

I&I NETWORK NEWSLETTER



2021 - ISSUE 3

Interleukin-6 antagonists and COVID-19

A [new analysis](#) of 27 randomised trials involving nearly 11,000 patients found treating hospitalised COVID-19 patients with drugs that block the effects of interleukin-6 (the interleukin-6 antagonists tocilizumab and sarilumab) reduces the risk of death and the need for mechanical ventilation. The study, coordinated by the World Health Organization in partnership with King's College London, University of Bristol, University College London and Guy's and St Thomas' NHS Foundation Trust, found interleukin-6 an-

tagonists were most effective when administered with corticosteroids. In hospitalised patients, administering one of



these drugs in addition to corticosteroids reduces the risk of death by 17%, compared to the use of corticosteroids alone. In patients not on mechanical ventilation, the risk of mechanical ventilation or

death is reduced by 21%, compared to the use of corticosteroids alone. The findings have prompted new WHO recommendations to use interleukin-6 antagonists in patients with severe or critical COVID-19 along with corticosteroids.

Shankar-Hari M *et al.* (2021). [Association between administration of interleukin-6 antagonists and mortality among hospitalized patients with COVID-19: a meta-analysis.](#) *JAMA*.

See the new [WHO recommendations](#).

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Bristol AMR		

EVENTS

Vaccination in Children: Evidence, Ethics, and Equity

9 September 2021, 16.00 - 17.00, online

Avon and Somerset Police Seminar

15 September 2021, 13.00 - 14.00, contact organiser for details

Medical Physics and Engineering Conference 2021: Breaking Through Barriers

21 - 23 September 2021, online

Writing for a lay audience

21 September 2021, 10.00 - 12.00, Zoe Trinder-Widdess (Communications Manager at NIHR ARC West), online

Infection & Immunity Research Network Annual Symposium: Emerging Zoonoses

17 November 2021, 13.30 - 17.45

Keynotes: Dr Kathryn Allan (University of Glasgow), Prof Eric Fevre (University of Liverpool), Prof Leah Cowan (University of Toronto)

It is estimated that one billion cases of illness and millions of death occur every year from zoonoses, and that 60% of emerging infectious diseases that are reported globally are zoonoses.

Join the Bristol Infection and Immunity Research Network for this half-day event, which will explore this topic, on a local and global scale, in more detail.

Registration is FREE, all are welcome: <https://red.onlinesurveys.ac.uk/iandi-zoonoses>

Connecting Bristol's expertise in impacts of changing climates on plant vector-borne diseases

22 September 2021, 10.00 - 12.00, online

Bristol Health Partners AHSC virtual conference

12 October 2021, 13.00 - 15.00, online

#Idea2Pitch Event

13 October 2021, 13.30 - 17.00, Rick Chapman, Entrepreneur-in-Residence at SETSquared, Boardroom, SETSquared Centre, Engine Shed, Bristol

Documenting trial methods - the HEAP

14 October 2021, 12.00 - 13.00, Joanna Thorn (University of Bristol), online

Cytokines 2021 - 9th Annual Meeting of the International Cytokine and Interferon Society

17 - 20 October 2021, 13.30 - 14.15, hybrid (online and in person)

Cabot Institute Annual Lecture: COP26 - are you paying attention?

20 October 2021, 18.00 - 19.30, Mya-Rose Craig, Leo Hickman and Alyssa Gilbert, online

NEWS

Aspirin can reduce risk of heart attack in pneumonia patients

Serious cardiovascular complications are common in cases of pneumonia and are strongly associated with long-term mortality. A study by Dr [Fergus Hamilton](#) (Bristol Medical School) and colleagues looked at whether aspirin could reduce the risk of ischemic stroke (stroke caused by blockage of blood vessels, representing some 80% of strokes) and heart attack, and if the drug could have a



preventative role to play in primary care settings. The team found that the risk of the primary outcome (stroke and MI) was 36% lower in aspirin users compared to non-users. The drug was also associated with a reduced risk of both secondary outcomes with ischemic stroke and MI rates being 30% and 54% lower, respectively, in aspirin users.

This study provides supporting evidence that aspirin use is associated with reduced

ischaemic events after pneumonia in a primary care setting. This drug may have a future clinical role in preventing this important complication.

Hamilton F *et al.* (2021). [Aspirin reduces cardiovascular events in patients with pneumonia: a prior event rate ratio analysis in a large primary care database](#). *European Respiratory Journal*.

Presented at the [European Congress of Clinical Microbiology & Infectious Diseases](#) held online 9-12 July 2021.

BioMed2 Doctoral Training Partnership

The GW4 Alliance, comprising Bath, Bristol, Cardiff and Exeter Universities, has been awarded a share of £79 million funding from the Medical Research Council (MRC) to support 64 studentships over the next three years.

The GW4 BioMed2 MRC Doctoral Training Partnership is one of 17 successful Doctoral Training Partnerships (DTPs) to receive the awards across 34 UK research organisations through the MRC's DTP competition which focuses on sci-

entific excellence, positive research culture and wider training opportunities.



Led by Cardiff University, the Partnership will train post-graduate research students in three main areas: neuroscience and mental health; in-

fection, immunity, antimicrobial resistance and repair; and population health sciences. The programme will focus on three cross cutting strands: data science, interdisciplinary skills and translation and innovation and includes opportunities for students to broaden horizons through industry placements, research visits, public engagement internships and a bespoke online core skills training element.

[Read the full press release](#)

GL Brown Prize Lecture

Prof [David Sheppard](#) (School of Physiology, Pharmacology and Neuroscience, pictured) was awarded the [Physiological Society's GL Brown Prize Lecture](#) in recognition of his outstanding contribution to physiology for his studies of the root cause of the genetic disease cystic fibrosis. The GL Brown Prize Lecture series is aimed at an early career audience to stimulate an interest in physiology. Departments around the UK can invite the GL Brown Lecturer to their institutions to

showcase their research.

Confirmed lectures for this year (2021) include:

- 21 October: University of Cambridge
- 27 October: University of Aberdeen
- 17 November: London Metropolitan University
- 25 November: University of Edinburgh
- 7 December: University of Bristol

Other lectures are planned for the Open University and the University of Sheffield.



Long COVID in children

The clinical definition of long COVID in children is at present very limited and poorly understood. Symptoms typically associated with long COVID were having a significant physical and psychological impact on children's day-to-day lives. Long COVID is commonly used to describe signs and symptoms that continue or develop after acute COVID-19. This is the first step in a COVID-19 testing in schools study to obtain opinions and experiences of long COVID from different groups of people.

[Enhancing the utilisation of COVID-19 testing in schools](#) is an ongoing study that will bring together the Bristol-

based [COVID-19 Mapping and Mitigation in Schools](#) (CoM-MinS) study, Electronic Patient Records, and the [COVID-19 Schools Infection Survey](#) (SIS) to address additional



questions not initially included in the individual studies. One of these questions is the extent and features of long COVID in children. Doctors said that long COVID in children is not well defined, and it may be difficult to distinguish between it and other condi-

tions; they need to understand whether long COVID is a new condition, or a group of conditions like post-viral fatigue, which is already recognised and can arise after common infections such as flu. It is not known how many children have or will develop long COVID. To date, studies that have attempted to measure this suggest it is rare, however, a lack of clinical understanding of long COVID including no agreed clinical definition has made this difficult.

Report: Looker KJ *et al.* [Long COVID in children: A report summarising the views of young people, parents and doctors.](#)

Funding successes: Part 1

Dr [Bronwen Burton](#) (Cellular and Molecular Medicine [CMM]) and Dr [Caroline McKinnon](#) (Biochemistry) have been awarded a **British Society of Immunology** Equality Diversity & Inclusion grant. The funds, including some from CMM, were used to employ four undergraduate students over the summer to review specific undergraduate teaching units with the aim of decolonising and diversifying the curriculum.

Dr [Helen Weavers](#) (Biochemistry) received

£3,733 from the **Cystic Fibrosis Trust** for *Using Drosophila to study cystic fibrosis-related pathology*, from July 2021.

Hypo-stream awarded Prof [Andrew Davidson](#) (School of Cellular and Molecular Medicine) £6,571 to look into Antiviral Testing.

Dr [Dave Copland](#) (Bristol Medical School) was awarded £135,905 from the University of Washington for *Defining cellular and molecular patterns in Uveitis*.

The **Health and Safety Execu-**

tive awarded £141,887 to Prof [Jonathan Reid](#) (School of Chemistry) for *Airborne Survival of SARS-CoV-2: Aerosol Microphysics and Variants*.

The project *Modelling solutions to understand impact of COVID-19 on cardiovascular waiting lists*, led by Prof [Gian-ni Angelini](#) (Bristol Medical School), was supported by a £60,938 award from **Above & Beyond**.

Pregnancy and COVID-19 vaccination

Pregnant women said taking their routine vaccines like whooping cough and flu was even more important during the COVID-19 pandemic but they have doubts about the safety of taking new COVID-19 vaccines during their pregnancy.

The findings from the study ([Pregnant in a Pandemic](#)), which looked at the impact of the pandemic on attitudes towards vaccines and how pregnant women felt about taking a new COVID-19 vaccine, were presented to the [British Psychological Society's Division of](#)

[Health Psychology conference](#) held on 30 June 2021 by BPS chartered member, Dr [Emma Anderson](#) (Bristol Medical School).



Interviews with 31 pregnant women in Bristol showed that they saw routine maternal vaccines as important but they were concerned about attending surgeries/health

centres due to the risk of COVID-19. They were wary of new COVID-19 vaccines and thought the risks of vaccination were greater than catching the virus, especially because of a lack of evidence of vaccine safety for pregnant women.

Anderson E *et al.* (2021). [Maternal vaccines during the Covid-19 pandemic: A qualitative interview study with UK pregnant women](#). *Midwifery*.

Converting the COVID-19 vaccine doubters

Informing people about how well the new COVID-19 vaccines work could boost uptake among doubters substantially. The [study](#) shows the importance of raising awareness of vaccine efficacy, especially if it compares very favourably to another well-established vaccine. The research focused on adults who were unsure about being vaccinated against COVID-19. Those who were given information about the vaccine's efficacy scored 20% higher

on a measure of willingness to be vaccinated, compared to those who received no information. This improved



receptivity increased by as much as double among survey respondents who were also given information about

how COVID-19 vaccines perform in comparison to the annual flu vaccine.

The latest figures show vaccine uptake is slowing among younger groups, especially the 18-24-year-olds.

Davis C *et al.* (2021). [Efficacy information influences intention to take COVID-19 vaccine](#). *British Journal of Health Psychology*.

PrEP awareness in HIV-exposed communities

A study of cisgender men and trans people who have sex with men has found that many of them know about PrEP, and commonly use it alongside other precautions to reduce the risk of getting HIV.

PrEP is a medication which reduces the risk of getting HIV. Until recently it was only available to people in the [Impact trial](#) or bought privately online but it has recently become freely available on the NHS to those who need it. PrEP is highly effective at preventing HIV and is likely to have played a part in the dramatic decline in new HIV diagnoses in the UK among men

who have sex with men. However, the rise in the use of PrEP may lead people to have more sex without a condom.



This could cause an increase in other sexually transmitted infections (STIs), which can cause complications and increase antibiotic resistance.

Of the 617 study participants, 3% had taken PrEP before. Among all those who didn't have HIV or were unsure if

they had it, 62% were more likely to have unprotected anal sex with someone who they thought was HIV-negative if they themselves were using PrEP at the time. Those interviewed were aware of PrEP and keen to use it. It was seen as 'life-changing', reducing their fear of acquiring HIV and anxiety about being tested for HIV, but the cost and it being hard to get stopped people using it more.

Lorenc A *et al.* (2021). [Human immunodeficiency virus preexposure prophylaxis knowledge....](#) *Sexually Transmitted Diseases*.

[Read the full NIHR ARC article](#)

Quick way to determine viral vs bacterial RTI?

Rapid tests already on the market that combine more than one biomarker may be more effective at distinguishing between bacterial and viral respiratory tract infections than standard single biomarker tests, a review of the evidence has found. It's often impossible to tell from signs and symptoms alone whether a patient has a viral or bacterial respiratory tract infection (RTI). As a precaution, clinicians often prescribe antibiotics when in doubt, but antibiotics do not help against viral infections and

overuse can lead to antibiotic resistance.

The team reviewed research on new rapid tests in GP practices or in hospital, including tests that combined two or more biomarkers. Tests under development and tests that are already on the market were included. They estimated the accuracy of these tests where possible. The 20 studies included described 15 different tests that identified bacterial infections and nine different tests for viral infection. The accuracy of these tests varied, with some show-

ing the potential to be used in healthcare. The commercially available FebriDx and Im-munoXpert tests show a lot of potential and could reduce unnecessary antibiotic prescriptions, but methodological problems with many of the studies means that these we need to interpret these findings with caution.

Carlton HC *et al.* (2021). [Novel point-of-care biomarker combination tests to differentiate acute bacterial from viral respiratory tract infections...](#) *Clinical Microbiology and Infection*.

[Read more on the NIHR ARC site](#)

Tsetse fly age and diet influence offspring health

The female tsetse fly, which gives birth to adult-sized live young, produce weaker offspring as they get older, and when they feed on poor quality blood. The study, carried out by researchers at the Universities of Bristol, Oxford and the Liverpool School of Tropical Medicine, was designed to measure how tsetse offspring health is influenced by their mothers' age, and how factors such as the mother's nutrition and mating experience might come into play.

Scientists found that female

tsetse that experience nutritional stress have lower fertility and produce smaller offspring that are less likely to survive starvation. However, the rate at which the female



fly ages is not affected by the quality of her diet or how long she waited to mate. Thus, neither nutrition during pregnancy nor mating costs drive variation in reproductive ageing in this species.

Now researchers will look at new ways to test evolutionary predictions about ageing, using a new model system and innovative method of tracking reproduction of individual flies. Understanding these patterns in tsetse, which spread deadly parasites to humans and animals, will help design better population dynamic and disease transmission models.

Lord JS *et al.* (2021). [Effects of maternal age and stress on offspring quality in a viviparous fly.](#) *Ecology Letters*.

Image © Daniel Hargrave

Funding successes: Part 2

A jointly funded University of Bristol **Elizabeth Blackwell Institute (EBI) / Development and Alumni Relations** scheme (total budget £50k) for COVID-19 aimed at early career researchers awarded funds to the following:

- Dr [Joshua Bell](#) (Bristol Medical School): *Obesity and severe COVID-19: strengthening causal inference using historical intensive care records*
- Dr [Ore Francis](#) (CMM): *Development of standardised virus pseudotype assay to quantify SARSCoV-2 neutralising antibodies in saliva and serum*
- Dr [Anu Goenka](#) (CMM): *T-cell response kinetics in an extended interval dosing schedule of the Pfizer SARS-CoV-2 vaccine: a key piece of the jigsaw puzzle informing a rational vaccination strategy*
- Dr [Sam Creavin](#) (Bristol Medical School): *VACI: The effectiveness of a local and hyper-local Population Health Management approach in maximising vaccine uptake of the COVID-19 vaccine among groups vulnerable to health inequalities*

Research England awarded Prof [Linda Wooldridge](#) (Bristol Veterinary School) £42,983 for *Immunomodulation using artificial membrane binding proteins (AMBPs) to improve T cell responses to melanoma*, starting October 2021.

Wind instruments and aerosol generation

Aerosol generated by playing wind instruments is less than that produced when vocalising and is no different than a person breathing. The findings contributed to the roadmap for lifting COVID-19 restrictions in the performing arts, which have been significantly restricted since the start of the pandemic.

The **PERFORM** project (**P**articulate **R**espiratory **M**atter to **I**nForm Guidance for the Safe Distancing of **P**erfor**M**er**R**s in a COVID-19 **P**and**E**mic), looked at the amount of aerosols and droplets generated when playing woodwind and brass instruments. The team found aerosol (<20

µm diameter) generated while playing woodwind and brass instruments is similar to that produced by breathing,



based on measurements of several musicians playing the flute and piccolo as well as measurements across a range of instruments. Large droplets (>20 µm diameter) were not observed during instrument playing but were observed during singing and

coughing. Together the findings indicate that playing woodwind and brass instruments generates less aerosol than vocalising at high volume levels.

Reid J *et al.* (2021). [Aerosol and droplet generation from performing with woodwind and brass instruments](#). *Aerosol Science and Technology*.

Image: Classical musician and award-winning professional trumpeter Alison Balsom taking part in the PERFORM-2 study. Alison is pictured in an operating theatre (a zero aerosol environment) playing the trumpet into a funnel that allows the researchers to measure the aerosols generated from playing the instrument.

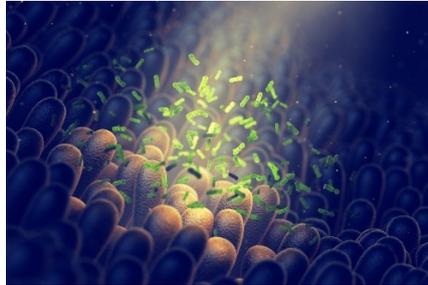
Biotech company wins Bristol's Tech-Xpo 2021

Ferryx, a biotech company tackling gastrointestinal inflammation, pitched against ten other start-ups from Bristol's world-leading tech scene, to win 'Best Elevator Pitch' at SETsquared Bristol's Tech-Xpo on 30 June 2021.

SETsquared Bristol is a University of Bristol-led incubator, supporting the growth of technology-based businesses, helping them move from initial ideas into commercial viability.

Tech-Xpo is SETsquared Bristol's flagship pitch, demo, connect showcase, providing a platform for startups to

showcase their innovative technologies and raise investment.



Founded in 2019 as a spin-out from the University of Bristol, Ferryx are tackling the problem of no effective treatment for gastrointestinal inflammation during active disease which does not present negative side effects. Their lead product (FX856) is being developed as a prescription

therapeutic to target inflammatory bowel disease, which affects 6.8 million people worldwide. FX856 is a live bacterial product which is able to survive and thrive under high iron conditions. During periods of active inflammation, stress or following surgery there is an increase in levels of iron in the gut. While most constituents of the gastrointestinal microbiome are able to grow under conditions of increased iron availability, lactobacilli and bifidobacteria, frequently employed as probiotics, are rapidly outcompeted and cannot have a beneficial effect.

[Read the full press release](#)

Mask-wearing reduces COVID-19 transmission

The study, led by academics at the Universities of Bristol, Oxford and Copenhagen, analysed epidemiological data on the effect of mask-wearing by surveying a population of over 20 million mask-wearers and obtaining estimates from 92 regions across six continents.

Using hierarchical Bayesian modelling, researchers estimated the effect of both mask-wearing and mask mandates on transmission by linking wearing levels (or mandates)

to reported cases in each region, adjusting for mobility and non-pharmaceutical interventions.



The study found mask-wearing reduces COVID-19 transmission by around 25% if everyone wears them. Previous work has looked for R to decrease at the time of a gov-

ernment mask mandate, but the research found actual mask-wearing rises in anticipation, before the mandate, and then after the mandate compliance increases slowly as people get used to mask-wearing. The research suggests that transmission is strongly predicted by mask-wearing, but not by mask mandates.

Leech G *et al.* (preprint). [Mask wearing notably reduces COVID-19 transmission.](#) *medRxiv*.

How early adulthood education influences cardio health

There are important differences in health between different sectors of our society, with those who are less educated and in lower status jobs shown to be less healthy and have shorter life expectancy on average than the more privileged. While early adulthood is an important time for both the development of adult socioeconomic position and for development of behaviours related to cardiovascular health, until now the degree to which

early adulthood socioeconomic trajectories contribute directly to health differences observed in later life has not been clear. Researchers from the Universities Cambridge, Bristol and UCL analysed health and socioeconomic data collected over several decades and studied the association of these groups with cardiovascular risk factors at age 46. They found that those who spent a longer time in education, going on to employment in profes-

sional or managerial roles during early adulthood, had better cardiovascular health more than 20 years later than other groups. This association wasn't entirely because of a higher income or higher level job at age 46, suggesting an independent and long-term association of early adulthood influences with health.

Winpenney E *et al.* (2021). [Early adulthood ...](#) *Journal of Epidemiology and Community Health*.

Can chlamydia increase cancer risk?

A review of evidence by researchers at the Universities of Bristol and Edinburgh has suggested a possible new means by which chlamydia could lead to an increased risk of cancer, ectopic pregnancy, and pelvic inflammatory disease.

The review looked at evidence from lab-based studies, animal models and clinical studies on the role of chlamydia in diseases of the reproductive tract. Analysis of the studies' findings suggests that chlamydia induces a particular type of change in reproductive tract cells known as 'epithelial to mesenchymal transition' (EMT), which can

lead to inflammation and cell growth. Their hypothesis is that this chlamydia-triggered cell change contributes to the development of further disease.

The team, think that the association of chlamydia with ovarian and cervical cancer could be explained by the persistence of EMT changes in combination with DNA damage caused by chlamydia following chlamydia infection. EMT cells impair the integrity of the lining of the infected reproductive tract cell, making it more susceptible to invasion by other bacteria. This increases the risk of pelvic inflammatory disease from

those invading bacteria. Furthermore, epithelial (barrier) cells in the fallopian tube that have previously been infected with chlamydia have more receptors on their surface, which are associated with an increased risk of ectopic pregnancy. There is evidence that these cell surface receptor changes could be caused by EMT.

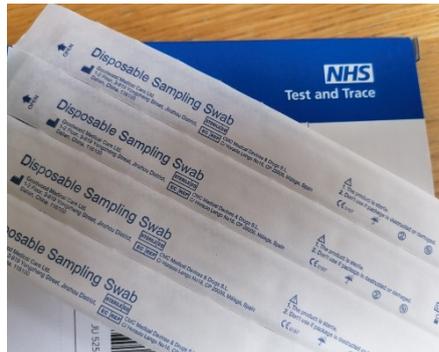
Horner P *et al.* (2021). [Is There a Hidden Burden of Disease as a Result of Epigenetic Epithelial-to-Mesenchymal Transition Following Chlamydia trachomatis Genital Tract Infection?](#) *The Journal of Infectious Diseases*.

Interpreting lateral flow tests

New guidance for GPs and other health professionals on how to interpret and communicate results from Lateral Flow Device (LFDs) tests based on the current understanding of the tests' performance has been published. Researchers from the Universities of Bristol, Cambridge, and Trinity College Dublin have devised a calculator which aims to help doctors, who are increasingly asked by patients what they should do after receiving their results, to better advise patients on what their LFD test result means.

Previous research into LFDs shows a range of estimates

for sensitivity and specificity in different contexts of use. In the 'BMJ practice pointer', researchers explain that test characteristics (sensitivity and



specificity) alone are of limited value in interpreting the test result. Knowing the pre-test probability, or the underlying likelihood of an individual having COVID-19 (e.g. contact with a known case or link to an

outbreak), is vital for interpreting the test result. When the disease incidence is low, a positive result should be validated by a polymerase chain reaction (PCR) test. However, if a clinician's opinion is that COVID-19 is likely, then a positive test is likely to be reliable. If the clinician suspects COVID-19, a PCR test is recommended, even if the patient has received a negative result from a recent LFD test.

Mytton O *et al.* (2021). [Interpreting a lateral flow SARS-CoV-2 antigen test](#). *British Medical Journal* (practice pointer).

Low risk of severe COVID-19 illness in children

The risk of severe illness and death from SARS-CoV-2 is extremely low in children and teenagers according to the most comprehensive analyses of public health data, led by researchers at UCL, University of Bristol, University of York and the University of Liverpool. However, catching Covid-19 increases the likelihood of serious illness in the most vulnerable young people, those with pre-existing medical conditions and severe disabilities.

Preliminary findings will be submitted to the UK's [Joint](#)

[Committee on Vaccination and Immunisation](#), the [Department for Health and Social Care](#) and the [World Health Organisation](#) to inform vaccine and shielding policy for the under-18s.

One study found that 251 young people aged under 18 in England were admitted to intensive care with COVID-19 during the first year of the pandemic; this equates to having a one in 47,903 chance of being infected and subsequently being admitted to intensive care. Looking sepa-

rately at PIMS-TS, a rare inflammatory syndrome in children caused by COVID-19, the researchers found that 309 young people were admitted to intensive care with this condition – equating to an absolute risk of one in 38,911.

Ward *et al.* (preprint). [Risk factors... medRxiv](#).

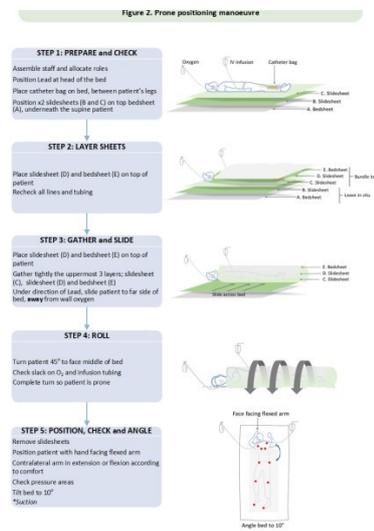
Smith *et al.* (preprint). [Deaths in children.... Research Square](#). Harwood *et al.* (preprint).

[Which children and young people.... medRxiv](#).

New protocol for prone positioning

A new protocol for prone positioning - a technique commonly used to treat COVID-19 patients in respiratory distress by turning them on to their front to increase oxygen flow to the lungs - has been proposed by a team from the University of Bristol in collaboration with clinicians at the Royal United Hospital in Bath. They conducted a literature review of the manoeuvre to develop a standard protocol for the adjuvant treatment that can

be used for COVID-19 pa-



tients at high risk of dying

being treated in normal hospital wards. The data showed that as well as being cost effective, when patients are positioned prone their oxygenation improves dramatically.

Brazier D *et al.* (2021). [Prone Positioning of Older Adults with COVID-19: A Brief Review and Proposed Protocol.](#) *Journal of Frailty and Aging.*

Image: Diagram illustrating a new protocol for the prone positioning technique

During the pandemic the number of patients waiting for routine surgery in the UK has almost doubled with more than 5.3 million people awaiting surgery, including more than 300,000 waiting more than a year.

A contributory factor is that COVID-19 precautions have led to many operating theatres working at **75-50 per cent of normal working efficiency**. Staff working in operating theatres have been required to take special precautions at the start and end of operations to allow viral particles to disperse from the operating theatre. This is based on the belief that anaesthetic

procedures are **'high risk aerosol generating procedures'** (AGPs) that produce a mist of small airborne particles that increase risk of infec-



tion to staff and other patients. These AGPs require the use of high grade personal protective equipment and delays of up to 20 minutes both at the beginning and end of each operation.

New research has shown that

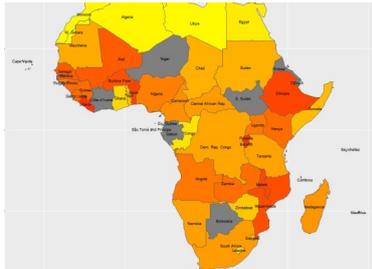
routine anaesthetic procedures do not generate these aerosols and so should not be designated as AGPs. The team studied insertion and removal of anaesthetic airway tubes and found that the quantity of aerosol produced by inserting the device was no more than during quiet breathing and less than one twentieth of the amount of aerosol produced by a single cough.

The research is part of a wider **AERATOR study** funded by the NIHR.

Shrimpton AJ *et al.* (2021). [A quantitative evaluation of aerosol generation during supraglottic airway insertion and removal.](#) *Anaesthesia.*

Millions of Africans lack means to prevent COVID

Millions of people across the African continent are at risk of contracting COVID-19 because of a lack of the most basic public health tools to protect themselves - including the essentials of soap and water. The global research collaborative finds almost 900 million Africans live without on-site water, while 700 million people lack in-home soap/washing facilities. These measures – known as non-pharmacological public health interventions (NPIs) which include physical distancing or isolation at home to prevent



transmission – are among the simplest and least expensive methods to slow the spread of SARS-CoV-2, yet huge numbers of Africa's roughly 1.4 billion people do not have access to these tools. Across the 54 countries, approximately 718 million people live in households with more than six individuals at home. Approximately 283 million people live in households where more than three people slept in a single room.

As of now COVID-19, caused by severe acute respiratory

syndrome coronavirus 2 (SARS-CoV-2), has resulted in some 7.3 million cases and 185,505 deaths across the continent. Globally, nearly 210 million cases and 4.4 million deaths have been reported in more than 200 countries, although total mortality due to COVID-19 may be as high as seven million deaths.

Brewer TF *et al.* (2021). [Housing, sanitation and living conditions affecting SARS-CoV-2 prevention interventions in 54 African countries](#). *Epidemiology and Infection*.

Image: Map of Africa showing the areas in which households lack soap.

Guidelines on the use of blood and blood products in cats

Blood and blood products are increasingly available for practitioners to use in the management of haematological conditions, and can be lifesaving and therapeutically useful for patients with anaemia and/or coagulopathies. It is important for feline healthcare that donors are selected appropriately, and transfusions of blood or blood products are given to recipients that will benefit from them. Complications can occur, but can be largely avoided with careful donor management

and recipient selection, understanding of blood type compatibility, and transfusion monitoring.

Feline blood transfusion can also be detrimental without precautions. Cats have naturally occurring alloantibodies to red cell antigens and severe reactions can occur with type-mismatched transfusions. Blood transfusions can also transmit infectious agents to the recipient, so donor testing is essential. Finally, donors must be in good health, and sedated as appro-

priate, with blood collected in a safe and sterile fashion to optimise the benefit to recipients.

The guidelines are aimed at general practitioners to provide a practical guide to blood typing, cross-matching, and blood collection and administration.

Taylor S *et al.* (2021). [2021 ISFM Consensus Guidelines on the Collection and Administration of Blood and Blood Products in Cats](#). *Journal of Feline Medicine and Surgery*.

ELIZABETH BLACKWELL FUNDING

Nurturing
Research.
Improving
Health.



EBI Clinical Primer scheme

This scheme is aimed at clinically qualified medical, veterinary and dental trainees who are at an early stage of their career.

Closing date: 13 September 2021

EBI Support for researchers applying for Wellcome Trust Investigator Awards

This scheme is designed to support a small number of permanent academic staff at UoB within the first five years of their appointment, who are planning to apply for an Investigator Award from the Wellcome Trust. Applications will be accepted on a rolling basis.

Heads of School are asked to nominate members of staff who can be eligible for this scheme by emailing ebi-health@bristol.ac.uk. Applications accepted on a **rolling** basis.

EBI Seed Fund: Public Engagement with Health Research

Seed funding is available for health researchers who would like to deliver public engagement events and activities. This scheme is currently closed to submissions for any projects focusing on face to face engagement.

If you would like to apply for funding to support an engagement activity which adheres to social distancing guidance relating to coronavirus, please get in touch to discuss this in more detail. Applications accepted on a **rolling** basis.

EBI Workshop Support

Support interdisciplinary workshops in health research at new or emerging interface between two or more disciplines. Applications **reviewed all year**.

Returning Carers Scheme

To support academic staff across all faculties in re-establishing their independent research careers on return from extended leave (16 weeks or more) for reasons connected to caring (e.g. maternity leave, adoption leave, additional paternity leave, leave to care for a dependant). Applications **reviewed all year**.

FUNDING OPPORTUNITIES

Research Professional provides access to an extensive database of funding opportunities. UoB staff and students have **FREE** online access to the database from any device – once you've registered then you can view upcoming funding opportunities from any device. You can search for funding information by discipline, sponsor, database searches, by recent calls or by upcoming deadlines. If you register for the site and log in, you'll be able to:

- Set up automated funding opportunity email alerts - **tailored according to your discipline and research interests**
- Save searches and bookmarks - store items of interest for future reference, download and email to colleagues
- Sign up for higher education news bulletins

For further information on Research Professional, go to the [RED website](#).

* **Research Professional**

National Institute of Allergy and Infectious Diseases, US

[Advancing research needed to develop a universal influenza vaccine \(R01 clinical trial not allowed\)](#)

Closing date: 5 October 2021

Award amount: unspecified

This supports research that will advance the development a universal influenza vaccine providing durable protection against multiple influenza strains. This includes efforts to: improve understanding of transmission, natural history and pathogenesis of influenza virus infection; characterise influenza immunity and correlates of immune protection; support rational design of universal influenza vaccines.

Versus Arthritis

[Targeting shared mechanisms in immune mediated inflammatory diseases](#)

Closing date: 13 October 2021

Award amount: £100,000

This supports innovative projects that address shared mechanisms of autoimmunity with the goal of developing new treatments for people affected by autoimmune conditions. Projects should involve translational research by multi-disciplinary teams. Areas of particular interest include: revisiting interferon response and autophagy to define disease drivers of these pathways for new interventions; leveraging single cell and epigenetic analyses to determine new therapeutic concepts; looking beyond professional immune cells to the tissues to break the efficacy ceiling; immune-neuronal bidirectional signalling in health and disease and new opportunities for intervention; harnessing new understanding of the interplay between the gut microbiome, gut immune system and enteric nervous system.

Royal Society[APEX awards](#)

Closing date: 13 October 2021

Award amount: £110,000

These enable established, independent researchers with a strong track record in their respective area to pursue genuine interdisciplinary and curiosity-driven research to benefit wider society. The objectives of this scheme are to: promote collaboration across disciplines, with a particular emphasis on the boundary between science and engineering and the social sciences and humanities; support interdisciplinary research that is unlikely to be supported through conventional funding programmes; support researchers in developing their research in a new direction through collaboration with partners from other disciplines; enable researchers to focus on advancing their innovative research through seed funding.

European Society for Paediatric Infectious Diseases[Fellowships awards](#)

Closing date: 13 October 2021

Award amount: €100,000

These support basic or clinical research that utilises advanced techniques and methods to improve the health of children through the prevention or management of infectious diseases. Fellowships can take place outside or within the applicant's institution and country.

Horizon Europe: Global Challenges and European Industrial Competitiveness[HORIZON-HLTH-2022-DISEASE-06-two-stage — tackling diseases](#)

Closing date: 11 February 2022

Award amount: €8 million

This supports projects that set out a credible pathway to contributing tackling diseases and reducing disease burden. Funding is available under the following topics: HORIZON-HLTH-2022-DISEASE-06-02-twostage - pre-clinical development of the next generation immunotherapies for diseases or disorders with unmet medical need; HORIZON-HLTH-2022-DISEASE-06-03-twostage - vaccines 2.0, developing the next generation of vaccines; HORIZON-HLTH-2022-DISEASE-06-04-twostage - development of new effective therapies for rare diseases.

Healthcare Infection Society[Small research grants](#)

Closing date: 1 March 2022

Award amount: £10,000

These support small-scale research projects within the scope of infection prevention and control and nosocomial infections, or possibly the costs associated with the visit of an overseas research fellow.

THIS ISSUE'S FEATURED ARTICLE

EPIToPe (Evaluating the Population Impact of Hepatitis C Direct Acting Antiviral Treatment as Prevention for People Who Inject Drugs)

A joint project between: University of Bristol, Glasgow Caledonian University, University of Dundee, MRC Biostatistics Unit University of Cambridge, Queen Mary University of London, Health Protection Scotland, University of California (San Diego), NHS Tayside, Public Health England, Scottish Drugs Forum, London School of Hygiene and Tropical Medicine

An estimated 200,000 people in the UK have been infected with the Hepatitis C Virus (HCV), which is an important cause of liver disease, cancer and death. Most HCV infections in the UK are in people who inject drugs. New Direct Acting Antiviral (DAA) HCV therapies now combine high cure rates (>90%) with short treatment duration (8-12 weeks).

EPIToPe aims to generate empirical evidence on the effectiveness of HCV "Treatment as Prevention" in People who Inject Drugs (PWID). Despite effective prevention interventions, chronic HCV prevalence is still 40% among PWID. Evidence from mathematical modelling suggests that HCV treatment is essential to achieving substantial reductions in HCV prevalence and incidence among PWID. EPIToPE aims to test whether scaling up HCV DAA treatment will reduce chronic HCV prevalence and transmission among PWID.

The team recently revealed a new method of delivering hepatitis C testing and treatment to people who inject drugs which will help bring the world a step closer to eliminating the virus. Their blueprint on how best to get Hep C treatment to those who need it most was published on 11 August 2021, following a successful three-year trial in NHS Tayside. The breakthrough will help guide efforts in Scotland to eliminate Hep C by 2024.

Key recommendations include introducing a nurse-led community service for hepatitis C testing and treatment, recruiting peer workers who know the local drug culture and creating close ties between existing community services for people who inject drugs.

Researchers say the ideal model would be to house all these services in one building but where this is not possible the links between these services need to be strengthened including data sharing systems, role sharing and post-treatment care and support. A key part of that support is ongoing testing and treatment to prevent re-infection. It is hoped the guide will be rolled out across the UK and around the world.

The World Health Organization (WHO) has set an elimination target to reduce hepatitis C transmission by 80 per cent and deaths by 65 per cent by 2030, and researchers believe this new method of getting treatment to those who inject drugs in communities will have a major impact on cutting incidence and death rates.

[Read the full blueprint](#)

CONTACTS

The Infection and Immunity Network is run by a Steering Group:

Co-Chair: [Philip Bright](#)
Clinical Immunologist



Co-Chair (interim): [Angela Nobbs](#)
Senior Lecturer in Oral
Microbiology



- [Borko Amulic](#) - Lecturer in Immunology
- [Matthew Avison](#) - Co-Director, Bristol AMR
- [Andrew Davidson](#) - Professor of Systems Virology
- [Stephanie Diezmann](#) - Senior Lecturer in Fungal Pathogens
- [Hannah Fraser](#) - Research Fellow in Infectious Disease Mathematical Modelling
- [Clare French](#) - Research Fellow in Research Synthesis
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- [Jamie Mann](#) - Lecturer in Vaccinology & Immunotherapy
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The content of this newsletter is not the intellectual property of the Network, but rather an amalgamation of information obtained through a variety of sources including our [community members](#); research groups such as [Bristol AMR](#) and [Infection, Inflammation and Immunotherapy](#); and University of Bristol [school bulletins](#) and [press releases](#).

Affiliations are stated wherever possible, however please note that omissions do happen and we apologise in advance for any you may come across. All information is merely for educational and informational purposes. We cannot offer medical advice and any queries regarding treatment for a specific medical condition or participation in a clinical trial should be addressed to your healthcare provider. While the information herein has been verified to the best of our abilities, we cannot guarantee that there are no mistakes or errors.

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