

# Vaccine trials among recipients of £20 million coronavirus research investment

- Trials of new coronavirus vaccine among 6 projects to receive share of £20 million
- other projects to combat coronavirus include immediately repurposing existing treatments to treat patients already diagnosed with coronavirus
- the UK is leading the scientific and medical response to the coronavirus outbreak

Six coronavirus research projects, including 2 focused on vaccination trials, will be the first to benefit from a share of £20 million in government investment, Business Secretary Alok Sharma today (23 March) announced.

Two government-backed projects will receive new funding, enabling pre-clinical and clinical vaccine trials, as well as supporting researchers to develop manufacturing processes to produce a vaccine at a million-dose scale.

Other projects receiving funding examine how existing treatments could be repurposed to treat coronavirus, developing antibodies to help target the virus, and examining how people at greatest risk of catching it could be identified.

Business Secretary Alok Sharma said:

Whether testing new drugs or examining how to repurpose existing ones, UK scientists and researchers have been working tirelessly on the development of treatments for coronavirus.

The projects we are funding today will be vital in our work to support our valuable NHS and protect people's lives.

Health Secretary Matt Hancock said:

In the midst of a global health emergency the UK is using all its extensive research expertise to quickly develop new vaccines to target this international threat.

This investment will speed up globally-recognised vaccine development capabilities and help us find a new defence against this disease.

The 6 projects receiving funding today are supporting and encouraging the UK's world-class researchers and experts to speed up coronavirus research

including developing new vaccines and treatments. Alongside the clinical trials, other projects include:

- repurposing existing therapies. Patients being treated by the NHS for coronavirus are taking part in a new clinical trial to test existing therapies developed for other conditions such as HIV. These therapies might help improve patients' recovery
- developing antibodies that target coronavirus. Researchers are aiming to develop a new coronavirus therapy by developing antibodies that target the disease – doing so will help treat a range of coronavirus infections and help people's immune systems recognise the disease and destroy it
- testing approved drugs. Researchers will test around 1,000 approved drugs on cells in laboratory conditions to determine if they might be able to treat the disease
- answering urgent questions relating to coronavirus. Scientists will collect samples and data from patients diagnosed with coronavirus in the UK to answer important questions including which peoples have a higher risk of severe illness, the best way to diagnose the disease, how their immune systems are coping, and closely monitoring the effects of drugs being used. The data could help control the outbreak and improve treatments for patients

Chief Scientific Adviser Patrick Vallance said:

The UK is home to incredible scientists and researchers who are all at the forefront of their field, and all united in their aim; protecting people's lives from coronavirus.

The announcement made today reflects the vital work being undertaken by our scientists to help develop vaccines and treatments. This research could herald important breakthroughs that will put the NHS in a stronger position to respond to the outbreak.

Chief Medical Officer Professor Chris Whitty said:

The world faces an unprecedented challenge in our efforts to tackle the spread of COVID-19 and it is vital we harness our research capabilities to the fullest extent to limit the outbreak and protect life.

Alongside the world-leading research overseen by the NIHR, these new 6 projects will allow us to boost our existing knowledge and test new and innovative ways to understand and treat the disease.

UK Research and Innovation Chief Executive, Professor Sir Mark Walport said:

These studies will be critical to finding better ways to treat and manage COVID-19, which we hope will help to save lives, protect the

more vulnerable, and support the development, trials and in due course the scale up of production of much-needed vaccines. We will continue to support new proposals for research and innovation that will help the UK and others to tackle the pandemic caused by the virus SARS-CoV-2.

Today's announcement builds on the UK's world-class expertise and capability in global health and infectious disease, and supports the government's efforts to save lives, protect the vulnerable and support the NHS.

It follows £30 million of new government funding for the National Institute for Health Research to enable further rapid research into COVID-19, and an additional £10 million to increase Public Health England's ability to test people and monitor the virus, announced in the Budget (11 March).

## **The research projects**

**Dr Kenneth Baillie, University of Edinburgh, Professor Peter Openshaw, Imperial College London, and Professor Calum Semple University of Liverpool – £4.9 million**

The project involves collecting samples and data from COVID-19 patients in the UK to answer many urgent questions about the virus and provide real-time information, which could help to control the outbreak and improve treatment for patients. Their questions include:

- who in the population is at higher risk of severe illness
- what is the best way to diagnose the disease
- what is happening in their immune systems to help or harm them
- closely monitoring the effects of drugs used in patients with COVID-19
- how long are people infectious for and from which bodily fluids
- whether people with COVID-19 are infected with other viruses (e.g. flu) at the same time

They will recruit at least the first 1,300 UK patients who agree to take part over the next year and aim to start communicating their initial results in months. The team's capacity builds on planning over the past 8 years as part of the International Severe Acute Respiratory Infection Consortium, and it includes co-investigators from 6 UK universities and Public Health England.

**Professor Sarah Gilbert, University of Oxford – £2.2 million**

The team are already developing a new vaccine against the COVID-19, as they initiated vaccine development as soon as the genetic sequence of the novel coronavirus was released. This funding will support preclinical testing of the new vaccine, vaccine manufacturing and then clinical trials in people. The first stage of human testing will be in adults aged 18-50, later expanding the trial to adults over 50 years and school age children. The vaccine is made from a harmless virus, an adenovirus, which has been altered to produce the surface spike protein of the coronavirus after vaccination, to

prime the immune system to recognise and attack the coronavirus. If the vaccine is shown to be safe and effective in these earlier trials, vaccine manufacturing will be scaled up for larger studies. The vaccine utilises the same technique as a vaccine the team previously developed for the closely related MERS coronavirus, which showed promise in animal and early-stage human testing. This earlier research was funded by the UK Vaccines Network (a DHSC and UKRI initiative) in 2018.

### **Professor Peter Horby, University of Oxford – £2.1 million**

A clinical trial has started in the UK to test if existing or new drugs can help patients hospitalised with confirmed COVID-19. The drugs will be tested to see if they are safe and effective when added to the usual standard of care. The trial will have an 'adaptive' design, meaning it can test new therapies as they become available. The first 2 therapies to be tested will be HIV drugs: lopinavir-ritonavir and low-dose corticosteroids. The trial is called Randomised Evaluation of COVID-19 Therapy (RECOVERY). The research team's ambitious aim is to have data available to inform patient treatment within 3 months.

### **Professor Xiao-Ning Xu, Chelsea and Westminster Hospital, Imperial College London – £0.6 million**

This research aims to develop antibodies that target the novel coronavirus with the aim of developing a new therapy for COVID-19. Antibodies are molecules produced by the body's immune system that can specifically recognise and bind to structures, such as those on the surface of a virus, to block the virus entry and instruct the immune system to destroy it. They have already identified some antibodies that might bind to proteins from the COVID-19 coronavirus. In collaboration with China, the scientists will use these in this project to develop a potential antibody therapy, with the aim of getting the therapy to the stage where it is ready to enter clinical trials to determine if it can treat a range of coronavirus infections including the COVID-19 coronavirus.

### **Dr Sandy Douglas, University of Oxford – £0.4 million**

The team are aiming to develop manufacturing processes for producing harmless virus, adenovirus vaccines at a million-dose scale, so that – if clinical trials are successful – a vaccine could be made available to high-risk groups as quickly as possible. They are working with Professor Sarah Gilbert's team, who are developing promising novel coronavirus vaccines by modifying harmless adenoviruses.

### **Professor Ultan Power and Professor Ken Mills, Queens University Belfast – £0.3 million**

This project will test a library of approximately 1,000 drugs on cells in the laboratory to determine if any can reduce the toxic effects of novel coronavirus infection. The drugs are already approved for use in humans. They will be tested on airway epithelial cells grown in the lab and infected with

novel coronavirus to determine if the drugs can reduce virus infection or replication and virus-induced inflammatory responses. This could identify promising drugs for further testing and clinical trials in 12 months.

## Notes to editors

This announcement is part of a £20 million research response funded by the Department of Health and Social Care through the National Institute for Health Research, and by UK Research and Innovation. The funding call has 2 rounds, the results of the first are announced today. The call was announced in February – [find out more on the UKRI site](#).

The projects will run over a maximum 18-month period, ensuring timely insights into the current epidemic.

This research funding has been coordinated with other funders and the World Health Organization (WHO) to ensure there is no duplication of effort and expertise is applied strategically.

The funding is in addition and complementary to £20 million funding announced by the Health Secretary in February for the Coalition for Epidemic Preparedness Innovations (CEPI).

In January, the Medical Research Council (part of UKRI) directly funded £0.5 million each to 2 centres:

- the MRC Centre for Global Infectious Disease Analysis at Imperial College London, which is contributing world-leading outbreak modelling and transmission dynamics and liaising with WHO
- the MRC-University of Glasgow Centre for Virus Research, which has investigated the genetics and origins of the virus

## About the National Institute for Health Research (NIHR)

The National Institute for Health Research (NIHR) is the nation's largest funder of health and care research. The NIHR:

- funds, supports and delivers high quality research that benefits the NHS, public health and social care
- engages and involves patients, carers and the public in order to improve the reach, quality and impact of research
- attracts, trains and supports the best researchers to tackle the complex health and care challenges of the future
- invests in world-class infrastructure and a skilled delivery workforce to translate discoveries into improved treatments and services
- partners with other public funders, charities and industry to maximise the value of research to patients and the economy

The NIHR was established in 2006 to improve the health and wealth of the nation through research, and is funded by the Department of Health and Social Care. In addition to its national role, the NIHR supports applied health research for the direct and primary benefit of people in low- and middle-

income countries, using UK aid from the UK government.