COVID-19 research taking place at CUH

21 April 2020

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Alongside the excellent care our staff are delivering, we are using our tremendous research capabilities to better understand COVID-19 and its successful management, including development of innovative approaches to testing and treatment.

National studies that we are supporting in Cambridge Hospitals include: PRIEST (Pandemic Respiratory Infection Emergency System Triage) to optimise the triage of people using the emergency care system, RECOVERY (Randomised Evaluation of COvid-19 thERapY), a trial of potential therapies that can be adapted to introduce new treatment arms as potential therapies emerge, and REMAP-CAP (Randomised, Embedded, Multifactorial, Adaptive Platform trial), a trial designed to evaluate a number of treatment options simultaneously and efficiently in critically ill patients.

We have also developed a new research resource in the NIHR COVID-19 BioResource, which will allow all patients admitted to Cambridge hospitals to participate in research studies by providing biological samples and health information. We have recruited over 100 BioResource participants, and the first samples have already been processed for analysis. The NIHR COVID-19 BioResource will be instrumental in understanding why the virus affects people in such different ways and identifying new treatments.

Our SAMBA (simple amplification-based assay) point of care test is already helping us rapidly find out whether patients have COVID-19 and ensure that they receive the right treatment in the right ward of the hospital.

We would like to thank all of the clinical and research staff who have made these remarkable achievements possible in such a short period of time, as well as all of the patients who have participated in our studies and made such a valuable contribution to improving care and treatment for COVID-19.

Current active research studies for COVID-19 taking place at Cambridge University Hospitals: Updated 21 May 2020

- **TACTIC-R:** This Cambridge-led, national trial will test whether two drugs that are

already in use to treat other immune-related conditions can prevent the development of severe COVID-19 symptoms in patients admitted to hospital. Each of the drugs initially included in the trial, ravulizumab and baricitinib, target a different part of the over-active immune response thought to be the cause of severe COVID-19 disease. TACTIC-R is designed as a platform trial, so that further existing or new drugs that show promise for treating COVID-19 can easily be added to the trial. The chief investigator of TACTIC is Dr Frances Hall, Consultant Rheumatologist at Cambridge University Hospitals. More details about the trial.

- PROLIFIC
  The PROLIFIC trial is studying whether hydroxychloroquine, an anti-malarial drug, can protect frontline healthcare workers from infection with SARS-CoV-2. The study is run by the Cambridge Clinical Trials Unit through the Cambridge Centre for Clinical Research, and opened for enrolment on 8 May 2020.

- **NIHR COVID-19 BioResource**: Creation of a cohort of COVID-19 patients to support research. Led by Professors Ken Smith and John Bradley, the NIHR COVID-19 BioResource allows patients admitted with suspected COVID-19 to participate in research by providing blood and other biological samples. Participants provide blood samples and nasal swabs, as well as consent to access their health records and completion of a short mental health questionnaire. Blood samples will undergo detailed analysis to assess immune responses to infection, in order to understand the determinants of disease course and severity. Combining these data with health records and genomic information will enable researchers to assess physical and mental health outcomes of infection.

- **RECOVERY trial:** Identifying potential treatments for COVID-19. This national trial is recruiting adult patients with confirmed COVID-19. Treatments currently tested in the trial include anti-retrovirals, hydroxychloroquine or steroids, which are compared with standard 'supportive care'. However, the trial has an 'adaptive design' which means that treatments can be removed if they are shown to be ineffective, or added as other promising treatments emerge. Study led locally by Dr Martin Knolle.

- **COVIDx study**: Evaluation of a rapid test (diagnostic) for COVID-19 in clinical care. Led by Professor Ravindra Gupta and Dr Helen Lee, using the SAMBA-II machine. This technology was developed while Dr Lee was at Cambridge's Department of Haematology and provides diagnostic information on the ward within 2 hours.

- **PRIEST study:** Testing the accuracy of triage methods in the emergency room to identify patients in most urgent need of treatment. Led by Dr Adrian Boyle and Susie Hardwick, this study will use de-identified patient data from the early phases of the pandemic to assess the accuracy of current triage methods for patients presenting with

respiratory symptoms, and potentially develop improved systems for use later in the pandemic.

- **REMAP-CAP:** This international study aims to generate evidence to reduce mortality, admission to intensive and morbidity in severely ill patients with COVID-19 infection. The trial is similar to RECOVERY, but is based in intensive care. It will test multiple treatments at the same time (antivirals, immune modulation drugs and corticosteroids) and more treatments will be added as new evidence emerges. If a treatment is beneficial, more patients will be treated with that drug within the trial, improving outcomes and reducing ICU stays. This study is led locally by Dr Charlotte Summers.

- **GenOMICC:** This study aims to identify genes that cause some people to be more susceptible to specific infections such as COVID-19. Identifying genes that cause some people to have greater risk will enable better use of existing treatments and the design of new treatments. DNA and cells from patients participating in this study will be compared with samples from healthy people to help identify the genes involved. This study is led locally by Dr Charlotte Summers.

- **ISARIC:** This study is designed for the rapid, coordinated clinical investigation of patients with confirmed novel coronavirus infection. This UK-wide consortium aims to use clinical data to answer urgent questions about COVID-19 quickly and transparently.

- **Health data research:** using linkage of data from existing research cohorts such as NIHR BioResource to Public Health England and NHS-Digital in collaboration with HDRUK. Led by Professor John Danesh

- **CERA (COVID-19 Emergency Response Assessment)**. Led by the University of Bristol, this study aims to understand the effects on the psychological health of doctors working in emergency care settings across the UK during the COVID-19 outbreak. Participating doctors will complete questionnaires on their phones at the beginning (acceleration), middle (peak) and near the end (deceleration) of the epidemic wave to understand how staff are coping and any changes that occur as the pandemic progresses. This will help researchers understand the physical and psychological impact on doctors in both the short and long term, where and how support can best be delivered and support preparedness for future outbreaks.

- **Coronavirus infection in immunosuppressed children:** This study will allow families of immunosuppressed children and young people to self-record their experiences of Coronavirus (COVID-19) and other viral respiratory illnesses during the COVID-19 pandemic. Participating parents and children will be provided with online information and asked to fill in weekly questionnaires about their experiences. Information collected will include medications they take that affect their immune system, symptoms they

have, whether they have contact with health care providers, test results and the impact of infection on daily activities.

- **UKOSS: Pandemic Influenza in Pregnancy:** This NIHR supported study is a national study of women hospitalised with confirmed COVID-19 in pregnancy. The study will use the UK Obstetric Surveillance System (UKOSS) to collect information about all pregnant women admitted to hospital who are confirmed to have the virus infection to better understand how common the infection is in pregnant women, what treatment they were given and the outcomes of COVID-19 in pregnancy. The data will be used to identify factors associated with better outcomes for women and their babies in COVID-19 infection, to inform ongoing guidance for women and maternity staff in response to the pandemic. UKOSS is led by Professor Marian Knight, from the National Perinatal Epidemiology Unit, University of Oxford

The list of active studies at CUH will be updated weekly as and when new studies open to patients on site. A list of the national studies already prioritised and approved by NIHR can be found here.

COVID-19 Research for healthy volunteers and those with mild symptoms
The studies listed above are all recruiting patients who are hospitalised with suspected or confirmed COVID-19. If you have experienced mild COVID-19 symptoms or have not had the infection, there are still a variety of ways that you can support essential COVID-19 research. You can find out more about those opportunities here.

More information about COVID-19 research in Cambridge
Researchers from across Cambridge are collaborating closely to understand COVID-19 better and identify successful diagnostics and treatments. The links below highlight how we are working with our partners on the Biomedical Campus and throughout Cambridge on these essential studies:

- COVID-19 research studies from the University of Cambridge Department of Public Health and Primary Care

- Cambridge Fights COVID website outlining the collaborative COVID-19 effort across the Cambridge Biomedical Campus

- NIHR Applied Research Collaboration East of England COVID-19 Projects

- COVID-19 related research from the University of Cambridge