

COVID-19 Bulletin

An RSB communication on the
bioscience behind the outbreak and
response

23 November 2020

This fourteenth 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 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

Immunity and animal coronaviruses: the latest COVID-19 coverage from *The Biologist* looks at **lessons that can be taken from the many coronavirus vaccines that have proven successful in veterinary medicine.**

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

Where did COVID come from? WHO investigation begins but faces challenges

Identifying the source will be tricky, and investigators will need to grapple with the sensitive political situation, reports Nature News.

COVID-19 pathophysiology

Tiny variants in genes may dictate severity of coronavirus

Scientists are tracking small differences in DNA to explain why the disease has different effects, reports The Guardian.

The strange ways that coronavirus can affect the brain

With delirium the latest condition to be highlighted as a key symptom, emerging evidence suggests Covid can leave a long shadow.

New study links air pollution to 15 percent of COVID-19 deaths

Researchers say deaths linked to COVID-19 and air pollution represents 'potentially avoidable, excess mortality'.

How the Coronavirus Hacks the Immune System

At a laboratory in Manhattan, researchers have discovered how SARS-CoV-2 uses our defences against us, reports The New Yorker.

Why do COVID death rates seem to be falling?

Hard-won experience, changing demographics and reduced strain on hospitals are all possibilities - but no one knows how long the change will last, reports this Nature News Feature.

Epidemiology and public health response

Severe COVID-19 infection rare in newborns - expert comment

UK-wide analysis of COVID-19 infections in newborns across the UK suggests that severe

COVID-19 infection is rare in newborn babies, reports the London School of Hygiene and Tropical Medicine.

Why schools probably aren't COVID hotspots

Young children are unlikely to spread the virus - but older kids are more at risk, say researchers. Reported in Nature News.

Healthcare workers and their households at increased risk of COVID-19 hospitalisation

During the first peak of the COVID-19 pandemic in Scotland, whilst the absolute risk remained low, patient-facing healthcare workers were at three-fold higher risk of hospitalisation with COVID-19 than the general population, according to new research published in the BMJ and reported here by the London School of Hygiene and Tropical Medicine.

The science of superspreading

Science Magazine explains why preventing hot spots of transmission is key to stopping the COVID-19 pandemic.

How to stop restaurants from driving COVID infections

US mobile data suggests restaurants, gyms and cafes can be COVID hotspots - and reveals strategies for limiting spread, reports Nature news.

Denmark announces cull of 15 million mink over Covid mutation fears

Mutated virus infects 12 humans, sparking concerns that effectiveness of future vaccine could be affected, reports The Guardian.

COVID mink analysis shows mutations are not dangerous - yet

The analysis found the mutations probably won't jeopardize vaccines, but scientists say the rampant spread means the animals still need to be killed, reports Nature News.

COVID-19: first go-ahead given to the new Recovery and Resilience Facility

MEPs have adopted the Recovery and Resilience Facility, an instrument designed to help EU countries tackling the effects and consequences of the COVID-19 pandemic, reports European Parliament News.

'This is a pivotal moment - a national lockdown could mark the start of a better future for the UK' writes Liam Smeeth in this opinion piece for the Independent

The government has delayed a circuit-breaker too long. To prevent years of suffering and devastation, this is the time to radically change the UK's approach to the pandemic, says Liam Smeeth, professor of clinical epidemiology and Dean of the Faculty of Epidemiology and Population Health at the London School of Hygiene and Tropical Medicine.

Next slide please: data visualisation expert on what's wrong with the UK government's coronavirus charts

Following slide after slide of maps and charts, there was growing frustration about the way nationally important statistics were being presented to the public, writes James Cheshire, Professor of Geographic Information and Cartography, UCL, in this opinion article for The Conversation.

Opinion: A Lack of Transparency Is Undermining Pandemic Policy

Official guidance seems handed down from on high, rather than based on studies. That will make it harder to beat Covid-19, writes science journalist Roxanne Khamisi in an opinion article for Wired.

Simulating the pandemic: What COVID forecasters can learn from climate models

Methods that are routine in computation-heavy fields could lead to more reliable pandemic predictions, reports Nature News.

Opinion: How the experts messed up on Covid

Stuart Ritchie, phycologist and Michael Story, GJP Superforecaster discuss the question 'why did all the major health authorities get it so wrong back in March?', writing for UnHerd.

'The K factor: Nevermind R, here's the number we need to understand', reports Science Focus

The R value has stolen all the headlines. But there's another measure that could help us better understand how the coronavirus spreads, and crucially, how we can stop it in its tracks, reports Science Focus.

Testing and ongoing surveillance

Coronavirus testing finally gathers speed

The imminent large-scale rollout of rapid coronavirus tests promises to aid public health responses to COVID-19 - but a rapid home test remains elusive, reports Nature News.

Prophylaxis and treatment

The race to make COVID antibody therapies cheaper and more potent

Injections of antibodies might prevent mild COVID-19 from becoming severe, but the treatments are expensive and difficult to make.

Covid-19: Oxford University vaccine is highly effective

The coronavirus vaccine developed by the University of Oxford is highly effective at stopping people developing Covid-19 symptoms, a large trial shows.

New Pfizer Results: Coronavirus Vaccine Is Safe and 95% Effective

The company said it planned to apply for emergency approval from the Food and Drug Administration "within days."

Covid vaccines - Why we need more than one iron in the fire

As reports of new COVID-19 vaccines offer us "hope in a vial", MRC Executive Chair Fiona Watt explains why it's so important to have multiple vaccines in the pipeline.

'Just beautiful': Another COVID-19 vaccine, from newcomer Moderna, succeeds in large-scale trial

Now, there are two. Another COVID-19 vaccine using the same previously unproven technology as the vaccine from Pfizer and BioNTech, the U.S. and German companies that reported success on 9 November, appears to work remarkably well, reports Science Magazine.

Temperature concerns could slow the rollout of new coronavirus vaccines

The news that Moderna's COVID-19 vaccine might work as well as one made by Pfizer and BioNTech means the world could have two powerful weapons to fight the COVID-19 pandemic. Now, the next 'hot' vaccine topic is how to transport these vaccines - both of which are temperature sensitive. Science Magazine investigates.

Opinion: COVID vaccination logistics: five steps to take now

Beyond vaccine safety, efficacy and procurement lie licensing and delivery - nations must get

ready, a Nature opinion piece.

Exposure to misinformation could see people making a U-turn on taking a COVID-19 vaccine

First of its kind survey (under peer review) suggests online misinformation threatens herd immunity target and 'people's lives', reports the London School of Hygiene and Tropical Medicine.

Nearly 90% of parents and guardians in England would likely accept a COVID-19 vaccine for themselves and their children, suggests new study

Parents and guardians surveyed from lower income households and ethnic minority groups were more likely to say that they would reject a COVID-19 vaccine, reports the London School of Hygiene and Tropical Medicine.

Immunity to the Coronavirus May Last Years, New Data Hint

New York Times covers researchers reports that blood samples from recovered patients suggest a powerful, long-lasting immune response.

Immunological memory to SARS-CoV-2 assessed for greater than six months after infection

Understanding immune memory to SARS-CoV-2 is critical for improving diagnostics and vaccines, and for assessing the likely future course of the pandemic. The authors of this preprint study in bioRxiv analyzed multiple compartments of circulating immune memory to SARS-CoV-2 in 185 COVID-19 cases, including 41 cases at greater than or equal to 6 months' post-infection. The results indicated that durable immunity against secondary COVID-19 disease is a possibility in most individuals.

Scientists criticize use of unproven COVID drugs in India

Researchers say it is unclear on what basis the drugs were approved for 'emergency use', reports Nature 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](#).

Download the NHS COVID-19 app

The NHS COVID-19 app aims 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.

Apply to switch your existing funding to COVID-19 priority areas

UKRI has put in place a process to allow researchers to repurpose existing UKRI standard grants to address COVID-19 research priorities. Companies and organisations being funded by Innovate UK, who wish to re-purpose their grant for COVID-19 purposes, should approach their Monitoring Officer in the first instance; and progress any requests through the Project Change Request (PCR) system. If you are unable to repurpose existing funding, you can apply to one of UKRI's COVID-19 funding opportunities.

How to establish an academic SARS-CoV-2 testing laboratory

To meet the demands for SARS-CoV-2 testing capacity in the United Kingdom, a network of laboratories was set up from March 2020 onwards. The authors of this correspondence, published in Nature microbiology, document their experience and learnings from implementing an automated, medium-throughput testing facility for SARS-CoV-2 in the University of Birmingham Turnkey project.

Volunteer for study on the use of medical detection dogs as a solution to the urgent need for improved diagnostics for COVID-19

Volunteers are needed for a study where dogs are 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.

UK-India Covid-19 partnership initiative

You can apply for funding to support research collaborations between researchers in India and the UK. Your research should focus on comparing south Asian populations in the two countries to improve our understanding of COVID-19 and have potential for improving health outcomes.

Closes: 1 December 2020

Researching long-term COVID-19 effects in non-hospitalised individuals

Apply for funding for research into the causes (biological and environmental), mechanisms and management of the longer-term physical and mental health effects of COVID-19 in non-hospitalised individuals. Up to £20 million is available to fund two or three proposals and a small number of study extensions which take a holistic approach. You must be hosted by a UK institution that is eligible for UKRI funding. [They] will also accept applications from small and medium enterprises, government arm's length bodies and NHS organisations. Projects can last up to three years.

Closes: 9 December 2020

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

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

Further £134m business investment to support COVID-19 recovery

Nearly 1,200 companies across the UK will share £134 million of new Innovate UK investment through its latest dedicated COVID-19 innovation recovery fund.

Digital sprint powers digital environmental solutions to COVID-19

Scientists from across the world participated in teams during three successive hackathons to develop digital environmental tools that can help track, understand and predict the effects of COVID-19 and help lead to a greener post-pandemic future.

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

The Covid crisis has caused anger, arguments and confrontations

Some even say they're no longer speaking to family or friends because of disagreements, according to research by King's College London and Ipsos MORI, published in a peer-reviewed article in the Journal of the Royal Society of Medicine.

'I've never worked harder': the race to develop a COVID-19 vaccine

Teresa Lambe is working with AstraZeneca to give the world a shot against the SARS-CoV-2 coronavirus, described in this 'where I work' Nature piece.

'To counter conspiracy theories, boost well-being', Nature World View

It is better to stop misinformation taking root than to try to weed it out, writes Aleksandra Cichocka, a political psychologist at the University of Kent in Canterbury, UK.



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