

Witness Name: Dr Tracey Cooper

Statement No.: First

Exhibits: 84

Dated: 17th May 2023

UK COVID-19 INQUIRY

WITNESS STATEMENT OF DR TRACEY COOPER

I, Dr Tracey Cooper, care of Public Health Wales, 2 Capital Quarter, Tyndall Street, Cardiff, CF10 4BZ,

Will state:

1. This personal Witness Statement is provided by me in my capacity as Chief Executive of Public Health Wales in response to a request for evidence made by the Inquiry Team to me dated 21 March 2023.
2. Public Health Wales has been appointed as a Core Participant for Module 1 and Dr Quentin Sandifer has provided the Corporate Witness Statement on behalf of the organisation.

1 Background and Context

3. I joined Public Health Wales as Chief Executive in June 2014 and therefore my response to this Rule 9 request will cover my knowledge from this point in time. This personal statement should be considered alongside the corporate witness statement.

4. At that time, in June 2014, Public Health Wales was actively planning for the North Atlantic Treaty Organization (NATO) Summit 2014 that took place on the 4 and 5 September 2014. **(Exhibits TC1 – INQ000089621, TC2 – INQ000089622, TC3 – INQ000089623)**. Also in June 2014, we knew about an outbreak of Ebola virus disease in West Africa. Global and United Kingdom (UK)/Wales concern about this outbreak was increasing in July 2014, because of international travel connections between the growing number of affected countries in West Africa and the rest of the world.
5. At the outset, and in consideration of the module 1 List of Issues, and to assist the Inquiry in understanding the structure and capacity of Public Health Wales in relation to our health protection and microbiology and infection services, from 2014 to the start of the pandemic, I have described the development and organisation of these services below.

Health Protection Service Design

6. From 2014 to 2016, Public Health Wales Health Protection services had a staff capacity of circa 74 staff (69.47 whole time equivalents (WTE)), which comprised multi-disciplinary teams of consultants, nurses, practitioners and scientists. Staff were organised in teams focused on key functions including a) response to Acute and Chronic Health Protection cases, incidents and outbreaks of infectious disease and environmental hazards, b) Surveillance and epidemiology through our Communicable Disease Surveillance Centre, c) Vaccine Preventable Diseases and d) specialist programmes (for example, sexual health and offender health). Acute response services are delivered 24/7 365 days a year through normal working hours (09:00-17:00) and out of hours (17:00-09:00 and weekends) arrangements.
7. The Acute Health Protection Response Team was organised into four regional teams. These were *South Wales* (Cardiff and Vale University Health Board (UHB), Cwm Taf UHB (as was) areas); *Gwent* (Aneurin Bevan UHB area); *Mid and West* (Abertawe Bro Morgannwg UHB (as was), Hywel Dda UHB, Powys Teaching Hospital Board areas); and *North Wales* (Betsi Cadwaladr UHB area) – each with

an office within their area. The team, and related partnership working, was usually led by a consultant and the health protection response to cases and incidents was primarily managed within the relevant region with cross cover provided to manage any surge in demand.

8. Out of Hours services were delivered on an All Wales basis, through a three tier rota model involving specialist trainees, general public health consultants and specialist health protection consultants, working remotely across Wales.
9. The other health protection teams/ functions operated primarily on an All Wales basis. The services were managed by the Director of Health Protection.
10. In 2016, Health Protection and Microbiology Services were integrated, with leadership being provided by a Director of Integrated Health Protection working with a National Clinical Lead for Microbiology/Infection Services and a Professional/Clinical Lead for Health Protection services. A new model of acute health protection response was also developed in 2016, with input from partners namely the seven Health Board Directors of Public Health. The new model involved the delivery of a normal working hours acute response service delivered through an Acute Response Centre (ARC) based in a single location in Cardiff. Staff remained in the current geographical locations and adopted this All Wales Acute Response (AWARe) model in 2017. This model involves Health Protection Team staff – Consultants, Nurses, Practitioners and Administrators, contributing through a planned timetable to an initial response service that operates between the hours of 09:00 to 17:00 Monday to Friday. The out of hours service model remained the same. Support to local/regional geographies/ partners being provided either through the local presence or, if needed, remotely, to all regions of Wales.
11. From 2017 to 2020 (and currently), the service has been strengthening and transforming its workforce model and capacity; embracing and developing its approach to multi-disciplinary practice. In 2017/2018, prior to the pandemic, Public Health Wales had identified to the Welsh Government the need to strengthen the health protection system and particularly fragile microbiology services, which was

challenged by a lack of workforce capacity (UK wide). During 2018, Public Health Wales met with the Chief Medical Officer for Wales and, in May 2019, supported the Chief Medical Officer and Chief Nursing Officer to host a Wales wide workshop, which engaged key partners and highlighted the key issues. The issues were recognised to include:

- a. UK-wide shortages of trained staff (scientific, nursing and medical)
 - b. laboratory estates on many sites, including some owned by health boards, which were no longer fit for purpose (and unable to implement rapid testing technologies)
 - c. the need for increased ward-based clinical services and services in the community to support both infection prevention and antimicrobial stewardship.
12. Following this, Public Health Wales submitted a successful application for additional funding to the Welsh Government to strengthen its own specialist Health Protection services but particularly Microbiology including laboratory diagnostic services – see below (**Exhibits TC4 - INQ000183487, TC5 - INQ000183502, TC6 - INQ000183513, TC7 - INQ000183527, TC8 - INQ000183544, TC9 - INQ000183550**). Work to review the Wales system was ongoing when the pandemic began. Having used its resources to respond to the emergence of Covid-19, Public Health Wales undertook further work and submitted a detailed business case to the Welsh Government in November 2020. This had benchmarked services against other National Public Health Institutes and was intended to describe the investment and system required to deliver 'leading edge' health protection services in Wales [further details are provided in paragraphs 38-40].
13. The service has and continues to develop its IT/digital infrastructure. This has included the creation of a single telephony system (2017) for seamless call transfer and resilience and the introduction of "surface hubs" allowing for twice daily face to face virtual handover discussions via video link (now supplemented by Microsoft Teams).

Microbiology and Infection Service Design

14. In 2014, the service had a budget of approximately £20 million and directly employed 320 staff to deliver clinical and diagnostic services. Routine diagnostics were delivered through ten laboratories organised on a regional basis as follows:

a. **South East Wales**

- University Hospital of Wales (UHW)
 - Regional Microbiology
- University Hospital, Llandough
 - Regional Food, Water and Environmental

b. **Mid and West Wales**

- Singleton Hospital
 - Regional Microbiology
 - UK Toxoplasma Reference Unit
 - Wales and England Cryptosporidium Reference Unit
- Glangwili Hospital
 - Local Microbiology
 - Regional Food, Water and Environmental
- Bronglais Hospital
 - Local Microbiology

c. **North Wales**

- Ysbyty Glan Clwyd
 - Regional Microbiology
- Ysbyty Gwynedd
 - Local Microbiology
 - Regional Food, Water and Environmental
- Ysbyty Wrexham Maelor
 - Local Microbiology

15. In addition, Specialist and Reference laboratory services were provided as follows:

- Anaerobe Reference Unit (UK - UHW Laboratory)
- Toxoplasma Reference Unit (UK - Singleton Laboratory)
- Cryptosporidium Reference Unit (Wales and England - Swansea Laboratory)
- Welsh Centre for Mycobacteriology (Wales and South-West England – Llandough (Cardiff) Laboratory)

- Specialist Antimicrobial Chemotherapy Unit (Wales – UHW laboratory)
 - Regional Mycology Unit (Wales – UHW laboratory)
 - Welsh Specialist Virology Centre (Wales – UHW laboratory)
16. In 2014, clinical services were delivered through a team of consultant microbiologists (23 in total) embedded with local Health Boards. The main clinical services delivered included individualised laboratory reporting, patient consults, multi-disciplinary team meetings, antimicrobial stewardship rounds, development of local patient management pathways, advice for management of local and national incidents, and the development of national guidance. The team also delivered the role of Infection Control Doctor for five of the Health Boards in Wales.
17. In 2014, although the Microbiology/Infection service delivered routine clinical and diagnostics services and responded effectively to infection and public health incidents such as a major measles outbreak in South Wales, both diagnostic and clinical services were under strain due to the UK-wide challenges in the supply of trained clinicians and scientists. From that time, there have been a number of developments in both the clinical and diagnostic services to provide a high-quality, safe, effective, regionally focused public health infection service encompassing modern diagnostics, management, prevention and control to the population in Wales in order to improve health outcomes in an equitable manner.
18. In 2013, the Public Health Wales network had successfully achieved accreditation by CPA (Clinical Pathology Accreditation) under the ISO 25289:2012 standard. The following year, NHS Wales pathology services had completed the roll-out of an all-Wales Laboratory Information Management Service. This involved the standardisation of all laboratory processes in Microbiology to improve the consistency and quality of results across the network.
19. Over the following years there was workforce reconfiguration with increases in staffing, improvement in training opportunities, with the development of run-through training pathways for biomedical and clinical scientists.

20. In 2014, a Kiestra robotic system was introduced into the Rhyl Regional (Ysbyty Glan Clwyd Hospital) laboratory to support centralisation of the regional service. Unfortunately, the laboratory estate did not allow for robotic systems in the other regional laboratories. Also in 2014, MALDI-TOF (Matrix Assisted Laser Desorption/Ionisation – Time of Flight) mass spectroscopy was rolled-out across the laboratory network to improve both the accuracy and turnaround time for bacterial identification. In 2019, front-end automation (partial robotics) was introduced into the Swansea and Cardiff regional laboratories.

21. In 2017, funding was secured, and a Pathogen Genomic Unit (PenGU) was established in the UHW laboratory in 2018. Over the following years, PenGU has developed and delivered HIV resistance testing, Mycobacterial identification and cluster identification, typing of all Clostridium Difficile across Wales, Influenza sequencing, and is developing systems for genus-agnostic typing methods to support infection control management. During the COVID pandemic, PenGU supported the UK-wide infrastructure for SARS-CoV-2 sequencing. In the first year of the pandemic almost 16% of all positive samples in Wales were sequenced. At the time this represented the highest proportion of positive samples sequenced in the four UK nations.

22. Additional funding was secured from the Welsh Government for the development of molecular diagnostics. This led to the roll-out of gastrointestinal multiplex testing in the regional laboratories in 2017 and subsequently, rapid molecular respiratory testing in seven of the network laboratories, to provide the service to all Health Boards. This proved invaluable during the 2017 to 2018 influenza season, which saw the highest number of influenza cases since 2010.

23. From 2017, Public Health Wales initiated a Transformation programme to develop a sustainable and blended clinical workforce, with the following elements:
 - a. Expansion of the Clinical Microbiology consultant establishment
 - b. Expansion of the Infectious Diseases consultant establishment in Cardiff
 - c. Expansion of the medical training programme for Microbiology/Infectious Diseases in Cardiff

- d. Establishment and expansion of an Infectious Diseases team in Swansea
 - e. Establishment of a medical training programme for Microbiology/Infectious Diseases in Swansea
 - f. Establishment of run-through training (STP – Scientist Training Programme, HSST – Higher Specialist Scientist Training) for Clinical Scientists
 - g. Establishment of consultant Clinical Scientist roles
 - h. Establishment of new Physician Associate roles in Microbiology and Infectious Diseases
 - i. Establishment of a new Clinical Liaison Biomedical Scientist role
 - j. Establishment of an Advanced Nurse Practitioner role.
24. At the beginning of 2020, the diagnostic service had maintained UKAS accreditation (United Kingdom Accreditation Service) as a network under ISO 15189:2012 and was delivering testing for approximately 1.5 million samples/year. The service continued to be organised in three regions with regional molecular gastrointestinal testing and local molecular respiratory testing in seven local hospitals. There was an established genomics unit with an associated programme of activity. The microbiology service had developed considerable experience in the implementation of modern molecular testing methods with a number of test platforms available throughout the network. In addition, the Welsh Specialist Virology Centre had significant expertise in the development and validation of novel assays.
25. The clinical service was delivering more than 20,000 consults each year across Wales. It had expanded to 40 staff with a blend of medics, Clinical Scientists, Physician Associates, Clinical Biomedical Scientists, and Nurses. Medical training had been established in Swansea, alongside Cardiff, and there were Infectious Diseases services delivered in Cardiff and Swansea.

2 Policies and Procedures

26. By way of context, I have identified several National (Wales) policies that are relevant because Public Health Wales staff contributed to their development *and*

they informed the organisation's policies and actions [see paragraphs 103-104 in the corporate witness statement]. These include:

- a. Wales Health and Social Care Influenza Pandemic Preparedness and Response Guidance (published February 2014) **(Exhibit TC10 - INQ000089573)**
 - i. Document states that it *"is targeted at those engaged in pandemic preparedness planning and builds on the lessons learned from the H1N1 2009 (Swine) influenza pandemic and the latest scientific evidence. It is intended to support local pandemic preparedness and response planning in Health and Social Care organisations. Implementation of the guidance will help ensure that Wales health and social care remains well prepared for a future pandemic."*
 - ii. This guidance was still in force in January 2020.
- b. Wales Framework for Managing Major Infectious Disease Emergencies (published October 2014) **(Exhibit TC11 - INQ000089572)**
 - i. Document states that this *"Framework sets out generic arrangements for the management of major infectious disease emergencies by health services in Wales and should be considered within the context of the principles set out in: NHS Wales Emergency Planning Guidance; Cabinet Office statutory guidance 'Emergency Preparedness'; Cabinet Office non-statutory guidance 'Emergency Response and Recovery'; and The Pan-Wales Response Plan. The Framework is supported by the following guidance documents that must be used to inform planning for specific diseases or aspects of the response:"* (list includes The Communicable Disease Outbreak Plan for Wales **(Exhibit TC14 - INQ000089588)**; and the Wales Health and Social Care Influenza Pandemic Preparedness and Response Guidance. **(above - Exhibit TC10 – INQ000089573)**
 - ii. This guidance was still in force in January 2020 [paragraph 166 in the corporate witness statement].
- c. NHS Wales Emergency Planning Core Guidance (published February 2015) **(Exhibit TC13 – INQ000089570)**

- i. Document states that it “*contains principles for effective health emergency planning that has been developed in consultation with other United Kingdom Health Departments...*”.
 - ii. This guidance had not been republished by January 2020.
 - d. The Communicable Disease Outbreak Plan for Wales (update published April 2014 **(Exhibit TC12 - INQ000089575)**).
 - i. Provided the template for managing all communicable disease outbreaks with public health implications across Wales.
 - ii. The 2014 version of the Plan was still in force in January 2020 and was later reviewed and updated in July 2020 [see paragraphs 115 and 173 in the corporate witness statement] and, again following a rapid review, updated again in 2022 [see paragraphs 167 and 174 in the corporate witness statement].
 - e. Pan-Wales Response Plan (working draft 2019) **(Exhibit TC15 - INQ000089571)**
 - i. Document states that it “*sets out the arrangements for the pan-Wales level integration of the Welsh response to an emergency in or affecting Wales.*”
 - ii. This guidance had not been published by January 2020.
 - f. Genomics for Precision Medicine Strategy (published July 2017) **(Exhibit TC16 - INQ000183461)**
 - i. Document states that it “*sets out the Welsh Government’s plan to create a sustainable, internationally- competitive environment for genetics and genomics to improve health and healthcare provision for the people of Wales.*”
 - ii. This Strategy informed investment decisions by Welsh Government including pathogen genomics, which enabled Public Health Wales to establish and launch its Pathogen Genomics Unit (PenGU) in February 2018.
 - iii. The Strategy was superseded by the Genomics Delivery Plan for Wales 2022-25 published in December 2022.

27. In relation to key policies implemented by Public Health Wales during my tenure, which had a material effect on its pandemic readiness, the following relate. For

noting, I am interpreting 'policies' to include policies, plans and guidance.

28. During my tenure, Public Health Wales had contributed to the development of the following policies/plans (as referred to in paragraph 26 of this statement). To note, these are all-Wales plans that would have been implemented by the Welsh Government with or without Public Health Wales advice:

- Wales Framework for Managing Major Infectious Disease Emergencies **(above - Exhibit TC11 - INQ000089572)**
- Pan-Wales Response Plan **(above - Exhibit TC15 - INQ000089571)**

29. As stated in paragraph 26 above, Public Health Wales had contributed to these plans and they were available for use but not invoked by the Welsh Government during the Covid-19 pandemic response. The Welsh Government did however use the Wales Health and Social Care Influenza Pandemic Preparedness and Response Guidance to inform their response to Covid-19 **(above Exhibit TC10 – INQ000089573)**.

30. Public Health Wales had also contributed to and implemented the following All Wales plans/guidance [see context in paragraph 26 above]:

- NHS Wales Emergency Planning Core Guidance – used as reference in developing our (Public Health Wales) Emergency Response Plan **(above - Exhibit TC13 – INQ000089570)**
- The Communicable Disease Outbreak Plan for Wales – guided our approach to outbreak management **(above Exhibit TC12 - INQ000089575)**

31. These plans (listed in paragraph 30) were ready and available for use during the pandemic. In the case of The Communicable Disease Outbreak Plan for Wales, this cross-agency plan was used by Public Health Wales (and partners), in accordance with its intended purpose for the response to outbreaks of an infectious disease. As such the plan appropriately and directly informed relevant aspects of the Public Health Wales Covid -19 response. This plan was also later referenced specifically by the Welsh Government in the Welsh Government Coronavirus

Control Plan for Wales (published in August 2020) (**Exhibit TC17 - INQ000056326**) which provided a summary of the overall approach to preventing and containing the spread of coronavirus in Wales. The NHS Wales Emergency Response Planning Core Guidance (**above - Exhibit TC13 – INQ000089570**) was used to inform the development and review of the Public Health Wales Emergency Response Plan, which was activated during our response.

32. The effect of using the Communicable Disease Control Plan for Wales was that it provided an agreed structure and process to be followed by Public Health Wales and partners in responding to incidents and outbreaks of Covid-19. The effect of using the Public Health Wales Emergency Response Plan was similar in that it was used in accordance with its purpose and provided agreed structure and process to guide the Public Health Wales strategic and tactical response. Both plans were reviewed and revised during the pandemic response.
33. Public Health Wales also contributed to and implemented the Genomics for Precision Medicine Strategy (**above - Exhibit TC16 - INQ000183461**) (for Wales) [see context in paragraph 6 above] – as the basis for establishing our Pathogen Genomics Unit (PenGU). This strategy supported the establishment of PenGU that in turn enabled our genomics response during the pandemic.
34. In relation to the Public Health Wales internal, organisational policies and plans that were developed and implemented by the organisation, the following relate.
 - a. Emergency Response Plan (note this Plan complements multi-agency and national plans by setting out how Public Health Wales will discharge its responsibilities under the *Civil Contingencies Act 2004*).
 - i Public Health Wales had reviewed and exercised its Emergency Response Plans prior to the pandemic, firstly in 2016 and again in 2018. (**Exhibit TC18 – INQ000089562, Exhibit TC19 – INQ000089558**).
 - ii As at January 2020, the latest version of the Plan was version 2.0 published September 2018 (**above - Exhibit TC19 – INQ000089558**).
 - iii This document was supported by the following documents:

- Emergency Response Handbook: A guide for Public Health Wales responders version 1.0 published 2019 (**Exhibit TC20 - INQ000089563**).
 - Incident Co-ordination Centre Concept of Operations version 1.0 published July 2019 (**Exhibit TC21 - INQ000089569**).
 - Silver Group Concept of Operations version 1.0 published July 2019 (**Exhibit TC22 - INQ000089567**)
 - Gold Group terms of reference and standing agenda published December 2019 (**Exhibit TC23 - INQ000089565**)
 - Silver Group terms of reference and standing agenda published January 2020 (**Exhibit TC24 - INQ000089566**).
- iv The Emergency Response Plan was further reviewed and updated again during the pandemic response and was updated to Version 2a in February 2022 [see para 86 of the corporate witness statement]. This version is currently subject to a further full review, which is scheduled to be submitted to the Public Health Wales Board for approval in May 2023.
- b. Business Continuity Plans
- i Business Continuity Incident Management Process (first published 2018, version 2.0 published January 2019) (**Exhibit TC25 - INQ000089576**), which describes the response and recovery process for the organisation's management of business continuity incidents. This document is supported by the Business Continuity Framework (**Exhibit TC26 - INQ000089577**).
 - ii Business Continuity Silver Group terms of reference and standing agenda were published in January 2020 (**Exhibit TC27 - INQ000089579**).
- c. Training and Exercising for Public Health Wales Emergency Response Plan and records of exercises and training undertaken. Following approval of the updated Emergency Response Plan in 2018 (**above - Exhibit TC19 – INQ000089558**), Public Health Wales implemented an increased focus on staff training and exercising in relation to the revised plan.
- d. Microbiology stabilisation plans – in response to the microbiology workforce challenges faced by Public Health Wales from 2016.

- e. Health Protection Plans and business cases to review and strengthen the specialist health protection workforce capacity – resulting in discussions with the Welsh Government in relation to the resourcing of our Health Protection and microbiology services.
- f. Pathogen genomics development plans – these were developed alongside the national genomics strategic discussions that Public Health Wales contributed to that led to the development of the Genomics for Precision Medicine Strategy (see above) **(above - Exhibit TC16 - INQ000183461)** with the effect that £500k funding was received from the Welsh Government to purchase sequencers in 2017 and then the establishment of PenGU (in February 2018).
- g. European Union Transition (Brexit) planning – we undertook a significant amount of planning internally, **(Exhibits TC28 - INQ000089638, TC36 - INQ000089640, TC32 – INQ000089625)** and on behalf of the Welsh Government, to prepare for Brexit with the effect of strengthening our business continuity arrangements for critical and assessed at high-risk services including Health Protection and microbiology. **(Exhibits TC29 - INQ000089631, TC30 - INQ000089626, TC31 - INQ000089627, TC33 - INQ000089628, TC34 - INQ000089629, TC35 INQ000089630.**
- h. Review of the Communicable Disease Outbreak Control Plan for Wales (2014) **(above - Exhibit TC12 - INQ000089575573)** and publication of an updated version in July 2020. **(Exhibit TC37 - INQ000089586)** (This is an All Wales cross-agency plan which was approved and published by the Welsh Government but is hosted on the Public Health Wales website.) The 2014 version of the plan was used by Public Health Wales and partners, to inform outbreak/incident response in the initial months of pandemic. Public Health Wales, at the request of Welsh Government, facilitated a partnership review and revision of this plan during June/July 2020. This resulted in a revised version being published and used from July 2020, which introduced a new section (Appendix 7) to strengthen the clarity of the connectiveness of the plan to the Wales Civil Contingencies infrastructure. The Welsh Government requested Public Health Wales to facilitate, with key partners, a further rapid interim review of the plan in May 2022, considering lessons learnt from the Covid-19 response. A revised interim version of the plan

was finalised in July 2022 and approved and published for use by the Welsh Government on the 3 October 2022. **(Exhibit TC38 – INQ000089557)**. The revisions to the plan, including lessons from using the plan during the Covid-19 response, were summarised in a report submitted to and approved by the Chief Medical Officer’s Health Protection Advisory Group on the 6 September 2022. **(Exhibits TC39 - INQ000183486, TC40 - INQ000183489, TC41 - INQ000183490, INQ000183491, INQ000183492 and INQ000183493, TC42 - INQ000183494, TC43 - INQ000183495, TC44 - INQ000183496, TC45 - INQ000183497)**.

- i Public Health Wales Long Term Strategy/Strategic Plans have clear references to strategic priorities for Health Protection and Microbiology services and also strong references to health inequalities. The Public Health Wales Long Term Strategy, 2018 to 2030, **(Exhibit 46 - INQ000089568)** and associated strategic plans, explicitly recognised health protection and public health emergency preparedness (Priority 5).

3 Impact of Policies on the Preparedness and Resilience of Public Health Wales

- 35. In relation to the effect that policies that were implemented, in particular, on the funding and structure of health and social care, had on the preparedness and resilience of Public Health Wales, the following relates.
- 36. The only significant structural changes in the NHS in Wales that took place between 2014 and 2020 were the establishment of Health Education and Improvement Wales (HEIW) on the 1 October 2018 as a special health authority and a boundary change to the former Cwm Taf University Health Board and Abertawe Bro Morgannwg University Health Board to form the Cwm Taf Morgannwg University Health Board and the Swansea Bay University Health Board on the 1 April 2019. It is our understanding that, with the exception of the changes referred to above, the Welsh Government did not issue or implement any further policies during the period 2014 to 2020 that impacted or changed the structure of health and social care in Wales. With the exception of these changes, The structure of NHS Wales (including Public Health Wales and public services

(e.g., Local Authorities) has remained relatively stable during the period 2014 to 2020. This has provided a level of continuity in relation to the preparedness and resilience of Public Health Wales, including in its engagement with key public service partners during this period.

37. During 2014 to 2020 Public Health Wales did acquire some new organisational responsibilities. These included hosting the NHS Wales Health Collaborative in 2015 and the NHS Wales Finance Delivery Unit in 2018. These hosting arrangements did not involve the operational management of these functions and did not impact on Public Health Wales' civil contingency role.

38. The Welsh Government did not issue policies specific to the funding for health and social care during this period that effected the preparedness and resilience of Public Health Wales. However, in response to direct representation from and engagement with Public Health Wales, the Welsh Government did provide the following funding increases over the period 2014 to 2020 to specialist health protection and microbiology services. The monetary value is included below and the details of this are included in paragraphs 6 to 25 above. These included for example:

2018/19

Genomics core funding	600,000
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2019/20

Increase in funding for Pathogen Genomics	466,000
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Strengthening the National Health Protection Service	1,068,000
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2020/21

Further strengthening of the National Health Protection Service	3,860,000
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Additional funding for Pathogen Genomics	42,000
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39. This additional funding for health protection, microbiology and infection services, enabled Public Health Wales, to further develop key aspects of these services and improve preparedness and resilience during the pandemic response.

40. Examples of the effect on the funding on preparedness and resilience include:

a. **Genomics:** The establishment and further development of the Pathogen Genomics Unit (PENGu) and the ongoing development of existing genome sequencing services in Wales, resulting in improved pandemic preparedness and PENGu supporting the UK-wide infrastructure for SARS-CoV-2 sequencing during the Covid-19 pandemic response.

b. **Strengthening the National Health Protection Service:**

- i. In 2019/20, following representation from Public Health Wales in previous years, additional funding facilitated enhancements to the microbiology laboratory network infrastructure, diagnostic services, infection specialist workforce and health protection services (including epidemiology/surveillance workforce) (**above - Exhibit TC4 - INQ000183487, Exhibit TC5 - INQ000183502**). This resulted in Public Health Wales commencing a range of improvements, which positively affected preparedness and resilience, including the role out of rapid molecular diagnostics across Wales, the development of a more resilient microbiology workforce and some additional resilience in the epidemiology workforce support at regional (Health Board) level (**above - Exhibits TC6 - INQ000183513, TC7 - INQ000183527, TC8 - INQ000183544, TC9 - INQ000183550**). Some of these improvements were still being implemented at the outset of the pandemic.
- ii. It should be noted that the 2019/20 funding was only a part response to the need raised by Public Health Wales for the strengthening of the Health Protection system across Wales. To this end, a full business case was submitted by Public Health Wales to the Welsh Government in November 2020 (**Exhibits TC47- INQ000183499, TC48 - INQ000183500**) to build on the previous investment and develop a leading edge health protection service in Wales. Whilst this was not approved, following a request from the Welsh Government (**Exhibit TC49 - INQ000183501**), Public Health Wales made a revised application for funding for 'urgent and critical posts' so as to provide the minimum level of resilience and sustainability to our ongoing Covid-19 Response.

(Exhibits TC50 - INQ000183503, TC51 - INQ000183504). Additional funding was approved in February 2021. This then led to the further development of the health protection specialist workforce and notably the appointment to additional health protection posts, which provided additional resilience for the service.

4 Pandemic Planning, Preparedness and Resilience

41. I have outlined below examples of actions undertaken by Public Health Wales in relation to pandemic planning, preparedness and resilience during my tenure of office. I have included these because this planning and implementation prior to 2020 contributed greatly to the preparedness and resilience of the Public Health Wales services going into and during the Covid-19 response. This includes the developments in our Health Protection and Microbiology/Infection Services described in paragraphs 6-25 above.
42. During my tenure Public Health Wales has correctly discharged its statutory role as a Category 1 responder. This is evidenced by the submission of, and feedback from, the Welsh Government of our Emergency Plan Annual Reports (Exhibits **TC52 - INQ000183505, TC53 - INQ000183506, TC54 - INQ000183507, TC55 - INQ000183508, TC56 - INQ000183509, TC57 - INQ000183510, TC58 - INQ000183511, TC59 - INQ000183512**). In addition, we have successfully developed, reviewed, trained and exercised our Emergency Response Plan [see paras 30-34b of this statement and paras 83 and 87-89 of the corporate witness statement]. We have actively participated in all aspects of the All Wales Civil Contingency structure, processes and exercising for emergency planning, exercising, resilience and response.
43. We have an established practice of annual planning and also reviewing plans and applying learning following actual use. This activity is reported through our Annual Returns to the Welsh Government. For example, during and following our response to NATO, Ebola [paragraph 262 in the corporate witness statement]) or following exercises such as MERS-CoV [paragraph 242 in the corporate witness

statement]) or from learning from others. For example, the Public Health Wales Emergency Response Plan version 2.0 published in September 2018, was informed by some comparison with the Public Health England (PHE) approach **(above - Exhibit TC19 - INQ000089558)** As a result, updated plans were published in 2011, **(Exhibit TC60 - INQ000089559)**, 2012 **(Exhibit TC61 - INQ000089560)**, 2014 **(Exhibit TC62 - INQ000089561)**, 2016 (**Exhibit TC63 - INQ000089562**) and 2018 **(above - Exhibit TC19 - INQ000089558)** and 2022 [paragraph 86 in the corporate witness statement].

44. We commissioned external reviews on areas of our emergency response and planning. For example, a review of our Business Continuity Management arrangements in 2016 resulted in a decision to merge Emergency Planning and Business Continuity functions within Public Health Wales, to ensure closer alignment between the two functions, under a single executive lead [paragraph 89 in the corporate witness statement].
45. New management arrangements were established for Emergency Planning and Business Continuity **(Exhibit TC64 - INQ000089650)** [paragraph 47 in the corporate witness statement]. This included the merger of the Emergency Planning Assurance Group and the Business Continuity Group to form the Public Health Wales Emergency Planning and Business Continuity Group, which was established in August 2018 [paragraph 90 of the corporate witness statement] and terms of reference revised July 2019 **(Exhibit TC65 - INQ000089648)**
46. Emergency preparedness and planning moved from a divisionally led (Health Protection) function to a corporately led (Executive Director of Public Health Services) organisational priority in January 2018 (reflected in the new Public Health Wales Long Term Strategy 2018 to 2030 [see paragraphs 13 and 15 in the corporate witness statement]. **(above - Exhibit TC46 - INQ000089568)**
47. New investment in emergency planning and business continuity was made which included the establishment of, and appointment to, a new Emergency Planning and Business Continuity Manager role in October 2017.

48. With the establishment of the Emergency Planning and Business Continuity Group, a single organisational work plan was developed – the Public Health Wales Emergency Planning and Business Continuity Work Plan 2018-2020. **(Exhibit TC 66 - INQ000183523)**
49. A process was established by Health Protection for holding a repository of learning and recommendations from internal and multi-agency debriefs (Lessons Management System) [see paragraphs 290 to 297 in the corporate witness statement] – a situation report of recommendations as at 17 December 2019 is referenced in the Module 1 Corporate Statement [paragraph 259] **(Exhibit TC67 - INQ000183524)**.
50. Expansion of training and exercising increased organisational capability (as reported in annual returns to the Welsh Government and recorded in the Public Health Wales Training Log) [situation as at January 2020 referred to in paragraphs 301 to 302 of the corporate witness statement].
51. We undertook national leadership of relevant training and exercising including MERS-CoV Exercise Dromedary [paragraph 144 of the corporate witness statement], and in High Consequence Infectious Diseases [see paragraphs 145 and 213-214 of the corporate witness statement].
52. Planning for, and investments made in, microbiology services that were essential to the Covid-19 response including molecular diagnostics and pathogen genomics (funding in 2017, PenGU– Pathogen Genomics Unit – established February 2018).
53. Some initial investments were made in health protection regional/field epidemiology (funding 2019) which strengthened surveillance in health boards.
54. A health protection business case was submitted to the Welsh Government in November 2020 with funding approved in February 2021, and some further additional investments (see paragraphs 197 and 227 of the corporate witness statement) were approved by the Welsh Government for additional urgent/critical

posts in the health protection workforce, during the Covid-19 response to provide resilience (funding approved February 2021).

55. Learned experience from Ebola [see paragraph 256 in the corporate witness statement] had established the concept of the Public Health Wales Public Health Strategic Co-ordination Support Group (PHSCSG), (**Exhibit TC 68 - INQ000183525**) which worked well during Covid-19 as a mechanism for facilitating the efficient exchange of information and multi-agency strategic discussions.
56. Brexit preparedness provided significant additional focus on emergency planning, preparedness, response and business continuity arrangements in the 18 months before the pandemic.
57. Public Health Wales had routine and active participation in All-Wales Emergency Planning structures and processes (Wales Resilience Forum and Local Resilience Fora) prior to the pandemic.
58. Public Health Wales had established collaborative working relationships with key partners/ stakeholders at national and local levels (Welsh Government, health boards and their Directors of Public Health, local authorities and their Directors of Public Protection and policing and criminal justice), which facilitated enhanced joint working at all levels at the start and throughout the pandemic response.
59. Public Health Wales was able to facilitate exercising of key aspects of a pandemic response, for example, a lockdown (e.g. Exercise Seren City held on the 3 March 2020) (**Exhibit TC 69 - INQ000183526**) and local cluster/outbreak management alongside strategic multi-agency arrangements (e.g. Exercise Barod (**Exhibit TC 70 - INQ000183528**) to test updated Communicable Disease Outbreak Control Plan for Wales held on the 7 August 2020).
60. During the response, Public Health Wales provided guidance to inform Local Covid-19 Planning and Response Plans, which provided structure for a level of consistency of local response (**Exhibit TC71 - INQ000183529, Exhibit TC71a – INQ000183531, TC72 - INQ000183532, TC73 - INQ000183533**)

61. Public Health Wales had robust core surveillance and epidemiology systems, that could be rapidly adapted and which facilitated the early and ongoing sharing of system wide information on Covid-19 in Wales with partners (particularly the Welsh Government, health boards and local authorities) to inform both policy and response.
62. At the end of December 2019, Public Health Wales had [see paragraphs 191 and 215 to 218 of the corporate witness statement]:
- a. a clear framework to guide its strategic and tactical response – the Public Health Wales Emergency Response Plan version 2.0 published September 2018 (**above - Exhibit TC19 - INQ00089558**) with supporting documents as detailed above [paragraph 82 of the corporate witness statement]
 - b. an established governance structure and work programme for implementing the Plan
 - c. trained and exercised over a third (more than 500) of its staff in the year to January 2020
 - d. reviewed its business continuity arrangements and plans (in preparation for Brexit)
 - e. risk and impact-assessed key functions including health protection and microbiology services (in preparation for Brexit)
 - f. raised awareness of the need for and made some additional investments in microbiology and health protection services
 - g. capability in surveillance and epidemiology to provide system wide information.

5 Improving Pandemic Preparedness

63. In relation to some of the key changes that could be made to the systems, structures and processes of Public Health Wales to make it better prepared for a future pandemic, my views include reference to our organisational actions, and also national and UK-wide actions that will directly and indirectly benefit Public Health Wales' preparedness, and are as follows:

Wider National and UK-wide Changes

- a. A review of the role of the Health Protection Advisory Group and the Wales Resilience Forum and their place in any future pandemic response could be undertaken (this should be broader than a review and assurance of outbreak management).
- b. The implementation of the recommendations contained within the report of the independent review of the health protection system in Wales, commissioned by the Chief Medical officer for Wales, and undertaken by Professor David Heymann and Sara Hayes which was published on the 7 February 2023 (**Exhibit TC74 - INQ000183534 and Exhibit TC75 - INQ000183535**)
- c. The development of a 'Pandemic Workforce Plan' to understand the capacity and competencies required for effective response, supported by a clear understanding of resource requirements at a local and national level and the training and development requirements necessary to retain experience and skills for rapid and effective mobilisation.
- d. Improvement in the understanding and clarity of the respective roles and responsibilities of the key players and clear articulation in how the health protection system works most effectively together across the key response functions during a pandemic. This should include the leadership and co-ordination, sampling, testing, treatment, contact tracing, enforcement, public messaging, training and development of professionals and volunteers, research and evaluation, developing evidence-informed interventions, surveillance, prevention and control.
- e. A Welsh Government led review and updating of all Wales-specific national plans and policies that relate to pandemic planning, preparedness and response, not already updated since January 2020. This would include an ongoing review of the Communicable Disease Outbreak Control Plan for Wales and the Pandemic Response Plan for Wales which should incorporate learning from the Covid-19 pandemic response, including details of the rapid mobilisation and scaling-up of the system response.

- f. Systematic exercising of specific 'Pandemic response plans' with all partners.
- g. A review of the High Consequence Infectious Disease and isolation facilities across Wales and the development of a plan, with the associated required investment, to ensure sufficient capacity and capability to address any gaps could be undertaken
- h. In addition to the investment received from the Welsh Government to strengthen our health protection and microbiology services during the pandemic [paragraphs 57 – 58 of the Module 2B Corporate Witness Statement] further investment is required in a Wales health protection *system* adopting a One Health approach including further investment in Health Protection and Microbiology/Infectious disease specialist staff, as described in the Public Health Wales business case prepared and submitted in November 2020 refers. **(above – Exhibits TC47 - INQ000183499, TC48 - INQ000183500)**
- i. Further sustained improvements in NHS Wales infection prevention and control practices and performance across the NHS.
- j. The establishment of a 'reserve' workforce of public servants, people from other sectors and public volunteers who are appropriately trained, competent at any given time, and able to respond and mobilise into key local roles if and when required.
- k. The strengthening of the Four Nations arrangements to ensure that all four national public health agencies are better informed of real-time information, and are all actively engaged in dynamic risk assessment, and co-design of guidance and resources where appropriate.

Direct Organisational Changes

- l. We have recently made further investment in our specialist Emergency Planning and Response function for the organisation which will allow more enhanced resilience and capacity for emergency planning and business continuity.
- m. We have undertaken a comprehensive review of the Public Health Wales Emergency Response Plan, engaging both internally with our staff and

externally with our partners. An updated draft version of the Plan (Version 3), is being considered by the Public Health Wales Board in May 2023.

- n. We are in the process of consolidating and undertaking ongoing modernisation of the Wales microbiology / virology laboratory infrastructure and facilities
- o. Applying the learning from our Covid-19 response is ongoing including:
 - developing standard operating procedures for Public Health Wales (and the wider system where appropriate) that describe the 'how-to' for the rapid mobilisation and scaling-up of functions and activities in a system response
 - ensuring that Public Health Wales staff are kept up-to-date with core health protection and response-related skills to ensure that the organisation is able to mobilise at pace and scale if required
 - developing and keeping up-to-date, the necessary guidance, toolkits, training (and refresher training) and modules required to support and sustain the reserve workforce (see point j. above) in order to facilitate rapid mobilisation of staff in a surge response
- p. Undertaking ongoing internal and external learning and debrief sessions to inform the review of the Communicable Disease Outbreak Control Plan for Wales.
- q. Continuing to undertake structured debrief learning in relation to aspects of our pandemic response and continue to undertake internal exercises to test our updated Public Health Wales Emergency Response Plan.

6 Lessons Learnt in Advance of the Covid-19 Pandemic

64. A number of lessons were learnt in advance of the Covid-19 Pandemic, which are set out in paragraph 65. Public Health Wales holds a repository of learning where recommendations are extracted from internal and multi-agency debrief reports, and documented where the organisation is listed as the action owner. Lessons are then added to the lessons management system and progress is tracked through the Emergency Planning and Business Continuity Group to ensure their implementation. For example, **(above - Exhibit TC67 - INQ000183524)** shows recommendations as at 17 December 2019 including the relevant status at that

date. As of the date of this statement, all outstanding actions have been completed or have informed new ongoing actions.

65. Some examples of the lessons that had been learnt and implemented by Public Health Wales from past simulation exercises and events to make it ready for the Covid-19 pandemic are as follows:

- a. Importance of the role played by Public Health Wales in coordinating public health action. This has been learnt from the measles outbreak (2012 to 2013 which pre-dates my tenure) (**Exhibit TC76 - INQ000183536**) and specifically the implementation of mass catch-up immunisation programmes, and the response to Ebola virus disease where Public Health Wales provided the lead for the NHS in the context of a multi-agency response. Of note, both of these examples were at the request of, and supported by, the Welsh Government, which did not happen explicitly during the Covid-19 pandemic. In the case of Ebola virus disease, this was enabled by the Welsh Government and Public Health Wales secured system agreement for the establishment of the Public Health Wales Public Health Strategic Co-ordination Support Group (PHSCSG), as a single route of sharing information with civil contingency partners.
- b. Challenge of mobilising staff at the scale and speed necessary – challenge learnt from measles but offset by health board ownership of the response from the start and the available staff to act (for example, to deliver mass immunisation). In Covid-19, health boards needed to be strongly supported into action at the beginning (early sampling and testing), and the necessary staff for the response was only more optimally achieved following the publication of the National Health Protection Response Plan and the Test Trace Protect strategy. Tensions between Public Health Wales and health boards have occasionally occurred in relation to the local management of an outbreak or health protection issue. Some local outbreaks of Covid-19 reflected some of these issues in relation to responsiveness and clarity of roles.
- c. Need to regularly review the understanding of roles and responsibilities by the wider civil resilience community and to ensure clarity of definitions in

both Public Health Wales and partners' Plans. For example, clarity of the role(s) of Public Health Wales staff in Strategic Coordination Groups, and the definition and role of an Incident Management Team. Exercise Barod **(above - Exhibit TC70 - INQ000183528)** held in August 2020 highlighted the need for clear shared understanding of definitions as a learning point.

- d. A regularly explored issue since the establishment of Public Health Wales (basing the time before my tenure on experience from the former Executive Director of Public Health Services) is the number of specialist public health staff required for the health protection and infections system for Wales. For example, health protection, epidemiologists, medical microbiologists/infectious disease doctors; the range of professional groups (medical versus nursing/practitioner versus scientific); and how they are deployed. For example, there have been debates about the range of possible models dependent on the partner (health board) involvement and our resources available at any given time including whether we need one specialist consultant in health protection for each health board or could our human resources be deployed in different ways including with health board and local authority staff at times of surge). Looking back on Covid-19, takes us to the question: of what the optimal health protection system is for Wales.
- e. Outbreaks frequently highlight gaps in diagnostic capacity and at the same time, new opportunities for applying established skills and knowledge to meet these. Examples from the recent past include PCR techniques to diagnose measles rapidly and molecular methods to respond to the increase in seasonal influenza in 2017-18.
- f. A pandemic inevitably reopens the debate about generic plans versus disease specific plans; this tension is also repeated when the Communicable Disease Outbreak Plan for Wales is reviewed. The rapid review of this plan in July 2022, highlighted the need for consideration of the development of separate 'pandemic response plans' [see paragraph 34h above] (above - **Exhibits TC39 - INQ000183486, TC40 - INQ000183489, TC41 - INQ000183490, INQ000183491, INQ000183492 and INQ000183493, TC42 - INQ000183494, TC43 - INQ000183495, TC44 - INQ000183496, TC45 - INQ000183497)**)

- g. Linked to this is the debate about the meaning of 'dynamic risk assessment' and whether sufficient reliance can be placed on 'dynamic risk assessment' or whether plans should incorporate checklists or even specifications to cover different groups in an affected population. Public Health Wales has further strengthened its reference to the needs of vulnerable groups/ population with protected characteristics in our reviewed Emergency Response Plan, recognising that this was not explicit in the core language/focus of civil contingency response.
- h. In the context of changed organisational arrangements for public health in other UK nations (notably PHE-UKHSA), the importance of strengthening Four Nations working arrangements, including a review of lessons learnt, is fundamental, particularly so in a pandemic. Whilst working relations function, they are sometimes not followed, e.g. Wales/Public Health Wales may not be brought in early enough to contribute to the dynamic risk assessment process for cross border infection threats (but often receives the outcome later for comment).
- i. The extensive preparation and planning that Public Health Wales put into large scale events also helped significantly in the preparation for, and response to, Covid-19. This includes the:
 - exercises, planning and learning from the NATO Summit which took place on the 4 and 5 September 2014 (**above Exhibit TC1 – INQ000089621, TC2 – INQ000089622, TC3 - INQ000089623**)
 - exercise, planning and learning from the UEFA Champions League Final that took place in Cardiff in June 2017 (**Exhibit TC77 - INQ000183537**)
 - planning, preparations, review of supply chains and provider's resilience, significant staff training, support to the Welsh Government and system partners and engagement with the Four Nations public health agencies in the run up to the European Union transition.

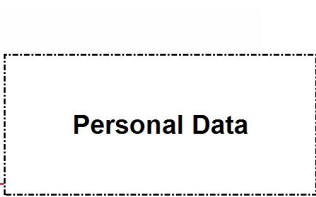
66. In relation to missed opportunities for lessons to be learnt, following the publication in May 2021 of the report of the Independent Panel for Pandemic Preparedness and Response on 'Covid-19 Making it the last Pandemic', the Chief Medical Officer

for Wales and I discussed and agreed that it would be helpful to consider this from a global learning perspective as part of a wider Pandemic Preparedness and Learning from Covid-19 Summit in Wales with all partners involved (including the Welsh Government, Local Authorities - Chief Executives and Directors of Public Protection, Health Boards Directors of Public Health, Emergency Services and Local Resilience Forum chairs) with the initial plan for the middle of July 2021. **(Exhibits TC78 - INQ000183538, TC79 - INQ000183543, TC80 - INQ000183545, TC81 - INQ000183546, TC82 - INQ000183547)** The aim of the pandemic preparedness summit was to help inform our individual organisational and collective public service planning for how we will prepare for and react to a further wave of Covid-19, alongside the potential impact of other seasonable diseases this winter, based on what we have experienced and learned so far. The event was also to inform our planning and preparedness for a future pandemic. A multi-agency planning group (including Welsh Government officials) was convened and met on a number of occasions to prepare a methodology and agenda for the event **(Exhibit TC83 - INQ000183548 and Exhibit TC84 - INQ000183549).**

67. The event was then scheduled for September 2021, but unfortunately, the national pandemic summit was cancelled. This was outside of Public Health Wales' control and followed recommendation from Welsh Government officials due to a range of reported dynamic issues including:
- the ongoing changes to Covid-19 and severe system pressures on public services (notably in health and social care services)
 - ongoing preparation by the Welsh Government of policies and plans (including testing) for the winter season e.g. winter respiratory diseases (including Covid-19)
 - an intention for the Welsh Government to organise a separate winter planning workshop
68. As such, as a specific national retrospective lessons learnt/ debrief process has not been undertaken, there may be lessons yet to be identified, which could inform future pandemic response.

Statement of Truth

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

Signed:  _____

Dated: _____ 17th May 2023 _____