

COVID-19 Bulletin

An RSB communication on the
bioscience behind the outbreak and
response

24 August 2020

This eleventh edition of the RSB COVID-19 bulletin highlights a selection of the bioscience research and news of the last month. It cannot be comprehensive and gives just a glimpse of the huge worldwide effort to understand SARS-CoV-2 and its effects.

We can all contribute to the response to COVID-19 by engaging with sound science, countering misinformation and increasing awareness. We hope this bulletin is helpful in this.

Views or opinions presented are those of the original author(s) and do not necessarily represent the views of the Royal Society of Biology; medical and government advice should be consulted regarding personal wellbeing decisions.

For further information and to get in touch, contact our policy team via: policy@rsb.org.uk.

To read previous editions and directly sign-up to future editions of this bulletin, please [visit this page](#).

This bulletin is divided into six main sections:

- 1. RSB news:** including key current updates from the RSB.
- 2. Research updates and expert opinion:** relevant research news and outputs under topic headings.
- 3. How else can the bioscience community help?** Resource and expertise calls.
- 4. Positive community news:** community impact aiding the pandemic response.
- 5. Other regularly updated information sources:** useful online information hubs.
- 6. Spotlight on personal and community wellbeing:** articles on mental health and wellbeing during self-isolation and social distancing.

This newsletter provides links to published news articles from a range of sources. Views or opinions presented are those of the original author(s) and do not necessarily represent the views of the Royal Society of Biology.

RSB news

Education during COVID-19

Our education policy team is working with government, awarding bodies and policy partners to provide advice and support to teachers, parents and students. These pages will be updated regularly over the coming weeks.

[The Biologist's 'COVID Q&A series'](#)

In the latest from *The Biologist's* 'COVID Q&A series', Dr Andrew Singer explains how [a national system to monitor COVID-19 levels in sewage](#) could identify local outbreaks more quickly and cheaply than mass testing, and Professor Sarah Gilbert, lead vaccinologist on the Oxford COVID-19 vaccine trials, [explains how her team developed and started testing a vaccine before anyone else](#).

[RSB Policy Lates looks at the positives and negatives for research in 'the COVID era'](#)

Almost 100 people from the UK and beyond joined the RSB's latest 'Policy Lates' event to discuss how discovery research will change in the era of COVID-19.

[Call for papers for journal special issue on Pandemics](#)

Emerging Topics in Life Science (ETLS), the journal co-owned by the Biochemical Society and the RSB, has opened a call for papers for a special issue on pandemics.

Aiming for publication in 2020, the issue will feature short reviews looking at coronaviruses & COVID-19, but also drivers of disease and emerging infections, emerging infectious disease preparedness and novel epidemiological concepts.

Submission deadline: September 2020

[Main RSB webpage on COVID-19](#)

The RSB is working to adapt and ensure our services are delivered to the greatest extent possible whilst also taking into account Public Health England and Government advice during the pandemic. We regularly update this webpage with relevant information about our activities, initiatives and community support.

For more current news, commentary and updates, visit the [RSB on Twitter](#), [LinkedIn](#), [The Biologist](#), and read our latest edition of the weekly [Science Policy Newsletter](#).

Research updates and expert opinion

SARS-CoV-2 is a virus in the zoonotic coronavirus family. This novel virus, discovered in 2019, was previously unidentified in humans and causes the disease COVID-19, which has since been characterized as a pandemic.

SARS-CoV-2 virus characteristics

[Covid-19: Infectious coronaviruses 'circulating in bats for decades'](#)

Coronaviruses capable of infecting humans may have been circulating undetected in bats for decades. Research suggests one of the closest known ancestors of the virus that causes Covid-19 emerged in bats more than 40 years ago, reports BBC news.

[Trump 'owes us an apology.' Chinese scientist at the center of COVID-19 origin theories speaks out in this opinion article from Science](#)

The coronavirus pandemic has thrust virologist Shi Zhengli into a fierce spotlight. Shi, heads a group that studies bat coronaviruses at the Wuhan Institute of Virology (WIV). On 15 July, she emailed Science answers to a series of written questions about the virus' origin and the research at her institute.

[Escape from neutralizing antibodies by SARS-CoV-2 spike protein variants](#)

In this bioRxiv preprint the authors somewhat clarify the degree to which SARS-CoV-2 may adapt to evade neutralizing antibodies.

COVID-19 pathophysiology

[Does exposure to air pollution increase the risk of dying from the coronavirus \(COVID-19\)?](#)

This ONS analysis measures the link between long-term exposure to dirty air and COVID-19 deaths in England.

['Immunology Is Where Intuition Goes to Die'](#)

Ed Yong writes for The Atlantic about why a clearer understanding of how the immune system reacts to the coronavirus is key.

[Why pregnant women face special risks from COVID-19](#)

Data on pregnancy and COVID-19 are woefully incomplete. While foetal infections later in pregnancy appear to be rare, and experts are cautiously optimistic that the coronavirus won't warp early fetal development emerging data suggest pregnancy does appear to make women's bodies more vulnerable to severe COVID-19, reports Science

Epidemiology and public health response

[Working on the ward: investigating the risks of COVID-19 for ethnic minority healthcare workers](#)

Crucial evidence is now showing that after taking into account age and other sociodemographic factors, Black, Asian and minority ethnic (BAME) people are nearly twice as likely to die of COVID-19 than white people, reports MRC.

[COVID-19, children and schools](#)

This article by UK Parliament POST summarises key findings about how COVID-19 affects children, and the role that children have in the transmission of the virus in the population, their local communities and in schools.

[Hancock axes 'failing' Public Health England - reports The Telegraph](#)

The Telegraph describes news of how PHE is to be scrapped and replaced by German-style pandemic response agency.

[Serial interval of SARS-CoV-2 was shortened over time by nonpharmaceutical interventions](#)

By compiling a line-list database of transmission pairs in mainland China, the authors of this publication in Science show that mean serial intervals of COVID-19 shortened substantially within a month, a change driven by enhanced non-pharmaceutical interventions. They also show that using real-time estimation of serial intervals provides more accurate estimates of reproduction numbers than using conventionally fixed serial interval distributions.

[We Need to Talk About Ventilation](#)

How is it that six months into a respiratory pandemic, we are still doing so little to mitigate airborne transmission? Writes Zeynep Tufekci for The Atlantic.

[Aboard the Diamond Princess, a Case Study in Aerosol Transmission](#)

A computer model of the cruise-ship outbreak found that the virus spread most readily in microscopic droplets light enough to linger in the air, reports The New York Times.

[Coronavirus: Scientists find 'unambiguous evidence' that Covid-19 can remain airborne - the Independent reports.](#)

Following months of speculation and disagreement in the health community, a team of researchers has found that Covid-19 is airborne and that current social distancing guidelines could lead to more exposures and outbreaks. Confirmation of aerosol transmission, at distances

of 2 and 4.8 metres, was made by University of Florida experts in virology and aerosol science, according to a research paper published on the preprint server medRxiv.

[Face masks becoming normal but a flashpoint and source of conspiracies for some, while 'Covid-secure' behaviours sticking.](#)

KCL Policy Institute has been tracking public attitudes, beliefs and behaviour throughout the coronavirus crisis, their latest survey data reveals masks have been a cause of confrontations and the subject of false beliefs.

[Coronavirus fallout: blame, trust and the future of the UK](#)

KCL Policy Institute has been tracking public attitudes, beliefs and behaviour throughout the coronavirus crisis, their latest survey data reveals where the public assign blame and credit, and how their trust and hopes for the future have changed.

[How to Actually Talk to Anti-Maskers - an opinion article in the New York Times.](#)

You cannot force public trust; you have to earn it, writes Charlie Warzel.

['If Britain ditches overseas holidays, we can eliminate coronavirus' - an opinion article in The Guardian](#)

The Spanish travel U-turn should inspire us to emulate other islands and wipe out Covid-19. The benefits would be huge write David Hunter (Richard Doll professor of epidemiology and medicine, University of Oxford) and Neil Pearce (professor of epidemiology and biostatistics at the London School of Hygiene and Tropical Medicine).

[UK could eliminate the coronavirus but it might do more harm than good](#)

Becoming a covid-19-free zone sounds like the ultimate goal for any nation. Several countries around the world have come pretty close and, according to a group of independent scientists, the UK could join them. However, closer scrutiny reveals that no country has truly eliminated the coronavirus from its shores and that doing so would mean making such large sacrifices in other areas of public well-being that it might not be worth it, reports NewScientist.

[The pandemic appears to have spared Africa so far. Scientists are struggling to explain why](#)

Although Africa reported its millionth official COVID-19 case last week, it seems to have weathered the pandemic relatively well so far, with fewer than one confirmed case for every thousand people and just 23,000 deaths so far. Yet several antibody surveys suggest far more Africans have been infected with the coronavirus - a discrepancy that is puzzling scientists around the continent. "We do not have an answer," says immunologist Sophie Uyoga at the Kenya Medical Research Institute–Wellcome Trust Research Programme.

['Our epidemic could exceed a million cases' - South Africa's top coronavirus adviser](#)

Salim Abdool Karim tells Nature News Q&A how the country must rediscover its community spirit to deal with a coming surge in infections.

[Comparisons of all-cause mortality between European countries and regions: January to June 2020](#)

ONS analysis of all-cause mortality patterns of selected European countries and regions, week ending 3 January (Week 1) to week ending 12 June (Week 24) 2020, last updated 30 July 2020.

[How does the coronavirus pandemic compare across Europe?](#)

Even in the early stages of the coronavirus (COVID-19) pandemic the ONS were asked how the UK's death toll compares to other countries. Unfortunately making international comparisons is not a straightforward task; from different data collection methods to different population structures

there's multiple factors to consider. But, six months into the pandemic and with more data available, Edward Morgan Senior Research Officer, Centre for Ageing and Demography, writing for National Statistical, looks at the international data.

[New Zealand reports 80 COVID-19 cases from domestic transmission, breaking streak](#)

Over the course of the COVID-19 pandemic thus far, Outbreak Observatory (run by Johns Hopkins Center for Health Security) has been keeping track of the successes and challenges of various national response strategies. However, it has become apparent that even nations which have suppressed their outbreaks can suffer from resurgences in transmission - such as in the case of Japan and Singapore, which they've written about previously. This post takes a closer look at the resurgence of COVID-19 cases in another country they've written as a success story in the past: New Zealand.

[Evidence of exposure to SARS-CoV-2 in cats and dogs from households in Italy](#)

The authors of this bioRxiv preprint report a large-scale study to assess SARS-CoV-2 infection in companion animals living in northern Italy, sampled at a time of frequent human infection. No animals tested PCR positive. However, 3.4% of dogs and 3.9% of cats had measurable SARS-CoV-2 neutralizing antibody titers, with dogs from COVID-19 positive households being significantly more likely to test positive than those from COVID-19 negative households.

[How the pandemic might play out in 2021 and beyond](#)

This coronavirus is here for the long haul - here's what scientists predict for the next months and years reports Nature News Feature.

Testing and ongoing surveillance

[Coronavirus: Sewage testing for Covid-19 begins in England](#)

The BBC reports on how sewage testing is being conducted across England in a bid to develop wastewater-based Covid-19 surveillance.

[The challenges of informative wastewater sampling for SARS-CoV-2 must be met: lessons from polio eradication](#)

In this article for The Lancet Microbe, the authors highlight several challenges of wastewater sampling for SARS-CoV-2 and outline lessons that can be learnt from polio eradication.

[Backward contact tracing could help double the effectiveness of test & trace system](#)

Backward contact tracing combined with standard contact tracing has the potential to double the effectiveness of the NHS Test and Trace system (NHSTT), according to new preliminary research by the London School of Hygiene & Tropical Medicine.

[Effective testing and contact tracing is essential for schools to safely open during COVID-19 pandemic](#)

Effective contact tracing and epidemic control measures are essential for safe opening of schools during the COVID-19 pandemic, according to a new study published in The Lancet Child & Adolescent Health.

[Test UK arrivals to cut Covid quarantine times, scientists urge](#)

Testing people after seven days could also 'increase compliance from public', says one researcher reported in The Guardian.

[A negative COVID-19 test does not mean recovery](#)

Pandemic policy must include defining and measuring what we mean by mild infection, writes

Nisreen A. Alwan for Nature World View.

[Long-Haulers Are Redefining COVID-19](#)

Without understanding the lingering illness that some patients experience, we can't understand the pandemic writes Ed Yong for the Atlantic.

[Welcome Back to Germany. Now Take Your Free Virus Test.](#)

The country's capacity to make testing efficient, affordable and available has distinguished it. Now, to head off a potential second wave, it's testing anyone returning from a "hot zone" on entry reports The New York Times.

Prophylaxis and treatment

[UK government secures new COVID-19 vaccines and backs global clinical trial](#)

UK citizens will receive early access to 90 million doses of 2 COVID-19 vaccine candidates should they prove safe and effective.

[COVID-19 vaccine showed robust immune responses in all participants](#)

Interim results from the ongoing Phase I/II COV001 trial, led by Oxford University, showed that AZD1222 was tolerated and generated robust immune responses against the SARS-CoV-2 virus in all evaluated participants, reports Nordic Life Science News.

[China's coronavirus vaccines are leaping ahead - but face challenges as virus wanes](#)

Companies could struggle to enrol enough trial participants, or gather enough data to convince regulatory agencies that the shots work, reports Nature News.

[Russia's fast-track coronavirus vaccine draws outrage over safety reports Nature News](#)

The immunization is the first approved for widespread use but could be dangerous because it hasn't been tested in large trials, say researchers.

[Audio Interview: New SARS-CoV-2 Vaccine Results, with Peter Piot](#)

In this audio interview conducted on July 29, 2020, the editors of The New England Journal of Medicine are joined by Peter Piot, who talks about his own experience with Covid-19, as well as recent developments in SARS-CoV-2 vaccines.

[Who's least likely to say they'll get a Covid-19 vaccine?](#)

KCL Policy Institute has been tracking public attitudes, beliefs and behaviour throughout the coronavirus crisis, their latest survey data reveals one in six say they're unlikely to or definitely won't get one, rising even higher among some groups.

['I'd Need Evidence Before I'd Get a Covid-19 Vaccine. It Doesn't Exist Yet' an opinion article in The New York Times.](#)

Scientists need to show us the data. And that's exactly what they're working on, writes Dr Natalie Dean, assistant professor of biostatistics at the University of Florida.

[Risk, uncertainty and fear of failure: Why scientists aren't celebrating a coronavirus vaccine yet](#)

Scientific community wrestling with how to deal with both public hesitancy and overblown expectations for a potential jab, reports The Telegraph.

[Finnish drug lead molecule shows promise in targeting the new coronavirus](#)

Since 2014, Ville Paavilainen's laboratory at the University of Helsinki has been investigating a

molecule, which now shows promise in targeting the new coronavirus, reports Nordic Life Science News.

How else can the bioscience community help?

[COVID-19 resources from the community](#)

An RSB webpage with links to COVID-19 initiatives and resources available from other bioscience organisations and the wider community. This page is being updated regularly and if you would like to suggest additional content please [send us an email](#).

[UKRI open call for research and innovation ideas to address Covid-19](#)

Proposals are invited for short-term projects addressing and mitigating the health, social, economic, cultural and environmental impacts of the COVID-19 outbreak. For this next phase of the call, UKRI will focus on areas that fill gaps in the Covid-19 research and innovation landscape. UKRI have developed a priority list of areas which they are particularly interested in seeing addressed. These will be updated periodically. It's important that applicants also check what projects are already in progress. On Friday 31 July the application process changed. Application to the research councils is via the Joint Electronic Submission (Je-S) system.

Closes: 31 December 2020

[UKRI COVID-19 and ethnicity research](#)

UKRI has issued a highlight notice to call for research to understand:

- the vulnerability of minority ethnic groups to COVID-19
- the emerging social, economic and cultural impacts of the pandemic on these groups.

UKRI's ambition is to fund one or two consortia in this area, with a combined value of up to £5 million. UKRI has funded a number of projects focussing on minority ethnic groups and COVID-19. This call aims to highlight the need for research in areas that have not been covered sufficiently to date.

Closes: 18 September 2020

[Volunteers needed for COVID-19 detection dog trial](#)

Researchers investigating whether bio-detection dogs can detect COVID-19 in humans are asking people in England for help with the trial.

[Science and Technology Committee \(Commons\) inquiry: The role of technology, research and innovation in the COVID-19 recovery](#)

The House of Commons Science and Technology Committee will inquire formally into the role of technology, research and innovation in the UK's economic recovery from COVID-19, as well as the support that the sector itself requires to recover from the pandemic.

Closes: 11 September 2020

[COVID-19: The Impact on Technicians in UK Higher Education & Research](#)

A new report from the Technician Commitment and partners highlights the impact of COVID-19 on the technical community in higher education and research.

[New survey reveals concerns from early career researchers](#)

Earlier this year, the Biochemical Society launched a community survey amongst its members and other key stakeholders to assess the impact of the COVID-19 pandemic on researchers in the molecular biosciences. These results have revealed principle concerns around the future of early career researchers (ECRs) and the funding landscape.

[Wider Impacts of COVID-19 on Health \(WICH\) monitoring tool](#)

The wider impacts of COVID-19 on health monitoring tool (WICH) looks at the indirect effects of the COVID-19 pandemic on the population's health and wellbeing. Public Health England (PHE) health intelligence teams are scoping metrics that will enable the monitoring of the indirect health impacts of COVID-19. This resource is a central repository for the metrics as they become available.

[University of Oxford Immunology Network: COVID-19 Literature Reviews](#)

A group of post-docs and DPhil students in the Medical Sciences Division are voluntarily reviewing some of the immunology-focussed COVID-19 literature, particularly pre-prints. This initiative has been organised by the Kennedy Institute for Rheumatology Journal Club.

[How to stop COVID-19 fuelling a resurgence of AIDS, malaria and tuberculosis](#)

This Nature editorial describes how a focus on the coronavirus has disrupted detection and treatment of other infectious diseases. Governments and funders can do four things to avert a catastrophe.

[Why deforestation and extinctions make pandemics more likely](#)

Researchers are redoubling efforts to understand links between biodiversity and emerging diseases - and use that information to predict and stop future outbreaks, reports Nature News.

[Reduce the risk of animal viruses jumping to humans](#)

The pandemic is forcing us to change direction, to rethink what we do and how we do it. University of Cambridge asks their experts 'where should we go from here?'. This is the first article in their series 'Beyond the Pandemic'.

For more on the link between biodiversity loss and spillover of animal diseases into human populations, read [The Biologist's 'COVID Q&A' series interview with ecologist Professor Kate Jones](#).

[Investing in nature makes more sense than ever](#)

If there is one lesson from COVID-19, it is that we can no longer manage environmental and economic pressures separately reports the Global Environment Facility.

[How could COVID-19 change research culture for the better?](#)

COVID-19 is transforming every aspect of society - and research is no exception. But how can we use what we've learned in the past six months to build a better research culture? Writes Ben Bleasdale, Senior Policy Adviser Wellcome.

[Understanding the full business impact of the coronavirus pandemic](#)

Statistics on the number of business creations and closures are important indicators of the health of the economy. However, the different measures of creation and closure can paint a complex picture. Josh Martin, ONS Economic Advisor writing for National Statistical, describes some new ways ONS are measuring this important metric to support understanding of the longer-run impact of the COVID-19 pandemic on the economy.

[Invitation from the Valuing Nature Network to participate in a study on the impacts of COVID-19 on human wellbeing and interactions with coastal nature](#)

If you live in or near coastal areas Valuing Nature Network invites you to participate in a research study exploring the impacts of COVID-19 on people's wellbeing and interactions with coastal nature, by completing an anonymous survey and forwarding it to others living in or near coastal areas.

Contact RSB to discuss bioscience community issues or actions via policy@rsb.org.uk

Positive community news

[Multimillion investment in six new research projects to investigate COVID-19 and ethnicity](#)

Six new projects to improve our understanding of the links between COVID-19 and ethnicity have been funded by UK Research and Innovation's (UKRI) Medical Research Council (MRC) and the National Institute for Health Research (NIHR). These projects will seek to explain and mitigate the disproportionate death rate from COVID-19 among people from Black, Asian and minority ethnic (BAME) backgrounds, including BAME health and social care workers.

[Mapping the COVID-19 research landscape: How tracking medical research funding has accelerated in the pandemic](#)

Europe PubMed Central (EPMC) has launched a new online grant finder tool to include a global dataset of COVID-19 projects. This new tool takes data from the UK Collaborative for Development Research (UKCDR) and Global Research Collaboration For Infectious Disease Preparedness (GloPID-R) COVID-19 Research Project Tracker, the most comprehensive international open dataset of pandemic-related research projects. MRC Director of Strategic Evaluation and Impact, Dr Ian Viney MBE, highlights how the tracking of research projects has accelerated and become more globally-connected in the pandemic, to better support the rapid pace of worldwide discovery and clinical research.

Other regularly updated information sources

[Additional COVID-19 resources](#)

An RSB webpage collating other regularly updated resources on COVID-19. This page has recently undergone a revamp for easier navigation of the wide range of resources posted.

[\[WHO\] Coronavirus disease \(COVID-19\) Situation Dashboard](#)

WHO COVID-19 situation dashboard.

[Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE](#)

COVID-19 case dashboard.

Spotlight on personal and community wellbeing

[My COVID-19](#)

Physician Sondra S. Crosby shares her personal experience of contracting COVID-19, as a comment piece in the Annals of Internal Medicine.

[Is there really a Covid mental health crisis?](#)

The coronavirus disaster has obviously brought with it an epidemic of anxiety and depression. Or has it? Science writer Tom Chivers discusses this question in an article for UnHerd.

[Putting feeling into policy making](#)

A guest post by Clare Moriarty (former Permanent Secretary for the Department for Exiting the European Union) for University of Cambridge centre for science and policy.

[The trials of global research under the coronavirus](#)

Researchers share how they have adapted fieldwork and collaborations in the face of travel bans and closed borders, in this Nature Career Feature.

[What's on the agenda for post-pandemic meetings?](#)

Conferences could become more affordable, international and inclusive if virtual events become 'the new normal' according to this Nature Career Feature.



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