Witness: Suzanne Rankin
Statement No: 3
Exhibits: Nil
Dated: 23 January 2025

UK COVID-19 INQUIRY

WITNESS STATEMENT
of
SUZANNE RANKIN

I, Suzanne Rankin of Cardiff & Vale University Health Board will say as follows:-

1 I am the Chief Executive of Cardiff & Vale Health Board - Bwrdd Iechyd Prifysgol Caerdydd a'r Fro (CVUHB) and have been since 1 February 2022.

2 I provide this statement in response to a request under Rule 9 of the Inquiry Rules 2006 dated 21 October 2024 for information from CVUHB relating to procurement and the distribution of key healthcare equipment and supplies. In making this statement I have relied upon information and data which has been provided by colleagues at CVUHB. In the Schedule at the end of the statement, I have listed the names and roles of these colleagues.

3 In this statement, I refer to two waves, which are defined by reference to the waves in the Cardiff and Vale area, as follows:

• first wave starting in early March 2020 and ending at the end of April 2020;

• second wave starting in late September 2020, with an initial peak in the second half of October 2020, after which infection levels declined slightly

before rising again in late November 2020, peaking in mid/end December 2020 and ending at the end of February 2021.

Overview of the role, functions and activities of CVUHB

4 The NHS in Wales underwent major change in 2009 to equip it to deliver better healthcare to the population of Wales in the 21st century. The reorganisation of NHS Wales created single local health organisations that are responsible for delivering all healthcare services within a geographical area, rather than the Trust and Local Health Board system that existed previously. Accordingly, the NHS in Wales now principally delivers services through seven Health Boards. CVUHB is one of the seven established Health Boards in Wales.

5 CVUHB is one of the largest NHS organisations in Europe and provides health and wellbeing services to a population of around 472,400 people living in Cardiff and the Vale of Glamorgan. It also serves a wider population across South and Mid Wales for a range of specialties and is a teaching Health Board with close links to the university sector.

6 CVUHB provides:

6.1 Primary and community-based services: GP practices, Dentists, Pharmacy and Optometry and a host of community led therapy services via community health teams.

6.2 Acute services through our two main University Hospitals and Children's Hospital: providing a broad range of medical and surgical treatments and interventions.

6.3 Public Health service, supporting the communities of Cardiff and Vale with a range of public health and preventative health advice and guidance.

6.4 Tertiary care: serving a wider population across Wales and often the UK with specialist treatment and complex services such as neuro-surgery, Major Trauma and cardiac services.

NHS Wales Shared Services Partnership

7 NHS Wales Shared Services Partnership (NWSSP) managed the procurement of the majority of key equipment and supplies at a national level before, during and after the pandemic.

8 NWSSP created a national store for Wales and purchased as much stock as possible, which was then made available to Health Boards as we needed it.

9 NWSSP's procurement service also managed non-stock supplies and equipment, contracting with third party suppliers directly.

10 Although most PPE products were managed centrally by NWSSP, there was also a local NWSSP team based at CVUHB which increased sourcing of key PPE products locally during the pandemic to ensure resilience and so that stocks did not run out.

11 The local team also dealt with the procurement of the majority of equipment for the surge hospital built by CVUHB, Ysbyty Calon y Ddraig - Dragon's Heart Hospital.

Working with other organisations during the pandemic

12 CVUHB participated fully in the suite of planning arrangements set up to deliver the requirements laid out in Wales' response during the pandemic, and the Welsh Government's (WG) national Coronavirus Prevention and Response Plan (August 2020), both from a healthcare planning and delivery perspective and from a public protection of communities perspective.

13 An Executive Director from CVUHB was a member of the national WG health planning group which met weekly (and sometimes more frequently) and led the joint planning arrangements for all aspects of healthcare provision during 2020, including procurement. The Executive Director then fed back to the local planning mechanisms within CVUHB, so it was a two-way process.

14 A daily call was set up between the Chief Executive Officer NHS Wales (CEO Wales) and the Chief Executive Officers of all Health Boards and Trusts in Wales to highlight key issues, opportunities, challenges, solutions and requirements. This also informed CVUHB's local planning and delivery arrangements, linking closely with Executive Leads for different elements of the response such as the Chief Operating Officer, the Director of Public Health, the Medical Director and the Director of Nursing.

15 The Chief Medical Officer for Wales (CMO Wales) met regularly with Health Board Medical Directors (including CVUHB's Executive Medical Director) and separately with Executive Directors for Public Health to plan and discuss the way forward and to advise.

16 CVUHB's Executive Director of Nursing worked very closely with the Chief Nursing Officer NHS Wales, with regular WG national and Health Board meetings to inform practice, highlight challenges and seek solutions.

17 CVUHB also worked very closely with Public Health Wales (PHW) throughout the pandemic through joint working mechanisms outlined in the Coronavirus Control Plan for Wales. In terms of Covid Prevention and Response, the planning context had three component parts (i) local Covid-19 prevention and response plans (ii) Communicable Disease Outbreak Plan for Wales and (iii) National Covid-19 Prevention and Response plan. The latter outlined the respective roles of Health Boards at the local and regional level, together with the role of PHW and other organisations. We co-worked through all these levels, with PHW and with WG colleagues.

18 The Health Board co-produced its local Covid-19 Prevention and Response plan with the two local authorities, publishing the first version on 21 August 2020. The first Cardiff and Vale of Glamorgan Covid-19 Prevention and Response Plan outlines how Health Boards and local authorities co-worked regionally.

19 PHW also advised our Cardiff and Vale Incident Management Team (IMT) through our PHW regional Consultant in Communicable Disease Control and other PHW health protection staff worked closely with us both tactically and operationally. The IMT was set up from September 2020 in accordance with the Communicable Disease Outbreak Plan for Wales and Coronavirus Control Plan. It was attended by CVUHB, local Councils, the Police, the Local Public Health team and PHW.

20 The group's purpose was to collate and interpret the latest epidemiology for Covid-19 in our area, at a population level as well as local clusters and outbreaks, and discuss and agree how best to manage and prevent harm from Covid-19 in our area. Issues relating to procurement would have been discussed incidentally but were not the main focus of the meetings.

21 The reports from the regional IMT meetings were an important line of communication with WG.

22 CVUHB was a core member of the partnership delivery of Test, Trace and Protect throughout the course of the pandemic, and worked particularly closely with the local Councils and PWH throughout. PWH's Specialist Health Protection Team was contactable both in and hours to access support and advice on case and cluster management. The regional Consultant in Communicable Disease Control (CCDC)/Consultant in Health Protection (CHP) would often chair the IMT meetings.

23 CVUHB was also advised on public health matters through a weekly PHW-led briefing sessions, with Local Resilience Fora (LRF) mechanisms in place across Wales. The Health Board sat on the weekly (and sometimes bi-weekly) regional LRF meetings of which PHW was also a member.

24 WG was responsible for making policy decisions on the Covid-19 response in Wales and so CVUHB would have very little direct communication from the UK Government.

25 PHW was our national public health organisation, and public health system lead, so it had connections to UK public health organisations which formed part of the pandemic response. The public health organisations of all four

nations would meet, share intelligence and planning considerations, and have shared messaging for tackling the pandemic.

26 The Medicines Regulatory Authority (MHRA) oversaw new vaccination licensing. WG planned the vaccination infrastructure for Wales, but had to wait for confirmation of licensing from MHRA before implementing it.

27 CVUHB involved and consulted Trade Unions throughout the pandemic. Martin Driscoll, Executive Director of Workforce and Organisational Development and other executives met with the Trade Unions remotely through Local Partnership Forums (LPF) from May 2020. The meeting in May 2020 was a special meeting set up to discuss COVID-19 related issues. From June 2020 routine LPF meetings took place bi-monthly with a full agenda, which included Covid-19 related issues such as such as shielding and recovery. In addition to the main LPF meetings, the Workforce Partnership Group (WPG) (a subgroup of LPF) met on a bimonthly basis from June 2020, co-chaired by Martin Driscoll and Mike Jones (Independent Board Member as the Trade Union Representative since 1st March 2021). Martin Driscoll and Mike Jones also had one to one meetings on a monthly basis. There is always a Trade Union Independent Member on the Board of Health Boards.

Guidance on infection, prevention and control

28 Early in the pandemic we used the Covid-19 operations morning meeting to disseminate infection prevention and control (IPC) advice. As the pandemic continued, a formal IPC cell was created. This multi-disciplinary group was chaired by the Executive Director of Nursing (or their deputy)

and membership included senior members of the IPC nursing team, Consultant Microbiologists, Infectious Diseases Consultants, communications specialists, and members of the patient safety team. Any information that required sharing from the IPC cell was added to the Covid-19 intranet page and a communication briefing would be shared across the organisation as all-staff emails, in CEO Connects and on the Staff Connects app. The app was introduced during the pandemic. A member of the communications team sat on the IPC cell to oversee rapid and accurate dissemination of advice. There were also daily CEO publications for Covid updates and weekly CEO updates for wider communications, including public facing communications.

29 Information was communicated to staff in a number of other ways as well, for example by Facebook groups and displays on department walls and in staff rooms. Information was also communicated verbally by the IPC nursing team, who spent time on the ward and clinical areas relaying the changes, and the medical microbiology team who provided advice via meetings and through clinical contacts with ward teams. As frontline staff were busy looking after patients and not accessing emails, we were reliant on lead nurses and ward sisters/charge nurses verbally communicating changes.

30 Daily or weekly updates were shared as a news update to staff to try and keep up to date with changes.

31 In ICU, information received in emails by Senior Staff was disseminated widely to the ICU team utilising WhatsApp. The Critical Care Network set up All Wales WhatsApp groups to share information. One of the ICU

Consultants took the lead in relation to IPC issues and ensuring the guidance was followed. Posters were used in staff areas to disseminate information. Local daily meetings were held to discuss updates and strategic planning. A critical care email address was set up to allow staff to submit questions.

32 There were difficulties in dissemination and implementation of guidance. The main difficulty was the amount of guidance and information being disseminated to us as an organisation, in a variety of ways and from a variety of sources, so that it was challenging to assimilate, disseminate and implement this in a timely manner. Guidance changed very frequently (occasionally more than once a day), and often guidance was issued out of hours/at the weekend or late in the week which added to the challenge. Some of this guidance is archived on the UK Government website from which the frequency and dates of changes can be seen. The effect of this on staff/the Health Board included the level of work needed to assimilate, disseminate and implement the guidance (including the need to re-order stock), often at times of reduced staffing (out of hours and at the weekend). The frequency of change also led to lack of clarity/confidence in the guidance. There were often conflicting opinions from staff who accessed PHW information prior to it being disseminated within the organisation, until the IPC cell could formally interpret and distribute the information widely across CVUHB. There was a pace of demand at the time, matched by a pace of change, that was inversely proportional to the ability to document and categorise the myriad documents being distributed. This makes it difficult to pinpoint specific examples of guidance documents. Additionally,

it is very difficult to try and translate the dynamism of the period into a static, encapsulating statement here. In the absence of the ability to share specific documents, what is clear is that the memory of the pace of change and inconsistency is a constant. It is not possible to comment on how this manifested in other Health Boards. It is not possible, at this stage, to point to specific examples of pieces of guidance which gave rise to conflicting opinions and what those conflicting opinions were. The guidance received by the Health Board was considered by the IPC cell in order to interpret the information clearly, reduce ambiguity and ensure that the communication was relevant and meaningful to all levels of staff within CVUHB. Whilst this occurred as fast as was possible in the circumstances, it is not possible at this juncture to provide information about how long this took – it will of course have varied depending on factors such as staffing levels, frequency of changes, and when the changes were announced. The degree of any liaison with other Welsh Health Boards will also have varied.

33 The frequency of change was challenging from a senior and lead nurse perspective and caused confusion and anxiety at times. Pathways and flowcharts were being created every day or couple of days with different versions being taken down and put up almost on a daily basis. Some of the challenges resulted from the fact that IPC guidance changed and was updated during the course of the pandemic in terms of what were thought to be 'aerosol generating' procedures and what the level of risk was in specific clinical areas. As a result, health care workers saw colleagues in some areas wearing higher levels of PPE than in others, which led to

confusion and in some cases mistrust, as the evidence base for the guidance was not always clear.

34 The fact that the national guidance changed so often led to a lack of confidence in some of the guidance. In areas where staff were expected to just wear a face mask, staff were not comfortable with that especially in the first months of the pandemic before vaccinations were available and before the disease was really understood.

35 Frequent changes to guidance on usage also resulted in wastage of the masks which were no longer being used and low stocks of the new types of mask.

36 We followed the national guidance on IPC over the majority of the period, although there were certain occasions when we departed from it. For the reasons outlined above in paragraph 32 we cannot, at this stage, provide a list of occasions on which IPC guidance may have been departed from, but this was mainly because we had to make the guidance work in practice, taking into account local factors, as opposed to compromising on adherence. Discussions about how to do this were held in clinical departments, with the IPC team, and in PPE cell meetings. There were rare occasions of items being sourced externally from other local Health Boards but subsequently procurement became more central and rationalised.

37 At one stage, in critical care, face visors were reused to conserve supplies. Each member of staff would have one visor for a shift, which would be cleaned on leaving the clinical area and reused when re-entering the

clinical area. The visors were kept for one shift and not shared between staff. Another example related to mask wearing. Unilateral decisions (prior to receiving guidance) were taken that both patients not in their beds and all staff in all areas of the building should wear masks at all times. Later, ongoing use of FFP3 masks continued despite changes in national guidance, due to local concerns around staff exposure to unidentified cases of Covid-19. These concerns were not prompted by any local outbreak of Covid-19, but largely due to the nature of our infrastructure including the lack of isolation facilities in Intensive Care, whose patients were considered to fall within the vulnerable patient cohort. There were also concerns about the potential impact on staffing levels in the event of a Covid breach in amber leading to a number of staff needing to simultaneously self-isolate. The decisions to stop using FFP3 masks were made on the basis of local risk assessments in individual departments, stepping down first to IIR surgical masks, and then to no masks. The time when stepdown from FFP3 occurred differed according to the zone, for example blue zone had stepped down from FFP3 to type IIR surgical masks by September 2020 but for amber zone this wasn't until after March 2022. The use of FFP3 masks/hoods continues in respiratory zones (where patients with 'flu or Covid are cohorted).

PPE supplied by the Welsh Government, NWSSP or UK Central Government

38 PPE was procured by NWSSP centrally and through the local NWSSP procurement team.

39 CVUHB had a local, central PPE repository from which these supplies would be allocated and distributed according to need within the

organisation. The repository was a combination of both previous pandemic stock and the additional stock we procured through the pandemic. This was more efficient than having many local repositories which would have required more resource. While the delivery system may have resulted in delays of PPE arriving in areas at times and there were variations in lead times, CVUHB did not run out of required PPE at any point. All PPE requests from within the organisation were made via the local NWSSP procurement team and supplies were often delivered on the same day of ordering.

40 Between March and June 2020, the local NWSSP procurement team worked to identify sources of PPE internationally and in the UK and worked with the Health & Safety team to ensure that these products met the required specification. The strategic approach in the CVUHB was to identify specific products for single areas where possible (e.g. one particular mask for community services) and this allowed a more sustainable approach and meant that fit testing on repeated products was not required.

41 Discussions were held with intensive care units along the M4 corridor to share supply of essential PPE, mainly masks, when stocks ran low and there were insufficient supplies for the oncoming shift. This did involve staff meeting in a carpark to exchange stock on one occasion.

42 The use of re-usable PPE (i.e. half-mask respirators) presented a problem, in that suppliers were not able to meet the increased demand for the replacement filters. We experienced long lead times or, in some cases, non-fulfilment of orders. The delays and non-fulfilment of orders did not, however, result in overly prolonged use of the disposable filters. Due, in

part, to the supply issues and in part, to issues identified with prolonged use of half-mask respirators (skin damage), the Health Board decided, quite early in the pandemic, to adopt instead the use of powered air purifying respirators (PAPR). Disposables for the PAPR devices were always available. The introduction of reusable PAPR "hoods" (June 2020) helped towards a reduction in the use of, and demand for, disposable FFP3 masks. The hoods and the disposable filters were generally available with little to no delay in supply. The combination of hoods, half-mask respirators and disposable masks allowed for a good overall provision of respiratory protection. However, there were delays in obtaining hoods for staff who wanted to work but were unable to wear alternative masks. These staff were prioritised for a hood, and undertook non-clinical duties until they were available. This only applied to a small number of staff.

43 There were occasions (for the reasons outlined above in paragraph 32, we cannot now give an exact number of occasions) of substandard PPE or low stocks of PPE (but the situation was managed by CVHUB and did not impact frontline staff). The situation was resolved when the local Health Board central PPE repository was implemented.

44 NWSSP's responsiveness to late orders and substandard batches was always good.

45 Flu pandemic stock was utilized where required and the Surgical Materials Testing Laboratory provided assurance about the quality of the product where necessary.

46 There was a case when national guidance was issued about the recall of eye protection due to quality issues and breakages, which was in use across the Health Board. Communication was circulated that day, and the devices were removed from circulation immediately.

47 Critical Care was the highest risk area that required the greatest focus on PPE. There were no shortages of core PPE, so that adequate protection was available to staff. However, reserves were often low and staff were asked to ration use of some equipment. What was core PPE varied according to which zone (blue, amber, purple/grey or red) staff were working in, but in general initially core PPE was FFP3 masks or hoods, full face visors, gowns, aprons and gloves. This reduced over time. Staff were regularly provided with different models of disposable FFP3 masks. The difficulty with this was that an individual is generally fit tested to one model, and when another model is provided they need retesting (which was time and workforce consuming), with no guarantee that the new model can be made to fit their specific face. This means a change of provided model can result in staff having no usable FFP3 model available, and effectively, they cannot work in any Covid zone, depleting the available workforce. To combat this, when a model change occurred, limited supplies of the outgoing model were 'rationed' / prioritised to try and allow staff who could only wear that model to continue working. Additionally, because medical staff are more mobile around our large ICU, especially at night when the team is smaller, they made efforts to ensure they reduced total usage of disposable FFP3 masks by finishing all tasks in Covid zones before moving on. Sometimes this was less efficient than moving freely between zones

but it was a logical modification of behaviour in order to preserve stock. Staff knowledge that reserves were frequently low, and a lack of confidence in re-supply sometimes meant staff could be anxious pre-shift or lead them to avoiding drinks on breaks to reduce the need to leave the clinical area.

48 Changes to FFP3 mask types and supplies were frequent and information was sometimes slow. Health Board support for fit testing was a real challenge to maintain. Internally, the Practice Educator Team provided excellent fit testing, however this took up a significant amount of time and they were unable to cope with the demand, which was essential with staff unfamiliar with the environment. This team supported out of hours cover to ensure staff safety and also tested the whole multidisciplinary clinical team. In the first wave, an external company was brought in to support fit. Surgery had local arrangements in place to fit test staff.

49 Quantitative fit testing equipment was procured to support fit testing in departments including theatres and ICU.

50 On occasion (particularly early on in the pandemic) a deficit of certain types of masks meant other types would have to be used, for which repeat fit testing was required meaning a new process for staff training and fit testing.

51 In the first wave the daily briefings in the lecture theatre provided up to date information to staff about the availability of PPE. In addition, updates were provided at daily meetings.

52 A shortage of PPE (FFP3 and respirator masks) was expected in late 2020 – early 2021 and the reprocessing of the affected single-use items was investigated. A process was developed and submitted to the Department

of Health. This contingency plan was never implemented/triggered as the supply stabilised.

53 In Primary Care, the distribution of pre-packed boxes containing set quantities of various items resulted in wastage when only some of those items were required.

Procurement by CVUHB and supply chains

54 CVUHB did not procure healthcare equipment or supplies, including for PPE, as this was undertaken by NWSSP centrally or through its local staff.

The Local Care Sector

55 In April/May 2020 a local system was developed for the provision of enhanced PPE and fit-testing to the local independent and third sector care providers including residential and domiciliary care providers. An exercise was undertaken to identify individuals in nursing and residential homes; individuals cared for by District Nurses and domiciliary care providers in their own home; hospice provision for adults and children; and specialist educational residential settings who had Aerosol Generating Procedure (AGP) care needs. The Primary, Community and Intermediate Care Clinical Board (PCIC) arranged and supported fit testing for the agencies and providers and identified and established a process and system for the delivery of enhanced PPE to providers supporting the identified individuals.

56 It was also recognised that there were individuals at home receiving social care packages via the Local Authority or privately funded who, because of their respiratory conditions, may have been on non-invasive ventilation machines for example CPAP, BPAP and cough assist machines which

would have been considered aerosol generating, so that domiciliary care staff who were delivering their care whilst the individuals were on those machines, would have been required to wear enhanced PPE which was under the responsibility of the UHB to supply/provide to the care agencies. Those individuals may not have been receiving input from CVUHB community-based health services so we may not have been aware of them. We therefore liaised with the secondary care respiratory teams who undertook an exercise to write and contact individuals whom they were aware had machines, to offer advice and, where possible, ask them not to be on the machine when care staff visited so that the staff could use standard PPE. If that were not possible, we could then arrange fit testing and provision of appropriate enhanced PPE for those visits.

57 The Local Authorities and CVUHB both set up systems initially, and as the response to Covid-19 rapidly developed, it was clarified that Local Authorities had responsibility for supporting the supply of standard PPE to the local care sector and enhanced PPE, which was required for AGP procedures, lay with the NHS.

58 CVUHB also supplied PPE to care homes otherwise unable to access it and to the Welsh Ambulance Service Trust.

Ventilators

59 Ventilators were procured directly by NWSSP to supplement the national UK allocation.

60 Early in the pandemic a surge in patients needing ventilation was expected. Across Wales, the Critical Care Network, Clinical Engineering departments

and NWSSP worked alongside to coordinate and share information on equipment stocks.

61 NWSSP and CVUHB Clinical Engineering (CE) teams also collaborated to distribute devices from the UK Government's Department of Health and Social Security (DHSC) loan stock and purchased stock. A team from CE based themselves at the NWSSP warehouse at IP5 (Newport) and helped to evaluate suitability, "kitted" up vents with disposables, and carried out commissioning checks so the devices could go straight into use from the warehouse and logs kept for tracking purposes.

62 An inventory of all ventilators was carried out across CVUHB on 9 March 2020, classifying the ventilators according to capability, what monitoring was available, and whether there was a suitable location for them to be used. The ventilators were classified as fully invasive (tubed), or non-invasive (face mask).

63 The list included 69 anaesthetic machines – these are usually used for ventilation under general anaesthetic during surgical operations. Their suitability for long term ICU type ventilation was limited by the design of their breathing circuits, and because some only had basic modes of ventilation available. An exercise was undertaken to purchase upgrades for the software on 25 machines to make more suitable modes available. In the event, the anaesthetic machines were not needed.

64 It was calculated that if all ventilators that were immediately available were put into use for Covid patients (keeping 5 anaesthetic machines back for emergency surgery) CVUHB would have had 154 ventilators available. This

calculation was made in light of the situation in Italy – where patients were being ventilated manually in corridors – which suggested that the demand could be severe.

65 DHSC commissioned two projects to provide supplies of ventilators: (i) to source ventilators from various suppliers and hold them in central loan stock, and (ii) a rapid ventilator "challenge" development project to design simple ventilators by industry partners. Some, *but not all*, of the loan stock in strategic reserves was suitable for use but the "challenge" ventilators were never deemed good enough to be put into use. Clinical Engineering teams in England carried out evaluations of some of these ventilators so that learning and suitability could be shared.

66 CVUHB's ICU provision was based at the University of Wales, which took delivery of 25 Aeonmed VG70 ventilators from loan stock around July 2020. These ventilators would have performed adequately (and would have been more suitable than the anaesthetic machines), but they had valves that would have needed autoclaving. They were also supplied with humidifiers, but these were not deemed suitable. Although the VG70s were made ready for use, and training materials provided, they were not needed and patients were able to be ventilated on the usual machines we had in use. This was possible due to the lower incidence of ventilation needed overall, and the reduced burden on ICU from suspended theatre activity and admissions generally as a result of lockdown.

67 At the outset of the Covid response, adult ICU had 45 suitable ventilators (38 at UHW and 7 at University Hospital Llandough) which met the requirement for ventilating severe respiratory disease. A further 9 were on

Cardiac ICU. The Critical Care team identified a shortage of ventilators. In the first wave, this potential deficit in numbers was temporarily filled by central procurement by NWSSP of ventilators (VG70), repurposing of community ventilators, and anaesthetic machines. There were 7 Phillips V60 machines usually used for NIV/CPAP (Non-Invasive Ventilator/Continuous Positive Airways Pressure) available to us that met ISO standards for invasive ventilation but were of lesser quality. However in the event no repurposed ventilators or anaesthetic machines were used and the V60 machines were not used for invasive ventilation.

68 By the second wave, 10 ICU standard ventilators had been delivered. These had, coincidentally, been procured as part of our ongoing replacement programme just prior to the pandemic and were delivered in two batches and available in May 2021. The old machines that were to be scrapped were instead retained to provide increased capacity.

69 Beyond this, we had explored options. There was a proposal to use anaesthetic machines, for which software required upgrading (to allow a spontaneous mode of ventilation for weaning), however it became apparent very quickly that this was inadequate and potentially unsafe. Other options that were explored included 5 oscillating ventilators (since withdrawn as this novel ventilation mode has been shown to be harmful). We also looked to small Breas ventilators that were procured via Welsh Government (Breas Vivo 55) and that we had available in stock in the hospital (Breas Vivo 50, 23 immediately available). Patients would be able to step down onto these machines, however they were not suitable for acutely unwell patients.

70 Clinical Engineering uploaded user manuals for all ventilators in use to an internal SharePoint site, accessible to all, and signposted users to a free resource setup by "Allego" where they provided a dedicated app containing ventilator and medical device manuals and training.

71 In summary, we were unable to meet our WG statutory requirement to safely double capacity from an equipment perspective within 96-hrs (also a GPICS requirement) and the need to ventilate a greater number of patients than we did in wave 2 would have led to compromises and risks to patient safety. However, this was not needed as the need for patients to be ventilated was lower than had been initially predicted.

CPAP machines

72 In March 2020 inventories of CPAP stock were taken and shared with Welsh Government for every Health Board. We had extra stock from NWSPP but supplies were good until the Philips FSN notice came into effect as described below. Although there was increased use of CPAPs they were not as critical a resource as ventilators, and in general there were no shortages.

73 Unrelated to the pandemic, a field safety notice was released on 23 June 2021 regarding Philips ventilators (approx. 150) and CPAPs (thousands). This caused a significant resource drain to action the safety notice. This also led to a significant shortage of CPAPs being issued and disruption to services.

74 Physiotherapists working within home ventilation team worked with NWSSP to ensure availability of CPAP circuits with appropriate use of

filters. A considerable amount of time was spent procuring these and making up suitable circuits in readiness.

Oxygen

75 The National Collaborative Commissioning Unit (NCCU) developed a dashboard for Covid-19 which included capacity and usage of the oxygen piped supply. WG led prioritisation of oxygen supplies and negotiated with the supplier (BOC) across Wales to secure supplies.

76 As we were planning to be ventilating patients in areas outside ICU, an assessment of piped oxygen and air provision (both are essential to run most ventilators) was carried out in those areas. Assessments of predicted use showed that the existing system would have sufficient overall quantity, but that there would be problems with delivery. Locating piped oxygen and air sites at UHW was a challenge. Some bed spaces had plugs for air but no connection behind the wall. Therefore, a new oxygen storage facility (vacuum insulated evaporator – VIE) was obtained for UHW, at the Children's Hospital for Wales (which shared a site with UHW), and a new oxygen pipe was fitted to floors 6 and 7 and the High Consequence Infections Diseases Unit initially, with an extra pipe run to UHW's Lakeside site in autumn 2020 as part of the construction work.

77 During the pandemic no supply issues regarding piped oxygen were encountered. However, later in the pandemic, when normal services were resuming, it became rapidly apparent that there were issues as the oxygen ports were breaking and expelling gas and we had to move patients on three occasions (specifically on the gastroenterology and respiratory ward on the 7th floor and for patients requiring CPAP on Heulwen ward).

78 Some types of oxygen cylinders were difficult to obtain. This made provisioning field hospitals very challenging, although for the Dragon's Heart Hospital, a VIE was obtained and pipework installed to deliver oxygen to the bedside in most locations. Oxygen concentrators were procured from NWSSP to equip rooms in Dragon's Heart Hospital that could not be piped.

79 Although there was initial concern that there would not be sufficient oxygen available, an adequate supply was maintained through all waves.

Testing

80 WG purchased lateral flow tests directly from a supplier under a contract held by the UK government and NWSSP warehoused them and distributed them to CVUHB and other Health Boards. CVUHB was supplied with PCR tests through PWH's Microbiology team.

81 A system was put in place within CVUHB to manage access to and distribution of the tests. Senior nurses maintained the sign off for access to rapid test for staff members. In addition, from April 2020 new forms were put in place within the Emergency Department for requesting testing of patients and all screening requests and results were recorded. Any delays in screening were escalated.

Diagnostic and other medical equipment

82 Equipment was purchased centrally by NWSSP for distribution across the Welsh Health Boards. CVUHB Clinical Engineering department led a team to commission the purchased equipment so as to be ready for rapid deployment. Clinical Engineering also organized redistribution of equipment across the Health Board to enable the changes to clinical areas.

83 Issues relating to a shortage of supply of medical equipment were reported to the CVUHB's Medical Equipment Group. From their Minutes we can see that there was a shortage in 50ml BD syringes, for which alternative syringes were identified and of tympanic thermometers which lead to the issuing of non-contact thermometers on a Health Board level. The decision on what thermometer to issue was down to the clinical team requesting the equipment.

84 Additional consumables were purchased at the beginning and throughout the pandemic. This included increasing stock of tracheostomy tubes, tracheostomy consumables and equipment relating to airway clearance e.g., cough assist tubing.

85 Critical Care to some degree experienced delays in obtaining some consumables, ventilator circuits (via Flexicare Medical) was one notable example. To mitigate this, at departmental level, we identified a list of consumables that we could safely extend the use of (e.g. in-line suction catheters were extended to 7-day use rather than the usual 72-hour period), therefore decreasing our usage and demand.

86 A large quantity of infusion devices was purchased, but these were kept back from main circulation due to them being a different model of pump compared to that most CVUHB staff had been trained on. This would have been a high risk even in normal circumstances, but given the chance that staff using them would be under extreme pressure or untrained we held them back unless the situation deteriorated to the point where there was no option. A small quantity of these pumps was released for the field hospital and very limited and contained use in areas where they would not

enter normal circulation. It was agreed that gravity sets (drips) were a safer option than untrained staff using unfamiliar pumps. Therefore in situations when the usual infusion device was not available, gravity sets were used in order to mitigate the potential risk of using an unfamiliar model of pump.

87 Haemofiltration fluids and filters for renal replacement therapy machines had a shortage alert in April 2020. Alternatives were considered, alongside reducing rates and increasing the threshold for starting haemofiltration. Filters were used for 96 hours instead of usual 72 hours to conserve stocks. For fluids, manufacturers ended up allocating stock based on historic usage (significantly below demand) and mutual aid was used between NHS Wales hospitals to maximise stocks available.

88 Prismaflex machines (only used for plasmapheresis in the renal unit) were moved to support critical care and a further device was also moved from Aneurin Bevan University Health Board as it was not needed there. Daily calls were set up between the renal network, critical care network, UHW renal team and critical care team to review overall stock levels of consumables and equipment versus demand across Wales as stock levels were predicted to be low. However, as there is no universal machine or consumables in use across the regions redistribution of stock did not take place. There were also discussions between the renal unit/critical care and the UK Kidney Association to look at alternative treatments for acute kidney injury such as peritoneal dialysis if demand 29 increased. That pathway was utilised in England but not enacted in Cardiff as demand stabilised. Although there was an adequate number of machines, we experienced the effect of the global shortage of disposable circuits used on these machines.

Consideration was given to using haemodialysis machines as an alternative, but these require specially treated water from reverse osmosis and ultrafiltration plants. For kidney dialysis units these plants are usually large and incorporated into the building, but small individual units for home dialysis are available. There was only one spare reverse osmosis unit available which is kept as a standby spare for home patients. That coupled with the fact that ICU nurses would be unfamiliar with the haemodialysis machines meant this option was never utilized.

89 A global material shortage supply impacted the supply of physio equipment. The proposed solution was to bulk purchase equipment to ensure a consistent supply.

90 Ophthalmology photo-dynamic therapy treatments were cancelled due to shortages and the available stock used for cancer services.

91 Sourcing infusion pumps presented a particular challenge, as these devices tend to be used by a wide group of staff, Supplies of our standard infusion pump were unobtainable when setting up the DHH hospital, so the local NWSSP procurement team negotiated with an alternative supplier to procure pumps that were "locked" down to basic settings and staff competency was ensured by planning training for those staff at field hospitals.

92 In general, the response of NWSSP and DHSC was very effective, as stock lists and requests were coordinated centrally and devices delivered efficiently where external factors allowed.

93 The work done by the Clinical Engineering Network to coordinate its member's in evaluating devices procured at pace, and provided by the ventilator challenge was invaluable. Reports were available to inform clinical teams of suitability, performance and issues or workarounds that might be needed to cater for. It also served as a communication hub to share learning, and an information repository was also created on HEIW's SharePoint site to archive shared information in an accessible way.

Lessons Learned

94 Having centralised procurement for Wales through NWSSP was generally a good thing. Whilst there were moments of concern over shortages, procurement was largely managed well and problems dealt with effectively.

95 Clinical Engineering regard the setting up of a central team embedded in the IP5 NWSSP warehouse as a success story. The team were able to kit up ventilators with disposables, commission, quarantine any failures, and log devices for tracking to their destination. This saved local CE team's time and ensured devices were ready for use at the delivery point. They developed work instructions for each commissioning "production line" steps so that other redeployed Healthcare Science staff could assist with minimal training. Once established the batches of devices could be processed with one CE member of staff supervising and redeployed staff carrying out the tasks. This enabled CE staff to continue repairing devices and doing work only they could do.

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.

Personal Data

Signed:

Dated: 24 January 2025

SCHEDULE

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