

## COVID-19 Bulletin

An RSB communication on the  
bioscience behind the outbreak and  
response

28 September 2020

Dear Sir or Madam,

This twelfth 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](mailto: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 national and international research news and outputs under topic headings.
- 3. How else can the bioscience community help?** Examples, 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

### **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.

## **The Biologist**

Coping with COVID-19: The RSB policy team explores [responses to an RSB survey](#) that found three-quarters of UK researchers have had to abandon or suspend research due to COVID-19. Education during the pandemic: From the October issue of *The Biologist*, [a special double education feature on teaching practical skills](#) and [final year projects during a pandemic](#).

## **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.

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**

### **Rigorous wildlife disease surveillance**

Evidence suggests that zoonotic (animal origin) coronaviruses have caused three recent emerging infectious disease (EID) outbreaks, including the current coronavirus disease 2019 (COVID-19) pandemic. The authors of this AAAS Science viewpoint article highlight and discuss the fact that to date there are no international or national conventions on pathogen screening associated with animals, animal products, or their movements, and capacity for emerging infectious disease (EID) diagnostics is limited along much of the human-wildlife interface. This despite EID risks associated with the wildlife trade remaining the largest unmet challenge of current disease surveillance efforts.

## **COVID-19 pathophysiology**

### **How COVID-19 can damage the brain**

This Nature News Feature describes how some people who become ill with the coronavirus develop neurological symptoms. Scientists are struggling to understand why.

### **The Core Lesson of the COVID-19 Heart Debate**

The Atlantic reports on how the new coronavirus seems so strange because it has our full attention in a way most viruses don't.

### **Hidden immune weakness found in 14% of gravely ill COVID-19 patients**

A new study may help explain why men are more likely than women to develop life-threatening COVID-19, reports Science.

### **Coronavirus reinfections: three questions scientists are asking**

This Nature News Explainer covers how second infections raise questions about long-term

immunity to COVID-19 and the prospects for a vaccine.

### **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.

### **Upper respiratory viral load in asymptomatic individuals and mildly symptomatic patients with SARS-CoV-2 infection.**

In this study, published in the *bmj* journal *Thorax*, the authors assessed the viral loads in asymptomatic individuals with SARS-CoV-2 infection in comparison with those in symptomatic patients with COVID-19. Approximately one-fifth of the individuals without severe symptoms were asymptomatic, and their viral loads were comparable to those in symptomatic patients.

## **Epidemiology and public health response**

### **Covid-19: Experts divide into two camps of action - shielding versus blanket policies**

Two open letters sent to the UK's four chief medical officers signal the polarisation of opinion among medical professionals over how the government should tackle the emerging "second wave" of covid-19.

### **Coronavirus (COVID-19) in 10 charts**

ONS data highlight the profound impacts of the pandemic on the UK economy and society.

### **Europe Is Seeing a Surge in Coronavirus Cases. 'Are Tourists the Cause of the Increase?' asks Time magazine.**

Time magazine reports on how Europe has seen sharp rises in the number of COVID-19 cases across the region, with some countries reporting higher daily caseloads than they have ever seen.

### **The risk of introducing SARS-CoV-2 to the UK via international travel in August 2020**

APHA worked with Public Health England to model COVID-19 air travel restrictions in August 2020. The study, in preprint with medRxiv, estimated that on average 895 infectious travellers arrive in the UK every week via international air travel, prior to any UK control measures.

### **Why Some People Get Terribly Sick from COVID-19**

Beyond factors such as age and sex, underlying aspects of biology and society influence disease severity reports Scientific American.

### **The coronavirus is most deadly if you are older and male - new data reveal the risks**

Nature News describes how a slew of detailed studies has now quantified the increased risk the virus poses to older people, men, and other groups.

### **How many people has the coronavirus killed?**

Researchers are struggling to tally mortality statistics as the pandemic rages. This Nature News Feature describes how they are gauging the true toll of the coronavirus outbreak.

### **COVID-19 less deadly and causes milder symptoms in children**

Children and teenagers are less likely than adults to develop severe COVID-19 or die from the disease, according to a report published in the British Medical Journal.

### **Research, innovation vital in new COVID-19 world**

The UK's Official Development Assistance funding for research and development innovation is vital to tackle the COVID-19 pandemic and address future global challenges, writes Professor

Peter Piot, independent chair of the UK government's Strategic Coherence of ODA-funded Research Board.

### **A city in Brazil where covid-19 ran amok may be a 'sentinel' for the rest of the world**

So many people have gotten sick in Manaus that researchers say the virus is running out of people to infect, reports MIT Technology Review.

### **'Confounding': Covid may have already peaked in many African countries**

One explanation for virus not behaving as expected could be previous exposure to other infections, experts tell MPs.

### **COVID-19 data on Native Americans is 'a national disgrace.' This scientist is fighting to be counted, reports Science**

"If you eliminate us in the data, we no longer exist," says Abigail Echo-Hawk, a citizen of the Pawnee Nation of Oklahoma and director of the Urban Indian Health Institute.

### **Why the United States is having a 'coronavirus data crisis'**

Nature News reports that political meddling, disorganization and years of neglect of public-health data management mean the country is 'flying blind'.

### **Handwashing and hygiene: How simple solutions help complex problems**

An article by LSHTM on how the pandemic has thrust handwashing and environmental hygiene into the limelight, yet studies have shown that many people - regardless of where they live - don't wash their hands, even after going to the toilet.

### **The Mail online published pictures from a hand washing experiment that show how to stop Covid-19 'brewing trouble' in the office**

The Mail online reports that the message has been clear: washing or sanitising your hands frequently and thoroughly, and wearing a mask when required, are key to making a safe return to the office.

### **Possibility for reverse zoonotic transmission of SARS-CoV-2 to free-ranging wildlife: A case study of bats**

The authors of this study, published in PLOS Pathogens, review the diversity and natural host range of beta-coronaviruses  $\beta$ -CoVs (related to SARS-CoV-2) in bats and examine the risk of humans inadvertently infecting free-ranging bats with SARS-CoV-2

### **Jumping back and forth: anthrozoootic and zoonotic transmission of SARS-CoV-2 on mink farms**

The authors of this preprint study in bioRxiv describe an in-depth investigation of outbreaks on 16 mink farms and humans living or working on these farms, using whole genome sequencing. They conclude that the virus was initially introduced from humans and has evolved, most likely reflecting widespread circulation among mink.

### **COVID-19 confirmed in pet cat in the UK**

An Animal and Plant Health Agency (APHA) Science blog on some of their work to date through the pandemic, and how tests they conducted have confirmed that the virus responsible for COVID-19 has been detected in a pet cat in England.

### **More than a health crisis: Covid-19 impacts are far-reaching and long-term**

The Covid-19 pandemic is already causing wider consequences for societies, national economies and global relations, and these will continue for years to come. Three experts share insights in

this Wellcome Q&A feature on how we can better respond to the pandemic while we continue the search for vaccines and treatments.

### **Looking ahead to prepare for tomorrow: COVID-19 Futures**

Beth Thompson Head of UK & EU Policy at Wellcome describes how the Wellcome team has brought together experts to explore how the world can consider and plan for the long-term possibilities and impacts of COVID19. Here's what they learned from their COVID-19 Futures project.

## **Testing and ongoing surveillance**

### **Coronavirus: 'Long Covid' patients need treatment programme, doctors say**

Greater NHS support is needed for people chronically ill for months with Covid-19 symptoms, experts have told BBC Radio 4's File on 4.

### **Nature World View: More testing alone will not get us out of this pandemic**

Inequities and other social realities must be factored into diagnoses and tracing of COVID-19, writes Shobita Parthasarathy.

### **Titres of antibodies do not decline within 4 months according to Icelandic study**

Scientists at deCODE genetics in Iceland, a subsidiary of Amgen, and their collaborators, have published a study in The New England Journal of Medicine, that shows that antiviral antibodies against SARS-CoV2 do not decline within four months of diagnosis.

### **Coronavirus testing: Simple test gives results in 90 minutes, reports BBC**

A rapid test can accurately diagnose a coronavirus infection within 90 minutes without needing a specialist laboratory, say scientists.

### **Coronavirus testing: the global race to find a rapid test which can produce on-the-spot results**

Researchers are racing to develop a 'game-changing' Covid-19 test that can produce a result in 10 to 15 minutes, reports inews.

## **Prophylaxis and treatment**

### **RECOVERY trial will evaluate REGN-COV2 investigational antibody cocktail in the UK**

The University of Oxford and its partner Regeneron Pharmaceuticals, Inc. (NASDAQ: REGN) have announced that RECOVERY (Randomised Evaluation of COVid-19 thERapY), one of the world's largest randomised clinical trials of potential COVID-19 treatments, will evaluate Regeneron's investigational anti-viral antibody cocktail, REGN-COV2.

### **Association Between Administration of Systemic Corticosteroids and Mortality Among Critically Ill Patients With COVID-19**

The WHO Rapid Evidence Appraisal for COVID-19 Therapies (REACT) Working Group carried out a prospective meta-analysis of 7 randomized trials that included 1703 patients of whom 647 died, 28-day all-cause mortality was lower among patients who received corticosteroids compared with those who received usual care or placebo, published in JAMA Network.

### **Advisers See No Data Favouring Trump-Touted Plasma Therapy**

A panel of experts convened by the National Institutes of Health undercut an emergency authorization issued just days ago by U.S. regulators, saying there's not enough evidence to recommend use of convalescent plasma for hospitalized coronavirus patients.

## **Jeremy Farrar, Director of Wellcome writes: Let's get real. No vaccine will work as if by magic, returning us to 'normal'**

In an opinion article in The Guardian, Jeremy Farrar writes that to dream of imminent solutions is only human. But progress will come from controlled expectations.

## **Covid-19: UK volunteers could be given virus to test vaccine**

The BBC reports on how the UK could be the first country in the world to carry out Covid "challenge trials" - where healthy volunteers are deliberately infected with coronavirus to test possible vaccines.

## **Opinion: These Coronavirus Trials Don't Answer the One Question We Need to Know**

An opinion article in the New York Times describes how we may not find out whether the vaccines prevent moderate or severe cases of Covid-19.

## **Covid-19 Vaccines Could End Up With Bias Built Right In**

Some of the leading candidates might work better for the richest people in the world, simply on account of how they're made, according to this Wired Ideas article.

## **Who gets a COVID vaccine first? Access plans are taking shape**

Nature News describes how advisory groups around the world release guidance to prioritize health-care workers and those in front-line jobs.

## **UK joins WHO-backed effort to share vaccines globally**

The initiative is designed to ensure that a vaccine is distributed equally among both poorer and richer nations, reports the Telegraph.

## **Russia's COVID-19 vaccine showed antibody response in initial trials**

Reuters reports on how Russia's "Sputnik-V" COVID-19 vaccine produced an antibody response in all participants in early-stage trials, according to results published on Friday by The Lancet medical journal that were hailed by Moscow as an answer to its critics.

## **Speed of coronavirus vaccine race 'crazy' and unsafe, scientists warn**

'The more this moves into politics, the more it becomes a little crazy,' one leading expert says in the Telegraph.

## **Pharma giants sign COVID-19 vaccine safety pledge**

Nine leading US and European vaccine developers have signed a pledge to continue to make the safety and well-being of vaccinated individuals the top priority in development of the first COVID-19 vaccines, reports Nordic Life Science News.

## **Largest global vaccine confidence survey reveals hesitancy hotspots**

This article by LSHTM describes how public confidence in vaccines varies widely between countries and regions around the world, with signs that public trust may be improving in parts of Europe, whilst several countries experiencing political instability and religious extremism are seeing growing scepticism that vaccines are safe, and the spread of misinformation online is threatening vaccination programmes worldwide.

## **Engagement with anti-vaccine Facebook posts trebles in one month**

Guardian analysis prompts calls for new drive to combat conspiracy theories.

## **Keeping track on the development of a COVID-19 vaccine**

An article about LSHTM's COVID-19 Vaccine tracker.

## Swedish researchers have identified nanobodies that may prevent COVID-19 infection

Researchers at Karolinska Institutet have identified a small neutralizing antibody, a so-called nanobody, that has the capacity to block SARS-CoV-2 from entering human cells.

## America Is Running Low on a Crucial Resource for COVID-19 Vaccines

According to The Atlantic, the US is facing a monkey shortage.

## 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](#).

### NHS COVID-19 app launches across England and Wales

NHS COVID-19 app launches to help control coronavirus (COVID-19) transmission. People across England and Wales are being asked to download the NHS COVID-19 app to help control the spread of coronavirus and protect themselves and their loved ones as case numbers rise.

### Call for expressions of interest for National Testing Programme roles

As part of supporting efforts to reopen society and the economy, NHS Test and Trace is expanding their network of laboratories across the UK. As part of the expansion plans, they have a range of job opportunities available at their established labs and new labs that will be opening in the coming weeks and months.

### 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**

### Call for life science companies to get involved in UK's largest ever health programme

The UK Research and Innovation-funded Accelerating Detection of Disease (ADD) programme is the UK's largest ever health research initiative. Over the next four years it will recruit five million volunteers to support research intended to improve early detection, risk stratification, and early intervention for chronic diseases. Life science companies can find out more about the UK's biggest health programme and opportunities to get involved [by signing up for a webinar taking place on 1 October 2020](#).

### Prime Minister's speech to UN General Assembly: 26 September 2020

Prime Minister Boris Johnson addressed the UN General Assembly during UNGA 2020 on the UK contributing up to £571 million to COVAX, to distribute a COVID-19 vaccine worldwide. Johnson also announced the UK's five-point plan to prevent future global health crises.

### Making health statistics more easily accessible

ONS have published a new tool which aims to bring together health statistics from across

government in one place. Covering a wide range of topics from alcohol to dementia, the tool aims to make it easier for anyone to find the information they need on health in England. Theodore Joloza explains how this tool came about and why it is important.

### **Supporting action on reducing health inequalities**

PHE has launched the Health Equity Assessment Tool (HEAT) - a framework consisting of a series of questions and prompts, designed to support professionals across the public health system and wider health economy systematically address health inequalities and equity in their work programmes, services or business planning cycles.

### **Rethink the menu and how much it costs**

Boris Johnson has urged the country "to lose weight to beat coronavirus" through exercise and healthy eating. Dr Jean Adams, co-leader of the CEDAR and MRC Epidemiology Unit Population Health Interventions Programme in Cambridge suggests that food policies should be sensitive to the fact that healthier diets are beyond the budget of too many people in the UK.

### **HRH The Duchess of Cornwall meets the dogs who could detect COVID-19**

Dogs being trained to sniff out COVID-19 as part of a project led by the ARCTEC team at the London School of Hygiene & Tropical Medicine (LSHTM) with partners Medical Detection Dogs and Durham University have received a Royal visit. Volunteers are also needed for the study, further information in this article by LSHTM.

### **Integrating climate action for health into covid-19 recovery plans**

In this analysis published in the *bmj*, Kristine Belesova (LSHTM assistant professor in environmental epidemiology) and colleagues argue that recovery from the covid-19 pandemic must safeguard the health of current and future generations in the face of the climate emergency.

### **Opinion: 'Let's not be short-sighted - the UK's medical research charities need urgent support'**

Iain Foulkes, CRUK executive director of research and innovation, writes on the UK's uniquely prominent, well-integrated charity-funded research sector; how this faces a serious challenge with the UK's National Cancer Research Institute projecting a devastating 24% drop in the UK's overall cancer research spending this year, driven by a 46% fall in charity sector funding; and the untapped potential to be achieved if the sector's substantial track record is protected.

### **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](mailto:policy@rsb.org.uk)

## **Positive community news**

### **£5 million for new research projects investigating how coronavirus spreads**

Eight new projects will explore how the virus spreads in schoolchildren, healthcare workers, in medical settings, on surfaces in public spaces, and in strictly-Orthodox Jewish communities.

## Unprecedented national effort by UK immunologists to search for answers on COVID-19

Three new UK-wide studies, bringing together scientists from 17 research institutions, will receive £8.4 million from UK Research and Innovation (UKRI) and the National Institute for Health Research (NIHR) to understand immune responses to the novel coronavirus.

## COVID-19 data scandal prompts tweaks to elite journal's review process

Three months after retracting a high-profile COVID-19 paper, editors at The Lancet hope to assure the research community that they've learned their lesson, reports Science.

## 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

### Mental health: listening to young people and learning from Covid-19

Covid-19 has highlighted that mental health is an urgent global health challenge requiring international cooperation. This position paper sets out a commitment by Wellcome, UNICEF, the World Health Organization, and the World Economic Forum to embed three principles across their mental health work: lived experience, local innovation, and larger than healthcare.

### Postdocs in crisis: science cannot risk losing the next generation

A Nature Editorial piece on how the pandemic has worsened the plight of postdoctoral researchers - it calls for more than moral support in funders' offering.

### Building a meditation routine for a more productive, creative and happier scientific life

A piece in Nature Career Column: mindfulness has helped Ana Pineda to juggle the demands of academic research in a foreign country alongside parenting responsibilities.



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