

## COVID-19 Bulletin

An RSB communication on the  
bioscience behind the outbreak and  
response

15 June 2020

The seventh edition of the RSB COVID-19 bulletin highlights a selection of the bioscience research and news of the last fortnight. 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 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. Opinion 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, preserving the original title and summary line. 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**

### [RSB COVID-19 Impact Survey](#)

The Society has launched a survey to find out more about how the bioscience community has been affected by the COVID-19 pandemic.

If you can, please do fill in this short survey to help inform how we support the research community now and in the future.

## 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, emergence disease preparedness and novel epidemiological concepts.

## 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.

## 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.

## Policy Lates: Antimicrobial Resistance – The One Health approach

As part of the RSB's [Policy Lates series](#), a panel of experts came together on 20 May for an event online to discuss the challenge of antimicrobial resistance (AMR) and one health approaches to tackling this complex issue. A recording of the evening's discussions is now available on the [RSB YouTube channel](#) or you can [read our news story](#) for a summary of the event.

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.*

### Coronavirus (COVID-19): scientific evidence supporting the UK government response

A collection of the evidence provided to the Government by the Scientific Advisory Group for Emergencies (SAGE) on COVID-19, updated June 15th.

### Coronavirus research updates: Bars, karaoke and gyms can aid 'superspread'

*Nature* wades through the literature on the new coronavirus - and summarizes key papers as they appear.

### Coronapod: The divisive hydroxychloroquine study that's triggering mass confusion

The plot thickens for controversial coronavirus drug as it is mired with possible safety concerns.

### High-profile coronavirus retractions raise concerns about data oversight

Retracted studies had relied on health-record analyses from a company that declined to share its raw data for an audit.

## SARS-CoV-2 virus characteristics

### [We need to be cautious when interpreting phylogenetic studies from COVID-19 genomes](#)

A discussion article by Dr Damien Tully, Assistant Professor in Epidemiology, Biostatistics and Bioinformatics, Department of Infectious Disease Epidemiology.

### [The biggest mystery: what it will take to trace the coronavirus source](#)

SARS-CoV-2 came from an animal but finding which one will be tricky, as will laying to rest speculation of a lab escape.

## COVID-19 pathophysiology

### [The ABO blood group locus and a chromosome 3 gene cluster associate with SARS-CoV-2 respiratory failure in an Italian-Spanish genome-wide association analysis](#)

A medRxiv preprint (not yet peer reviewed), [the authors] have identified two human gene variants that could make people more susceptible to lung failure associated with COVID-19.

### [Proteins in the blood of COVID-19 patients could help predict how ill they will become](#)

Researchers at the Francis Crick Institute and Charité – Universitätsmedizin Berlin have identified 27 protein biomarkers that could be used to predict whether a patient with COVID-19 is likely to become severely ill with the disease.

### [SARS CoV 2: eXplaining the differences in death rates](#)

An article for The Biochemist Blog by Priyadarshini Chatterjee.

### [Can you catch coronavirus twice? What we know about Covid-19 so far](#)

Your questions answered based on current knowledge and the latest research from scientists

### [No antibodies? You could still have had Covid by fighting it off with T-cells](#)

Some experts believe T-cell immunity is likely to be more important for fighting coronavirus than antibodies, reports Harry de Quetteville.

## Epidemiology and public health response

### [Critiqued coronavirus simulation gets thumbs up from code-checking efforts](#)

Influential model judged reproducible - although software engineers called its code 'horrible' and 'a buggy mess'.

### [Mathematical models as public troubles in COVID-19 infection control: following the numbers](#)

An article from Health Sociology Review: Mathematical models are key actors in policy and public responses to the COVID-19 pandemic. The projections from COVID-19 models travel beyond science into policy decisions and social life. Treating models as 'boundary objects', and focusing on media and public communications, [the authors] 'follow the numbers' to trace the social life of key projections from prominent mathematical models of COVID-19.

### [Coronavirus: Relaxing lockdown 'risky' and a 'political decision'](#)

Relaxing lockdown is a risk because levels of the coronavirus are still "very high", one of the government's top science advisers says.

### [Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe](#)

An article from nature: Following the emergence of a novel coronavirus (SARS-CoV-2) and its spread outside of China, Europe has experienced large epidemics. In response, many European countries have implemented unprecedented non-pharmaceutical interventions such as closure of

schools and national lockdowns. [The authors] study the impact of major interventions across 11 European countries for the period from the start of COVID-19 until the 4th of May 2020 when lockdowns started to be lifted.

### [The effect of large-scale anti-contagion policies on the COVID-19 pandemic](#)

An article from *Nature*: [the authors] compile new data on 1,717 local, regional, and national non-pharmaceutical interventions deployed in the ongoing pandemic across localities in China, South Korea, Italy, Iran, France, and the United States (US).

### [SARS-CoV-2 in environmental samples of quarantined households](#)

A medRxiv preprint (not yet peer reviewed) the authors found that contaminated surfaces might have only a minor role in transmitting COVID-19 within households.

### [BBC Contagion experiment offers insights into COVID-19 control strategies](#)

Moderate social distancing with contact tracing and testing could also reduce the number of people who need to be in quarantine.

### [What is the coronavirus R number and is it rising in the UK?](#)

Research suggests the average number of people one person infects may be increasing – but opinions differ as to why.

### ['The rules have to be the same for everybody and if there is a breach of trust it will collapse and will not work' - Prof Peter Piot](#)

Channel 4 Presenter Jon Snow has been speaking to Professor Peter Piot, the director of the London School of Hygiene and Tropical Medicine.

### [New mask rules 'offer clarity' although science 'isn't very clear' - epidemiology professor](#)

Channel 4 News interviewed Professor Liam Smeeth, a clinical epidemiologist from the London School of Hygiene and Tropical Medicine, on new mask rules.

### [Analysis of hospital traffic and search engine data in Wuhan China indicates early disease activity in the Fall \[Autumn\] of 2019](#)

The global COVID-19 pandemic was originally linked to a zoonotic spillover event in Wuhan's Huanan Seafood Market in November or December of 2019. However, recent evidence suggests that the virus may have already been circulating at the time of the outbreak.

### [Protecting hard-won gains for mothers and newborns in low-income and middle-income countries in the face of COVID-19: call for a service safety net](#)

An article from *BJM Global Health*: The adverse impact of COVID-19 on maternal and newborn services in low-income and middle-income countries risks undermining improvements in health outcomes and care achieved over the last three decades.

### [Coronavirus rips through Dutch mink farms, triggering culls to prevent human infections](#)

In a sad sideshow to the COVID-19 pandemic, authorities in the Netherlands began to gas tens of thousands of mink on 6 June, most of them pups born only weeks ago. SARS-CoV-2 has attacked farms that raise the animals for fur, and the Dutch government worries infected mink could become a viral reservoir that could cause new outbreaks in humans, *Science Magazine* reports.

### [Employment MEPs reach consensus with Commission on workers' health and safety](#)

MEPs and the Commission agreed to classify the virus that causes COVID-19 as a risk group 3 biological agent, adding more safeguards to protect all workers.

## Testing and ongoing surveillance

### Large-scale testing and tracing is likely to prevent a second COVID-19 wave

A secondary COVID-19 wave is likely to be prevented if at least 50% of symptomatic COVID-19 cases are tested and 40% of their contacts are traced as part of an effective test-trace-isolate (TTI) strategy, finds research co-led by UCL and the London School of Hygiene & Tropical Medicine (LSHTM).

### NHS test-and-trace system 'not fully operational until September'

Guardian exclusive: chief operating officer told staff programme would be imperfect at launch.

### Coronavirus testing hit by struggle to match results with NHS records

Problem affects up to 350,000 samples from drive-through centres in England and Scotland.

### ONS' future analytical work programme in response to COVID-19

A blog post from the Office for National Statistics (ONS) on how they are currently working to ensure that the country has the best possible information on the UK's society and economy and that the government has the information it needs to manage the UK's response to the coronavirus (COVID-19) pandemic.

## Prophylaxis and treatment

### A protein that helps to fight viruses can also block lung damage repair

Researchers at the Francis Crick Institute have found that a protein which is initially helpful in the body's immune response to a virus, can later interfere with the repair of lung tissue. The work, published in *Science*, highlights the need for careful consideration regarding the use of this protein to treat viruses, including coronavirus.

### Preliminary results from RECOVERY trial on the use of hydroxychloroquine in hospitalised patients with COVID-19

The 'RECOVERY' trial has released preliminary results showing no effect on mortality from the use of hydroxychloroquine in patients admitted to hospital with COVID-19. The RECOVERY trial (which stands for 'Randomised Evaluation of COVID-19 thERapY') was funded by UKRI as part of the UKRI/DHSC/NIHR COVID-19 rapid research response.

### No clinical benefit from use of hydroxychloroquine in hospitalised patients with COVID-19

Statement from the Chief Investigators of the Randomised Evaluation of COVID-19 thERapY (RECOVERY) Trial on hydroxychloroquine, 5 June 2020.

### Study: Hydroxychloroquine had no benefit for hospitalized Covid-19 patients, possibly closing door to use of drug

A major clinical trial showed the malaria drug hydroxychloroquine had no benefit for patients hospitalized with Covid-19, likely closing the door to the use of the highly publicized medicine in the sickest patients - a use for which it was widely prescribed as the pandemic hit the U.S.

## How else can the bioscience community help?

### Government Guidance: NHS test and trace: how it works

An overview of the NHS test and trace service, including what happens if you test positive for coronavirus (COVID-19) or have had close contact with someone who has tested positive.

## The NHS Test and Trace system, explained

In late May Britons were asked to sign up to the NHS Test and Trace service. Here's how it works and what you need to do.

## How you can help with COVID-19

An RSB webpage collating routes through which individuals can offer their help to support the national effort to respond to the spread of COVID-19.

*The Biologist* is publishing [a series of Q&As](#) with bioscientists who are helping to understand, track, and treat COVID-19. The series is looking at how science works in a crisis, how we know what we know about this virus so quickly, and the experiences of researchers and scientists that have shifted their focus towards the current emergency. Contact [tom.ireland@rsb.org.uk](mailto:tom.ireland@rsb.org.uk) if you would like to feature or have any information or ideas for the series.

## 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](#).

## COVID-19 Rapid Response Rolling Call

Building on the initial calls of their Initiative, DHSC, through the NIHR, and UKRI are jointly launching a rolling call for proposals for rapid research into COVID-19. As this is a rolling call there is currently no fixed end date to the call, we are open to applications and will aim to review complete proposals within 4 weeks of submission.

**Closes: currently no fixed end date**

## Coronavirus Global Response

#UnitedAgainstCoronavirus #StrongerTogether #GlobalResponse

The European Union and its partners are hosting an international pledging marathon starting on Monday 4 May 2020 and culminating in a final Global Pledging Summit on Saturday 27 June. The aim is to gather significant funding to ensure the collaborative development and universal deployment of diagnostics, treatments and vaccines against coronavirus.

## Global Effort on COVID-19 (GECO) Health Research

Research proposals addressing COVID-19 in Low and Middle Income Countries (LMICs) - supported by NIHR and UKRI

Global Effort on COVID-19 Health Research is a new cross UK government funding call aiming to support applied health research that will address COVID-19 knowledge gaps. The focus is on understanding the pandemic and mitigating its health impacts in LMIC contexts. The call prioritises epidemiology, clinical management, infection control and health system responses.

**Closes: 22 June 2020**

## The science of COVID-19

The Science and Technology Committee (Lords) is investigating the scientific and technological aspects of the COVID-19 pandemic, including the nature of the SARS-CoV-2 virus, its transmission and spread, the development of vaccines and treatments, and how digital technologies can be used for tracking and modelling. The inquiry aims to help Government and society learn from the pandemic and better prepare for future epidemics.

**Closes: 30 June 2020**

## UK Science, Research and Technology Capability and Influence in Global Disease Outbreaks

The Science and Technology Committee will inquire formally into the place of UK research, science and technology in the national and global response to the COVID-19 pandemic, and what lessons should be learned for the future. If you plan to submit evidence, please let us know by emailing [consultation@rsb.org.uk](mailto:consultation@rsb.org.uk).

**Closes: 31 July 2020**

### If drug firms take public funds they must make their finds available to all

An opinion article for the Guardian by Kenan Malik: The hunt for a coronavirus vaccine has led to refusals to share research.

### Frozen cells and empty cages: researchers struggle to revive stalled experiments after the lockdown.

Abandoned experiments have to be restarted - sometimes from scratch.

### COVID-19 and Mental Health

The current COVID-19 pandemic may have far-reaching effects on our mental health. Here [MRC's] Executive Chair, Professor Fiona Watt, outlines how the MRC, and the researchers it supports, are tackling these important issues.

### The pandemic mixed up what scientists study - and some won't go back

Thousands of researchers have jumped into studying coronavirus and many want to continue: part 8 in a series on science after the pandemic.

### One Health: taking a horizontal approach to tackling pandemics

An opinion piece by Director General Jimmy Smith, International Livestock Research Institute (ILRI), Kenya.

### A bridge not too far: To prevent pandemics, close the human and animal health divide

An investigative piece by Lynne Peeples, highlighting expert opinion and examples of emerging infectious disease spill-over events, including SARS-CoV-2, and how public health approaches could learn from and better integrate with those employed to protect animal health.

### Does COVID-19 offer opportunities for progressing One Health?

As COVID-19 continues to wreck havoc on lives, economies and food systems, the world has proved to be sorely under-prepared. This despite past warnings that zoonotic diseases, transmitted from animals to humans, could represent a significant risk to global health and prosperity. If any silver lining is to be found in this crisis, it might be that it offers opportunities to accelerate progress towards a 'One Health' approach.

### Build back better: A letter to the PM

The Institution of Environmental Sciences (IES) has joined the leaders of more than 100 renowned companies, charities, universities, and trade associations to call on the UK Government to ensure the Sustainable Development Goals (SDGs) are at the heart of UK COVID-19 recovery plans. On Tuesday 9th June, a letter was sent to the Prime Minister to call on his government to use the UN SDGs to frame COVID-19 recovery planning within the UK.

### How to Grow Green: 26 ways to launch a clean energy future out of the pandemic recovery

Bloomberg Green reports that less than 0.2% of the total coronavirus-related stimulus spending by the world's 50 largest economies has (as yet) been allocated to "green" policies.

## Environmental solutions for COVID-19 - NERC virtual Ideas Series

NERC is inviting a broad range of researchers, innovators and research users to express their interest, using the form below, to attend a virtual 'Ideas Series' designed to unearth novel research and innovation ideas for environmental solutions that can contribute to solving the challenges of the current COVID-19 pandemic and the recovery.

The series will be held from 15 June to 16 July 2020 and will involve short (90 minutes), virtual workshop sessions and a variety of online resources and networking opportunities.

## People and nature: lessons learned from the Covid-19 pandemic

Sandra Díaz and Eduardo Brondizio, co-chairs of the 2019 IPBES Global Assessment Report on Biodiversity and Ecosystem Services, help us to understand the reasons behind and consequences of the new coronavirus pandemic.

## How face masks, gloves and other coronavirus waste is polluting our ocean

Coronavirus waste has become a new form of pollution as single-use personal protective equipment (PPE) floods our ocean. Between the end of February and mid-April this year more than a billion items of personal protective equipment were given out in the UK alone.

Contact RSB to discuss bioscience community issues or actions via [policy@rsb.org.uk](mailto:policy@rsb.org.uk)

## Positive community news

### Global Vaccine Summit 2020- At last some good news

Anna Mouser, Policy and Advocacy Lead - vaccines, at the Wellcome Trust describes how Gavi, the global vaccine alliance, hosted the Global Vaccine Summit this year - the culmination of their efforts to raise the \$7.4bn needed to ensure they can keep up the work that has saved 13 million lives since 2000. Not only were they able to reach their target, they exceeded it by over \$1bn to reach a staggering \$8.8bn.

### 'Hygiene Hub' links science to action to help save lives during COVID-19

New online portal provides 'real-time' support and latest evidence for hygiene interventions actors, supported by funding from DFID and Bill & Melinda Gates Foundation.

### Imperial COVID-19 Lockdown Lessons

Aimed at students aged 16-18, join Professor Sara Rankin for a webinar series where she'll be chatting with Imperial researchers to find out more about the work they're doing to combat COVID-19.

### EU Environment Programme: Preventing pandemics: new report on zoonotics to be released in July

This year, with the outbreak of COVID-19 having affected every country in the world, UNEP and researchers from the International Livestock Research Institute have conducted a scientific assessment to consolidate knowledge and identify areas of policy focus. Titled Preventing the Next Pandemic: zoonotic diseases and how to break the chain of transmission, the assessment is to be published in July.

## Other regularly updated information sources

[Additional COVID-19 resources](#)



An RSB webpage collating other regularly updated resources on COVID-19.

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

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

## Opinion on personal and community wellbeing

[National Statistical: News and insight from the Office for National Statistics: How has lockdown affected our wellbeing?](#)

ONS has released a new analysis that, for the first time, shines a light on how the Government's response to the COVID-19 pandemic has affected some of the most vulnerable members of society. This work also adds to ONS insight on how the lockdown has affected the mental health and personal well-being of people from all corners of society.

[How scientific conferences will survive the coronavirus shock](#)

Virtual meetings are becoming the norm under COVID-19 and winning over many researchers: part 3 in a series on science after the pandemic.

[Loneliness Strategy and Covid-19](#)

The Government's Loneliness Strategy

A University of Cambridge CSaP guest post by Graham Pendlebury: Loneliness has always been a problem for society. Everyone feels lonely from time to time, but for some people the problem can be chronic or even feel overwhelming. The issue has come to greater prominence in recent years and is one of those rare issues where there is broad cross-party agreement that government has a role to play.

[Artists explore new ways of knowing in a time of information overload](#)

From mapping coronavirus to recording extinctions, Heather Houser describes the intersection of art and data visualization.

[When 511 Epidemiologists Expect to Fly, Hug and Do 18 Other Everyday Activities Again](#)

These are the personal opinions of a group of 511 epidemiologists and infectious disease specialists who were asked by The New York Times when they expect to resume 20 activities of daily life, assuming that the pandemic and the public health response to it unfold as they expect.



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