

COVID-19 Bulletin

An RSB communication on the
bioscience behind the outbreak and
response
1 March 2021

Dear Sir or Madam,

This sixteenth 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

The Biologist: Tracking viral variants and pandemic press coverage

In the latest COVID interviews from *The Biologist*, molecular epidemiologist Emma Hodcroft explains how **scientists are currently having to sample 'the ice-cube on top of the iceberg'**

when looking for significant SARS-CoV-2 variants; and the Science Media Centre's Fiona Fox **gives her view on how the press has handled the science of the COVID-19 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.

Training

During the Covid-19 pandemic the RSB can offer training courses both online and in-person (via video conferencing). Training courses can also be delivered in-house to staff or students (via video conferencing). If you are interested in up-skilling then please contact us at training@rsb.org.uk. Visit our **online training platform myLearning** or send a request to sign-up to our **Training Newsletter** for regular updates.

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

Coronavirus: Bat scientists find new evidence

The BBC describes a report from scientists saying that coronaviruses related to Sars-CoV-2 may be circulating in bats across many parts of Asia.

What are the Brazil, South Africa and UK variants and will vaccines work?

A Covid variant first identified in Brazil has been found in the UK. Public health officials are investigating six cases and are using testing to see if it has spread to more people. Some variants, like this one, appear to be more contagious and there are concerns current vaccines may not work as well, reports the BBC.

MRC Seminar Series: "Tracking viral mutations to understand SARS-CoV-2 epidemiology and evolution"

Continuing the series with the first seminar of 2021, Claire Mooney, Strategic Stakeholder Engagement Manager for the Medical Research Council (MRC) and the organiser of the MRC Seminar Series, writes about the January seminar and the importance of understanding the spread of COVID-19 variants to overcome the pandemic.

Emergence in late 2020 of multiple lineages of SARS-CoV-2 spike protein variants affecting amino acid position 677

In this preprint in medRxiv, the authors describe how their findings demonstrate simultaneous convergent evolution, thus providing an impetus to further evaluate S:677 polymorphisms for effects on proteolytic processing, cell tropism, and transmissibility.

COVID-19 pathophysiology

World's first coronavirus Human Challenge study receives ethics approval in the UK

The Government has stated that up to 90 volunteers aged 18 - 30 years will be exposed to COVID-19 in a safe and controlled environment to increase understanding of how the virus affects people.

Immunology and COVID-19 Taskforce briefing note: Immunity and COVID-19 (PDF, 203KB)

As the leading membership organisation representing immunologists, the British Society for Immunology has established an expert taskforce that is able to collate and review what is currently known about the immunology of COVID-19. In the latest in the Taskforce's series of briefing notes, questions around immunity and COVID-19 are discussed. Immunity, induced by both natural infection and through vaccination, will be key to our ability to exit the current pandemic.

Evolution of antibody immunity to SARS-CoV-2

Nature has published an article and reports on the author's findings that immune system remembers how to make antibodies that can fend off the new coronavirus for at least six months after the initial infection.

How 'killer' T cells could boost COVID immunity in face of new variants

In the race against emerging coronavirus variants, researchers are looking beyond antibodies for clues to lasting protection from COVID-19, reports Nature News.

'Coronavirus Reinfection Will Soon Become Our Reality' reports The Atlantic

The Atlantic describes how the virus can take many paths to reinvading a person's body, declaring that most of them shouldn't scare us.

The disease-resistant patients exposing Covid-19's weak spots

Some people are unusually resilient to the coronavirus, so scientists are now searching their genes and blood in the hope of finding the pandemic's Achilles' heel, reports BBC Future.

Epidemiology and public health response

The impact of reopening schools on SARS-CoV-2 transmission in England

New modelling suggests reopening schools fully could increase the R number to above 1, reports LSHTM news.

Superspreading drives the COVID pandemic - and could help to tame it

Uneven transmission of the SARS-CoV-2 coronavirus has had tragic consequences - but also offers clues for how best to target control measures, reported in Nature News Feature.

Transmission of COVID-19 in 282 clusters in Catalonia, Spain: a cohort study

The authors of this study, published in *The Lancet Infectious Diseases*, describe how the viral load of index cases was a leading driver of SARS-CoV-2 transmission. The risk of symptomatic COVID-19 was strongly associated with the viral load of contacts at baseline and shortened the incubation time of COVID-19 in a dose-dependent manner.

Covid: Why goal is to live with the virus - not fight it

The government says it hopes to make Covid a manageable disease like flu, reports the BBC.

The coronavirus is here to stay - here's what that means

A *Nature* survey shows many scientists expect the virus that causes COVID-19 to become endemic, but it could pose less danger over time.

Establishing the National Institute for Health Protection

On 18 August 2020, the Health and Social Care Secretary, Matt Hancock, announced the establishment of the National Institute for Health Protection (NIHP). The NIHP brings together the health protection and resilience functions of Public Health England (PHE), the Joint Biosecurity Centre (JBC - which provides data and advice on Covid-19 infection outbreaks) and NHS Test and Trace. This House of Commons Insight looks at what is known so far about the new body and reaction from the health sector, ahead of it being formally established in spring 2021. Most functions confirmed to be moving to the NIHP relate to either managing the current Covid-19 outbreak or preparations for future epidemics and emergencies.

Citizens Panel says Scottish Government must set out its Covid-19 strategy

A panel of the public convened by the Scottish Parliament's Covid-19 Committee has today reported its findings to MSPs.

European Parliament plenary highlights: Covid-19 recovery, vaccines, circular economy

MEPs approved the EU's key instrument to help countries recover from Covid-19, debated the vaccines situation and called for tighter recycling rules.

EU is right place to tackle pandemic, but reform is needed, latest survey finds

The Covid-19 pandemic has strengthened citizens' beliefs that the European Union is the right place to develop effective solutions to tackle its effects, reports European Parliament News.

COVID-19: MEPs want to ensure developing countries' access to vaccines

COVID-19 vaccines should be produced also in developing countries to overcome the pandemic, development MEPs told Commissioner Urpilainen on 4th of February 2021.

High level of public support for strict COVID control measures but much lower level of trust in Government

New survey finds 52% of UK public thought Government was doing a good job of controlling the virus at the start of the first wave, reports LSHTM news.

Local and national restrictions in England reduced contacts in small and varied ways

Measures between August to December 2020 had smaller reductions than those in March, reports LSHTM news.

Why did the world's pandemic warning system fail when COVID hit?

Nearly one year ago, the World Health Organization sounded the alarm about the coronavirus, but was ignored, reports Nature News.

Testing and ongoing surveillance

Understanding the 'UK' variant: How the ONS is monitoring the new strain of Covid-19

In mid-November 2020, a new variant of the coronavirus (COVID-19) was identified in the UK. For several weeks afterwards the Office for National Statistics (ONS) reported positive cases they called "compatible with the new variant" alongside all other positive cases. Now the new variant has become an established part of the pandemic picture they are updating our reporting of it.

UK finds more coronavirus cases with 'concerning' mutations

Public Health England is investigating cases of coronavirus with 'worrying' new genetic changes that have been found in some regions of the UK.

Contact-tracing apps help reduce COVID infections, data suggest

Evaluations find apps are useful, but would benefit from better integration into health-care systems, reports Nature News.

Prophylaxis and treatment

SARS-CoV-2 evolution during treatment of chronic infection

Nature has published an article and reports on the author's description of a case where antibody treatment for COVID-19 seems to have spurred mutations in SARS-CoV-2 that infected a man with a compromised immune system. The potential for viral evolution means that convalescent plasma should be used cautiously when treating people with compromised immunity.

Tocilizumab reduces deaths in patients hospitalised with COVID-19

The Randomised Evaluation of COVID-19 Therapy (RECOVERY) trial has demonstrated that an anti-inflammatory treatment, tocilizumab, reduces the risk of death when given to hospitalised patients with severe COVID-19. The study also showed that tocilizumab shortens the time until patients are successfully discharged from hospital and reduces the need for a mechanical ventilator.

Preventive blood thinning drugs could reduce COVID hospital deaths

New evidence suggests these common preventive therapies may help alleviate pressure on hospitals and save lives, reports LSHTM news.

Covid vaccines extremely safe, finds UK regulator

BBC reports: covid vaccines being given to millions of people in the UK are extremely safe, with mild expected side-effects, says the country's drugs regulator.

Report of the Commission on Human Medicines Expert Working Group on COVID-19 vaccine safety surveillance

In May 2020, the Commission on Human Medicines established an Expert Working Group (EWG) to advise the Medicines and Healthcare products Regulatory Agency (MHRA) on its safety monitoring strategy for COVID-19 vaccine(s). The EWG held four meetings from May to October 2020, during which it considered proposals and methodologies for MHRA-led vigilance activities. Based on this advice, the MHRA has developed, and now has in place, a four-stranded approach to vigilance, which is summarised in this report.

MHRA research and analysis: Coronavirus vaccine - weekly summary of Yellow Card reporting

This report covers the period 9 December 2020 to 14 February 2021.

COVID vaccines and safety: what the research says

It is clear that coronavirus vaccines are safe and effective, but as more are rolled out, researchers are learning about the extent and nature of side effects, reports this Nature News Explainer.

Delivery to Ghana is the first in an ambitious global vaccination drive

The New York Times reports on the global sharing program designed to make vaccine access more equal delivered its first major shipment of doses on Wednesday to the West African nation of Ghana, ramping up the largest mass immunization campaign in history.

Unprotected African health workers die as rich countries buy up COVID-19 vaccines

AAAS Science published this article on February 17th 2021, reporting on how countries in Europe, Asia, and the Americas had at the time administered more than 175 million shots to

protect people against COVID-19 since December 2020, with most countries giving priority to medical workers. But not a single country in sub-Saharan Africa had started immunizations - South Africa was to be the first, that week—leaving health care workers dying in places where they are scarce to begin with.

Why COVID vaccines are so difficult to compare

Despite the widespread roll-out of several vaccines, it could be months before they can be ranked, reports Nature News.

Can COVID vaccines stop transmission? Scientists race to find answers

Controlling the pandemic will require shots that prevent viral spread, but that feature is difficult to measure.

Escaping Catch-22 - Overcoming Covid Vaccine Hesitancy

An article in the New England Journal of Medicine interviews Heidi Larson, Director of the Vaccine Centre at LSHTM, on how COVID-19 may present an opportunity to rethink our approach to vaccine uptake.

TB vaccine may protect newborns against other infectious diseases

New study "raises hopes" that the BCG vaccination could be used against COVID-19 infection, reports LSHTM news.

Vaccine-wary France turns to citizens' panel to boost trust in COVID-19 shots

AAAS Sciece reports on how, all across Europe, coronavirus vaccines are in scarce supply. But in France, they are also surprisingly unwanted: Recent polls suggest just 57% of the country intends to get vaccinated, whereas in the United Kingdom, 89% wants to get a shot for COVID-19.

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](#).

National lockdown: Stay at Home

Coronavirus cases are rising rapidly across the country. Find out what you can and cannot do according to this Government guidance.

What's the roadmap for lifting lockdown?

BBC reports on how the 'roadmap' for easing Covid restrictions in England has been announced.

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.

Researching factors affecting ethnic minority groups during COVID-19

UK researchers are to dig deeper into the reasons why people from Black, Asian and Minority Ethnic backgrounds have been disproportionately affected by COVID-19.

BSI guide to vaccinations for COVID-19

The British Society for Immunology has published a new vaccination guide on COVID-19 vaccines for the public. This resource explains how vaccines work and answers common questions and concerns and provides up-to-date information on the current approved COVID-19 vaccinations in the UK. The public may have specific questions regarding COVID-19 vaccines and that's why BSI have created a free, easy to read guide on vaccinations for COVID-19 suitable for a public audience. Sharing of this guide is encouraged.

Covid-19 vaccines: information hub

Vaccines are one of the best tools for overcoming Covid-19. This is a collection of quick and simple resources on how Covid-19 vaccines work, how we know they're safe, and how they can be distributed to everyone around the world, put together by Wellcome.

Top 10 COVID-19 vaccine myths

An article by Understanding Animal Research (UAR) aims to counter misinformation.

The superspreaders behind top COVID-19 conspiracy theories

The Associated Press collaborated with the Atlantic Council's Digital Forensic Research Lab on a nine-month investigation to identify the people and organizations behind some of the most viral misinformation about the origins of the coronavirus.

Disgraced COVID-19 studies are still routinely cited

In June 2020, in the biggest research scandal of the pandemic so far, two of the most important medical journals each retracted a high-profile study of COVID-19 patients. Thousands of news articles, tweets, and scholarly commentaries highlighted the scandal, yet many researchers apparently failed to notice. In an examination of the most recent 200 academic articles published in 2020 that cite those papers, Science found that more than half—including many in leading journals—used the disgraced papers to support scientific findings and failed to note the retractions.

We need a green recovery after COVID-19, but banning wildlife trade could do more harm than good

Writing for The Conversation, Hollie Booth, PhD Candidate, Conservation Science, University of Oxford, shares results of a study that indicates large-scale prohibitions on wildlife use could have negative consequences for nature and human health.

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

Massive Google-funded COVID database will track variants and immunity

Open repository will give free access to more than 160 million data points with details about individual infections, reports Nature News.

Protecting your Data at ONS during COVID-19

The ONS we are working all year round to ensure the nation's data is kept safely. This blog recaps how the ONS' security has been able to adapt and improve during the pandemic.

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

WHO COVID-19 situation dashboard.

Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE

COVID-19 case dashboard.

Global.health open repository and visualisation platform

An international database tracking anonymised information about individual COVID-19 cases.

Spotlight on personal and community wellbeing

Research investigates COVID-19 impact on UK farmer mental health

The COVID-19 pandemic's impact on the mental health and resilience of farmers and farm workers will be the focus of new research led by University of Reading. The project is receiving £190,000 funding from the Economic and Social Research Council (ESRC) as part of UK Research and Innovation's (UKRI) rapid response to COVID-19.



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