

**UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST
COUNCIL OF GOVERNORS
THURSDAY 23 JULY 2020**

Title:	UHB RESEARCH DEVELOPMENT AND INNOVATION SUMMARY REPORT 2019/20
Responsible Director:	TIM JONES, CHIEF INNOVATION OFFICER
Contact:	Hilary Fanning, Director of Research Development & Innovation, Ext 13697

Purpose:	To present a summary of UHB Research Development & Innovation for 2019/20 to the COUNCIL OF GOVERNORS
Confidentiality Level & Reason:	NHS CONFIDENTIAL - Board
Board Assurance Framework Ref: / Strategy Implementation Plan Ref:	BAF - SR8/18 - Adverse impact of BREXIT on Trust innovation agenda BAF - SR13/18 - Failure to realise the opportunities and benefits of merger SIP - #17 Maximise the opportunities for research and innovation across the whole Trust SIP - #18 Standardise research and development processes across the Trust SIP - #19 Increase research and innovation activities associated with artificial intelligence
Key Issues Summary:	<ul style="list-style-type: none"> • UHB research metrics for 2019/20 • UHB research development and innovation activities of note for 2019/20
Recommendations:	The COUNCIL OF GOVERNORS is asked to: <ol style="list-style-type: none"> 1. ACCEPT this summary report of UHB research development and innovation activity for 2019/20 2. RECEIVE a research development and innovation summary of response to Covid 19 in quarter 1 2020/21.
Signed: TIM JONES	Date: 14 JULY 2020

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COUNCIL OF GOVERNORS

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**UHB RESEARCH DEVELOPMENT AND INNOVATION SUMMARY
REPORT 2019/20**

PRESENTED BY CHIEF INNOVATION OFFICER

1. Introduction

- 1.1 The purpose of this paper is to provide the Council of Governors with a summary of the Trust's research, development and innovation activity during 2019/20.
- 1.2 This paper also notes the work of the Research Development and Innovation (RD&I) function and team members during phase one of the Trust's response to Covid19.

2. Research Development and Innovation at UHB

- 2.1 The Trust's RD&I function delivers a wide range of activities including academic and commercially sponsored clinical trials across a range of complexity (Phases 1 to 3), medical device development and testing, and cutting-edge healthcare data research. UHB hosts National Institute for Healthcare Research (NIHR), Innovate UK (IUK), Health Data Research UK (HDR UK), EU and Charity sector funded research infrastructure. The latter bring together clinical, cross-discipline academic researchers and industry collaborators; generating novel research and enabling its delivery to our patient population (see appendix 1 for summary infographic of research infrastructure and appendices 4 and 5).
- 2.2 Significant steps forward were made during 2019/20 on the integration of the RD&I function across all Trust hospital sites. The phase one response to Covid 19 accelerated a number of these. Specifically; alignment of all UHB site permissions for research through a single Trust level Research Facilitation Group (RFG): transition to use of EDGE (an NIHR IT platform for research portfolio management and reporting to be completed in August 2020), cross-site recruitment strategy to ensure maximisation of research opportunities for our patients. RD&I are continuing to evolve these new ways of working as we transition to restart of non-Covid19 specific research activities.

3. Patient Recruitment To NIHR Portfolio Trials Activity during 2019/20

3.1 Recruitment to NIHR Portfolio Studies

- 3.1.1 For NIHR portfolio activity, UHB was the largest recruiting Trust in the West Midlands in 2019/20 (n=8885), achieving more than double the number of patient recruitment than the second largest recruiting Trust

in the region, (see graph 1 below)

Graph 1: WM CRN NIHR Portfolio Performance



3.1.2 NIHR portfolio recruitment in 2019/20 at n=8885, is considerably less than the 16,000 recruitment target originally agreed with WM CRN for the financial year. This reflects changes in NIHR’s portfolio of trials, adoption of highly complex interventional trials where target recruitment numbers are small compared to observational studies, commercial company uncertainty around Brexit-related impact on commercial trial activity in the UK (see appendices 2 and 3).

3.2 In 2020/21, we expect NIHR to place specific emphasis on recruitment to vaccine trials (experimental to late phase), not all of which will be for delivery within secondary care sites, Covid19 UPHR trial recruitment, and restart of broader research activities associated with funded research grants.

4. Health Data Research UK Infrastructure and Associated Activities

4.1 The HDRUK Midlands substantive site is now well established. Prof. S. Ball. (HDR UK Midlands Director of Research and UHB CMO), was appointed national lead for HDRUK’s Better Care programme, which aims to use health data science to generate and use executable data to enhance quality and safety of clinical care.

4.2 In 2019/20, UHB successfully led bids to HDRUK to establish the **HDRUK INSIGHT** Health Data Research Hub (Prof. A. Denniston) and **HDRUK PIONEER** Health Data Research Hub (Prof. E. Sapey). HDRUK funded seven of these nationally, with the others based in Oxford, London and Cambridge.

4.3 Funding provided by these research grant awards has supported UHB’s iteration of cloud-based data architecture design, data standardisation to international standards for (e.g Open EHR: OMOP); data Quality Assurance and Quality Control standard operating procedures, towards the deployment of cloud-based trusted research environments (TREs) for healthcare data research.

4.4 Our Health data research hubs have a significant focus on working with patients and the public to evolve robust systems and processes for safe use

of healthcare data.

5. European Regional Development Fund (ERDF): Medical Device Testing & Evaluation Centre – 3rd floor ITM

The ERDF funded element of MDTEC completed on 31st December 2019. Within the project's 3 year lifecycle, the team has engaged with over 300 companies and delivered 110 extended assists to companies within England, predominantly within the Midlands region. Over half of those companies received added value formative usability reports, forming an essential element in technical files and on-going regulatory compliance. Overall, the project achieved in excess of 80% of its challenging targets including bringing 19 new products to market, 55 product/service transformations and 47 new collaborations between industry and research organisations.

6. RD&I and the Covid19 phase one response

6.1 RD&I's Covid 19 phase one response in the main falls outside the reporting period for this paper. It is included here to provide Council of Governors with early sight of impacts on RD&I activity during 2020/21.

6.2 The size and breadth of the Trust's RD&I infrastructure allowed us to contribute to the Covid 19 phase one response by:

6.2.1 Re-deploying 101wte RD&I nursing staff to front line clinical services. The majority of these (67wte) were assigned to support additional Intensive Care Unit capacity.

6.2.2 Re-deploying non-clinical staff to operational role activities supporting for example the Senior Responsible Clinician role on the QE site, and the set-up of the Birmingham Nightingale hospital.

6.2.3 The remaining 58wte RD&I nursing staff were utilised to establish a Covid-19 research delivery team across all four hospital sites. The Covid -19 RD&I team opened and recruited to Covid 19 Urgent High Priority (UHPR) Research trials, and oversaw 75 clinical trials which remained open but paused to new patient recruitment (Clinical Trials of Investigational Medicinal Products – CTIMPS) where the trial treatment was identified as standard of care (i.e. no other treatment option available).

6.2.4 RD&I reduced the average time taken to open a research trial to two days.

6.2.5 Recruited approximately 90% of all patients admitted with Covid 19 for > 24hrs to clinical trials.

6.2.6 Supported the development and opening of two national UPHR trials for which UHB clinicians are Chief Investigators. The latter are **Recovery-RS** (Prof. G. Perkins) and **Catalyst** (Dr. T.Venith).

6.2.7 Provided pastoral support to RD&I staff deployed to front-line services.

- 6.2.8 Provided a dedicated testing centre for the Government's National Ventilator Challenge (Prof. T. Clutton-Brock and the MDTEC and NIHR MIC staff), led by the Cabinet Office. Over 50 prototypes of 12 different ventilators, CPAP systems and non-invasive ventilation systems underwent multiple rounds of safety and usability testing in the MDTEC Simulation Suite on the 3rd floor of the ITM. The testing was live streamed to the companies providing instant feedback and recommendations to be included in the next iteration of the prototype.
- 6.2.9 Leading and delivering a de-novo health data research collaboration with the Alan Turing Institute (ATI), UCL, UCLH and UoB (**DECOVID**), (Prof. E. Sapey), which aims to use data to generate rapid and robust insights to inform effective clinical treatment strategies for Covid 19.
- 6.2.10 Delivering the NHSE/I required programme of antibody testing to approximately 15,000 UHB staff.
- 6.2.11 Recruiting 2,400 UHB staff to the ethically approved CoCo study (Prof. A. Richter) which is collecting longitudinal data on Covid 19 antibody prevalence and persistence.
- 6.2.12 As one of a small number of national sites identified, opening and recruiting UHB staff (n=400 to date) to the Oxford Vaccine Group Covid 19 vaccine trial.
- 6.3. The current portfolio of Covid 19 specific trials is shown in Appendix 2 and 3. The Trust was one of the highest recruiting sites for national trials like **ISARIC**, **RECOVERY** (which has already published its findings on use of Hydroxychloroquine and Dexamethasone, changing clinical practice internationally), and **GenOMICCS** (whole genome sequencing for the sickest group of patients affected by Covid 19).
- 6.4 As we transition to Phase 2 of Covid 19 response, these trials will remain open, with patient recruitment dependant on numbers of patients admitted with Covid 19, and/ or decisions from trial sponsor site with respect to amendment to trial study arms and recruitment targets.
- 6.5 RD&I has issued a framework to support the restart of other paused research activity. All previously paused research (circa 1300 studies) will be assessed against: Viability; Capacity & Capability: Safety and Prioritisation (National Urgent High Priority Research and Local priorities). Clinical Service Lead agreement to restart of paused studies is being sought as part of this process.
- 6.6 Balancing restart of paused and new research studies, delivery of additional vaccine trials with clinical operational changes and the capacity of support services like imaging, pharmacy and laboratories to support research will be challenging.

7. Patient and Public Involvement Activities

All UHB sites have staff in place to support patient and public involvement and engagement in research activities. In addition to training, education and research grant development activities; this staff group actively promotes patient and public involvement through local and national workshops and conferences.

8. Academic Capacity Building in 2019/20

- 8.1 NIHR Integrated Clinical Academic Fellowships were awarded to two Dieticians.
- 8.2 Three nurses and one physiotherapist commenced HEE/NIHR ICA Clinical Doctoral Research Fellowships at the University of Birmingham.
- 8.3 Two nurses commenced the three year NIHR 70@70 Senior Nurse and Midwife Research Leader Programme.
- 8.4 Prof. A. Topping was appointed NIHR Midlands 70@70 Hub Facilitator, one of five facilitators nationally.
- 8.5 Ross Edgar (Physiotherapy) AHP Clinical Academic Lead in the IACO team was appointed as an NIHR CAPHR Research Champion
- 8.6 Five UHB staff were awarded WM CRN Clinical Scholars funding to support development of Chief Investigator competencies.
- 8.7 The Birmingham Health Partners Fellowship has now supported 14 Fellows over the four years since its inception, with nine fellows progressing to achieve external funding, including three British Heart Foundation fellowships, two Cancer Research UK fellowships, four Medical Research Council fellowships and 1 Academic Clinical Lecturer post. A BHP Fellowship was awarded to a registered nurse applicant (a graduate from the UHB hosted HEE WM Intern programme), for the first time in 2019/20.

9. Recommendations

The Council of Governors is requested to:

ACCEPT this summary report of UHB research development and innovation activity for 2019/20

RECEIVE a research development and innovation summary of response to Covid 19 in quarter 1 2020/21.

TIM JONES
CHIEF INNOVATION OFFICER
14TH JULY 2020