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Coronavirus (COVID-19) Research Priorities

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As global research efforts intensify to fight the COVID-19 pandemic, what do we know about the disease, and what are our research priorities?

What we know

Coronaviruses are a group of viruses that cause diseases in mammals and birds, and respiratory tract infections in humans. Typically, these infections are mild, but rarer forms such as Middle East respiratory syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) can be lethal.

The current coronavirus outbreak, recently declared a pandemic by the World Health Organization (WHO), is caused by the SARS-CoV-2 virus. This virus has been shown to have a close genetic similarity to bat coronaviruses, which are thought to have been its [likely origin](#).

COVID-19 seems to be spread in a similar way to cold and flu bugs, through droplets created when a person coughs or sneezes being left on surfaces, which are then touched by other people and spread the disease further. At present, whilst COVID-19 appears to be more contagious than SARS or MERS, the fatality rate is relatively low (around 3%) when compared with MERS (34%) and SARS (10%), with early data suggesting the elderly and those with underlying health conditions are at a higher risk.

What are we working on at Oxford?

All current data and research on the disease and virus is preliminary, and researchers are rapidly learning more about this new and evolving problem. At a two-day meeting in February the WHO agreed an [R&D Blueprint Strategy](#) to serve as a framework to coordinate around and accelerate global research efforts, which identified nine priorities for the medium- and long-term which could contribute to the control of the outbreak.

The University of Oxford is working on many of these priorities, alongside the short-term research areas that could help to save lives now, including: monitoring, modelling and delaying the spread of the disease; discovering the genetic structure and topography of the virus; developing tools to rapidly diagnose the disease; and leading in drug and vaccine trials.

Meanwhile, locally in Oxford we are working with Oxford University Hospitals NHS Foundation Trust to reduce clinical research activity, enabling our researchers to prioritise research on COVID-19 and to directly support the pressing clinical needs of the NHS.

It's clear that the academic community will need to work together with governments, funders and healthcare providers to effectively combat the COVID-19 crisis. We have a long history of responding to health emergencies, and during the 2014 Ebola outbreak our scientists lead the way in undertaking human vaccine studies. Oxford's particular strengths in research around infectious diseases and international health, alongside our leading work in emergency vaccine development, make us well placed to contribute to better understanding around the effective control of this epidemic.

You can find out [more about our research here](#), and how to [support our ongoing research efforts](#) here.

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