



## Weekly update

Through our research, community outreach and expert commentary, the University of Birmingham is taking an active role in the fightback against COVID-19. You can read our latest statements and follow our research updates at [www.birmingham.ac.uk/coronavirus](http://www.birmingham.ac.uk/coronavirus).

Through Birmingham Health Partners, a strategic alliance between the University and two NHS Foundation Trusts, we are working to support frontline healthcare professionals. For the latest updates visit their [website](#).

### Research

#### How our research is supporting the global effort

Current work includes boosting laboratory testing capacity, coordinating clinical trials of new interventions and providing practical support to NHS workers. In addition, many of our academic clinicians are now working full time in the NHS fighting the novel coronavirus and its devastating effects. We are:

- Working with COVID-19 Genomics UK Consortium to map how COVID-19 spreads and evolves using whole-genome sequencing
- Working closely with Public Health England to increase capacity for COVID-19 testing in the region and supporting the running of one of the national testing hubs
- Developing and delivering new interventions for COVID-19 both locally and as part of National Institute for Health Research funded national consortia
- Leading a central hub, PIONEER, that is collecting electronic health data nationally to help us understand the progress of the pandemic and how it impacts on both COVID and non-COVID patients
- Leading the national drive to develop and test new ventilators that are so badly needed to save the worst-affected patients, and working on solutions to improve the seal and fit of facemasks and develop new types of PPE
- Creating the first cancer coronavirus registry in the world to track how cancer patients who have tested positive for COVID-19 will be impacted

[\(More information\)](#)

#### Birmingham experts join forces to improve COVID-19 antibody diagnosis

Working alongside University Hospitals Birmingham NHS Foundation Trust and The Binding Site, experts at the University of Birmingham's Clinical Immunology Service aim to improve antibody diagnosis.

[\(More information\)](#)

#### Supporting local NHS Trusts to upscale testing for frontline staff

In this video, Professor Andrew Beggs, from the University's Institute of Cancer and Genomic Sciences at the University of Birmingham talks through the process of a COVID-19 test and how the labs here at the university have been repurposed to allow up to 10,000 swabs to be tested a day. [\(More information\)](#)



Above: Some of the University of Birmingham staff involved in testing for COVID-19

#### Latest clinical research briefing

Our latest summary of the evidence for COVID-19 interventions shows that Ivermectin has shown some effect on reducing viral load. Immunotherapies Tocilizumab and Siltuximab were tested in two separate studies, both had no control groups, but suggested some benefit. Larger studies are required to properly demonstrate effectiveness.

A summary of the latest clinical update can be found in the appendix on page 3.

[\(More information\)](#)

## Community

### Medical device specialists ensure NHS has access to the right equipment at the right time

A team of medical device specialists has joined together to support the supply and deployment of vital medical equipment into the healthcare system. The aim is to support healthcare providers in ordering new devices such as ventilators, infusion pumps, dialysis and critical care equipment that is fit for purpose and appropriate for use in treating COVID-19 patients. ([More information](#))

### University supplies virucidal disinfectant to West Midlands mortuaries

Staff at the University of Birmingham have donated stocks of high level disinfectants to emergency services for use in their mortuary triage areas, after their supplies ran low.

## Comment

### Poverty, household debt and COVID-19

Professor Karen Rowlingson has produced a briefing note calling on the Government to take action on poverty and household debt by considering:

- Ending the overall benefit cap so that increases can be felt by those in high-rent areas and those with larger families
- Child benefit payments should be increased as a cost-effective way of getting money to families quickly. A modest £10 uplift would reduce child poverty by around five percentage points.
- Ensuring people can access local crisis grants easily and promptly.
- Providing central Government funds to local authorities, housing associations and landlords so they can offer rent/council tax payment holidays to those in need.
- Working with regulator and creditors to protect those who fall behind on bills and credit commitments by pausing all forms of collection and enforcement activity.

([More information](#))

### How should the UK exit lockdown?

Dr Zania Stamataki, senior lecturer in viral immunology, writes in the Conversation about how the UK can develop an exit plan for lockdown.

([More information](#))

### Why is coronavirus so frighteningly successful?

Dr Zania Stamataki writes in the Guardian about the host of factors that determine whether a virus survives and thrives in humans. ([More information](#))

### An argument for wearing face masks in the community during the pandemic

Professor KK Cheng, Director of the Institute of Applied Health Research, argues that it is time citizens in the UK wore face masks in public. ([More information](#))

### How can we protect women and children at risk from violence during the COVID-19 crisis?

Now that nearly 3 billion people around the globe are under COVID-19 lockdown, domestic abuse victims will be confined for longer periods of time with perpetrators, increasing the risk of harm, including physical injury, emotional and verbal abuse, and even death, writes Dr Heather Flowe. ([More information](#))

### How COVID-19 has made the invisible silent killer of air pollution visible

In the battle to slow the spread of COVID-19, countries around the world are restricting social gatherings, encouraging working from home, closing schools and restricting public events. As a result, this brutal pandemic has inadvertently made the invisible and silent killer of air pollution now visible, writes Dr Nana Osei Bonsu. ([More information](#))

### How do collective and individualistic societies respond to the challenge of social distancing orders?

Professor Xiaohui Liu writes about why it is more difficult to implement social distancing in Western countries compared with China. ([More information](#))

### Using graphics to cut through Covid's complexity and saving lives with social science

Professor Heather Marquette has written a two-part piece for Oxfam's Poverty to Power blog looking at graphics and the contribution that social sciences can make to saving lives. ([Part 1/Part 2](#))

### Coronavirus crisis is a turning point for the NHS – for good or bad we just don't know yet

Mark Exworthy, Professor of Health Policy and Management, explores how 2020 could be a turning point for the NHS. ([More information](#))

## Contact us

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# Appendix

Regular updates to this clinical briefing can be [viewed here](#).



University Hospitals Birmingham  
NHS Foundation Trust

This is a summary of some of the current evidence for potential SARS-CoV-2 interventions and is not a comprehensive report. This will be updated as studies are reported.



# Research Update Therapies

Birmingham Health Partners  
Issue#: APR\_V5.05  
Date: 17APR2020

Caly *et al.*, Antivir Res, 2020

## Ivermectin *in vitro* Vero cell line

### Info

anti-parasitic drug with some anti-viral properties

### Study

- Previously shown to inhibit viral replication
- Vero cells + SARS-CoV2
  - 2h incubation
  - +ivermectin

### Outcome

- After 24h - reduced viral RNA in supernatant
- After 48h - no viral material

Shen *et al.*, JAMA, 2020; Duan *et al.*, medRxiv, 2020

## Convalescent plasma safety study / patients in hospital

### Info

plasma contained IgG and IgM SARS-CoV-2 antibodies. Given as infusion treatment

### Studies

- 10 patient safety study
- 5 patients with SARS-CoV-2 and ARDS
  - Plasma given on day 10 or 22
  - no control group

### Outcome

- Safety reported **no adverse events**
- Viral load negative after 12 days; SOFA scores decreased and **patients improved**

Cao *et al.*, New Engl J Med, 2020; Li *et al.*, medRxiv, 2020; Ye *et al.*, Eur Rev Med Pharmacol Sci, 2020

## Lopinavir-Ritonavir (antivirals) 3 patient studies

### Studies

99 vs 100 drug vs standard care	non-blinded study
21 vs 7 drug vs standard care	under-powered study
42 vs 5 drug + adjuvant vs adjuvant	no statistics and under-powered study

### Outcomes

- 99 and 21: no difference in viral load, clinical improvement or mortality
- 42: clinical improvement, but no stats

Xiaoling *et al.*, ChinaXiv, 2020; Gritti *et al.*, medRxiv, 2020

## Tocilizumab / Siltuximab 2 studies with 21 patients each

### Info

anti-IL6 receptor antibodies

### Studies

- Tocilizumab: no control group; risk of bias
- Siltuximab: no control group, all ARDS patients

### Outcomes

- Tocilizumab: suggested effective; 53% returned to normal lymphocyte counts, 84% normalised CRP
- Siltuximab: **reduced CRP** levels; over 8 days, **33% clinically improved**, 43% stabilised; **24% worsened**

Frie and Gbinigie, CEBM, 2020; Yao *et al.*, Clin Infect Dis, 2020; Liu *et al.*, Nature, 2020; Wang *et al.*, Cell Res, 2020; Gautret *et al.*, mediterranean-infection, 2020; Lane *et al.*, medRxiv, 2020

## Hydroxychloroquine and chloroquine *in vitro* and *in vivo*

### Info

multiple RCTs ongoing, **no serious adverse events** but possible **increased cardiovascular complications**

### Studies

- inhibited viral replication *in vitro* and prevented infection as pre-treatment
- 20 vs 16  
HCQ vs standard care
- under-powered, no follow up or randomisation

### Outcome

- in vitro*, HCQ more effective vs CQ
- 70% of patients on HCQ had viral clearance (vs 12.5%)

Bean *et al.*, medRxiv, 2020

## ACE inhibitors patients already on ACE inhibitors

### Info

SARS-CoV2 binds to the ACE2 receptor for cell entry

### Study

- patients followed for 7 days upon admission

### Outcome

- lower mortality and ICU admissions: odds ratio of 0.29
- no evidence increased severity of COVID-19

Russell *et al.*, The Lancet, 2020; Villar *et al.*, The Lancet, 2020

## Corticosteroids SARS-CoV and ARDS

- In patients with SARS, no clinical data exist to indicate a benefit, but potential for increased risk of harm
- From ARDS, low dose dexamethasone may reduce mortality and requirement for mechanical ventilation



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Generated in collaboration with researchers at the University of Birmingham. This is not a clinical guideline or SOP. This is a summary of the latest evidence available internationally on the management, treatment and science underlying COVID-19 disease presented in accompanying report and may be subject to change as further reports are released.