Witness Name: Ray Smith
Statement No.: 1
Exhibits: 30
Dated: May 2024

UK COVID-19 INQUIRY

WITNESS STATEMENT OF DR RAY SMITH

I, Dr Ray Smith, Chief Medical Officer of Bradford Teaching Hospitals Foundation Trust, Duckworth Lane, Bradford BD9 6RJ, will say as follows: -

1. I make this statement about the impact of the Covid-19 pandemic on Bradford Royal Infirmary (BRI), part of Bradford Teaching Hospitals Foundation Trust (BTHFT), and its' staff, patients and communities.
2. This statement is based on my account and recollection during the relevant period. It also draws on documentation held by the Trust and input from nursing, medical, scientific and operational colleagues.
3. The statement has also been through a verification process and where information is not in my direct knowledge, I am satisfied that it is accurate by reason of the verification sought.
4. Bradford Royal Infirmary is one of the hospitals managed by Bradford Teaching Hospitals NHS Foundation Trust ('the Trust'). The Trust provides acute, community, inpatient, outpatient, women's and children's health services. The acute services are provided from the BRI site, including the Emergency Department, Intensive Care Unit, Surgery and Theatres, Respiratory Medicine, Maternity and Neonatal services, Children's services, Elderly and Intermediate Care, Neurology, and Vascular services, amongst others. In addition to BRI, the Trust provides a range of services from St Luke's Hospital and community sites at Westbourne Green, Westwood Park, Shipley, Eccleshill, Skipton and the Bradford Macula Centre. It serves a population of around 550,000 from Bradford and the

surrounding area and employs over 6,750 members of staff. This response focuses on the BRI site.

5. The geographical area covered by the Trust primarily mirrors the area served by Bradford Metropolitan District Council. However, some specialist services cover a broader area, including the Yorkshire and Humber region. The Trust works closely with its partners across the Bradford District & Craven Health and Care Partnership, and more broadly across the West Yorkshire Health Integrated Care System. The Trust also forms part of the West Yorkshire Association of Acute Trusts (WYAAT) along with 5 other partner Trusts.
6. Bradford District is a large metropolitan area with a population of over half a million people. Over the past ten years the population has grown steadily and is expected to continue to do so. The District has a youthful population structure and contains a rich mixture of ethnic groups and cultures. Bradford is the third most densely populated of Yorkshire and the Humber's 21 local authority areas, with around 11 people living on each football pitch-sized area of land. The District has the fourth highest proportion of under 15 year olds in England, and the average age is 36 years. Bradford has the joint lowest average age in Yorkshire and the Humber (alongside Kingston upon Hull and Leeds), and a lower average age than England (40 years).
7. Bradford District is one of the most deprived local authorities in England and ranks 21st out of 317 Local Authority Districts. Deprivation varies greatly across the District, with wards generally around central Bradford and central Keighley appearing in the 10% most deprived wards in the country, and wards located in the Wharfe Valley appearing in the 10% least deprived wards in the country. In 2021, 32.1% of Bradford residents identified their ethnic group within the "Asian, Asian British or Asian Welsh" category. Bradford had the second largest proportion of people of Asian, Asian British or Asian Welsh: Pakistani ethnicity (25.6%). In 2021, 61.1% of people in Bradford identified their ethnic group within the "White" category, while 2.7% identified their ethnic group within the "Mixed or Multiple" category. The percentage of people who identified their ethnic group within the "Other" category ("Arab" or "Any other ethnic group") was 2.0% in 2021.
8. The BRI site has 774 in-patient beds distributed across 39 wards. These consist of 592 general and acute beds, a 16 bed Intensive care Unit, a 21 bed Neonatal Unit and a 145 bed Maternity Unit.

9. At the peak of the pandemic for the BRI in November 2020 during the Alpha variant phase, the BRI had a total of 180 COVID positive in-patients at any one time (30% of the bed base) across 8 wards. During the relevant period, the BRI treated a total of 6,337 COVID positive in-patients and recorded 934 deaths (data Trust-wide but predominantly the BRI) of patients who had tested positive for COVID within 28 days of their death.
10. The Trust implemented Silver and Gold Clinical Reference Groups and daily silver tactical meetings which were attended by a significant proportion of senior medical and nursing staff, departmental managers and team leaders from the BRI and the wider Trust. This provided a forum for discussion of any new or updated national guidance and how best to make that operational at the BRI, along with discussion of any safety risks in implementation. These forums were essential in communicating changing guidance, as well as seeking engagement and approval and ensuring that the information was cascaded widely.
11. When new national guidance was received, the relevant action card and later standard operating procedure documents (SOPs) were updated and approved through the Trust Covid-19 Gold group. Once approved, the SOP was disseminated via a global email and added to the Trust Covid-19 intranet page.
12. By adopting SOPs to distribute updated national guidance, they could be printed and shared with staff easily who may not have access to a computer. They were also discussed at clinical area safety huddles. The difficulty with this approach was ensuring that staff had the most up to date version. The Clinical Matrons supported ward and department staff by ensuring that the latest version was available and old versions removed.
13. The Silver group allowed a diverse multi-disciplinary team (MDT) input in real time to highlight and address any concerns as they arose. The group was chaired by Mr John Bolton, Deputy CMO and Consultant Urologist, and Dr Deborah Horner, Consultant in Anaesthetics and Intensive Care.
14. The Gold Clinical Reference Group (CRG) was jointly chaired by me as CMO and Professor Karen Dawber as Chief Nurse, and met between 2 and 5 times a week depending on need at different stages of the pandemic to discuss escalations from Silver CRG and act on National and Regional advice and queries, with escalations to the ICB as required.

15. At the peaks of the pandemic, the Executive Team met at the end of every day to discuss and ratify decisions made at Gold CRG. Frequency of meetings reduced during times of reduced clinical pressure.
16. The creation of the Silver and Gold Clinical Reference Groups (CRGs) meant that clinicians were involved in all decisions that might impact on patient safety and allowed innovative solutions to be implemented to mitigate the impact of operating within surge capacity. The silver CRG was created early in the first wave to coordinate clinical aspects of the trust's response. Initially there was mainly medical, nursing and AHP representation but over time more non-clinical managerial colleagues joined. Membership was broad and not limited to those with a managerial role with attendees from most specialties. The group was chaired by a consultant intensivist and consultant surgeon meeting every day virtually at 8am. Ideas and concerns from the last 24 hours were discussed and solutions to issues including capacity and safety were weighed up. This was then fed back to CRG Gold at 11am and any changes to clinical policies and procedures and ward areas were implemented immediately following Gold CRG approval.

Staffing Capacity

Capacity and shortages

17. Staffing was particularly challenging throughout the relevant period. This was primarily due to sickness, as the overall staffing head counts remained fairly constant across all staff groups for both bank and substantive staff.
18. Sickness was significantly higher during the relevant period. In the year preceding the pandemic, baseline sickness levels ran at 5% or less of total staffing, but during the relevant period it was consistently higher, running at approximately 7% and peaking at 9.45% in January 2022 (Omicron variant related). Covid sickness rates varied between 1% and 4% during the pandemic (68-272 staff).
19. In addition to staff sickness, the strict guidance regarding shielding for individuals with health conditions and those living with vulnerable individuals impacted on staff availability. Numbers of staff shielding were 204 (3% of all staff) in July 2020, rising to 218 (3.2%) in January 2021.

20. The need to self-isolate following a positive covid-19 test or following contact with someone who had tested positive meant that staff were at times unable to work for up to 2 weeks, depending on guidance in place at the time.
21. Those isolating were not included within the sickness numbers but were significant in number. The rate of staff isolating peaked in April 2020 at 5.32% (equivalent to 360 staff).
22. Staffing capacity was affected for all groups and fluctuated throughout the relevant period. Clinical Scientists and Estates and Facilities roles were the most significantly challenged by higher levels of absences. This included security, domestic, catering and maintenance staff.
23. Asymptomatic testing meant staffing was further impacted as staff not displaying symptoms were also isolating in line with Infection Prevention and Control (IPC) guidance. It is not possible to isolate the effect of asymptomatic testing, as a Covid absence was not coded as symptomatic or asymptomatic.
24. Clinical nurse staffing in Intensive Care was preserved due to the redeployment of staff to those areas, principally from operating theatres. This was made possible due to the standing-down of elective operating.
25. There was no significant effect on the workforce at the BRI from the introduction of antibody testing. Whilst the introduction of this testing was interesting, and staff wanted to know if they had had Covid without knowing it, BRI workforce data does not indicate that it was of value from a staffing perspective.
26. The experience at the BRI was that retired colleagues returning to frontline had no impact on workforce capacity. A handful of clinicians expressed an interest, but none were ultimately deployed in clinical areas. Student deployment in the first 2 phases of the pandemic, especially in nursing, did provide some temporary support, but numbers were limited and the impact modest. In total 162 student nurses were deployed, all during the second phase.
27. Staff testing was undertaken by a dedicated swabbing team initially based at a local sports stadium, and then at St Luke's Hospital, and was mainly staffed by nurses redeployed from the pre-operative assessment service. The Trust's Occupational Health team accessed the test results and relayed the results to the member of staff with specific isolation and support advice. We also informed the relevant line manager using an advice and inform letter.

28. If a member of staff tested positive, Occupational Health (OH) carried out contact tracing to identify other staff who may also need to isolate. This risk assessment was shared with the Trust IPC team so that they could track potential staff outbreaks. A daily report was sent to the Trust Command Centre indicating the number of positive Healthcare Workers (HCWs) reported to OH each day and the number of HCWs who were isolating because of close contact with a positive case.

Measures to alleviate shortages, including redeployment

29. Every healthcare provider across the region was experiencing the same staffing challenges and the limited supply of the healthcare workforce meant there was no additional pool to source staff from. There was no internal barrier to recruitment during the relevant period.
30. The stepping down of activity such as elective operating, routine outpatients and some screening services to focus on Covid 19 meant we were able to prioritise staffing for essential services. The redeployment of clinical staff to essential areas (medical wards and ICU), and redeployment of non-clinical staff to support clinical areas where appropriate helped ensure we were able to staff Covid areas. It is difficult to give exact numbers, but it is likely to run into the hundreds in total.
31. In terms of collaborative working, some staff previously working in theatres at our local Independent Sector provider (Ramsay Yorkshire Clinic) volunteered to come and work on the ICU at BRI. I believe there were 8-10 in total. Yorkshire Clinic staff working for us were still paid by Ramsay, but I presume Ramsay would have reclaimed that cost from central Covid funding and will be better placed to confirm this.
32. A regional memorandum of understanding supported by NHSE and the Integrated Care System (ICS) was agreed to enable staff movement between organisations. This allowed for staff from the wider health and care system such as University staff to support Trusts in the ICS area. This had a limited impact on overall staffing levels at the BRI.
33. There was little local impact from any NHSE initiative to support an increase in staffing levels. Essentially, as a Trust we managed our own resources internally and through the local initiatives with partners as detailed above.

34. One initiative which was helpful was permitting nursing students in their 2nd and 3rd years of study to undertake paid bank shifts. In total we had 163 students who signed up from the University of Bradford.
35. We recognised early in the relevant period that there would be a potential requirement for extra clinical staff to assist on medical wards and on the intensive care unit. It was not immediately clear at that stage what the numbers of patients would be, but it was widely acknowledged by the ICU Consultant body and the Trust in general that cessation of elective theatre activity, and the disruption of other normal activity such as outpatient clinics would lead to a large number of staff unable to carry out their normal clinical duties. However, it was also recognised that there would be a severe shortage of trained staff within the intensive care and respiratory environments.
36. On or around the 24th March 2020 I asked Dr Andrew Baker, Consultant in Anaesthesia and Intensive Care, to design and deliver a training package aimed primarily at consultants who did not usually work within intensive care. This included, but was not limited to, Surgeons, Medical Consultants and other specialty consultants such as Obstetricians, Ophthalmologists and Paediatricians. There was an extremely tight timescale given of around 3 days. Tracey Harrison, Lead for the Trust's Simulation Centre, and Dr Brian Wilkinson, Senior Trainee in Anaesthesia, were also involved with delivering training to over 200 consultants over 3 phases: design, information dissemination and delivery.
37. This training was delivered in the last week of March 2020 and included principles of oxygen therapy, fluid balance, pain relief and palliation, along with the basics of pathology and physiology of patients with Covid, in as much as we knew at the time. We ran simulated clinical scenarios including donning and doffing and responding to an acutely unwell Covid patient. None of the staff upskilled in this way worked alone, rather they worked as part of small teams so that they were supported by experienced colleagues. This was important for patient safety and for staff wellbeing and support.
38. Other groups of staff who were not required to carry out their normal duties due to Covid-19 helped in any way they could. For example, Consultant Radiologists formed teams who regularly visited the ICUs to carry out proning of patients (turning them onto their front, essential to improve oxygen delivery from the lungs),

which was time-consuming and enabled ICU staff to carry our work which only they were able to do.

39. Allied Health Professionals (AHPs) played a significant part in the integrated Covid response.

40. Dietitians – Whilst there were low levels of staff absence due to sickness, there were challenges around self-isolation from family contacts or school bubbles being closed. This was managed day-to-day with cover, supported remote working (laptops and remote access) and prioritisation of critical services. There was internal reprioritisation of dietetic work and new team structures (particularly in Adult Acute Services) to enable this. During the early phases of the pandemic, staff undertook additional training to support the delivery of care. Additional equipment, supplies and procedures for enteral feeding were established to ensure the anticipated patient numbers could be supported. To take account of an increase in home working, frequent team huddles were used to support staff well-being, and where possible, staff on site were relocated to Covid safe environments.

41. Physiotherapy & Occupational Therapy - Internal staff were redeployed from non-acute / outpatient areas to support the acute hospital wards (and community), and service provision was increased to 7 days a week, delivered by paid extra hours and overtime. We were contacted by several privately employed physiotherapists who wanted to come and work in the Trust. The effectiveness was variable as many of these staff had not worked on acute hospital wards for years, and the training and support needed to be effective was considerable.

42. It was agreed nationally that student physiotherapists could join the Health and Care Professionals Council (HCPC) register to enable them to work as paid Band 3s. We were contacted by 23 students (second and third year) who were interested in this opportunity. We took on 17 students between May 2020 and end of July 2020. The funding for the students finished at the end of July (they were funded centrally from Health Education England). In the main this was effective and supported by our substantive staff.

43. We explored opportunities for shielding staff to work from home with upgraded IT and access to Trust systems. This was effective for clinical staff who were able to triage referrals, provide remote support to teams and undertake service development activities. It was less successful for unregistered staff and administrative staff.

44. Physiotherapy and Occupational Therapy staff were redeployed from all non-urgent services to work on either the acute wards (or in the community) supporting discharges. We also continued to provide an acute musculoskeletal (MSK) service during this time.
45. All staff that were redeployed only worked in clinical areas where they had some knowledge and skills, and training was provided as required. There was no risk to patient safety as all staff were adequately skilled to work in the areas to which they were deployed, and in fact the service to patients was enhanced during this time, as more staff were available on the wards and the service was available 7 days. For example, Physiotherapy staff were redeployed to work in respiratory areas based on the following criteria:
    - Currently working in a respiratory area or,
    - On the Physiotherapy respiratory on-call rota or,
    - Had completed a respiratory rotation in the previous 12 months.

    Top-up training was then provided to the staff by the respiratory Physios as needed. Another example is of staff redeployed from the Pennine Breast Screening Unit to primary imaging (core X-Ray duties). All redeployed staff had a Radiography degree and were all qualified to work in Primary Imaging. Training by a senior member of the Primary Imaging team was provided and competency assessment was performed for the use of the x-ray equipment. Some staff who had been out of primary imaging for a long time found this change difficult. Any staff who struggled in this way were returned to their original role.
46. Initially most staff were happy to be redeployed, as there was a sense of camaraderie in facing a common threat. However, because of the nature of Covid in Bradford with multiple waves, the physiotherapy staff in Bradford were deployed for a significantly longer time than colleagues in neighboring trusts. Several staff were redeployed, then pulled back into their own service, only to be redeployed again a few weeks later when Covid numbers started to rise again. In several teams (especially MSK Physiotherapy teams) morale and staff wellbeing became low and resulted in 6 staff taking up employment elsewhere citing low morale and the impact of Covid as the reason.
47. A significant effect of staff redeployment was the negative effect that this had had on waiting times. In February 2020, most patients were waiting a maximum of 20

weeks to access MSK Physiotherapy with a small number waiting longer than this. In December 2023, the waiting time was 60+ weeks.

48. The physiotherapy team were instrumental in helping to deliver respiratory support and oxygen therapy to Covid patients across all wards and the ICUs.
49. Radiographers - There were no significant staff shortages that impacted on services because radiographers were redeployed internally where services had been paused. All staff were offered overtime / extra hours if required. Guidance from the Royal College of Radiologists and from special interest groups was followed around when to perform Chest X-Rays (CXR) or Computerised Tomography (CT) scans on Covid patients. Radiographers that had recently started in Ultrasound (US) and Magnetic Resonance Imaging (MRI) were asked to support primary imaging (PI) rather than in their usual work area, as the demand for routine work had reduced significantly.
50. Third year radiography students were allowed by the HCPC to start work as Assistant Practitioner Radiographers at band 4 prior to qualifying. This supported primary imaging where there was a high demand and a change in practice due to the cohorting of red and green or amber patients.
51. CT at BRI had a red team and a green team so that staff either had patient contact or not when on shift. Both CT and PI were crucial for support of the Covid-19 patients as well as keeping cancer, urgent and fast track services running.
52. In Medical Physics the Dexa service (bone density scanning) was paused at the start of the pandemic and the team that supplied this service was redeployed across the hospital and trust. One staff member went to work in the mortuary and two went to work on "green" wards. Most other non-urgent work was put on hold in medical physics, but nuclear medicine continued to provide support for urgent requests as these patients are nearly all on cancer pathways.
53. The Pennine Breast Screening Service was stood down on 24th March 2020. Service for symptomatic patients restarted on 12th June 2020, and for asymptomatic patients restarted on 24th August 2020.
54. The majority of staff from the Pennine Breast Screening Service were redeployed internally, either to primary imaging or across the trust working mostly on "green" wards or the PPE or decontamination hubs. These staff really struggled with redeployment, with poor morale and high sickness rates. A small number left the trust altogether.

55. Primary imaging returned to a drop-in service in December 2022 as they had built up a waiting list which took around 3 months to clear.
56. The Pennine Breast Screening Service which is based at St Luke's Hospital, took until summer 2023 to catch up with their screening back log.
57. Medical physics took 2-3 months to catch up with most backlogs except for cardiac imaging which took around 4 months to get to where it had been pre pandemic.
58. One radiographer that worked in Fluoroscopy, Vascular and Intervention was redeployed to the Nightingale Hospital in Harrogate. This had very little impact on the team as he was needed on only 2-3 occasions.
59. Overall, staff morale amongst radiology and medical physics was good throughout the pandemic, and challenges to wellbeing only became prominent when we returned to business as usual (BAU). The effort to maintain services had been enormous and staff were then asked to do even more.
60. Operating Department Practitioners (ODPs) - These staff are part of an Operating Theatre team whose usual work was reduced due to the reduction in elective surgery. This staff group did not experience shortages but were redeployed mainly to ICU on a voluntary basis, where they became invaluable members of the team. Prior to redeployment they undertook training on ICU equipment. There was mutual learning in that the ICU nurses benefitted from some of the skills which the ODPs brought with them.
61. Overall, ODPs had a positive, 'enjoyable' experience during their redeployment and the opportunity enhanced their skills. Aspects of the positive relationship with critical care have remained.
62. Healthcare Scientists - There were no significant staff shortages, but when these did occur due to illness there was a prioritisation of which services were provided. Two healthcare science staff were redeployed to a high dependency area elsewhere in the hospital to support nursing staff dealing with very sick Covid patients. A number of staff were redeployed to other non-clinical areas to provide support but were not as affected. They reported reduced morale as they were not working with their usual colleagues.
63. Research carried out in-house by Bradford Institute of Health Research (BIHR) funded by NIHR explored the impact of redeployment across three Trusts including BTHFT. Data was not reported or analysed at individual Trust-level in order to maintain confidentiality. I have therefore not included the findings in this

submission but have referred to this in my recommendations section as consideration for the future.

64. No BRI staff were redeployed to other hospitals, but staff from our nearby Private Sector Hospital (The Ramsay Yorkshire Clinic) came to BTHFT to work principally on one of our Intensive Care Units (ICU), as detailed earlier in this statement. These were mainly operating theatre and recovery staff. The support provided was very gratefully received. The move was easier as many of these staff knew our clinicians from their previous roles, and the team bond was immediate and strong.
65. Our nearest Nightingale Hospital, based in Harrogate, was never opened for its' intended use, so none of our staff were ever actually deployed there other than 1 member of Radiology staff, as referenced above. However, a request to identify staff who may go if needed was received. I considered this counter-productive when staff were needed at our acute hospital site. When staffing was so critically challenged at our acute BRI hospital site, it seemed to make no sense to denude that staff base further to staff a remote site with inferior infrastructure.

Long Covid

66. There were cases of long Covid in the BRI workforce which have had an impact on services through staff absence, although the numbers were in single figures.
67. The extended pay for staff off work with Covid created difficulties from a moral and ethical perspective as colleagues with other illnesses such as cancer were subject to significantly worse terms than those who remained off work due to Covid.
68. There were two members of BRI staff who died during the relevant period with a primary cause of death being Covid. Both were Domestic Assistants. This inevitably had an impact on staff and emphasised the potential risks that staff were taking, leading to caution and concern, in addition to the impact of losing a colleague. Given the 6750 members of staff we had working at the Trust, a large proportion being at the BRI, our death rate was very low, and supports the IPC measures we had in place at the BRI and across the Trust.

Vaccination as a condition of deployment (VCOD)

69. Vaccination as a condition of deployment (VCOD) was a controversial step, which caused some division amongst staff, and concern that staffing levels would be significantly impacted. As a Trust, we followed national guidance regarding the VCOD Policy. We were aware from feedback to the Covid-19 Steering Group, that some staff had indicated that they were unlikely to take the vaccine offer. Similarly, the impact on staff morale was discussed. I recall that the discussion included the potential impact on staff that did not want to be vaccinated, and the impact on their fellow staff who would be vaccinated.
70. On 19 November 2021 an action was recorded in the Covid-19 Programme for the Workforce Group: 'We need to start preparing for Mandatory staff vaccination as it appears it is going to be mandatory although there are ongoing negotiations with trade unions. There are already policies and procedures in place. WF is waiting for guidance from NHSI/E around what they mean by the 'frontline' staff. We need to understand what the gap is and what's demanded so we can create capacity for that'.
71. Various steps were undertaken to encourage staff to take up the vaccination offer. There were staff communications, one to one conversations with managers, and staff encouragement. We operated 'pop up' clinics to facilitate staff access to the vaccination offer.
72. There were a series of open meetings held on Microsoft Teams with all staff invited, hosted by an Executive Director (including me), and members of HR and Occupational Health to answer any questions or concerns.
73. There was clear recognition in these meetings that the requirement was imposed at national level, and most members of staff were not in conflict with the Trust over the decision.
74. 532 staff out of our total of 6750 (Trust-wide) were not vaccinated despite being in roles that required them to be vaccinated. This number was spread across all staff groups in the Trust and the BRI specifically. All of the unvaccinated staff continued to work in the hospital. We did not redeploy staff on the grounds of vaccination status as we could not manage the number that would be required.
75. My experience was that there was significant loss of confidence from staff in the Trust and the NHS. Managers were not necessarily in agreement with the decision

to require individuals to be vaccinated or to lose their jobs. The morale across the organisation was impacted and following a tiring period for the workforce this decision resulted in staff feeling unappreciated and undervalued. For senior people across the Trust this was a real dilemma of personal values versus the requirement to implement VCOD.

76. On 03 December 2021 a risk was recorded in the Covid-19 Programme Workbook for the Workforce Group: 'Low HCSW uptake may have significant workforce implications if uptake does not improve. Escalating infection rates/increased sickness amongst staff poses increasing resource risk, across health, social care, and emergency services'.

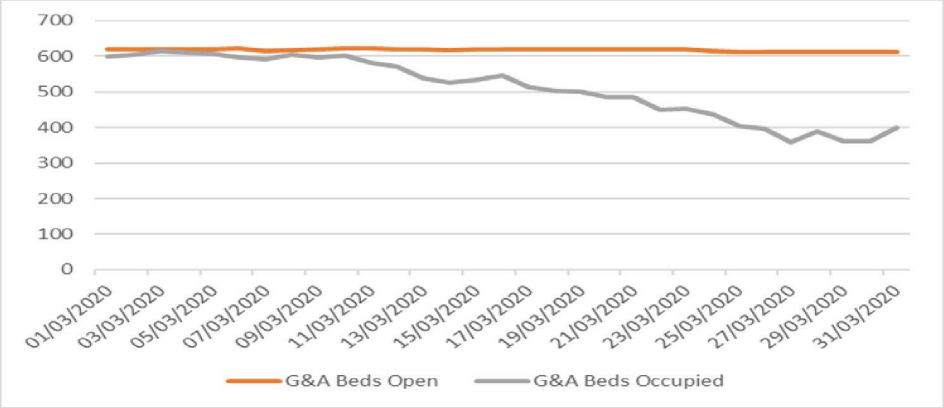
Bed Capacity

77. During the relevant period the general and acute bed base had multiple specialty changes to manage each wave of the pandemic so that COVID patients could be cohorted separately from non-COVID patients.
78. At BTHFT we employed an overarching plan to guide the opening of further Covid capacity according to demand, including at the BRI. The plan considered the total number of Covid cases and those requiring intensive care and guided a step up or step down in other activity accordingly.

NHSEI discharge policy

79. BTHFT was aware of the NHS England / Improvement's policy guidance of 17 March 2020 in relation to the discharge of patients to free up bed capacity. Prior to the guidance we were already working with Local Authority partners to safely expedite processes to discharge patients from the BRI to appropriate locations as per pre-pandemic pathways. This resulted in a marginal increase in the rate that patients were discharged from our intermediate care bed base. Our overall bed occupancy fell through this early period as a result of increased discharge efforts as well as reduced Urgent and Emergency Care attendances and admissions. A reduction in Elective Ordinary Admission also had an impact further reducing bed occupancy.

80. The following graph demonstrates the rate of discharges across the whole of BTHFT on and around 17 March 2020. The majority of the discharges are from the BRI as the largest hospital with the greatest throughput. Occupancy drops across March at a reasonably consistent rate between 10 and 27 March 2020. The graph demonstrates that both admissions and discharges reduced week on week, with no acceleration in discharges in the week commencing 17 March 2020.



Increase in ICU capacity

81. No measures were necessary to discharge patients from ICU at the BRI into general and acute beds or transfer to other providers.
82. Modelling undertaken by a critical care colleague Dr Tom Lawton (independent of national guidance) was hugely helpful in advance of the first wave of the pandemic to accurately predict the time we had to prepare prior to the first Covid patients arriving at BRI.
83. Early on Dr Lawton undertook some basic modelling using assumptions from Chinese and Italian data, and from some of the outputs of UK modelling groups such as Imperial. The numbers produced (which at the time were based on a no-lockdown scenario) were well beyond what the BRI (and the Trust) was capable of delivering, with hundreds of ICU beds simultaneously required at the peak. This informed the strategy to opt for CPAP as the major treatment option - partly on an understanding that those who had deteriorated to the point of needing ICU may represent a cohort that with too low a survival probability to be worth focusing on,

and partly to try to prevent the need for intubation/ventilation that is so much more resource intensive.

84. As it was, those numbers did not come to pass, largely because of the lockdown but also because the CPAP expansion at the BRI meant that far fewer of our patients ever needed intubating.
85. After the first wave Dr Lawton started to work with a company called Whole Systems Partnership who had designed a Covid modelling tool for Kent. We agreed to adapt this model for use in Bradford during the second wave, as the situation with immunity and possible vaccines made prediction extremely complex. They adapted their model for Bradford and provided regular reports – interestingly one modification we made, with ethnicity data from BTHFT's Performance Team, was to realise that it was best modelled as two parallel populations in the city with almost two different pandemics, one affecting our South Asian population and one affecting others.
86. As the situation had now become much more complex from a modelling point of view (immunity, vaccinations, partial data etc) Dr Lawton decided to try building a very simple model based on local data, but with the aim of predicting things only a few weeks ahead rather than trying to go further where the complexities lay. He provided weekly reports from this model, alongside the national model, to help inform Trust planning.
87. National modelling was more widely available in 2021, but this model seemed to be less good than our local modelling at predicting peaks in the pandemic, rather suggesting a flatter position.
88. Local modelling was also able to predict peak numbers including CPAP requirement and ventilated numbers, facilitating advanced planning of staff and resources. There was an early recognition that CPAP was likely to result in better outcomes than ventilation based on international data. This modelling was Trust specific and available before any national modelling was forthcoming. Modelling was shared with managers responsible for elective work in the hospital and escalated to the executive team rapidly. This allowed the trust to step down non urgent elective work at the right time to redeploy staff from theatres and surgical wards for additional training, and to begin the work to reconfigure the hospital to receive Covid patients.

89. A stepwise strategy (detailed below) to increase in critical care provision was developed at the BRI with clinicians collaborating with senior managers. Plans were devised by the critical care team alongside divisional managers and shared with executive colleagues via a silver and gold command structure for approval.
90. Locations for green (non-Covid) and red (Covid) patients changed over the course of the pandemic depending on numbers and other factors, but in total two additional critical care areas were created, as detailed below.
    a. There was a 12 bedded unit which was already partially configured as a critical care unit (Ward 10 - the old ICU at BRI) as a result of a new critical care unit having been commissioned prior to the pandemic.
    b. Ward 14 (at that time running as a Urology unit) was also a 12 bedded unit that had been configured as a potential surge critical care unit many years previously during the 1980s Gulf War with the required piped gases, plug points etc. that needed minimal estates work to be fit for purpose. The upgrading of this unit was co-ordinated by Dr Richard Briscoe, Consultant in Anaesthetics and Intensive Care.

    This gave us the potential for 40 level 3 beds in total as compared to a baseline of 8 level 3 and 8 level 2 beds. This additional capacity was available by the end of April 2020.
91. Plans were also put in place to convert theatre areas into critical care capacity should additional accommodation be required but this was never needed.

Managing ICU capacity

92. To equip the additional ICU at the BRI (Ward 10), a large number of high specification portable ventilators were purchased using Covid monies. The workforce was delivered by the rapid education and redeployment of theatre staff, as detailed earlier in this statement.
93. In addition to ICU provision, additional respiratory support capacity was included in the Trust's operational plan. Initially the Acute Medical Unit (AMU) provided CPAP (Continuous Positive Airway Pressure) as an interim measure before rapid ward reconfiguration and training provided Respiratory Medicine and Care of Elderly with the ability to deliver CPAP for up to 50 beds on 2 adjacent wards by April 2020.

94. As a Trust, and therefore at the BRI, we focused on early use of CPAP and wide availability of CPAP to reduce the requirement for invasive ventilation to improve survival.
95. To further reduce the burden on critical care, elective surgery was reduced significantly from March 2020 and patients clinically prioritised in line with National guidance from the Royal College of Surgeons into P1 (surgery required within 24 hours) – P4 (surgery can be after 3 months).
96. As we progressed through the relevant period and the waves of the pandemic all our ward 'cohorting' and escalation plans included clear descriptions of where COVID positive patients would be located and where non-invasive and invasive ventilation would take place in line with the numbers effected.
97. Because of our expanded critical care footprint, ready availability of CPAP which could support patients outside of critical care and a contracted elective operating programme, non-clinical transfers to other providers were not necessary. Transfers to other critical care units outside of the Trust were limited to patients requiring highly specialised support / intervention, such as extra-corporeal membrane oxygenation (ECMO) for COVID patients with very poor lungs and for neurosurgical procedures independent of Covid. We also worked with critical network colleagues as part of a regional bed base to provide mutual aid to other Integrated Care Systems (ICSs).
98. The management of such complex and limited resources required outstanding clinical engagement to facilitate agile decision-making. Decisions were not however based upon percentage bed occupancy and we did not approach the action undertaken based upon 85%, 92% and 100% capacity, rather it was a fluid, daily consideration.
99. Operating at surge capacity levels far in excess of baseline was a risk that was understood by all clinical and managerial staff alike. However, it was also understood that the risk was unavoidable, and mitigated by training, support, team working and senior decision-making. There was no feeling that the risk was unacceptable, given the extreme circumstances we were in.

Critical Care network

100. Support was available throughout the pandemic from the Critical Care Network. The network consists of local Trusts within WYAAT (West Yorkshire Association of Acute Trusts). These Trusts are Leeds Teaching Hospitals, Mid Yorkshire Hospitals, Calderdale and Huddersfield Foundation Trust, Airedale FT and Harrogate and District FT. The network met daily during the peaks of the pandemic, and involved the network management team and representatives from each Trust.

101. During periods of peak demand patients were moved to other units across the region to prevent the need to open additional ward areas if capacity within the network was available.

102. The Trust has been a part of the West Yorkshire Critical Care Operational Delivery Network since its inception in 2002. The Network units were supportive of each other during Covid with advice, information, equipment and supplies (such as renal replacement therapy fluid) exchanged frequently. The initial period in March/April 2020 was largely managed without transfer of patients as most units were rapidly expanding capacity and managing to cope. The Nightingale ICUs were largely an unhelpful distraction, with the risk of pulling away staff and equipment from where it was most needed. Our local Nightingale in Harrogate was never opened for its intended purpose.

103. During busy periods there was a daily conference call between units hosted by the network to discuss bed pressures, equipment, staff and any other relevant issues. Our ICU found this highly supportive - encouraging a feeling of teamwork and assisting with prompt transfers. For example, on several occasions a consultant from Bradford travelled to Airedale General Hospital (a neighbouring Trust) to assist with percutaneous tracheostomies on their unit as Airedale didn't have the expertise at that time.

104. In November 2020 during the second peak, mutual aid was managed within the Network with frequent transfers between units. The surge in Covid numbers occurred at different times in different places so that transferring patients helped spread the load which meant that using Surge ICUs was minimised.

105. January 2021 saw transfers to West Yorkshire from further south. It was at this point that a regional transfer service (hosted by Embrace – a multi-agency regional team which facilitates critical care paediatric transfers in normal times) was started. This service assisted with in-region and out of region transfers and

repatriations and was a big help, although many transfers were still carried out by local teams.

106. There were 69 transfers out of the BRI ICU in total during the relevant period (it is not possible to differentiate between Covid and non-Covid transfers):

a. 64 in region
b. 3 to Wythenshawe for ECMO (extracorporeal membrane oxygenation)
c. 2 others out of region

107. There were 18 transfers into the BRI ICU in total:

a. 17 in region (of which 8 were repatriations from units we had transferred out to)
b. 1 from Stoke

Medical equipment / medicine issues

108. There was a need to secure additional equipment and supplies throughout the relevant period, and to reconfigure our ward structures and allocations. This brought particular challenges which I will outline below.

109. **Ventilators:** A good early example of this was around the procurement of ventilators. Modelling produced by a critical care colleague (Dr Tom Lawton MBE) gave accurate information about when cases were likely to start arriving in the hospital and the number of patients requiring NIV and ventilation. On this basis following a direct request from critical care, and co-ordinated by Dr Tom Scarrott, Consultant in Anaesthetics and Intensive Care, an emergency order of an additional 12 Hamilton ventilators was approved in March 2020. On the same day Italy placed an order for 1000s from the company. A 24-hour delay in ordering would have meant we would have been unsuccessful in procuring what we needed. By having ventilators specifically designed for critical care we were able to provide our sickest patients with equipment designed for this purpose with only a small requirement for ventilators designed for use in theatres.

110. Our local Private Sector provider, The Yorkshire Clinic (Ramsay Health Care UK), kindly loaned BTHFT 8 GE anaesthetic machines in March 2020. Clinical Engineering confirmed that these had the latest software versions that included 'Smart Vent' ventilation modes to include PSV (pressure support

ventilation) Pro and SIMV (synchronized intermittent mandatory ventilation) which could be utilised in an ICU environment.

111. In total the Yorkshire Clinic loaned 8 anaesthetic machines, 7 anaesthetic pumps, 1 sonosite ultrasound machine, and 4 theatre / operating trolleys. This equipment was used across all of the units to increase capacity.

112. The anaesthetic machines were configured with GE support to modify from needing oxygen as a drive gas to power the ventilator to using air, which made them oxygen gas efficient to reduce pressures on BTHFT oxygen usage.

113. As the impact of the pandemic increased in April 2020, BRI elective theatres were closed enabling additional GE anaesthetic machines to be deployed to the second ICU that I detailed earlier in this statement.

114. **CPAP machines:** By closely monitoring national and international reports and research, we were able to rapidly implement the most up-to-date ways of treating COVID patients. Some of the key decisions included early continuous positive airway pressure (CPAP) in all patients requiring more than four litres of oxygen per minute and the preferential use of CPAP rather than invasive ventilation from the start of the first wave in March 2020 before this was standard UK practice.

115. Given the huge requirement for CPAP equipment in Italy in February-March 2020, early attempts to order similar equipment by the Trust failed. A critical care colleague (Tom Lawton MBE) recognised that community CPAP machines used to treat obstructive sleep apnoea (OSA) could be adapted to entrain oxygen and would provide CPAP requiring far less oxygen (5-15l/min vs 60l/min) than our inpatient machines. We were able to secure approximately 200 of these machines from the community for the BRI which meant we could provide CPAP to all patients who required it and use our hospital CPAP machines for sicker patients only. Although never used clinically, there were also other novel CPAP designs that could have been deployed to treat patient should the hospital have become overwhelmed with patients requiring it. Any novel usage of Anaesthetic equipment considered available national guidance, was risk-assessed, and documented.

116. **Oxygen:** Early on in the pandemic it became apparent from reports in the South of England that there were potential issues with the supply of Oxygen. At the beginning of the pandemic BRI had 2 Vacuum Insulated Evaporator (VIE) units supplying Oxygen to the site; one lead vessel and a second vessel providing

emergency reserve capacity (St Luke's Hospital (SLH) is supplied by one VIE unit with a cylinder reserve manifold).

117. Although oxygen supply-demand was not a problem during the relevant period, this was only because we undertook significant work to manage this.

118. Through conversations with British Oxygen (BOC), the supplier of our piped oxygen, we were able to identify that our largest VIE could deliver 3,000 litres of oxygen a minute. It had a net liquid capacity of 24,850 litres with an additional 5,792 litres in the secondary VIE.

119. Following discussion with BOC we changed the level at which our VIE was refilled from 35% of total volume to 65-75% of total volume. This, combined with the telematics monitoring of the VIEs meant that BRI (and the wider trust) did not face issues arising from an unavailability of oxygen to the site.

120. The Oxygen demand from the VIE units remained well below maximum flow capacity throughout the relevant period.

121. The existing oxygen supply network serving wards and departments at BRI was upgraded to a ring main in 1995. Over time as new wards have been constructed, the oxygen pipework supply and infrastructure has been extended and modified. The majority of the wards are of a similar design and age and therefore the medical gas pipework installation within each ward is the same.

122. To determine the Oxygen flow rate to wards during the relevant period, an assessment and actual measurement of ward maximum Oxygen flow demand capacities was carried out on wards on 1 April 2020.

123. Information was not readily available at the beginning of the pandemic but we were able to identify that the pipework of our oxygen delivery system was capable of delivering 3,400 litres per minute however this was limited by the output of the VIE as mentioned above. We were also able to identify the maximum flow rates to the key ward areas which varied between 200 and 330 litres per minute but we determined that most wards could run at 300 litres per minute, limited by the pipework supporting these areas. We also noted that it would not be possible to run all wards at these levels because combine they would exceed the 3,000 litres per minute available to the site.

124. Maximum flow rates varied across the BRI and an understanding of these variations was used in part to guide the preferred location clinically for Covid

patients. This meant that we had to actively manage flow rates and patient cohorts on each ward on a daily basis.

125. The maximum flow rate capacities were found to be greater in newer wards with more side rooms than the older nightingale ward installations, providing greater oxygen demand capacity. These newer wards were therefore the preferred location for Covid patients.

126. The actual measured maximum flow rate capacities for each ward provided the Trust's Clinical Operational Team with the information to determine which wards would be best placed (in terms of oxygen provision) to manage the Covid pressures, along with the single or multi bed bays available in each clinical area.

127. An Oxygen Calculation Tool (RS1 / INQ000416825) was developed by the Estates Team for recording oxygen demand across BRI. This proforma enabled each ward to input data on the number of patients on oxygen, either the flow rate administered or the type of ventilator used. This then produced a calculated oxygen flow rate for that ward, providing information on calculated flow rate compared to maximum measured flow rate capacity (availability). Once completed, each ward submitted their proforma centrally several times a day to Gold/Silver Command. This provided a total flow rate for the site, allowing the VIE capacity to be monitored to ensure the supply capacity was not at risk. These returns also enabled Gold/Silver Command to review and assess the patient distribution across the wards to ensure no individual ward was operating above supply capacity.

128. There was only limited information available regarding the oxygen flow demands associated with the use of various non-invasive ventilators (NIV) or Continuous Positive Airway Pressure (CPAP) Machines used within the Trust. This information was required to understand our oxygen demand on site and impact on overall availability.

129. To address this, a team from Estates, Clinical Engineering and clinical representatives was established to try to identify/simulate/measure the actual flow rates required by each different type of NIV in use at BRI. This assisted in identifying the high, medium and low efficiency of the NIV/CPAP devices. This information was incorporated into the Oxygen Calculation Tool (RS1 /INQ000416825) to help provide a more accurate understanding of Oxygen demand across the site and allow the clinical teams to determine which NIV ventilators were used in each ward.

130. Covid wards had existing local area alarm panels to monitor Oxygen supply pressures, providing nursing staff with warning/notification when the maximum capacity was reached on the ward. Once the maximum flow rate capacity was exceeded, then the pipeline pressure would start to reduce until the local pressure switch would activate (3.6bar) visually and audibly alerting the staff, though no visual indication of the actual oxygen pressure was available to the clinical teams.

131. The daily recording sheet provided ward by ward calculated flow rate data to actively manage the distribution of patients, managing the oxygen demand and prevent local supply capacities being exceeded.

132. The local distribution pipework on each ward was operating at well above design/installation flow rates and supplying at actual maximum flow rate capabilities for extended periods of time during the pandemic.

133. Concerns were raised regarding the potential risk from oxygen enrichment within the ward environments due to the increased oxygen consumption. Higher levels of ambient oxygen than normal could have increased the risk of fires. Local oxygen monitoring devices were investigated, and a "plug-in & play" device was sourced and purchased that the wards could move around as required to monitor the environmental oxygen levels in the high usage areas. These were attached to wheeled trollies and supplied to Covid wards, allowing staff use without the need for access by engineering or fire team members to set up. Six units were purchased and distributed around the wards based on oxygen usage.

134. A basic instruction sheet was provided with each monitor for staff/user reference for the device operation and actions to be taken if the oxygen alarm activated.

135. Orders were placed in May 2020 to upgrade the local ward area oxygen alarm panels to enable the actual local pipeline pressure to be visually displayed on the local area alarm panels. Due to equipment shortages nationally, the medical gas contractor was unable to obtain the required components, so the works never occurred. As there were no oxygen flow demand issues at the BRI because of the meticulous management applied, this was fortunately not a problem.

136. Prior to the pandemic VIE monitoring occurred weekly. During the relevant period VIE monitoring increased to twice weekly. This included inspection and carrying out de-icing of pipelines and evaporators due to increased demand for oxygen flow.

137. On 29th April 2020 an email was circulated from Sheffield Teaching Hospitals NHS Foundation Trust (RS2 / INQ000416836) referencing the increased terrorism threat level from low to medium for healthcare organisations. Sheffield had confirmed that security of their VIE fencing had been compromised. In response to this an order was raised for new security fencing to be installed around the perimeter of VIE units at BRI (and St Luke's Hospital). The work was completed during May 2020.

138. With regards to the VIE upgrade, the Trust received a telephone call offering a second VIE that was available from British Oxygen (BOC) for installation at BRI. We explained that onsite limitation was not due to the current VIE installation and we were running well below the existing VIE capabilities and the offer was not required and could be offered to a higher risk site. It was reiterated that BRI was identified as a high priority for demand, so the installation was arranged.

139. This prompted a review of the BRI site's existing Oxygen ring main infrastructure with the incumbent medical gas contractor (Medical Piped Gases). It was identified that it was feasible to separate the BRI site into two systems, allowing a second VIE installation to be installed, sharing the site's oxygen demand between two VIE vessels.

140. A new main and standby VIE were installed during May 2020 on a newly constructed plinth and connected into the existing oxygen ring main located adjacent to the Maternity building.

141. A second standby vessel was also installed adjacent to the existing, extended VIE compound located next to the BRI Boiler House.

142. All connections, installations and commission of the new VIE vessels were undertaken by BOC and Medical Piped Gases without the need to interrupt existing Oxygen supplies due to the flexibility of the existing ring main facility at the BRI site. The project was completed by early June 2020.

143. Following the installation of the second VIE adjacent to the Maternity building, the site had an increased maximum supply capacity of 2 x 3000 litres/minute i.e. 6000 litres/minute.

144. The main supply distribution pipelines and the VIE supply equipment never operated near capacity throughout the pandemic and did not place supply limitations on the organisation.

145. Our critical care unit and two surge critical care units never struggled with oxygen delivery. This was partly because they were designed as critical care units with good oxygen delivery and partly because we mainly used equipment that was specifically designed for critical care use in these areas.

146. **Renal replacement therapy machines:** The Renal Team were asked by the Head of the Renal Service, Dr John Stoves to provide a number of additional facilities, to cater for separation of differing classifications of Bradford's Renal patients during the relevant period. This request was made on 23/24th March 2020.

147. These were to be established at BRI in ICU and 4 other ward areas, whilst keeping all existing Renal facilities across the wider Trust operational.

148. There was no portable Reverse Osmosis (RO) equipment to purify the water to allow any of this to run. Existing spare haemodialysis machine stock was used to support this.

149. To satisfy Water Regulations Approval Scheme (WRAS) requirements, there was a necessity to provide a Category 5 water break tank at each new separate location, to allow RO to run i.e. at ward level. Northern Mechanical Services (external contractor) and the Trusts Estates Department provided the break tanks to facilitate this expansion.

150. It was additionally confirmed by the Renal Team on 25th March 2020 that 8 haemodialysis machines and 8 portable RO units would be required to support services during the first national lockdown. The Renal Team was informed by the supplier of the RO units that we could expect lengthy delays in equipment being supplied (of the order of several months) as demand for the product was globally high. The Renal Team was concerned that we could run into a situation where a surge in demand for any of the isolation facilities would leave the Team unable to respond if equipment which had been ordered was not available in time.

151. There was no issue during the relevant period regarding the supply of our normal Haemodialysis and Peritoneal dialysis consumable items. However, we did become aware of an issue with the supply of disposables during the first half of 2020 for use on the Continuous Renal Replacement Therapy (CRRT) machines used on ICU (due to global demand outstripping supply).

152. To mitigate this the Renal Team carried out some experiments to establish alternative innovative solutions. These were never actually required as NHSE took

control of the supply and distribution of CRRT disposables and we never ran out of stock of these items.

153. As a result of a reduction in demand within the Trust's existing Renal Units (due in part to deaths of Renal patients due to Covid), our ability to expand and the timing of the Covid surges, we never reached a point where the Trust's haemodialysis machine capacity was exceeded.

154. **Other equipment:** In March 2020 Clinical Engineering developed a pool of medical devices to support both Covid and non-Covid clinical services. This enabled an increase in designated devices into Covid areas. This was predominantly managed by Clinical Engineering stockpiling aged devices (scheduled for replacement) and servicing / reconfiguring them to meet clinical need. These devices were documented and managed within an equipment library.

155. Capital funds were used to purchase additional ventilators in October 2020 with 11 Philips V60 non-invasive ventilators purchased.

156. Covid funds were allocated by the Trust to enable the purchase of additional medical devices / spare parts. Clinical Engineering records show that this started in November 2020 to support Ward transformations and medical equipment resilience to include: 82 additional Fresenius Agilia infusion pumps, 62 Tympanic thermometers, 45 Wall suction Units, 78 Wall flowmeters, 436 blood pressure cuffs and 4 mobile patient hoists.

157. Due to concerns around availability of PPE right from the start of the relevant period, a significant proportion of the critical care PPE was reusable and decontamination processes were established by the clinical team in conjunction with the manufactures, the decontamination team at BRI and the infection control teams. The majority of reusable masks were Sunstrom or JSP, with a number of positive pressure hoods. Dr Tom Scarrott was able to secure 50 Sunstrom P3 reusable masks initially with additional filters following contact with the Sunstrom UK sales director. We secured an order of JSP Force 10 full and half masks directly from the JSP supplier including additional filters during the first wave of COVID. I will revisit PPE later in this statement.

158. A standard operating procedure (SOP) was agreed and documented for the decontamination process, and a risk assessment carried out. Decontamination was effected initially using 99% ethanol sourced from a local gin distillery, and subsequently using 60% ethanol procured by Pharmacy. The reusable masks

were disassembled and submerged in the ethanol for 5 mins before drying on racks for one hour in a laminar flow canopy. COSHH and Fire risk assessments were completed.

159. A number of Anaesthetic and Intensive Care doctors (including me) obtained their own reusable masks from local retail suppliers such as Screwfix when the scale of the approaching challenge was becoming apparent, before cases had really started appearing in the UK.

160. **Medicines:** Nationally the pharmacy procurement specialists at the Specialist Pharmacy Service with colleagues from the Department of Health and Social Care (DHSC) and NHSE's Commercial Medicines Unit (CMU) took central action to help manage stock across the system. In addition to this they took a lead on liaising with Pharma and Pharmaceutical Wholesalers to identify their preparedness for the pandemic.

161. The actions taken by these organizations helped the BRI and wider Trust and allowed local trust teams to focus on more local stock management. I consider this was a great help and a key learning point.

162. Early in the relevant period there was a national shift to all hospitals sharing information on drug usage via a system provided by Rx Info. The extract to this system was updated by each trust daily. The outputs of this system allowed regional and national pharmacy procurement specialists to monitor stock usage and holding and to move stock to sites where it was most needed. The introduction of this system, which is still in use, was seen as a massive step forward by pharmacy colleagues and again a key tool in helping the organisation respond to the pandemic.

163. Inevitably, despite these stock control measures, there were some issues with supply and availability of some drugs.

164. In April 2020 the trust, like all organisations nationwide began to see issues with the supply or neuromuscular blocking agents used in the induction of anaesthesia. Atracurium and cisatracurium (muscle relaxant drugs) eventually went out of stock leaving rocuronium as the only alternative. Centrally attempts were made to manage this stock disruption with the Department of Health and Social Care issuing a supply disruption alert SDA/2020/004.

165. Like other stock shortages regional and national procurement colleagues helped manage stocks through a system of allocations and mutual aid.

166. The national co-ordination of stock shortages continues to operate and mature further. Pharmacy colleagues feel that the regional and national support to stock management greatly assisted the response to the pandemic.

167. BRI and the wider Trust, like other trusts did experience some issues managing stock levels / sourcing stock of some of the medicines emerging as novel treatments for COVID e.g. Dexamethasone and tocilizumab. Whilst stocks of some of these were in reasonable supply e.g. dexamethasone which was held as part of the national stockpile, others were more specialist medicines for less common indications. In general, the stock management systems mentioned above helped to manage stock and align stock with usage.

168. Across the pharmacy sector a number of regulator-led derogations were implemented which assisted the trust in meeting the needs of our patients. Key derogations included:

a. Loosening the rules around the wholesale dealing of medicines which meant that pharmacies without the necessary licenses were able to supply stock to neighboring organisations under a scheme of mutual aid.

b. Changing the rules around the manufacture of injectable medications under section 10 exemption of the Medicines Act. This allowed vial pharmacy colleagues to vial share and prepare batches helping to reduce medicines wastage typically associated with such preparation.

169. Pharmacy colleagues have told me that they weren't aware of any negative consequences from these changes and therefore felt that these changes were vital in helping them meet the needs of trust patients and actions which should be actively considered for future pandemics.

170. In January 2021 the Trust began vaccinating patients in line with the national campaign. However, it was felt that the way the vaccine campaign was rolled out with vaccine initially going to larger centres may have led to exacerbations in health inequalities especially given the demographics of our local population who were at particular risk from COVID-19.

171. In terms of vaccine supply the Trust encountered issues with the numerous requests for information, the hoops the Trusts had to go through to get the vaccine and the complexities of ordering and recording use.

172. There was a complicated sign off process in order for an organisation to receive vaccine. This process was out with existing legislation and regulation that

an organisation works under. For example, BTHFT operates as an MHRA Licensed Wholesaler, and is Registered with the Home Office to allow the wholesale supply of medication and the General Pharmaceutical Council for the supply of medication.

173. Daily stock checks, and counts about vaccine use, vaccine administered, vaccine expiring, and vaccine moved to other sites were onerous. We recognise the need for sitreps but perhaps they could have been less frequent and less detailed.

174. · The vaccine was only available to order using a system most provider organisations did not use. We feel it would have made more sense to use existing supply routes / ordering routes rather than switch all to a different system.

Private healthcare sector

175. The Government's agreement with the private healthcare sector to provide services for NHS patients during the pandemic was helpful in a number of ways.

176. In the initial stages of the relevant period, as all organisations came to terms with the impact of the Pandemic on logistics and safety of elective operating, our local Independent Sector (IS) provider allowed theatre staff to be deployed within Trust theatres and critical care as previously described.

177. As part of our close relationships with the IS colleagues we supported the vaccination of their workforce, shared Standard Operating Procedures and training wherever necessary. Effectively we were able to achieve consensus to national guidance which facilitated a return to elective activity within Bradford District as soon as was possible.

178. The willingness of the IS (Ramsay Yorkshire Clinic) to provide equipment including ventilators has previously been described. They also provided us with all the stocks of PPE they had whilst surgery was paused.

179. In order to protect the most vulnerable patients and sustain surgery for the most urgent cases, the Trust worked closely with our neighboring IS provider to:

a. Provide cold site Chemotherapy at the Yorkshire Clinic
b. Provide cold site elective surgery for suitable Cancer and P2 / P3 patients at the Yorkshire Clinic.

180. Subcontracts delivering a partnership and novel approach continue to improve patient access and a right patient right place ethos. For example. the majority of skin cancer assessment and surgery is provided with an IS provider as the cold site delivered by a BTHFT surgeon, with exceptional performance.

Infection Prevention Control ("IPC")

181. Infection, prevention and control ("IPC") played a central and pivotal response to the Covid-19 pandemic.

National guidance

182. The Trust followed, adopted, and implemented national IPC guidance; any deviation from national guidance was risk assessed and highlighted, this included both guidance from Public Health England (PHE), later UKHSA as well as NHSE/I.

183. In terms of the frequency and timing of national guidance, this changed frequently, often at short notice. The Trust's internal communications and the new intranet site was rapidly developed with a dedicated COVID-19 page to act as central information hub for staff, which quickly became the authoritative repository for staff updates, Standard Operating Procedures and advice and guidance on staff welfare including how to access support. When new national guidance was received, the relevant action card and later standard operating procedure documents (SOPs) were updated and approved through the Trust Covid-19 Gold Clinical reference Group (CRG) group. Once approved, the SOP was disseminated via a global email, daily bulletins and added to the Trust Covid-19 intranet page.

184. The modification of national guidance was limited to situations where the risk was assessed as greater to fully comply than to adapt and modify.

185. By way of an example of the IPC challenges faced by the Trust at the BRI, and deviating from national guidance, in April 2022, confirmed Covid-19 positive cases were continuing to increase. The majority of patients were however asymptomatic and were only identified as part of the asymptomatic testing regime. This was leading to increases in delays and difficulties in maintaining a separation

of patients with and without a positive result, particularly as footfall through the hospital had increased due to resumed non-covid activity. A significant acceleration in number of positive Covid inpatient cases at this time was due to the Omicron variant. A Trust-wide risk assessment was completed that identified that 80 – 90% of patients testing positive were completely asymptomatic and being positive was incidental to their being in hospital.

186. Isolating asymptomatic patients in an environment outside of the area of specialist care for which they were in hospital leads to an increase in the length of inpatient stay and reduced specialist oversight. There was also a risk of failing to achieve effective hospital-wide patient flow ("the right care, in the right place, at the right time") which could also put patients at risk of suboptimal care, potential harm, and increased inpatient stays. A risk-based approach was taken to the continuation of inpatient testing [RS3 / INQ000416846: Risk Assessment Ceasing Covid Asymptomatic Testing 1]. The outcome of that assessment is set out below, but the approach taken as a consequence of this risk assessment was outside national guidance: Living with Covid-19 Testing Update - Publication date: 30/3/22, Publication approval reference: C1621 [RS4 /INQ000416847] which stated that: "Testing for asymptomatic inpatients on day 3 and days 5-7 of their stay should now be undertaken by lateral flow device (LFD)". We stopped across the board asymptomatic testing in April 2022.

187. The actions to be implemented across the Trust and at the BRI following the risk assessment mentioned above were incorporated into SOP 91: Asymptomatic Testing April 22.docx [RS5 / INQ000416848].

188. As a result of the approach adopted by the Trust and implemented at BRI:

a. all new COVID-19 positive patients received a senior clinical review and were relocated to a red ward if deemed infectious

b. where a patient was not deemed to be infectious and the plan was that they remain in their specialist clinical area, a risk assessment of the possible impact on other patients in the clinical area was undertaken.

c. COVID-19 patients who were asymptomatic, who had a critical requirement for specialist care in a green (non-Covid) ward, could be admitted to any single side room within the appropriate facility e.g. acute stroke, acute cardiology

d. patients with possible or confirmed COVID-19 were not moved during their infectious period unless this was essential to their care or reduced the risk of transmission

Dissemination and implementation of IPC guidance

189. In March 2020, a communication strategy was developed by the Communications Team and approved at the Trust Executive Management Team Meeting (EMT) to ensure that there was effective communication from the Trust to its workforce, including all staff at the BRI. This covered communications relating to IPC guidance.

190. It is important to note that although the relevant period commences on 1 March 2020, the Trust commenced Covid-19 operational preparations, including the commencement of daily silver tactical meetings and the development if IPC action cards on 31 January 2020. The action cards followed PHE guidance in place at the time (January 2020) and were updated each time the PHE guidance modified. These cards were intended to provide advice to staff on the management of patients with Covid-19. They provided guidance on assessment, infection control, the taking of samples for diagnostic tests, details of the laboratory protocol in place at the time, PHE contact details, staff contact details, clinical waste and linen guidance. A copy of the first Emergency Action Card for Wuhan novel coronavirus (WN-CoV) from January 2020 is exhibited at RS6 / INQ000416849. The cards were available on the intranet and widely shared through the clinical reference groups and operational teams.

191. As national guidance developed and modified, the Trust adopted simple standard operating procedure documents (SOPs). These were easy to share, specific to a certain area of the national guidance and intended to support operational implementation of guidance with ease. Any new SOP introduced for use at BRI was shared through the Trusts Silver and Gold clinical reference groups (CRG) and approved. The SOPs were then communicated to staff through global emails and on a specific Covid-19 section of the Trusts intranet front page which allowed for easy access to relevant guidance, policies and procedures, along with a range of other Covid-19 specific information and support. The use of SOPs to

implement national guidance saved staff time as new national guidance was often repetitive of previous guidance. The SOPs were more focused and allowed staff to focus on new information that required action.

192. In addition to this, the Head of Equality, Diversity and Inclusion facilitated a range of question and answer sessions relevant to IPC (and other matters) with all staff across the Trust, in particular staff from ethnic minority backgrounds and those with a disability or any other long term health condition. These sessions were well attended and supported by members of the Executive Team who acted as panel experts who listened and provided reassurance and support on the challenges and concerns raised.

193. The Trust issued daily email bulletins highlighting key local and national changes. The Trust also rapidly expanded the use of video in communications, including the weekly vlog from Professor Mel Pickup, Chief Executive Officer and videos in multiple languages developed and delivered by the Trust's bi-lingual staff and published on YouTube and other social media platforms.

194. The Trust's IPC Team comprised of the Director of IPC and Nurse Consultant, and 4 clinical nurse specialists. The IPC team supported relevant clinical areas with daily visits to wards and treatment areas across the BRI. The purpose of these visits was to ensure any new guidance had been received and understood; this was also an opportunity for staff to ask questions and seek clarification if required. The close working of the IPC team with clinical areas was incredibly valuable and fostered a strong and supportive relationship.

195. The Trust also used videos which were on the designated Covid-19 intranet page as detailed earlier in this statement, posters which were put up on wards and relevant places around the BRI, window stickers, pull-up banners, PC screensaver messages, and public display screens to inform the workforce of changes to IPC guidance changes. These were in addition to the dedicated intranet site and IPC SOPs that I have already mentioned earlier in this statement. The use of the practical measures and visual aids supported the messages being relayed by daily email bulletins, standalone global emails, daily printed bulletins and webinars which are more difficult to keep up to date with at the busiest of times or on return to work following a period of absence.

196. The Trust also ensured that IPC guidance was disseminated to the local public in Bradford via weekly YouTube bulletins, for example 'Our A&E department is still open, take a look inside', which included public IPC guidance.

197. During the relevant period the Trust launched its largest range of communications to ensure that it reached communities in multiple languages and dialects such as Urdu, Pahari, Slovak and many more. Much of this communication was supported and presented by bi-lingual staff to allow us to speak directly to patients and diverse communities providing them with key messages. The channels used included the Trust's own social media channels as well as engagement and participation in community-led groups, especially via WhatsApp, ensuring messages were accessible and heard as widely as possible.

198. An example of a message distributed via social media is given below:

VISITORS to Bradford Teaching Hospitals and people attending outpatients' appointments must wear a face mask or face covering at all times to protect them and others from coronavirus (Covid-19) from Monday.

The new guidance comes into force on June 15, and applies to hospitals across the UK, including those which are part of Bradford Teaching Hospitals NHS Foundation Trust – Bradford Royal Infirmary, St Luke's Hospital, Westbourne Green and Westwood Park.

Karen Dawber, the Trust's Chief Nurse, said: "Evidence from the Scientific Advisory Group for Emergencies (SAGE) previously confirmed face coverings can help reduce the risk of transmission if you are suffering from coronavirus, but not showing symptoms.

"As a result, we are now asking all members of the public coming to our hospitals to wear a mask or face covering when they arrive. This will help to protect them and others. This can be a fabric, non-medical mask. In the event of an emergency, a face mask will be provided.

"We are also asking that as well as wearing a mask or face covering, visitors and outpatients continue to use the alcohol gel provided on all our wards and departments on entering and leaving. It is vitally important to maintain good hand hygiene at all

times and to wash hands regularly with soap and water for at least 20 seconds, especially after using the toilet and before eating.

"We would also like to remind visitors of observing the two-metre social distancing rules."

For more information on wearing masks at Bradford Teaching Hospitals, please watch the short film below, which is available in English and Urdu. (Link provided in message)

NHS staff already wear face masks in clinical areas within two metres of a patient, but this new guidance now applies to everyone working in all areas of the hospital.

Challenges implementing IPC guidance

199. The challenge to restrict visitors and "lockdown" of the hospital sites was essential to help prevent and control the spread of Covid infection. I return to the question of visitor restrictions later in this statement. It is however worth noting at this point that discussion with community leaders and representatives, including MPs and faith leaders, helped to mitigate some of the concerns, but this remained a very contentious action for the Bradford community visiting loved ones. A lot of emphasis was placed on communicating the alternatives to face-to-face visiting and in supporting families to stay in touch through other methods. To disseminate information and engage with Bradford ethnic minority communities, the Trust also utilised a number of South Asian local radio stations such as Fever FM and Sunrise Radio for key updates and messages.

200. A particular area of concern voiced by staff and one part of IPC guidance that changed significantly during the relevant period, related to the correct personal protective equipment (PPE) to be used in a particular clinical area. Different requirements existed for different clinical areas, and as staff mover around the Trust, there was a need to ensure all staff were aware of what they should wear. The IPC Team therefore created visual posters which were placed on the clinical area entrance doors and clearly identified what PPE was required in that area. By way of illustration, I have included two examples of the types of posters in use at RS7 / INQ000416850 (COVID 19 PPE for patient contact poster d3 (2).pdf) and RS8 / INQ000416851 (COVID 19 PPE in clinical area poster d2 (1).pdf).

201. The Gold CRG as described previously (paragraphs 10-16) was chaired jointly by me as the Chief Medical Officer (CMO) and Professor Karen Dawber as Chief Nurse and attended by Clinical Directors, Director Infection Prevention and Control (DIPC) and other senior clinical staff – both medical and nursing. New guidance was again shared and discussed, with challenges and theories shared openly. By having regular and open discussions on new guidance across a large range of both clinical and managerial staff, the dissemination of any updates was also cascaded through team briefings and safety huddles daily.

202. The issue of new or updated national guidance being received late on Friday afternoons was a challenge for the Trust to ensure all relevant staff were aware and understood what the changes involved and how to implement them correctly and safely. Therefore, the Trust implemented a more measured approach – the Director of Infection Prevention and Control (DIPC) reviewed the updated guidance during the weekend, together with senior on-call Directors and Executives and the relevant SOPs were amended or new ones created. These were ready for discussion, challenge and approval through the silver/gold CRG systems and operational Silver/Gold structures for Monday morning. This process also allowed communication systems to continue in a more structured way.

203. The implementation of IPC guidance throughout the Covid pandemic was a challenge whether it be due to shortages of resources such as PPE required by national guidance, or building infrastructure, and the lack of adequate isolation facilities, or lack of appropriate ventilation. However, the Trust's approach to this challenge was to have robust command and control structures, wide engagement at a very early stage with all senior professionals and departmental managers and regular meetings with clear outcomes. This allowed a collaborative, constructive consensus of how to put into operation the guidance and overcome obstacles. The implementation of silver and gold command structures in the first week of February 2020 allowed the Trust time to work through many of the IPC difficulties and agree plans but also gave clinical areas time to work through business continuity plans and escalate where there could be potential obstacles. Our Covid Acton Plan was a live document, and described the need for Fit testing, fit for purpose PPE, preparedness for clinical areas to receive Covid patients, internal and external communications strategies, swabbing and reporting procedures, and risk assessments. The Trust's use of a Covid Action Plan to address the emerging

pandemic and concerns was 4 weeks ahead of the official letter being received from NHSE on 2 March 2020 directing a level 4 incident and to commence incident management response (KS9 / INQ000087445 - COVID 19 letter to the NHS Final version.pdf.)

204. Being the first line of defence against COVID-19 infection, health care workers were particularly at increased risk of becoming infected. Compliance with IPC measures was critical for their safety and the safety of their patients. In the early stages of the relevant period, much of the IPC Team time was focused on fit testing and the reiteration of PPE donning and doffing as a high consequence infectious disease (HCID) for frontline staff. In addition to providing direct support, written information was produced, an example of that relating to the donning and doffing of PPE is exhibited at RS10 / INQ000416826 (24 Coronavirus Donning and Doffing Leaflet- final.pdf).

205. PPE was a particular challenge during the relevant period, and I will come back to this later in this statement.

206. Social distancing for staff within the BRI hospital infrastructure in clinical departments and wards was a challenge; small staff rooms and offices required new rotas for breaks to ensure the staff room was not crowded and Covid assurance checklists were completed with signage stating how many staff were allowed in a staff rest room or office at any time. However, outbreak investigations identified that ensuring social distancing for staff at break times remained a problem and required reassessing and spot-checks to ensure compliance. Staff often perceived this as reducing their social support at a time when the staff needed emotional support and a balance between mental health care.

207. In July 2021 Covid-19 restrictions were ending in many settings in England. However, PHE's infection prevention control guidelines and hospital visiting guidance remained in place for all staff and visitors. That meant NHS guidance continued, and staff, patients and visitors were expected to continue to wear face coverings, masks, and other personal protection equipment. This led to some confusion and challenge from patients, visitors and staff about the disparity between national guidance and guidance in a health care setting.

208. Although patient and visitor compliance for mask wearing was good in outpatient departments, inpatients often either could not wear a mask due to illness, confusion, dementia, or perceived the risk in hospital to be lower (due to

the admission screening protocols and being placed on a "green" ward) and therefore did not wear a mask. Some patients receiving haemodialysis needed to attend the renal dialysis unit up to three times per week. Within this small unit regular encounters with other patients were unavoidable and therefore social networks were forged. This possibly contributed to a blurring of the Covid-19 regulations resulting in additional risk taking, such as social gatherings conducted outside of the healthcare setting, facilitating the transmission of COVID-19 infection and outbreaks. This is a view that was included in a report prepared by the Trust in September 2021 entitled: Hospital Onset COVID-19 Infections – Learning from Outbreaks and Deaths in Care [RS11 / INQ000416827].

209. Survival of the SARS-CoV-2 virus in the environment and on inanimate objects was noted in the DHSC, PHW, PHA, HPS and PHE Guidance: Infection prevention and control guidance for pandemic coronavirus (version 1.1, dated 27 March 2020). This meant that systems and processes required assessment and implementation to prevent transmission of infection; for example the storage and release of a Covid-19 positive deceased patient's property. Staff were concerned about parcels and post received at the BRI being contaminated. There was increased environmental cleaning and disinfection of wards and departments from the Domestic Services Teams who were already stretched. Staff uniforms advice on laundry was provided however staff in "red" areas insisted on scrubs so that they didn't have to take contaminated uniforms home. Each problem raised was discussed at silver and gold command structures and a plan formulated to respond to the issues as they arose.

210. The BRI was built with Nightingale ward designs and lacked quantity of side rooms; many did not have en-suite facilities and lacked adequate ventilation, and some were double side rooms (therefore in terms of isolation, a bed would need to be blocked). Therefore, when planning for Covid-19 commenced it was agreed that cohorting within an entire ward would be required. This involved managing groups of Covid positive patients together, as isolating individually was not possible.

211. An additional benefit of this cohorting approach was to ensure that scarce PPE stock was concentrated on identified higher risk wards and ensured that appropriate staff with the right specialty skills and knowledge were identified to support Covid patients.

212. The Trust implemented a ward cohorting plan where inpatient wards and units were separated into covid and non-covid. The Trust adopted a "red" and "green" ward approach rather than hot and cold. The ward chosen for the Covid red ward had 2 isolation rooms with positive pressure ventilated lobby (PPVL) as stipulated in Health Technical Memorandum 03-01 Specialised ventilation for healthcare premises and Health Building Note 04-01, Supplement 1, Isolation facilities for infectious patients in acute settings. This ward (ward 31) prior to the relevant period, was an elderly medical and rehabilitation ward with large 4 bedded bays, wide corridors, and a large proportion of single side rooms as well as the isolation rooms. The ward also had a lobby area at the entrance to the ward which was ideal for donning and doffing personal protective equipment (PPE) before going through double doors into the main ward area. This ward remained the main Covid "red" ward throughout the pandemic.

213. As the number of Covid-19 positive inpatients increased and declined at various times the ward cohorting plan was modified to adopt to the changing needs of patient Covid capacity. It was not possible to place the Covid cohort wards in one wing or section of the hospital. However, the Covid "red" adult wards were grouped together. Red wards had clear signage and posters on the ward entrance, as illustrated by RS12 / INQ000416828(COVID 19 PPE in clinical area poster d1.pdf). Green (non-Covid) wards also had signage as a green ward and appropriate PPE poster. This meant that each side wing of the hospital remained green with separate stairs and lifts and only a small section of the main corridor was adjacent to Covid "red" wards, as illustrated by RS13 / INQ000416829(Covid Ward Cohorting Plan_v4.0.pptx).

214. The difficulty with this approach was a lack of oxygen supply to a few areas requiring intensive respiratory support; this required multiple daily calculations of oxygen supply and risk assessment with senior clinicians of patient respiratory treatment capacity as previously discussed.

215. An additional challenge with cohorting a whole ward was that as Covid positive inpatients declined, bed capacity was affected as non-covid patients could not be placed on a cohort ward and this led to a risk to patient flow and admission delays. Many wards changed from COVID to non-COVID and back again over the Covid pandemic and each time the Trust ensured a deep clean and disinfection of the ward. A team of volunteer nurses would decant the ward and help with cleaning

nursing equipment whilst a team of cleaning staff cleaned and decontaminated all fixtures, furniture, and surfaces. This therefore presented an additional IPC demand and challenge.

216. In March 2020 the Accident and Emergency department (AED) at the BRI was segregated by the movement of the children's assessment area out of AED and this area was then labelled the "purple zone". Purple was used for the Covid area as AED already had red (high acuity - HDU and Resuscitation room) and green (ambulant patients) zones. The purple zone was a separate area segregated by fire doors and had its own entrance and waiting room. To ensure the Bradford public was aware of these changes a video was made and shared via the Trust website and YouTube (Ref video link: Our A&E department is still open, take a look inside).

217. Waiting areas in Outpatient departments were assessed across the BRI footprint and all seating was spaced 2 meters apart, with a screen placed between chairs. In the Antenatal and Maternity Assessment Area, cubicles were purchased during the first wave of the pandemic which segregated attendees (and 1 partner). Outpatient areas that had previously been multi-specialty occupancy were moved or segregated if the outpatient service user could be immunocompromised (e.g., Oncology clinic). An Outpatient reconfiguration plan was developed and updated through 2020-2021 which included templates for all specialty activity for all hospital sites across the BRI and wider Trust.

218. In addition to reconfiguration of the Antenatal and Maternity Assessment Area, the maternity unit also implemented red and green areas; the suite normally used for bereaved parents had a separate corridor and a room next door for removal of used PPE (doffing), which allowed the rest of the Maternity unit to continue to operate safely. As Covid numbers increased during March and April 2020, part of the midwife-led unit (Bradford Birthing Centre) was converted into a red area which could be contained behind closed doors and a new staff and patient flow was applied. The maternity antenatal unit was challenging to separate covid and non-covid mothers and required considerable change of use of rooms within the area to try and maintain segregation.

219. Radiology departments had already completed business continuity plans as part of the early Covid preparations that took place during February and early March of 2020 across the Trust, covering all imaging modalities, including which

activity should be continued, and which should be deferred. Radiology departments were visited by the IPC Team to support the Radiology clinical leads in structuring patient and staff movement flow, identify red and green x-ray and CT scanning rooms with separate waiting areas. The intention was to limit Covid-19 patients from waiting in any areas and return to their ward as soon as possible, however where this was not achievable separate waiting areas were introduced.

220. The Intensive Care Unit (ICU) was designed with all patients in individual single rooms plus 2 isolation rooms which had positive pressure ventilated lobbies. The isolation rooms were used initially for the placement of Covid patients who required ICU care. However, as ICU capacity for Covid patients began to surge in early 2020, the previous (closed) ICU (Ward10) was reopened and became the Covid ICU. This required the movement of theatre staff to ICU to support the surge capacity and the ICU Outreach team were also required as part of the ICU bedside team. This meant that outreach support to other ward areas was limited. A risk assessment was completed to understand the risk to ICU and its patients during ICU Covid surge which demonstrated an extreme risk scoring 15. (Standard risk scoring matrix: severity (1-5) x likelihood (1-5). Scores can therefore range from 1-lowest risk up to 25 – highest risk) [RS14 / INQ000416830 - Risk assessment ICU winter].

221. The Covid ward cohorting plan identified that reconfiguring wards would require significant staff movement and identified that where staffing constraints meant a full ward could not be staffed, wards would be opened to the capacity they could safely be staffed to. This was agreed between the Associate Directors of Nursing (ADNs) in charge and Tactical Silver Command and outlined the ward staffing plan for both medical and nursing staff and the ward cohorting plan was revised and adapted through the pandemic.

222. Renal Dialysis (both inpatient and outpatient) departments were a particular challenge. Separate dialysis sessions were implemented on different days and the department deep cleaned and disinfected after each Covid dialysis session.

223. Extant IPC guidance meant we had several issues from a staffing perspective as outlined below:

a. Strict adherence to the IPC guidance and PPE meant we were limited in our ability to mobilise staff within the Trust due to risk of staff physically moving from ward to ward.
b. Additional support was difficult to provide as non-clinical staff were unable to provide support to staff within ward settings.
c. There were a significant number of staff who for health reasons or personal circumstances could not be deployed within the red areas.
d. The isolation guidance meant staffing was volatile and difficult to predict day to day.

224. The number of single rooms within the BRI site was limited; many wards had less than 4 side rooms and some were double side rooms and therefore were utilised as a 2 bedded bay. There were 5 isolation rooms with appropriate ventilation, 2 on ICU, 2 on ward 31 (used as the main Covid cohort ward) and 1 on the Children's unit. Other single side rooms across the Trust had no mechanical ventilation and many had no en-suite facilities, which made isolating patients with any communicable infection a continuous challenge requiring daily bed placement reviews and side room prioritisation.

225. The majority of inpatient facilities are naturally ventilated or have mechanical ventilation for heat and cold control rather than air changes and are reliant on airflow through open windows. Whilst national guidance advised opening windows, in practice this was very difficult due to the windows being at the back of a patient's bed and therefore causing a draft and chilling the adjacent patients or the widows were unable to open. The Trust was therefore reliant on bed spacing and several beds were removed to allow 2 metre spacing, the use of PPE and hand hygiene and thorough additional and regularly cleaning and disinfection of the environment to reduce transmission risk in patient and non-patient areas. Lifts were designated with signage for 2 people only and corridors had floor signage to maintain 2 metre spacing and the windows on the corridors were opened to allow additional natural ventilation.

Testing as an IPC measure

226. The BRI first started testing symptomatic patients for Covid-19 with a relevant travel history or other risk factors for infection in February 2020, as demonstrated in exhibit RS15 / INQ000416831- Wuhan novel coronavirus action card V2.pdf, and this followed guidance from PHE in its flowchart "Management of a suspected case of 2019-nCoV acute respiratory disease", at exhibit RS16 / INQ000068933 - 2019-nCoV_flow_chart.pdf. The Trust first started by sending samples to Leeds & London PHL Laboratories, and then the Joint Venture Laboratory based at Airedale District General hospital introduced PCR in-house when the PCR (AusDiagnostics) platform was installed on 6 April 2020. At the time, the Trust responded by sourcing the AusDiagnostics platform independent of PHE, however the rationale for the timing was based on the national guidance received in March 2020 , at exhibit RS17 / INQ000119592- Guidance and SOP – Covid-19 Testing NHSE Laboratories final for Regional Labs.pdf).

227. Routine patient asymptomatic patient testing was introduced at BRI during week commencing 27 April 2020. This followed national guidance which was implemented via the Trusts SOP "Swabbing Not-suspected Covid 19 and Asymptomatic Patients", as initiated via NHSE and communicated to the Trust via letter dated 24 April 2020, exhibited at RS18 / INQ000384649.

228. Routine asymptomatic staff testing commenced at BRI on 1 December 2020 following guidance from NHSE/I and with the receipt and distribution of the lateral flow testing kits. The Trust also developed an app where staff could easily enter their test results. The process was approved at Gold CRG. A helpline was set up and manned 7 days a week, so staff getting a positive swab could ring a number and arrange a PCR test that was done at the St Luke's Hospital designated pillar 1 testing facility (swab testing in Public Health England labs and NHS hospitals for those with a clinical need, and health and care workers).

229. On the 13 March 2020, the national guidance changed and removed the travel history from the testing criteria and recommended Covid-19 testing based on clinical symptoms. The SOP for the Trust was updated to reflect this.

230. During most of the relevant period, particularly the first few months, there was a shortage of PCR reagents. The laboratory had to change their processes to do "heat inactivation" rather than "chemical extraction" for a period of several

months. Approximately 1 month into in-house testing, (May 2020), the laboratory received notice from AusDiagnostics that they could not supply any PCR reagents and introduced the "heat inactivation method." The Laboratory were already aware of this from group Pathology meetings.

231. The limited supply of PCR testing in 2020 meant that staff testing at the BRI was limited to staff meeting set criteria and only 25 tests per day were available. The criteria used for staff testing were as follows:

a. All clinical staff with Covid-19 symptoms.

b. Testing of household contacts: If clinical staff are self-isolating because a household contact / family member has symptoms of high temperature (37.8 degrees or above) and / or new persistent cough.

c. In addition, the member of staff / household contact must be in the first three days of the onset of their COVID-19 symptoms at the time the swab is taken.

232. The limited supply of PCR testing capacity was also a problem for patients requiring admission to hospital and therefore careful clinical risk assessment was implemented to ensure all Covid PCR testing was clinically appropriate by using set criteria to guide decision-making. However, the introduction of lateral flow kits and expansion of the Cepheid PCR platforms at the BRI in December 2020 ensured that there was only a slight impact on testing regimes during the period and national guidance continued to be implemented.

233. With the implementation of on-site PCR testing at the BRI, Covid-19 results were usually available within 2-4 hours. However, the lack of side rooms to enable patients admitted being isolated whilst awaiting swab results meant that there was a risk of transmission of infection from an asymptomatic patient and was described in IPC reports to the Regulation Committee in July 2020. This is exhibited at RS19 / INQ000416835 - RC.9.20.13 - Infection prevention and control report. Q1 2020 v4.pdf.

234. A root cause analysis in November 2020 from a cluster of Covid-19 outbreaks also identified that delays in taking the Covid-19 swabs had been identified. In December 2020 NHSE recommended that COVID-19 swabbing should be undertaken on the day of admission and days 3, 5 and 7. The Trust's standard operating procedure (SOP 27) was updated on 11 December 2020 to reflect this increased swabbing frequency. However, the outbreak investigation

highlighted that COVID-19 swabbing, in particular on day 3 and day 5 was on occasions being missed. In addition, swabbing was not always being undertaken in a timely manner, which was identified as a risk factor for onward transmission from patients not recognised as being infected.

235. The procedure at BRI followed national guidance for patient testing. Some patients were prioritised for testing after Covid-19 infection had resolved, for example patients with immunocompromised conditions were tested more frequently as these patients were at risk of transmission of the virus for longer periods than the recognised 14 days.

236. Testing was prioritised for those patients at greatest risk of severe infection or at greatest risk of harm from delays on test reporting. Some outpatients were tested routinely due to their immunocompromised condition and regular attendance for dialysis, for example renal dialysis patients and staff working with immunocompromised patients (haematology, oncology and renal) plus those working in elective care ("ultra-green") were tested asymptomatically every 3 days.

Nosocomial outbreaks

237. The Trust had and maintains a policy for the recognition and management of outbreaks of nosocomial infections which is exhibited at RS20 / INQ000416837 - 61 IC76-2020-Outbreak-Recognition-and-Management-Plan.pdf, which is approved by the Trust Infection Prevention and Control Committee, the Director of Infection Prevention Control (DIPC) and the Executive Lead for infection prevention and control (Chief Nurse). The policy was ratified in December 2020 and referenced to the UKHSA Communicable disease outbreak management – operational guidance 2014. In summary, this policy covers the definition and recognition of an outbreak, the principles of management of an outbreak, necessary training and competency assessments.

238. On the 9th June 2020, NHSE/I provided further guidance for minimising nosocomial Covid-19 infections in the NHS, exhibited at RS21 / INQ000088724 - C0586-minimising-nosocomial-infections-in-the-nhs 9 6 2020.pdf. This letter required Trusts to make changes to existing reports for nosocomial Covid-19 outbreaks to ensure the impact of outbreaks is captured and regional NHSE/I

teams developed standard ways of responding to these outbreaks. The North East and Yorkshire regional NHSE/I team provided further guidance to support Covid-19 outbreak management, exhibited at RS22 / INQ000416839 - Minimising nosocomial infections in the NHS SOP NEY Covid 19 Version2.pptx, which the Trust adopted and followed and reported progress on within the IPC report to the Regulation and Assurance Committee in December 2020.

239. On the 24th June 2020, a further letter from NHSE/I, exhibited at RS23 / INQ000145891 - Healthcare-associated-COVID-19-infections--further-action-24-June-2020.pdf, highlighted that evidence had shown that people infected with COVID-19 could be either pre-symptomatic or have very mild or no respiratory symptoms (asymptomatic) and could transmit the virus to others without knowing. Therefore, a further request was made to complete root cause analyses (RCAs) for every probable healthcare associated COVID-19 inpatient infection i.e. patients diagnosed more than 7 days after admission. This was implemented by the Trust in the form of a post-infection review for each patient identified as meeting the nosocomial case definition.

240. All hospital-onset Covid inpatient cases from the BRI were monitored and followed up including contact tracing for any relevant patient utilising an infection control database called ICNet. This database is used widely in England by IPC Teams and provides a surveillance tool which also links to the hospital EPR system. Therefore, patient placement tracking could also be monitored. This provided essential track and trace support for Covid-19 contacts.

241. When nosocomial patient cases of Covid-19 were identified as a potential outbreak, an outbreak control team was instigated, and a meeting arranged to discuss and agree outbreak management actions. Each outbreak received an outbreak investigation of cases and possible patient and staff contacts to follow up, a detailed action plan and these were monitored at outbreak meetings and the outbreak would be reported as a clinical incident via the Datix incident reporting system. The outbreak meetings and weekly summary of further actions were also reported to the NHSE/I outbreak reporting portal until 28 days after the last reported case when the outbreak was closed.

242. On 4th May 2020, NHSE/I published the Infection Prevention and Control Board Assurance Framework version 1 - Publications approval reference: 001559, to support all healthcare providers to effectively self-assess their compliance with

PHE COVID-19 related infection prevention and control guidance and to identify risks. The framework was developed to provide evidence, assure trust boards and as an improvement tool to optimise actions and interventions. The board assurance framework was adopted and implemented by the Trust at BRI and generally, with monthly update reports provided to the Trust's Quality and Patient Safety Academy. The board assurance framework report also provided a monthly update on lessons learnt, key themes and actions implemented from outbreaks of Covid-19 infection.

243. Whilst the ICNet surveillance system supported contact tracing, it lacked pro-active surveillance in real-time for identifying potential hotspots of hospital-onset Covid cases. A robust real-time surveillance system was also needed to assist in the prevention of outbreaks. We established a task and finish group in May 2020 to review how to improve early recognition of Covid potential outbreaks. The collaborative group designed a methodology to visually demonstrate by heat mapping the location of Covid positive patients in real time. The surveillance data included all individual patient pathways and their Covid carrier status which was extracted from the electronic patient record (EPR) system for inclusion. The information collected used to develop heat maps to facilitate a visual surveillance of all inpatients at the Trust. The heat map was designed to capture 3 categories of information:

a. The density of new reported Covid cases on the designated Covid cohort wards – this highlighted the pressure for cohort ward areas and allowed proactive escalation for Covid beds.
b. The density of new reported cases on designated non-Covid wards – This provided real-time data for patients with unexpected Covid results and ensured rapid isolation and cohorting of any patient contacts.
c. The density of new reported cases ≥ 7 and 14 days – This ensured robust risk assessments for potential transmission risks and outbreaks and enabled infection prevention interventions were in place.

244. By the development and daily updating of the heat map, the Infection Prevention Team and Clinical Team were able to clearly recognise potential cases of nosocomial transmission and early clusters of confirmed cases and provide rapid intervention support to the ward or department. The success of the heat map

was shortlisted for a HSJ Patient Safety Award in 2021. I exhibit the HSJ Heatmap report at RS24 / INQ000416841.

245. The emergence of COVID-19, determining how it spreads, how it affects people and communities, and how it can be treated has represented a steep learning curve. A cluster thematic analysis of twenty BTHFT Covid-19 outbreaks (occurring between June 2020 and May 2021) was undertaken, which identified a number of key learning points and was presented as a paper to the Executive Management Team meeting (EMT) and the Quality and Patient Safety academy. The key points of learning were identified as:

a. Difficulties identifying atypical presentations.
b. Estate challenges.
c. Social interactions within high-risk groups.

I exhibit Hospital Onset Covid 19 Infections.docx at RS11 / INQ000416827. which summarises this learning from outbreaks and deaths in care.

Personal Protective Equipment ("PPE") and Respiratory Protective Equipment ("RPE")

246. PPE was an issue very familiar to the general public as well as to those of us working in healthcare. There was a physical and psychological impact on our staff of wearing PPE, as well as issues around procurement and suitability.

247. Staff working in the BRI Covid wards and departments (red areas) were required to wear extensive PPE including a tight fitting FFP3 respirator, gowns, aprons and gloves which, when providing physical care to patients. It was very hot and uncomfortable – often leading to exhaustion, headaches, and stress for the staff. The FFP3 respirators created pressure damage on the nose bridge and sore sweat rash on cheeks and chin. In order that staff remained compliant with PPE, support was required. The Trust Tissue Viability Team provided guidance, an educational video and access to preventative products to ensure staff comfort. Guidance was also provided to ensure staff working in these areas kept hydrated and took regular breaks.

248. As the guidance on PPE changed, staff concerns were raised during the second wave from November 2020 that on non-covid wards, there was a disparity in PPE and that they were being given inferior protection, with the requirement only

to wear a surgical mask and not an FFP3 mask. Outbreaks of Covid infections on non-covid green wards from asymptomatic patients only made these concerns escalate. All staff at the BRI and the wider Trust who had any possible exposure to Covid in a clinical setting, were offered fit testing for an FFP3 respirator mask (Respiratory protective equipment – RPE) and although the Trust followed national guidance for PPE, any member of staff who had completed the Covid self-assessment and wished to wear a fit tested FFP3 mask were able to do so in any area of the Trust. This approach going beyond national guidance supported staff confidence, but led to only a small number of staff in non-Covid clinical areas wearing FFP3 masks. Covid-19 introductory training including PPE was adapted and provided to all support service staff (e.g., porters, domestic cleaning staff, catering staff and estates maintenance engineers) in February 2020. These training sessions included practice sessions in donning and doffing. To ensure continuity and standard practice for donning and doffing PPE in Covid "red" areas, volunteer PPE guardians were trained and daily supported staff entering red areas to ensure that their PPE was correctly fitted. The donning and doffing leaflet was also printed as A2 posters in the entrance to red ward.

249. Shortages of PPE were a significant concern in the first wave of Covid cases in March-June 2020. This led to daily ward round reviews of PPE stocks in each ward. Some wards had stockpiled PPE whilst other areas had shortages. The Trust therefore needed a way to control stock, but also to check PPE received for suitability and safety. The PPE hub was instigated at the end of March 2020 to have a central location to store at the BRI site, distribute and supply PPE to all areas across BRI and the wider Trust. It was jointly staffed by nursing and procurement / finance staff who had been redeployed to support this and ran 7 days a week 7am-8pm. Overnight the main areas like A&E, ICU and the Covid wards were stocked up by deliveries from the PPE hub, and stocks were left in the Command Centre for other wards to access overnight. A PPE hub was also set up at St Luke's hospital and the Maternity unit and the BRI PPE hub topped the peripheral community areas up daily too with support from the transport team. This allowed the Trust to have a complete oversight of PPE stocks and ensured that the Trust never ran out of any PPE.

Steps taken to obtain PPE

250. The Covid 19 Pandemic triggered a massive and sudden increase in worldwide demand for PPE, the inevitable consequence of which was that the supply of PPE / RPE and other supplies associated with the treatment and containment of the pandemic (together referred to as the "PPE") could not meet demand for it.

251. As a consequence of this, the normal processes for the procurement and distribution of PPE were suspended by the Government acting through various Departments and Agencies such as the DHSC, NHSE & the Cabinet Office (together referred to as the "Government") at the outset of the pandemic and replaced with a system of centrally procured PPE. This was a rational response to ensure that there was an equitable distribution of available supplies based on need.

252. The effective requisitioning by the Government of the Trust's usual supply channels did, however, mean that the Trust became entirely dependent on the Government to ensure that it received the appropriate supplies (in terms of both quality and quantity) in a timely manner. Because of national issues of supply and demand, the Trust did not receive enough of the supplies that it needed, when it needed them, at all times during the Pandemic.

253. The Trust was able to supplement the Government procured PPE route with two additional routes to market (even though technically, they no longer existed). First, the Trust had (and continues to have) a long-standing strategic relationship with Bunzl Healthcare which became a crucial second port of call. Where Bunzl Healthcare had access to PPE, we were able to use our relationship to ensure that they prioritised the Trust's immediate needs where they could not be met by the Government. Secondly, the Trust's procurement team were able to procure supplies (or alternative supplies) directly where the other two routes failed. The Trust did not, therefore, run out of PPE at any point during the pandemic. The quality of the supplies we received from the Government was also very variable and at times not fit for purpose. Significant volumes of PPE were therefore returned.

254. The first months of the pandemic were the most difficult in terms of PPE supplies. We often only had enough of certain types of PPE for one or two days of

usage and there was constant concern that a spike in Covid admissions could leave the Trust unable to provide its staff with the requisite PPE. Trusts had no visibility of what PPE supplies the Government had and what they did not. In light of the international shortage of PPE and the fact that our normal supply routes had been commandeered by the Government, Trust procurement teams could not provide the assurance that their clinical and operational colleagues sought as regards PPE availability. It also made it impossible for Trust procurement teams to take an informed decision on what they needed to seek to procure themselves until late, when other supply opportunities may have been missed. Thus, the question as to whether the Trust had sufficient PPE to meet its needs was a daily challenge and a constant concern for the Trust's Procurement Department.

255. Beyond that initial period, availability of PPE supplies gradually improved, though it took the most part of a year for the situation to stablise. The quality issues persisted well into 2021 as the PPE fed through the system, though it would be difficult to say that the quality of the Government procured PPE was ever entirely consistent or dependable. The distribution of PPE to Trusts only improved once the Foundry system was implemented in late 2020; this allowed Trusts to place orders for the PPE that it needed from the Government (prior to this, the Governments distribution of PPE remained seemingly ad hoc).

256. March – May 2020

The early months of the pandemic were characterised by supplies struggling to keep up with rapidly increasing demand.

257. In the face of PPE shortages and resource constraints, Trust procurement leads became focused on the needs of their individual Trusts rather than the needs of the 'system' as a whole. This led to Trusts effectively competing for the same products and in some cases making independent decisions to purchase PPE in bulk (though our Trust did not do so).

258. Much of the supplies that the Trust received from the national contingency were significantly beyond their expiry date (though crudely overlaid with new expiry dates which undermined the trust and confidence of staff in the Government's procured PPE).

259. Very early in the pandemic, the Trust established a physical hub and an electronic system for the management of the Trust's stock (counting-in, counting-out, storage, distribution and recording). This proved invaluable throughout the

pandemic and facilitated the monitoring of our usage across the BRI (and wider Trust) and the provision of accurate data to meet regional (weekly) and national (daily) reporting requirements.

260. Distribution of supplies of PPE by the Government / NHS Supply Chain during this period was sub-optimal. I recall that at one point every Trust, no matter their size and need, was receiving the same volumes of PPE supplies. At other points, the distribution appeared to be completely random. This issue improved gradually but only after the Army and Clipper took over the logistics from NHS Supply Chain. However, there was still an absence of a central distribution system which took account the specific needs and requirements of individual Trusts (though this did eventually materialise).

261. During this period, we also received support from other public bodies in the area. For example, science departments of local schools and colleges donated goggles for eye protection and the police donated coveralls (for use in lieu of gowns). Had we relied on Government supplies alone, the Trust would almost certainly have run out of supplies of PPE at certain points during this period.

262. June – August 2020

The principal development during this period was the increased level of co-ordination and co-operation between local NHS Trusts and later between NHS Trusts and other public bodies, such as local Councils. To this end, we established a board comprised of the Heads of Procurement from across the ICS to provide a forum for communication, escalation and resolution of common PPE related issues. This allowed for the sharing of the extant uneven or inappropriate distribution of PPE.

263. The establishment of a regional store of supplies facilitated the sharing of PPE and also provided a regional contingency.

264. Thereafter, throughout the pandemic, the PPE store became a crucial element of the regions ability to ensure that each organisation in the area (and sometimes outside the area) had the PPE supplies that they needed. Without the 'local redistribution', the Trust would likely have run out of supplies of PPE at certain points during this period.

265. Sept – Dec 2020

By this point, Trusts were aware that the Government had entered into various very large contracts for PPE. However, Trusts had no visibility about what had

been ordered or what had been received or when it would be received or what individual Trusts could expect to receive

266. We were receiving PPE from a multitude of unknown suppliers / manufacturers. The quality was variable. On various occasions PPE that was provided was found not to be compliant with applicable quality standards or was otherwise defective or not fit for purpose. Some examples are given in paragraph 281. A consequence of this variability in quality was that each new product that we received had to be thoroughly checked and tested by the Trust's IPC, Nursing and Procurement Teams prior to being placed into circulation for use at the BIR and across the wider Trust.

Use of the Emergency Request System

267. The National supply disruption response (NSDR) system was primarily used in 2020 with most of our requests being related to gowns and FFP3 masks.

268. Gowns were requested multiple times through this route as they were not reliably available from the PPE Push. It was used to supplement sporadic deliveries coming in from the Push and our prime supplier Bunzl Healthcare (now Mediq). This was also exacerbated by some products received from the PPE Push not meeting the requirements enforced by our Infection Control team and changes in guidance that caused large spikes in usage.

269. FFP3s were another contentious category due to stock availability and the time / resources it took to refit people onto new / available brands. The move from the 3M (8833, 1873, 1863) products to other brands took significant effort and the NSDR service alongside other supply routes helped maintain stock levels whilst we made the switches.

270. Many other miscellaneous requests were made for more specialist products such as cuffed gloves, goggles, fit testing equipment and bariatric body bags as they were not available from the foundry system at the time and all requests for these products were directed to NSDR until permanent routes were established, this was also the case for specific sizes and types of gowns.

271. Overall, the NSDR system worked well for us with only minor frustration with the level of information requested and the time it took to log a request for

support at an extremely busy period. All but one of the tickets we had in 2020 were resolved within 7 days with the average being 48 hours. 1 ticket took 12 days to resolve but that was for a large number of gowns in April 2020.

272. Usage of the service dropped significantly in 2021 and beyond due to improved supply and significant improvements to the Foundry system leading to more controllable and predictable deliveries.

PPE / RPE challenges

273. The PPE hub was initially set up at the end of March 2020 to have a central location to store, distribute and supply PPE to all areas across the Trust and therefore the BRI. It was jointly staffed by nursing and procurement / finance staff who had been redeployed to support this and ran 7 days a week 7am-8pm. Overnight the main areas like A&E, ICU and the Covid ward (Ward 31) were stocked up by deliveries from the PPE hub, and stocks were left in the Command Centre for other wards to access overnight. A PPE hub was also set up at St Luke's hospital and the Maternity unit and the BRI PPE hub topped the peripheral community areas up daily too with support from the transport team.

274. Each Covid area had a PPE Guardian, who was a member of staff who had been redeployed and they liaised with the PPE hub about stocks of PPE.

275. On the 1st April 2020, a process was set up with the Decontamination unit to clean and decontaminate various items of PPE so that it could be re-used. This included goggles, respirators and visors and after being decontaminated were sent back to the PPE hub to be able to be used the next day.

276. There was a Trust wide conference call at 2pm every day and one of the PPE hub team attended that call daily to update Silver/Gold Command of any issues or concerns with PPE. Any information that needed to be sent out to update staff about PPE was sent out via the Trust Communication team on a daily basis.

277. Prior to the National supply chain being set up for PPE it was necessary to collect all the stocks of PPE from wards and departments so that they could be logged centrally in the PPE hub and distributed equally. We also asked for help from the local community and received various items for the PPE hub. For example, schools supplied science goggles and the Police provided Chemical suits

and body bags and plastic visor helmets. We also shared and swapped PPE with NE Yorkshire hub and Bradford District Care Trust. At one point when we were running short of surgical gowns, washing machines were purchased and we were washing surgical gowns and drying them in one of the empty wards so that we could re-use them if necessary.

278. A member of staff from the Finance team and procurement was based in the PPE hub and worked alongside the nursing team. In early April 2020, they devised an electronic tracking system which enabled the Trust to be able to monitor the usage and stock levels of all items of PPE across the BRI (and wider Trust) at any given time in the day / night. It also showed when we were running short of items as well as which areas were requiring more PPE.

279. As well as the supply of PPE the hub also fit checked staff for RPE and powered hoods. These were staff who had failed their fit test using a FFP3 mask and the qualified nursing staff in the PPE hub were trained in doing Fit checks for the respirators. An SOP was devised for the fit check procedure, with pictures and narrative explaining the process. Staff were given written instructions on cleaning and after care of reusable respirator. The staff signed the respirator out from the PPE hub and signed it in the decontamination unit, just so that we could track usage and stocks. The Decontamination unit supported the cleaning and decontaminating of the respirators including the filter and helped to ensure that they were cleaned and fit to use again.

280. In May 2020 due to the increase in usage of full and half face respirators we started to run low on respirators, and we had to source more supply via procurement. There was a delay in receiving these as delivery of these items took 6-8 weeks. In June 2020, the stocks of respirator filters ran low as well as several of the older filters were out of date, again we asked procurement to source some more and received these later.

281. The powered hoods used from the start of the pandemic, if the staff required it when they failed on FFP3 and respirator, were cleaned according to Trust guidance. As these hoods were intended for individual use and not shared, we had limited stocks and when one of the brands was discontinued, this created issues in stock levels. We have a high number of staff at the BRI who choose to have beards due to their personal or religious reasons and this meant that we required a high number of the powered hoods. This created a shortage in May

2020 and the procurement team had to source other suitable types and models for us to use. We also had to use these for family members who were visiting dying relatives and required the powered hood due to having beards.

282. In August 2021, a National Patient Safety Alert was issued regarding the infection risk to patients when using FFP3 respirators with valves or Powered Air Purifying Respirators (PAPRs) during surgical and invasive procedures. In response to this alert, we completed a risk assessment for staff regarding alternative FFP3 devices.

283. Throughout 2020 every item of PPE that was sent through from NHS supply chain had to be checked as some of it was not fit for purpose. We used BSI (British Standards Institution) guidance and every piece of equipment that was sent we checked against these standards. There were numerous items that were not fit for purpose. Below are just a few examples:

- 24/05/2020 - Touren Type IIR masks – problem with nose strips
- 14/07/2020 - 20 cases of aprons received which did not open at the back.
- 29/07/2020 – Hib Medical gowns – cannot be used if doing laser or endoscopy
- 29/07/2020 – Full support Easi gown – does not fully cover the back area
- 20/07/2020 – Cardinal Type IIR mask – MDA alert – not fit for purpose to be destroyed
- 2/11/2020 – Spanish yellow gowns withdrawn not level 2 – 4 pallets returned
- 23/11/2020 – Out of date boxes of FFP3 masks received
- 1/06/2020 – PEVA body bags – ripping off
- 17/05/2021 – Latex gloves received as nitrile (latex-free) gloves

284. Throughout the relevant period, expired items included goggles, gowns, hand gels, Type IIR masks, gloves, FFP3 various types. RS26 / INQ000416843 is a more comprehensive list of faulty or expired items received.

285. As the focus was on acquiring and distributing usable PPE equipment, we did not keep an accurate log of faulty items, but all instances were reported to the central team. Overall, although the absolute number was significant, a minority of equipment was unusable. It is not possible to give a more accurate estimate.

286. When PPE items were faulty or recalled we quarantined the items until we received further advice to either destroy or deem it safe to use. A process was set

up across the region with the procurement team to share items via a mutual aid agreement and this did help at times when we were short of some items.

287. The lead for the PPE hub was also part of a PPE clinical reference group for the region and attended updates and shared information at this meeting.

288. There were few trained fit testers at the start of the pandemic, and it took on average 20 minutes to test a staff member on one mask. More Fit testers were trained as rapidly as possible.

Fit testing

289. Around early January 2020 ICU compliance for Fit testing was 93%.

290. Prior to February 2020, fit testing for PPE had been provided by trained fit test assessors in each clinical area who were also provided with qualitative fit testing kits. Training for the fit test assessors was provided to the Trust by an external Fit2Fit approved company. However, it was clear in early February 2020 that fit testing required rapid expansion and that clinically based fit test assessors were not able to focus on fit testing due to clinical patient priorities. The fit testing prior to Covid-19 had also focused on nursing and medical staff, however it became clear that all professionals and support service staff may have exposure to Covid-19 and would require fit testing for an FFP3 respirator. Therefore, fit testing was commenced and provided as a drop-in clinic by the IPC Team 7 days a week from early February 2020.

291. Prior to the pandemic, fit testing was the responsibility of Infection Prevention and Control (IPC). There was no obvious oversight which meant when COVID19 became a Pandemic, compliance was between 0%- 93% in the various areas within the Trust. Trust records of staff who were Fit testing or has been Fit tested were incomplete, and in some circumstances inaccurate.

292. The initial response at the BRI was for local Fit testers, and IPC to focus assessments in identified, high risk areas, primarily those where Aerosol Generating Procedures (AGP) took place, areas that were to become 'red zones' or areas with high risk groups of patients.

293. Recruitment also took place to increase the numbers of Trust Fit testers and a Trust Fit testing Clinic was set up at the BRI, initially running in February 2020 when resources were available.

294. Trust Associate Directors of Nursing (ADNs) took responsibility for managing the Fit testing clinic. They put in a team of Practice and Professional Development Nurses (P&PD) with the initial objective of increasing the number of regular Fit testing Clinic sessions. The team also created accurate databases of staff who were Fit testers, and staff who were Fit tested. There was an increase in the number of Trust Fit testers, 'hood and mask' testers and the new Port-a-count testers, and a coordinated use of available testing capacity to optimise available resources to staff across the BRI.

295. A user-friendly Trust-wide recording system was created to ensure accurate records of Fit testing were being kept and a booking system for the Clinic was launched to best use this resource and staff time.

296. Within ICU there was a robust, active fit testing program. Therefore attention was directed to Fit test in other high risk Trust areas with poor compliance. These were primarily AED, Maternity, and Paediatrics.

297. The IPC team had given priority to staff who had to visit / work on the Aerosol Generating Procedure (AGP) wards and AED.

298. There was an intention to fit test all clinical staff, portering, facilities, and allied support staff such as physios and pharmacists.

299. In the short-term efforts were directed at the identified, high-risk areas (as indicated above), primarily those where Aerosol Generating Procedures (AGP) took place, areas that were to become 'red zones' or areas with high-risk groups of patients.

300. Discussion took place about the need for local, experienced fit testers to be involved in staffing the fit testing Clinic, and to support those Trust fit testers who had still to gain practical experience. A staff rota was drawn from clinical and fit testing staff

301. In August 2020, qualitative fit testing training took place for the initial core group of three staff. These staff were temporarily redeployed due to various health issues. The fit testing clinic had initial operating hours were Monday to Friday 8am until 4pm. Further staff were released to fit testing from their normal roles such as Pre-Assessment Nurses and Pain Nurses.

302. Quantitative (using particle counters) fit testing (QNFT) training took place on 19th December 2020 after it became evident that the Qualitative (QLFT) method (reliant on the person being tested and their sense of smell / taste) was less reliable. As more and more staff were contracting COVID-19, some lost their sense of taste, and they could not taste the sprays used in the QLFT method.

303. There were three Port-a-count machines at the BRI. These detect the number of particles and do not rely on the sense of smell or taste. There were 18 Port-a-count trainers in total (all of them were also 'hood and mask' assessors) however not all of them had practical experience with the Port-a-count. There were 104 'hood and mask' trainers.

304. In December 2020, fit testing commenced a 7 day a week, 12 hour a day service (Bank Holidays excluded). Other initiatives to support this included:

a. New way of collecting fit testing data to ensure uniformity across the Trust and competency added to staff's Electronic Staff Record.

b. The setting up of a Twitter account to disseminate information and guidance to a wide range of staff.

c. Encouraging local and Clinic Fit testers to feedback so those running the Clinic could learn from their experiences and improve the quality of the Fit testing experience.

305. There were many challenges faced in setting up and operating the Fit testing clinic.

306. We started to fit test staff for two masks on 5th July 2021 following the release of the 'FFP3 Resilience in the Acute setting' document issued on 17th June 2021 from the DHSC.

307. Appointment lengths had to be extended from 45 minutes to one hour once staff had to be fitted for two masks, meaning less appointments per day for BRI staff.

308. In July 2021 there was no mechanism between the local Trusts to avoid assessing 'new' doctors on rotation on masks they were already compliant with. Medical Education tried to ascertain who needed Fit tested amongst these doctors to avoid taking up time that could be used for other BRI staff members.

309. Whilst Fit testing should be repeated two yearly, if a new brand / model came into the Trust then all the staff potentially needing to use these new devices would need to be retested. If no new models were introduced, then that would

equate to around 3000 assessments per year at the BRI. If there were frequent changes in models (as was the case due to unpredictability of PPE supply), then there could be a requirement for tens of thousands of tests each year.

310. There were multiple occasions when fit testers on the rota were unable to support the Clinic. The ADNs and Matrons were supportive and attempted to manage their areas so the fit tester could support the Clinic.

311. There were numerous occasions when medical staff, non-medical staff, and students failed to attend booked sessions, probably due to pressure of work at that time. This was fed back to the relevant responsible person to address.

312. There were concerns regarding sensitivity to testing chemicals, although this was never a practical problem.

313. The need for fit testing was included in students' and new starters' induction packs. Often with large numbers of students across the BRI all at once, block bookings were arranged with the Clinical Educators to accommodate all.

314. Due to the limited number of FFP3 masks from the NHS supply chain, initially we only had four masks (GVS, Meixin, HY9330 and HY9632). It was therefore difficult to pass some people as compliant with fit testing on a disposable FFP3 mask meaning they had to use the more expensive reusable respirators or powered hoods.

315. Any theatre staff who had passed on the Meixin or HY9632 masks all had to be retested following the NPSA alert in August 2021 highlighting that valved masks were contraindicated for use in surgical/sterile procedures.

316. Many staff who had been fit tested prior to August 2020 had passed on the 3M Aura FFP3 mask which there was then a supply issue with, resulting in a large proportion of staff needing to be retested. Increased demand for fit testing following the removal of the 3M Aura masks meant fit testing was spread out over three separate areas making it quite difficult to co-ordinate in terms of producing a rota and ensuring appropriate levels of staffing and skill mix.

317. It was initially very difficult to fit test people who needed full-face reusable respirators as they could only be fit tested using the QNFT method described in paragraph 299 and very few people were trained to fit test that way.

318. There were a number of staff working in fit testing who returned to their core roles when 'normal service' was resumed, for example Pre-Assessment

Nurses and Pain Nurses. This reduced fit testing capacity and meant that staffing reduced from 11 staff to 5.

319. Experience from the fit testing teams demonstrated that BRI staff who wore a hijab did not present a specific fit challenge and issues with the fitting of an FFP3 respirator mask with a hijab did not present a problem. The Trust's fit testing SOP stated that – "If the head coverings, such as a hijab, turban or yarmulke, don't come between the face piece and the wearer's face, then it should not interfere with a proper seal being achieved - if it does ask staff to reposition the scarf so that it does not come between the face piece and face or advise the staff member that a cloth theatre style hat is available as an alternative to cover their hair if required. If the staff member has attained a successful fit test wearing a particular style and design of head scarf, the fit tester must remind the staff member that it's their responsibility to ensure that they continue to wear the same style and design when in the clinical area. If the style or design is changed for any reason the staff member will need to be fit tested again wearing the new headscarf".

320. Issues relating to BRI staff who had facial hair was identified and one to one discussion with staff to encourage being clean shaven were regularly part of clinical team leader's role. Where beards were part of religious beliefs, alternative forms of respirators (i.e., hoods) that do not rely on a tight fit to the face were made available.

321. Overall, the clinic was a successful and effective system for ensuring PPE fit testing was carried out across the BRI. It removed the pressure from clinical staff to undertake fit testing when staffing had to be prioritised to patient clinical care. It also provided continuity and standardisation of fit testing and led to a highly experienced fit testing team. The clinic was held in a central area of the hospital easily accessible to all staff and fit testers would go to fit test at our other locations such as St. Luke's Hospital, Westwood Park, Westbourne Green, and Eccleshill Hospital. When staffing allowed, fit testers would go to priority 'red' areas such as ICU, A&E and Respiratory wards to fit test as many staff as possible so they didn't need to make appointments.

Impact of PPE / RPE shortages

322. Particularly in the early stages of the pandemic, there was national attention on the shortage of PPE. Inevitably, this did cause some worry and concern for our staff.

323. There were some initial discussions about how long PPE could be worn for, and whether it could be re-used by the same person during a day (after "doffing") or even over multiple days after decontamination.

324. We tried to increase our stock of powered respirators, and particularly the batteries for them as it appeared that the standard setup of 1 battery per respirator would result in significant downtime while they were being charged.

325. Reusable PPE was the mainstay of our plans on ICU at the BRI. We spoke to a number of industrial PPE companies and found Sundstrom very easy to work with. Their masks with reusable P3 filters were available from industrial suppliers, and with their filters being entirely mechanical they were well suited to decontamination. They had tested ethanol-based decontamination four times a day for 18 months without loss of filter function.

326. Decontamination was set up via the existing decontamination team, who worked above and beyond to provide an out of hours service. After a Facebook appeal we collected "Tommee Tippee" steam sterilisers, and we had a donation from a local supermarket. We also sourced ethanol for decontamination from a number of sources, including Leeds University and Whittaker's Gin distillery. The decontamination process was refined over the first few days and weeks to avoid headaches from the fumes, and the system worked well throughout 2020 and early 2021.

327. On the ICU at the BRI, we were well protected throughout the pandemic as a result. Unfortunately, as the guidance evolved there was the commonly held belief that PPE use could be limited by confining RPE use to the area around "Aerosol Generating Procedures". This was at odds with initial clinical experience that Covid had a high degree of airborne transmission, and subsequent work (largely from the AERATOR study - AERosolisation And Transmission Of SARS-CoV-2 in Healthcare Settings) has shown that it is not the procedures but the patients who generate the aerosols, by breathing, talking, and coughing. Luckily at the BRI because of our expansion of CPAP in a "critical care without walls" (in

acute ward areas) service run largely by the physiotherapy department, a large proportion of our bed base was considered to be in a potential aerosol zone and so appropriate RPE was provided. National guidance advised local risk assessment, but the general view was that outside these "AGP" areas only non-protective surgical masks should be used, and this was the case at the BRI during 2020/2021. In July 2021 the BRI allowed FFP3 use in all red zones.

328. There was definitely staff anxiety around the use of surgical masks instead of RPE when caring for Covid patients. The issue for us was not shortage though, but the national guidance which suggested that RPE was not necessary. However, there was at least a perception that the guidance was led by PPE availability rather than being led directly by the science.

329. It was notable after the first wave that there were very low rates of Covid amongst ICU staff, who had worked in areas that were considered to be the most dangerous, and much higher in other areas of the hospital where respiratory protection was less. This may not just have been due to RPE, but ICU patients usually being later in their disease course where there is less viral shedding.

330. The effect of PPE on patient safety is harder to judge. Clearly the risk of patient to staff transmission was the main driver behind requests for RPE; patient to patient transmission controls were mainly ventilation and cohorting – though "pop up" covid cases have been shown to have the highest risk of onward transmission

Visiting Restrictions

Compliance with NHSE visiting guidance

331. There is no doubt that the prevention and limitations of visiting during the covid 19 pandemic caused distress and harm to patients, family members and staff due the recognised benefits that support from family and friends can provide. A carer or loved one can often provide that insight and voice for patients at challenging times when patients are unwell and identify easier when things are not as normal. In addition to this the familiarity and support of having a loved one with

them, particularly at the end of life and during difficult conversations provides great comfort and support to the patient and their loved ones.

332. As with the rest of the nation the BRI closed visiting following the issue of NHSE guidance on 16 March 2020 to protect, patients, staff and members of the public themselves.

333. Despite this national directive the Trust recognised the importance of patients having people with them, particularly at end of life (EOL) and recognised the distress this was causing family members not being able to visit. A number of services and support mechanisms were put in place to support visiting at the BRI and communication for relatives at this unprecedented time. These included the following:

- **End of life sitting service.** This involved recruitment of staff within the hospital including our SPaRC (Spiritual, Pastoral and Religious Care, formally chaplaincy) and EDI teams to sit with patients in full PPE. This service provided great comfort to relatives to know that their loved ones were not alone, and a number of compliments were received through our Patient Advice and Liaison Service (PALS). Additional training for carrying out this role was provided by the SPaRC team and "*Know who I am*" forms were generated to allow the sitters to have basic information of what patients liked to talk about to make the visits more personalised.
- **Family view and tablets for ward areas.** These enabled parents and families of neo-natal unit patients to observe their child virtually via family view and the use of tablets on the wards to enabled staff to facilitate virtual calls and have conversations in the absence of visiting. Relatives being able to view their loved one in their environment provided great comfort.
- **Religious materials.** Materials were provided in the form of Quran cubes, prayer beads, bibles, non-religious passages of comfort and reflection, rosary beads and holy water.
- ***Thinking of you service.*** This service was set up as a dedicated email service where messages and photos could be sent to a designated email address and this was picked up on a daily basis, printed, laminated and delivered to the ward for patients to see. This service often delivered last messages from loved ones and again was a great initiative during the covid pandemic and remains in place today.

- **Relatives line.** This service was set up and run by clinical nursing staff (all registered) who themselves were unable to have direct contact in clinical areas due to personal health reasons. This was run like a call centre where staff had access to the clinical notes to be able to provide information that the ward would normally provide to prevent staff in the clinical areas donning and doffing to answer calls and gave relatives 7 days a week contact point for assurance about their loved ones. This service still runs today and still receives positive comments and feedback acknowledging its benefits.
- **Development of the door service and patient property.** This was developed towards the end of the summer 2020 to support drop-offs of clothes and personal belongings for patients in the absence of visiting to be delivered to ward areas and as visiting was reintroduced the door staff would liaise with wards about expected visitors and help facilitate this.

334. Visiting SOPs were produced throughout the relevant period and continue to be in place. They were reviewed at regular intervals throughout the relevant period and it was clearly documented on the bottom of each SOP as national guidance changed. The SOPs were written in line with the national guidance at the time and referenced the following:

a. NHS Visitors guidance 8th April 2020
b. NHS Visiting healthcare inpatients settings during the COVID-19 pandemic June 2020
c. NHS Visiting guidance October 2020

335. Close communication between our Assistant Chief Nurse and Director of Infection Prevention and control occurred whilst writing the SOPs to ensure the latest government guidance had been considered, but also considering our local position at the time regarding the R Value in the region and the number of covid cases within the trust.

336. Ongoing review and consultation took place with departments including ICU, paediatrics, and AED prior to each SOP being finalised to get views and opinions of how best visiting could best be managed in specialist areas.

337. I understand that the BRI was one of the first places in the UK to facilitate an ICU end of life visit from a family member, who was required to undertake and sign a risk assessment and be in full PPE for the visit. These visits took place as

early as June 2020 with amendments to the estate to create dirty and clean rooms to carry this out safely.

338. We felt it was difficult to manage a national directive on visiting, and that we as a Trust were better placed to make an informed risk assessment, considering the individual patient and family circumstances, and current community prevalence of Covid.

339. In Braford, with a large South Asian community, family contact at the end of life is culturally considered highly important. It was essential to keep our families and communities central and with us during the challenges of the pandemic. We did face accusations of harming patients from families due to lack of understanding arising from the inability to see their loved ones.

340. Visiting was restricted where a ward had experienced a covid outbreak.

341. People were requested not to visit if they themselves were vulnerable or shielding and were asked to complete the risk assessments during the first year. As time progressed and the trust (and nationally) health teams were in a better position to understand the IPC risks, visiting was gradually amended to support extensions to visiting and the SOPs at the BRI reflected this.

342. Within these amendments from the summer of 2020, the Trust allowed patients with cognitive impairment and capacity concerns a visitor. Patients whose length of stay had been over 3 weeks, children and maternity scans were also included.

Effect of visiting restrictions

343. There were challenges put to the Trust regarding our approach to visiting at the BRI (and wider Trust); The Chief Nurse received a challenge by email from the Royal College of Radiology for allowing partners to be in the scanning room during pregnancy. Risk assessment of these areas was carried out at the BRI following this challenge. Pods to seat patients were built and education about mask wearing and social distancing was put in place to minimise risks and allow scans to continue. Allowing partners to attend pregnancy scanning continued as there were counter-concerns raised to the head of midwifery from patients and the Maternity Voices Partnership about partners not being in scan visits, so there was a managing conflicting opinion and views based on our own assessment of risk.

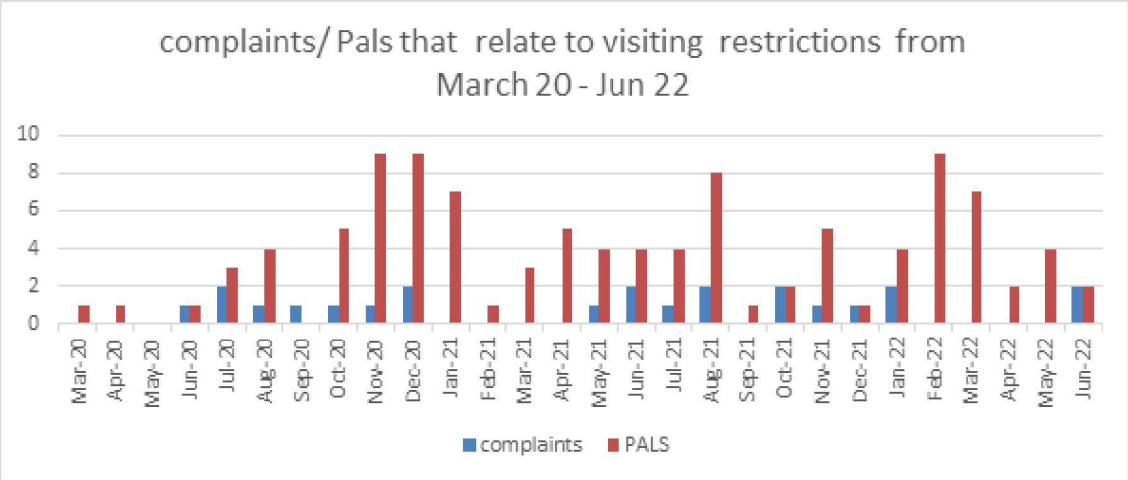
344. Other challenges to visiting in the initial days following national lockdown came from our local Muslim community, whose cultural norm is to visit the sick and dying. We were understanding of these concerns and a tremendous amount of work was carried out throughout the relevant period with the local Council for Mosques, our Iman and via the setting up of a community engagement meeting to explain the rationale for imposing visiting restrictions for the safety of all.

345. If a visitor was permitted to attend, this was facilitated with the appropriate PPE. Where visiting was not permitted, we had various ways of communicating with their loved ones through video calls, relatives lines and email as previously described.

346. From June we were able to facilitate in-person contact on a daily basis if a patient was receiving end of life care. The palliative care team supported this if the ward was not able to due to other clinical pressures and also promoted the use of alternative online communication through videocalling.

347. We also detailed advice to clinicians on how to talk to family and carers over the phone when they couldn't visit a patient at the end of life which included information about videocalling.

348. During the pandemic the Trust was in receipt of a number of complaints / PALS contacts about visiting restrictions, but it is also worth noting that we had some compliments regarding visiting.



349. These complaints relating to visiting restrictions were taken seriously and were considered during reviews of our visiting recommendations and amendments.

350. Most complaints related to the simple frustration of being unable to see loved ones. The distribution of complaints in the graph above show that most people understood the gravity of the situation during the first wave from March onwards, with few complaints. The peak for complaints was during the second wave (the largest wave of the pandemic for Bradford), when our clinical challenges were at their highest, but where the feeling locally of lockdown fatigue had set in amongst our local population, and probably the UK as a whole.

Balancing IPC and visiting restrictions

351. The BRI (and wider Trust) allowed and facilitated visiting for discretionary cases where it was safe to do so from June 2020 onwards. It was difficult at times in Bradford to adhere fully to the national guidance when Covid figures in other parts of the country were not the same as Bradford, but we continued to communicate and educate our community through the variety of mediums mentioned.

352. A number of the PALS contacts received in relation to visiting was due to staff on one ward allowing more flexible visiting due perhaps to the acuity of the patients need at that time. When patients recovered and moved to a rehabilitation ward visiting may have been a little more restricted. This was sometimes difficult for families to accept, and complaints and PALS were raised. It did at times prove difficult to get the balance right.

353. Language line was used as necessary for communication if English wasn't the patient's first language. We had significant support through chaplaincy with visiting and they were able to be with the visitor and often helped with language barriers.

354. We did allow relatives to stay with patients at the discretion of the ward staff in specific circumstances which would help facilitate care, and for patients at particular risk of distress. An example is that of a patient with Downs Syndrome. Whilst they were an inpatient at the BRI, a relative stayed with them 24hrs.

355. In general, we were very proactive at the BRI in supporting visiting wherever we could, communication and supporting individual needs during this period. Within the West Yorkshire Association of Acute Trusts (WYAAT) we were acknowledged for our constant engagement with our local communities and our ongoing revision and adaptation of visiting SOPs to support patients. Great consideration was given to introducing visiting at the earliest opportunity all amendments had prior dialogue with IPC and the senior leaders in the organisation to enable them to support the changes.

356. An internal audit report on visiting over the period showed a high level of assurance regarding policies and procedures that were in place, management of concerns, information provided to staff and patients, and the safe and effective management of visitor access.

357. On reflection, it would have been difficult to achieve the perfect balance of IPC safety and the patient / family support offered by visiting. There were many unknowns, and significant concerns amongst staff regarding their personal safety. A more liberal approach would certainly have increased the risk of spread.

358. It was difficult to maintain a national position when the prevalence of Covid varied considerably between different areas of the country. A consistent and clear message from central Government would have been helpful. That message should have been that visiting is suspended as the default position, but individual organisations would be supported to take a local, risk assessed view to do something different.

Patient Treatment and Care

Impact on care and treatment

359. The BRI continued planned activity throughout the relevant period despite not having a cold site (away from the main BRI site caring for Covid patients). Initially the elective theatre scheduling was dramatically contracted. This was due to the re-deployment of theatre and anaesthetic workforce to critical care, and increased staffing to facilitate operating and AGPs in the context of high levels of

IPC precautions when the risk of COVID was unclear, and time-consuming cleaning regimes.

360. As national and international experience and guidance evolved, we developed ringfenced wards and theatres from early in 2021 purely for elective activity with expanding capacity as workforce and wards became available. The number of elective theatre sessions per specialty was calculated based on the overall backlog, number of P2 patients added and the cancer demand where relevant. This detailed analysis of demand extended to specialty level within the Non-elective (NEL) bed base calculating the beds required for NEL Medicine, Care of Elderly, Vascular and other Surgery. Through waves of COVID and subsequent winter pressures, outliers between specialties have now been minimised and elective cancellations for Urgent and Emergency Care demands have been eliminated.

361. The greatest rate limiting factor for restoration of elective activity was the depletion of theatre and ward workforce because of redeployment to COVID wards and critical care, sickness and challenges in recruitment and retention. In order to expand elective activity BTHFT invested in insourcing (Medinet, an external provider supplying entire theatre teams) while our in-house workforce was gradually repatriated from 'COVID' roles and recruitment restores and attempts to exceed the pre-pandemic baseline.

362. The reduction in non-urgent care allowed better focus on urgent care, and trauma and cancer surgery were not impacted by the pandemic.

363. Similarly, management of ischaemic heart disease within the hospital was not impacted, although we did see a significant reduction in presentations with heart attacks and strokes, particularly during the first wave of the pandemic.

364. During the initial waves of the pandemic when theatre capacity was at its most constrained the priority (P) status previously described was used to prioritise access to theatre sessions and beds via a daily formal clinical prioritisation meeting chaired by the Operational Medical Director and supported by Clinical Directors and specialty leads from the surgical specialties. This meant that lower priority procedure in P3 and P4 such as limb Arthoplasty (joint replacement surgery) were delayed and an inevitable backlog developed.

365. As well as insourcing described above bridging gaps in the day-to-day workforce it has also be used alongside subcontracts and inter-provider transfer of

patients to effectively expand elective capacity to compensate for reduced in house efficiency and to clear backlogs and reduce delays for lower priority status.

366. Outpatient activity was largely maintained. Face to face appointment number were reduced due to social distancing but this was compensated for by an acceleration in the utilisation of remote and virtual consultations. Consultation where the physical presence of the patient was required for assessment or therapeutic benefit were inevitably affected leading to delays and backlogs which continue be recovered.

367. In addition to focusing resource on P status and the longest waiters, we have also gained greater insight into the waiting list allowing us to prioritise the most vulnerable including patients with a learning disability. Patients with a learning disability had a flag added to their electronic record, so they can be prioritised within a clinical priority group.

Changes to the provision of maternity services

368. The Women's and New-born unit is standalone building in the grounds of the BRI site.

369. Throughout the relevant period the workforce worked to deliver services tailored to the needs of the population. Some areas of the city are among the most deprived in the country and suffer from health inequalities; diabetes and obesity rates are among the highest in the country and there is a high proportion of smokers. We deliver a higher proportion of low birth weight babies and we have a higher rate of stillbirths than the national average. We have a high proportion of high-risk pregnancies in our caseload, partly because of our role as a level 3 neonatal intensive care unit, and partly because of the nature of the population we serve. At the start of the relevant period, 1% of babies born at full term were low birth weight and around 3% of babies were born at less than 34 weeks gestation.

370. The pandemic had an impact on our services and the way we delivered them. Visiting was restricted in line with national guidance, save where set out above, which affected women psychologically, particularly following birth when women were on the inpatient wards.

371. We changed the layout of the maternity unit to allow clinics and urgent/emergency obstetric care to continue in a redesigned, relocated Maternity Assessment Centre (MAC). There were adjustments and configurations to the Obstetric theatres to ensure women with COVID 19 could be cared for safely whilst maintaining social distancing and care for women not infected with COVID 19. Our community midwives modified the way they delivered care to women outside the hospital. The cancelation of non-urgent face to face consultations for pregnant women required the introduction of telephone consultations.

372. National guidance from NHS England and the Royal College of Obstetricians and Gynaecologists (RCOG) surrounding the management of high risk pregnancies, particularly those whose babies were at risk of growth restriction, required senior clinicians to review and daily risk assessments, particularly when staffing resources reduced.

Ambulance handovers

373. For the baseline pre-pandemic period, between October 2019 and February 2020, the average ambulance handover times at the BRI were 15 minutes and 18 seconds (Trust-wide data but predominantly the BRI). 67% of arrivals were handed over within 15 minutes and 91% were handed over within 30 minutes. Only 2.5% of arrivals waited for over 1 hour for handover. The average number of ambulance arrivals per day were 104 per day.

374. During the first phase of the pandemic, between March 2020 and December 2020, average daily arrivals fell by 36%. Average handover times improved to 13 minutes and 50 seconds. 62% of arrivals were handed over within 15 minutes and 92% of arrivals were handed over within 30 minutes with less than 1% of arrivals waiting over 1 hour for handover.

375. The improvement in handover times during the first phase of the pandemic can be attributed to several factors;

a. Demand. Lockdown resulted in fewer overall presentations to A&E for patients with an activity related injury.

b. Capacity. The cancellation of elective activity resulted in additional bed capacity for non-elective admissions.

c. Flow. The ward cohorting plan, which supported the placement of COVID and non-COVID patients into acute beds, improved the flow of patients from ambulance assessment, into A&E and onto an admission.

376. During second phase of the pandemic, between January 2021 and November 2022, average daily ambulance arrivals bounced back to worse than pre-pandemic levels. Average handover times increased to 20 minutes and 37 seconds. Only 49% of arrivals were handed over within 15 minutes and 79% of arrivals were handed over within 30 minutes. More than 5% of arrivals waited more than 1 hour for handover. The deterioration in ambulance handover times during this period can be attributed to several issues:

a. Capacity. Between January 2021 and November 2021, significant estates works were underway in the A&E department at BTHFT. These were originally planned to be over a 3-month period but were extended for another 5 months. This resulted in the loss of 4 HDU cubicles for the majority of the year and the mitigation plans in place were insufficient to meet the rise in demand for ambulance arrivals over this period. Over the same time elective activity had re-started resulting in fewer downstream beds for non-elective admissions compared to the first phase of the pandemic.

b. Demand. Ambulance arrivals during this period were 1.5% higher than pre-pandemic levels, as lockdown ended.

377. During the third phase of the pandemic, between January 2022 and June 2022 average daily arrivals were the same as pre-pandemic levels. Ambulance handover times remained at just under 21 minutes. 52% of arrivals were handed over within 15 minutes and 81% were handed over within 30 minutes, a slight improvement on the previous phase. Less than 5% of ambulance arrivals waited over 1 hour for handover.

378. Over this period of time it is clear that all acute providers were struggling to meet non-elective demand and as a result, a deterioration in ambulance handover times.

379. The reasons for this were multi-factorial. Despite these challenges BTHFT remained in the National upper quartile for ambulance handover times.

380. Steps taken to reduce ambulance handover times during the third phase of the pandemic included local escalation. Handover times were added to an hourly

trigger which is produced by the Command Centre and circulated to clinical managers and on call executives, with associated SOP for mitigating actions.

381. Regional and National steps to focus on the improvement in ambulance handover times were introduced during the winter of 2022-23. This included locally derived targets for handover, regional escalation for handovers of 1 hour and closer working with the ambulance service to introduce cohorting to release ambulance crews earlier.

Escalation of care decision-making including rationing of care

382. Care was never rationed at the BRI. A document that collated all clinical guidance for the management of Covid was developed by one of the Emergency Medicine Consultants ('The Corona Files') designed to support junior colleagues and consultants from non-medical specialties in the clinical management of Covid cases. This included a decision-making tool to support colleagues in determining which treatments would provide clinical benefit for Covid patients. The use of this tool was discussed at both CRG Silver and Gold and it was agreed that it was to be used only guiding treatment, never to ration care. This was a working document updated regularly as new evidence came to light, and available to all on the Trust intranet, and on our Trust clinical WhatsApp group. I exhibit The Corona Files (RS29/INQ000421785). This document described all aspects of the management of Covid patients based on latest evidence. The management and severity assessment algorithms are included on pages 13-18.

383. We never needed to assess anyone with a view to being denied treatment due to non-availability.

384. Escalation plans were made according to comorbidities and addition of Frailty Score as we were doing prior to the pandemic, and as we rapidly gained clinical knowledge around COVID, this was refined.

385. A treatment algorithm was used at the BRI, but ceilings of care were based on the needs of the individual patient, not on the limitation of resources. This tool remained consistent throughout the pandemic.

386. Even the frailest were not denied Non-invasive Ventilation, but clearly these difficult clinical decisions led to lots of discussions with patients and relatives.

Clinical teams would spend considerable time each day discussing with families of patients treatment options and outcomes.

387. The criteria for admission to critical care did not change based on bed availability. Patients with greater than 4l/min oxygen requirement were placed on re-purposed community CPAP machines in ward environments to reduce the risk of deterioration.

388. Seeing the pictures from Italy, we were prepared to face the prospect of 'reverse triage', whereby a less fit patient is removed from ventilatory support in order to allow access to that constrained support to a patient with a higher chance of survival. Fortunately, we never needed to use this approach.

389. At the peaks of the pandemic, we had a rota in place alongside the usual clinical on-call rotas to support any such decision which may be necessary. There were 2 senior clinicians available on the rota at all times (including me). This was never needed, as appropriate care was provided within capacity to all those who needed it.

390. There was a local WYAAT ethics group attended by a Deputy CMO from the Trust. This group was never required to make or assist with any decisions.

391. By closely monitoring national and international reports and research, we were able to rapidly implement the most up-to-date ways of treating COVID patients at the BRI. Some of the key decisions included early continuous positive airway pressure (CPAP) in all patients requiring more than four litres of oxygen per minute and the preferential use of CPAP rather than invasive ventilation from the start of the first wave before this was standard UK practice. Data was collected and analysed by the clinical team which supported continuing with the use of early CPAP and avoiding intubation and ventilation to improve outcomes. This data was published to help other units.

ReSPECT / DNACPR

392. ReSPECT (Recommended Summary Plan for Emergency Care and Treatment) plans were due to be considered for introduction across Bradford and Airedale in all sites (2 acute hospitals including BTHFT, community, primary care and hospices) in late 2019. This work was put on hold initially in March 2020 but

in view of the importance of escalation planning in ensuring patients get the right care, a rollout was planned by October 2020 across the ICS footprint.

393. At this point Paediatric Palliative Care at the BRI already used ReSPECT plans in conjunction with their Children and Young Persons Advance Care Plan across Yorkshire and the Humber.

394. Use of ReSPECT was adopted across Bradford District and Craven with ICS support. This involved webinar sessions, use of e-learning through the Resuscitation Council and communication skills training at the BRI (and wider Trust) as well as bespoke sessions with medical specialties. This rollout was supported by local and regional steering groups which linked into the national ReSPECT meetings. Leaflets for patients and families were available in English and a number of other locally spoken languages. I exhibit the ReSPECT Policy (RS30 / INQ000421786). Our previous DNACPR form became obsolete.

395. The DNACPR element either standalone or as part of a ReSPECT plan would only be relevant in regard to treatment once someone had died and attempts were made to restart the heart and lungs. A ReSPECT plan would have been considered in decisions around escalation of care as it offers guidance on what that individual would have wanted to happen when they were unable to convey their wishes themselves. It was checked with their next of kin that these decisions were still valid and applicable in the circumstances.

396. Guidance was received by clinicians at the BRI as detailed above, and was also issued by the Association of Palliative Medicine and CQC: Protect, respect, connect – decisions about living and dying well during COVID-19 - Care Quality Commission.

397. A decision that a patient is not for cardiopulmonary resuscitation is part of our patient's electronic record (Cerner EPR). It is recorded as a specific form with mandatory fields. Any form and decision must be countersigned by a senior clinician (ST3 or above). On patient discharge the information regarding their resuscitation status is part of the discharge letter to the GP.

398. There were no concerns raised, nor any suggestion I was aware of, that DNACPR notices were applied disproportionately to patients with protected characteristics or applied for clinically inappropriate reasons.

399. There was no increase in the number of patients arriving at hospital with a DNACPR notice applied.

400. During the first 2 Covid waves of the relevant period, the relevant Trust policy was the Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) Policy. I exhibit the Trust DNACPR Policy (RS31/INQ000421787). This policy also refers clinical staff to Decisions Relating to Cardiopulmonary Resuscitation (3rd Edition, 2016), jointly published by the British Medical Association, the Royal College of Nursing, and Resuscitation Council UK, and to the General Medical Council publication - treatment and care towards the end of life: good practice in decision making.

401. The Trust DNACPR policy specifies that "a DNACPR decision can only be made by a senior doctor, consultant, specialty doctor or specialist trainee/registrar (ST3 or more senior)". In relation to communicating and explaining these decisions, the Trust DNACPR policy specifies the following:

a. Throughout their care, the patient should be given as much information as they wish about their situation including information about CPR.
b. Open and honest communication using clear and unambiguous language with additional written information is essential.
c. Where English is not the person's first or preferred language they must be offered a suitably qualified independent interpreter. This should include offering British Sign Language or lip speaking.
d. Using an independent interpreter will help to overcome communication difficulties, avoid misunderstandings and help to ensure that everyone receives the same access to information, are treated with fairly, equally and with respect.
e. It is inappropriate to ask or allow family or friends to interpret for them during such sensitive discussions."

402. The Trust DNACPR Policy also sets out the role of the family and relevant others, as follows:

a. Throughout this document the term "relevant others" is used to describe patients' spouses, partners, relatives, parents or legal guardians of young people, carers (who are not acting in a paid, professional capacity), representatives, advocates, people with parental responsibility, people with lasting power of attorney, independent mental capacity advocates (IMCAs) and court appointed deputies.

b. If a patient has capacity, his or her agreement must be sought before discussing CPR issues with the relevant others. Where a patient with capacity refuses to allow such information to be disclosed to relevant others this refusal must be respected.
c. Family often see themselves as natural decision makers in this situation and may be surprised and/or distressed if they are not allowed to "protect" the patient from such sensitive discussions. Sensitive exploration of these issues should be undertaken by experienced medical and/or nursing staff.
d. It is generally good practice to involve those closest to the patient in discussions about CPR decisions and patients should be encouraged to let staff know who they would like to be involved. Patients should also be asked who they would like to be involved in such discussions if and when they are no longer competent to do so themselves.
e. Relatives should never be given the impression that their wishes override those of the patient.
f. They can give information about the patient's wishes but should not be burdened with the decision unless their status as proxy for the patient has been legally established.
g. According to the Mental Capacity Act [2005] only a formally appointed proxy with lasting power of attorney (welfare attorney) is able to make decisions for a patient who lacks capacity.
h. Relevant others should never be burdened with feeling they are making a sole decision about CPR. Where CPR might be successful, the role of relevant others is to assist the patient in decision-making or to state what they understand the patient's wishes to be.

403. If an adult lacks capacity and has no family, significant other or legal proxy to speak on their behalf, the Mental Capacity Act 2005 requires an independent mental capacity advocate (IMCA) to be consulted regarding all serious medical treatment decisions. In every case where there is genuine doubt about whether or not CPR would have a realistic chance of success, or if a DNACPR decision is being considered on the balance of benefits and burdens, an IMCA must be involved. An IMCA does not have the power to make a decision about CPR but must be consulted by the clinician in charge of the patient's care as part of the determination of the patient's best interests.

404. If a DNACPR decision is needed when an IMCA is not available (for example at night or at a weekend), the decision should be made and recorded in the health record. The decision should be discussed with an IMCA at the first available opportunity."

405. The Trust DNACPR Policy also contains an Appendix with detailed guidance, including example scripts, on how to discuss DNACPR decisions with patients, families, and relevant others. This is lengthy and so has not been reproduced here.

Potential unequal impact on patients

406. Rumours and 'scare stories' were rife among the BRI local communities. We had sick patients who refused to be admitted for fear of what we were going to do to them, or fear of catching COVID-19.

407. Worryingly, the numbers of patients who were presenting at the Emergency Department with symptoms of serious illness, such as cardiac arrest and stroke, were below what we would normally expect. Fewer women were seeking help from the maternity unit. People were staying away from the BRI and other hospitals within the Trust.

408. At the height of the first wave, we had to focus on dispelling the myths, conspiracy theories and fake news which was prevalent locally and on social media.

409. The population of Bradford, and particularly the communities in close proximity to the BRI, are incredibly diverse, with more than 100 languages spoken across the district. Bradford has a set of circumstances that, together, create a disproportionate demand for health and care services.

410. We recognised our traditional communication channels wouldn't reach those grass-root communities. A re-think was required, and we had to find different ways of engagement. The communications team joined forces with our Head of Equality, Diversity and Inclusion (EDI), to address the fake news. One of our key strengths was our focus on openness and transparency.

411. The national media focused on reporting death statistics every day. We wanted to reassure our local population that people were surviving COVID-19. Therefore, in direct contrast to national advice, we published a range of COVID-19

figures daily to quell the rumours and fake news which were exaggerating the number of hospital admissions and deaths. Every day we tweeted the number of people who had been discharged after surviving COVID-19. This served to take away any mystery around our hospitals' situation at any given time.

412. At the point of discharge our head of EDI helped us interview many COVID patients, from all backgrounds and ethnicities, and in the most common languages of the local communities - English, Urdu, Pahari / Pushto, Hinko, Punjabi, Polish, Czech / Slovak, British Sign Language (BSL). We gave patients a platform to talk about the severity of the virus and tell their story in their own words. They spoke about the love and care they had received from staff, how they had battled through months in intensive care, and how overwhelmed they were to be cheered out of hospital and into the arms of their families. These videos were sent out on our social media channels and distributed among a network of WhatsApp groups that were set up with key people in the local community. One video in particular, filmed entirely by our Head of EDI in Hinko dialect with an 83 year old survivor, went viral and had a huge positive impact on the local community.

413. Our head of EDI worked with our BAME staff to get messages out to the community, highlighting the services in operation, changes made in light of the pandemic and how the Trust had been helping patients to recover with high quality care.

414. We worked with local, regional and national media; our partner health and social care organisations; and numerous community groups to share messages and maintain a constant flow of open communication about how our hospitals were responding to the demands of the pandemic and keeping our patients safe.

415. Our director of Bradford Institute for Health Research teamed up with Radio 4 to deliver weekly podcasts 'From the front line' highlighting the challenges, innovations and progress the Trust experienced.

416. We produced a range of videos to support messages around maternity care during COVID. We reached out to women's groups, community groups and patient groups to target messaging and ensure we engaged with some of the most vulnerable people in our communities.

417. Some of these videos included our senior clinicians from BAME backgrounds providing a range of information. They were delivered in community languages and were very well received.

418. BBC Panorama chose our maternity unit to film 'Lockdown Babies with Stacey Dooley' – this reassured local mums-to-be that maternity care remained fully open and safe, and shared this message with the rest of the country.

419. Our chief nurse spoke on Fever FM and British Muslim TV, providing a range of information and reassurances to the Muslim community.

420. Well Bradford, the Trust's community engagement initiative, focused on engaging and improving the opportunities for residents of the most deprived communities, including largely BAME populated areas on the doorstep of the Trust. A member of the Well Bradford team facilitated the links between numerous community-based WhatsApp groups and the Trust.

421. Our EDI colleagues became a vital part of the communications team.

422. Through these measures, the impact on different racial and cultural groups was minimized. However, we did observe entire families who were affected together by Covid-19 infection. These were principally families of South Asian background, who lived in multiple occupancy and multi-generational households, and were reluctant to seek early medical support.

423. Sadly, we saw sometimes 2 or 3 members of the same family on our ICU at the same time.

424. We tried to assist patients with a learning disability or communication difficulties by allowing more flexibility on an individual basis regarding visiting.

425. We had access to see-through masks to assist patients and families who were deaf.

Impact on Hospital Staff

The impact on staff

426. Unsurprisingly, the pandemic had a significant effect on many of our staff members at the BRI, and across the Trust.

427. A small team of clinical psychologists offered onsite, face to face support to staff from the start of the pandemic when it became clear both from a local and national perspective that frontline clinical staff were being disproportionally impacted in terms of mental health and psychological wellbeing. Input was

primarily to small groups of staff (medical, nursing, physiotherapy etc) during their shift.

428. The pandemic had a very significant adverse effect on the mental wellbeing of staff in Critical Care at the BRI. Staff reported a range of difficult experiences including:

a. The repeated exposure to so many dying patients and the suffering of them and their families
b. The nature of covid and clinical care (i.e. proning, unpredictability of outcomes, high mortality rate)
c. The fear of becoming infected with Covid or passing it on to relatives
d. The effects of lockdown on people's usual coping strategies – staff were isolated from loved ones and restricted from undertaking their usual activities which would help them decompress
e. The physical and emotional challenges of wearing PPE for extended periods
f. "Moral Injury" – being unable to care for patients in ways that feel really important (i.e. not having time to deliver comprehensive personal care or support relatives to the usual high standard). This was particularly a theme among those in managerial roles – feeling they had no choice but to repeatedly put staff in harm's way.
g. Conflicting portrayals of staff in the media – being clapped as heroes at the same time as being falsely accused of not caring or even killing patients. Some communities were especially distrustful of the way that the NHS managed patient care during the pandemic.

429. These difficulties could impact anyone in the team however our experience suggested that the most distressed tended to be those with the least experience of Critical Care – particularly those staff who had been redeployed, and even more so for junior staff. Also disproportionately affected were staff from minority ethnic backgrounds, those with little social support or those with pre-existing mental health difficulties. Staff who were already feeling overwhelmed in services that they experienced as being under-resourced and stretched prior to the pandemic were especially susceptible.

430. Another contributing factor came from the way that higher risk, frontline roles had to be allocated. Only a small proportion of staff were frontline with most

being in more protected roles. There was no let-up for these staff members, and they reported operating at near burnout for weeks and months at a time. Those staff working frontline experienced the horror of witnessing patient deaths from Covid whilst worrying about infecting their own loved ones and not feeling safe themselves. Staff also reported that they felt conflicted in caring for patients. It was hard to see people flouting Covid distancing rules and then having to care for them on the wards.

431. Critical Care staff reported a number of effects on their wellbeing:

- Headaches/exhaustion/fatigue
- Emotional/tearful/sad
- Upsetting vivid memories
- Low morale/feeling numb & hopeless
- Worry about passing illness onto others
- Hyperarousal – feeling unable to switch off
- Disturbed Sleep
- Strained relationships with families/friends
- Feelings of Guilt

432. PTSD symptoms were also reported by a significant number of staff. Staff who witnessed little or no patient deaths in their typical roles were redeployed into areas where this became common.

433. We made significant efforts to support our staff through the challenges they were facing.

Covid-19 risk assessments

434. Occupational Health in conjunction with IPC/HR colleagues developed risk assessments and supportive guidance to minimise the risk to physical health of our staff, which reflected National guidance as it emerged. Occupational Health provided an additional work adjustment advice where this was necessary following management referral of individual staff.

435. A 'frequently asked questions' section devised by OH/HR colleagues was added to the intranet to provide staff with answers and guidance to commonly asked questions.

436. We undertook a risk assessment for all staff and ensured staff with health conditions that made them more vulnerable were moved to green areas, worked from home or were asked to shield.

437. We ensured staff had the appropriate PPE, as described previously in my statement.

438. In 2021 the trust commissioned the Staff Support Service to meet the needs of staff members involved in the pandemic response. This funding provided was for a full time Senior Clinical Psychologist. We have had over 500 staff members referred through our service to date.

439. The department set up a telephone support line staffed by qualified clinicians in the department which was available 8am-8pm.

440. We promoted this via Global emails and also putting up posters in kitchen areas, including non-clinical areas such as the mortuary, estates, portering services.

441. We also provided embedded on-site support to the areas of the Trust most affected by Covid: the "Red" Covid wards, Critical Care and later also Theatres staff (many of whom were redeployed to Critical Care). We also provided support and training to those in senior roles in these areas e.g. on Psychological First Aid, Resilience, triaging for PTSD etc.

442. While reportedly useful for the staff who did ring the support line, this was discontinued after around 4 months due to very low uptake.

443. Wellbeing Wednesday bulletins were issued each week via OD/Comms colleagues which included signposting to mental health support such as free apps, support lines, wellbeing tools and practical advice on skin protection and hydration when wearing PPE.

444. Staff were not positive about Wellbeing Wednesdays – indeed the very upbeat tone of some of these communications jarred with the emotional reality of those working with dying patients and was met with cynicism.

445. We were not aware of anyone using the national helplines.

446. On the Covid Red wards it was reported as being helpful for the Senior Nursing staff to be able to suggest staff take time out for themselves but members of staff often felt selfish for doing this and that they were adding to the burden for colleagues by absenting themselves. There was enormous loyalty within teams

which was both supporting but also a pressure to be there to support one another rather than to look after themselves.

447. We offered virtual webinars sharing guidance and updates and offered virtual reflection space which had limited uptake.

448. The wellbeing spaces we created ("wobble rooms") were not well used, despite the effort than some departments put into making them as pleasant as they could be. Due to lack of alternative space, they were often situated in the kitchen and were still used for this purpose. They were sometimes useful for seeing staff for 1-1 sessions when needed.

449. Members of the Clinical Health Psychology team worked with Dr Paul Whitaker, Respiratory Consultant, and other colleagues, in setting up Long Covid clinics. Clinical Health Psychology were not funded to provide input and had to pull out after the first two months due to demand pressures from other areas of the service. Several of the patients we saw initially were BRI staff members. This service offered a thorough multidisciplinary assessment and ongoing support service. The psychological component was ultimately provided online by Bradford District Care Trust.

450. Occupational Health supported reasonable adjustment and return to work advice for staff who had been absent due to long covid. Staff were referred to the local long covid team or recovering from covid course where suitable for support with ongoing rehabilitation.

451. National guidance around risk assessments was too late in coming, as in many other areas. We had to take our own steps to ensure we had risk assessments in place rather than waiting for national templates to be developed.

452. Risk assessments inevitably identified vulnerable staff, which meant that some staff were unable to work on site or had to be redeployed to 'green' areas, This did have an impact on overall staffing, but the effect is difficult to quantify.

Equality Impact Assessments

453. Many of the SOPs that were developed had to be done so quickly and on the back of rapidly changing guidance. As such, it was very difficult to carry out formal, documented Equality Impact Assessments (EIAs) as we would normally for policy documents developed in pre-Covid times.

454. However, the impact of any changes was considered and discussed for all staff groups during Gold CRG meetings.

455. A series of question and answer sessions were delivered for all staff across the Trust and in particular, we held sessions targeted at the specific challenges / concerns expressed by some of our more diverse and minority staff groups in relation to COVID-19 and vaccine hesitancy. These sessions included ethnic minority staff, staff with disabilities / long-term health conditions, LGBT+ staff, women (in relation to concerns around pregnancy and fertility), and bank staff. The sessions were led by the Head of EDI in conjunction with a range of experts including lead clinicians, Occupational Health, HR and Infection Control colleagues.

456. These sessions were an opportunity for staff who felt they may be disproportionately affected by any change in guidance to express their concerns.

457. Individual risk assessments aimed at ensuring safety and wellbeing were undertaken by line managers for every ethnic minority member of staff and those considered vulnerable. Managers attended a workshop to ensure they understood the importance of this risk assessment and how to carry it out with kindness and compassion.

458. The Head of EDI was represented at the COVID-19 Workforce and COVID-19 Gold meetings to help us as a Trust leadership team navigate any EDI-related issues.

459. The EDI team led on the equality impact assessment around the vaccination roll out across Place, which involved working with other local Voluntary and Community Sector partners. This group developed and widely shared an Equality Impact Assessment relating to the COVID-19 vaccine.

Unequal impact of measures adopted

460. There were examples of a disproportionate impact on patients with protected characteristics. One example, as previously mentioned, was the introduction of clear masks to facilitate communication following concerns raised by patients with hearing impairment.

461. Our head of EDI actively supported the Chaplaincy Team for the first 6 months of the pandemic to ensure that end of life rituals and the culturally diverse needs of patients and their families were met by the Trust.

462. Our Head of EDI provided guidance and support to ensure that staff who had beards for religious reasons could make an informed choice. Some staff chose to remove their beards and others chose to temporarily be re-deployed to an area where fitted masks were not required.

Communication with the Trust and other organisations

463. At the start of the relevant period, we established Bronze, Silver and Gold commands for operational teams and clinical teams as part of our EPRR response. Additionally, we instigated a daily 8.30 am Executive Huddle. A Clinical Reference group (CRG) was established drawing on clinical leaders from all specialties and was chaired by me as CMO and also by the Chief Nurse; as policy on clinical practice, testing regimes, IPC and new treatment regimens emerged, the CRG would evaluate them. This enabled a clear line of sight for all operational and clinical leaders within the Trust to be sighted on any new developments or directives within 24 hours and mobilise these as quickly as practical. In addition, we enhanced our wider communications within the Trust and established a communications workstream to focus on this. This included:

a. Daily global emails with a Covid Dashboard of facts and figures regarding the total number of patients and discharges –these would also be physically posted in every ward and clinical departments and staff rooms.
a. Delivered in-person briefings to the clinical areas on a daily basis physical print outs of key information and urgent changes circulated and posted in clinical areas and staff facilities
b. Physical presence of leadership team on the BRI site to meet and greet staff coming on shifts at handover times to pass on information / answer questions, encourage mask wearing etc.
c. Establishment of the PPE hub with clinical staff to create an additional safety net for hearing any concerns and reinforcing changes. The lead for this was the Trust Freedom to Speak Up (FTSU) Guardian, which enabled a safe space.

d. Setting up of staff wellbeing hubs and “wobble rooms”
e. Increased psychology and chaplaincy support
f. Redeployed non-clinical staff utilised as “runners” to quickly get messages out across the BRI site
g. Broadcast on local and national TV and radio by Trust leaders
h. Series of information videos, for example how to wear PPE
i. Purchase enhanced equipment for the medical illustration team and established a studio in Trust HQ from which we filmed videos for internal and external audiences. CEOs weekly VLOG health promotion, mask wearing, vaccination information

464. This process enabled effective communication both ways between all BRI staff, we were able to pass information quickly and efficiently. The Trust was able to be responsive to front line staff concerns and demonstrate immediate response.

465. Regular escalation calls and briefings were in place between the Trust and wider NHS leadership, which offered the opportunity to raise concerns and offer feedback. However, my view was that responsiveness was often slow and not within required timescales. Speed was key in trying to limit the spread of the virus, yet guidance was unclear, some important things were often missing and conflicting information left people confused over what to do.

466. Sometimes on the frontline it felt like there was radio silence or a vacuum as far as guidance was concerned. This would arrive eventually but often late and reflected what we had to do in the absence of guidance. It sometimes felt like practice was leading policy with the former being able to be more agile.

467. National guidance was generally helpful although at times this could be very difficult to implement. Any national guidance that could not be fully adhered to was risk assessed and agreed via Trust Governance processes. An example of this was the guidance in relation to visiting; the Trust reintroduced visiting before any additional national guidance due to the direct impact on our local communities, as detailed earlier in this statement. We took the view that any directives issued would be reviewed by the clinical and operational command structures regarding feasibility and any nuances that needed to be made in light of our demand on services and population.

468. The Command structure across Bradford Districts & Craven was established and led through the Outbreak Control Board, chaired by the leader of

Bradford Council, and included health and social care partners including representation from Bradford Care Alliance (on behalf of the care sector), the VCS, faith organisations and wider partners. We also enacted health and care gold, silver and bronze arrangements. This enabled all national correspondence to be enacted in a timely manner to all parts of our system with agreement on actions taken collectively, mutual support when possible and enabled one consistent message for our communities.

469. Where there were areas of concern, confusion or issues with national guidance (e.g. PPE/ vaccine supply), collectively partners agreed what should be done to enable consistency across the district. There were occasions where guidance issued was slow in coming or unclear in its ask and this is where our ability to agree collectively and then change promptly where necessary came into its own.

470. Unfortunately, there were times when national guidance was issued, but in reality it was hard to implement due to the supply, storage and movement of vaccine; guidance issued with necessarily short timescales; and the differing impact of COVID cases within some communities/ populations and staff. As an example, Bradford had higher rates of COVID infections and lower vaccinations and therefore recovering our elective position was challenging so one approach was not always appropriate – we often cite the example of London having numerous hospitals in close range and therefore the ability to manage their elective position and use their independent sector being very different to areas where you have limited IS potential.

471. Very quickly the national bodies and colleges came together to support, help and advise. We worked closely with public health and the local authorities to ensure a full system response with mutual aid and support. On some occasions directives could be contradictory, but this was resolved quickly and openly when flagged. It was apparent that any contradictions were due to the rapid evolving and complex nature of the situation rather than bodies working against each other.

472. At the start of the pandemic NHSE declared a level 4 national incident and moved into formal command and control arrangements. There was a clear line of command from the national operations centre to regional operations centre through to Trusts. NHSE wrote in March 2020 to Trusts confirming that elective and other non-urgent activity should be suspended, along with most non-essential

governance and reporting mechanisms. National and regional staff were deployed into cells to co-ordinate support to the system on a range of issues such as procurement, testing, critical care, infection prevention and control, and service-specific issues. NHSE issued substantial amounts of guidance throughout the pandemic and, at key milestones, set out clear priorities and requirements for the subsequent phase of response and recovery. In parallel with the NHS command and control arrangements, Local Resilience Forums played a key role in co-ordinating multi-agency response arrangements, working through frequent System Co-ordinating Group meetings (initially daily), and a number of tactical cells.

473. The wider Health and Care Sector in Bradford prior to the Covid-19 had good governance and working relationships in place across all key pathways. Due to this we were able to step up quickly. Our real strength within Bradford and at the BRI was around our ability to communicate effectively and quickly with all stakeholders – this helped to establish a shared understanding of key pressure points and challenges, while also enabling us to develop joint solutions to overcome these issues in a timely manner.

474. I would say that the BRI had strong partnership working with other hospitals and bodies. We had weekly catch ups as a partnership focused on understanding current data and current policy and guidance changes, pressures and risks in the system. We also held monthly outbreak control boards until the pandemic ended which had good attendance from all partners, and a commitment to dealing with local pressures together. We received a daily briefing from Public Health summarising key data from across the system including current covid levels, admissions, vaccination uptake, care home outbreaks, and key messages to the system. Updates from PHE came via the Department of Public Health and were shared with partners at the weekly catch-ups or earlier if there were important changes to national guidance or the local system that needed to be implemented.

475. Through the relevant period, ICSs were not yet on a statutory footing, and did not have a formal role in the command and control arrangements. In West Yorkshire the ICS played a key co-ordinating role, supporting partners on a range of issues:

476. A weekly senior leadership team meeting brought together leaders from all sectors of the partnership, to oversee mutual aid and support arrangements, respond to issues that had been escalated, and agree collective actions.

477. A weekly health co-ordinating group brought together Trust COOs and EPRR leads to identify challenges and escalate concerns.

478. Groups were established to co-ordinate support on testing, PPE supply and distribution.

479. Planning for recovery and restoration of services was co-ordinated across the system. Collective priorities were agreed for each phase of the pandemic. Eg, phase 1 priorities for the initial months were:

a. Supporting the exponential increase in critical care capacity
b. Supporting safe and effective discharge to communities, to free up acute beds
c. Supporting 'vulnerable' people shielded from the virus, & other groups who are likely to be most affected by social distancing
d. Ensuring continuation of other essential areas of business.

480. The West Yorkshire Association of Acute Trusts (WYAAT) made up of the five West Yorkshire acute trusts plus Harrogate FT continued to meet virtually throughout the pandemic as did its subgroup of Chief Operating Officers. It was an opportunity for shared learning and for agreeing mutual aid where that was indicated. CEOs on a rotational basis would chair the ops group which was all the Chief Operating Officers and linking with the critical care network in particular it facilitated mutual aid being able to ensure patients requiring critical care could receive that in West Yorkshire.

481. There were many good things to emerge from the pandemic, as well as the obvious horror. It is important that the learning is taken and embedded into future pandemic planning.

Recommendations

482. Redeployment of staff was essential to managing the pressures of Covid, but in the future this should be managed with awareness of the impact this has on staff.

483. Research carried out in-house by Bradford Institute of Health Research (BIHR) funded by NIHR explored redeployment across three Trusts including

BTHFT. Data has not been reported or analysed at individual Trust-level in order to maintain confidentiality.

484. The research explored the experiences of managers (when managing redeployment during the pandemic) and nurses who were redeployed at this time.

485. It was found that redeployment had a huge impact on nurses who were redeployed, those working in teams who supported redeployed nurses and the managers tasked with implementing redeployment. We found that a lack of guidance and support for nurse managers meant that the approach to redeployment was inconsistent both within and across Trusts. The Trust in our study (*not BTHFT)* who had an existing, scalable approach to redeployment prior to the pandemic fared better when mass redeployment of nurses was required in response to the pandemic. Overall, redeployment was primarily perceived as a contentious, unpleasant task for all involved in the process, and often led to incivility between staff. This negatively impacted those who were asked to be redeployed, as they often felt undervalued, that they had a lack of autonomy in the process and were unsupported when working in a redeployed role and when they were de-deployed to their home ward. Those implementing redeployment were left with feelings of guilt and moral burden. Some nurses reported that they struggled to maintain their identify as nurses and./or with their organisations. These nurses fared the worst and were most likely to report high levels of psychological distress, burnout and reported stronger intentions to leave.

486. There were some instances where redeployment had a positive impact on those involved, which resulted in nurses flourishing in their redeployed role, developing skills and professional relationships, job opportunities and career progression opportunities. Positive experiences of redeployment were primarily underpinned by the management of the process e.g., compassionate leaderships skills from those tasked with implementing redeployment and being integrated into, and supported by, the team nurses were redeployed to.

487. The recommendations arising from the study are contained in the attached documents:

a. The Recommendations for the management of NHS nurse redeployment and crisis workforce recovery [KS27 / INQ000416844]

b. Nurse redeployment: A good practice guide [KS28 / INQ000416845].

488. Innovation was a significant feature of our Covid response at BTHFT. This should be encouraged and supported, with a clear mechanism for escalation of successful local solutions to national level, and a mechanism for rapid and wide dissemination.

489. Communication was sometimes late or lacking during the pandemic. Significant changes should never be communicated late on a Friday when there is no time to action. Better to wait till Monday or Tuesday.

490. Pandemics affect different parts of a country in different ways and at different times. National guidance does not always fit with local pressures, and organisations should be trusted to make rational local decisions when appropriate.

491. Our effectiveness in managing the pandemic largely resulted from clinical leadership, supported by operational teams and senior managers. We were able to make agile decisions reflecting national guidance or local challenges. A clear command and control structure is necessary to make this effective.

492. It was clear from our experience in Bradford that old infrastructure is not equipped to deal with the demands of a pandemic. Consideration should be given to all builds in a healthcare setting to ensure adequate ventilation, pipework for oxygen supply, and ability to isolate patients.

493. Central control of scarce resources such as essential drug supplies was helpful during the Covid pandemic and should be implemented early.

494. Future consideration of 'Nightingale' Hospitals or equivalent should be made very carefully. Denuding acute hospitals, which are best equipped to manage a pandemic, of staff was demoralizing and an inefficient use of staff resources.

495. National communication should always allow for local variation in message, should acknowledge that local conditions may require a modified response, and state that clearly in their communication. It was difficult to manage visitor expectations when local prevalence was high, alongside more lenient national guidance reflecting a lower prevalence in other parts of the country.

496. Any future pandemic or other national healthcare disaster should consider the impact on staff both during and after the event. The immediate demand to restart elective care early and at pace, whilst understandable, was difficult for a tired and traumatized workforce. Adequate time must be allowed for recovery and healing before new demands ramp up.

497. A database of up-to-date information should be compiled and freely available from the outset of any future pandemic, containing the latest research evidence, modelling, treatment advice and guidance. We had our own in Bradford which worked well. A national version would ensure consistency of approach and the most effective response.

498. Rapid access to testing (particularly at point of care) and vaccination were ultimately the game changers in the response to the pandemic. Resource should be channeled to these areas at the earliest opportunity.

499. Leaders in whatever space they operate should model the behavior expected of those they lead.

Statement of Truth

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

Signed: Personal Data

Dated: 1/5/24