



The Friday Report – Issue 6

By Matt Fletcher and Nicola Oliver for

COVID-19 Actuaries Response Group – Learn. Share. Educate. Influence.

Every week, more is written on COVID-19 than any individual could possibly read. Collectively, the COVID-19 Actuaries Response Group read more about the outbreak than most, so we've decided each Friday to provide you with a curated list of the key papers and articles that we've looked at recently.

General

European Centre for Disease Prevention and Control (ECDC)

Contact tracing for COVID-19: current evidence, options for scale-up and an assessment of resources needed (5 May)

With many countries considering how and when to adjust or lift their non-clinical interventions such as physical distancing and lock-down, it is important to consider how COVID-19 will be controlled in future.

Promptly identifying and managing contacts of known COVID-19 cases makes it possible to rapidly identify secondary cases and halt further transmission. It has been an important part of the response in China and Singapore, as well as New Zealand.

This ECDC report ([link](#)) sets out the resources and infrastructure needed to manage contact tracing, based on scenarios where there are 10, 250 and 1,000 reported cases per day.

Scientific American

We all want scientifically reputable material on the pandemic that's written for a lay audience but not 'dumbed down'. The US 'lay science' magazine Scientific American which can be found [here](#) has a range of good material on the pandemic with a bias towards medical (as opposed to modelling) aspects. For instance, this article on genetic susceptibility to COVID-19 ([Link](#)) considers what might explain varying levels of ACE2 expression. Several articles consider the wider related aspects of mental health and climate interactions.

Clinical and Medical News

Pharmaceuticals

The race to develop or repurpose existing pharmaceuticals to treat patients with COVID-19 is on; with a number of vaccines having reached human trial stages, and other drugs further down the development pipeline, the potential arsenal seems ever expanding.

A detailed overview of the main pharmacological properties, including data on mechanism of action, safety concerns and drug-drug interactions, of drugs currently administered in patients with COVID-19 is presented here ([link](#)). Beyond the expected drug classes, this helpful review also describes the potential benefits of immunomodulatory agents, such as small molecule inhibitors and monoclonal antibodies which could prevent hyperactivation of the inflammatory pathway.

The UK COVID-19 Study - RECOVERY

RECOVERY aims to evaluate drugs with the potential to help patients admitted to hospital with confirmed COVID-19 in the UK. This study is remarkable for the fact that it went from concept to first patient in less than a fortnight ([link](#)).

9,318 participants have so far been enrolled from 173 sites and you can monitor live progress of the trial here ([link](#)) The trial will test the effectiveness of Lopinavir-Ritonavir (commonly used to treat HIV), Low-dose Dexamethasone (a type of steroid, which is used in a range of conditions typically to reduce inflammation), Hydroxychloroquine (related to an anti-malarial drug), Azithromycin (a commonly used antibiotic), and Tocilizumab (an anti-inflammatory treatment). Results are expected as soon as June 2020.

UK convalescent plasma programme

The UK NHS special health authority, NHS Blood and Transplant, are leading a programme to collect convalescent blood plasma from people who have recovered from COVID-19. They are recruiting plasma donors (convalescent plasma) who have recovered from a confirmed case of coronavirus or had symptoms at their main 23 blood centres. Details can be found here ([link](#)).

Mutation

One concern regarding the pandemic is the propensity for the virus to mutate to such an extent that pathogenicity is substantially altered. This study ([link](#)) collected samples from patients during the early stage of the breakout in China in order to sequence the viral genomic RNA and identify any variants. Researchers report that out of the 31 mutations that were identified, 19 were novel, despite the relatively early sampling dates. Worryingly, this study observes that the SARS-CoV-2 has acquired mutations capable of substantially changing its pathogenicity.

Lockdown – wider health effects

As some countries begin to ease their lockdown measures, this analysis considers those who may be particularly vulnerable to the social distancing measures ([link](#)). This includes older people through risks associated with social isolation, young people and the disruption to education and the support mechanisms provided by the stability of a school day, those on low income or with precarious contracts as they are more likely to be in insecure work without financial reserve, women, who are more likely to be carers and subject to domestic abuse. Other vulnerable groups include those with disabilities, people of East Asian ethnicity, those with mental health problems, people with substance abuse problems, homeless people, those in institutions and people with reduced communication abilities.

Research Research!

The amount of published research on COVID-19 is vast, the majority of which has also not undergone a peer review process ([link](#)) in order to allow for timely publication. This makes it somewhat challenging to make any kind of rapid appraisal of the current published research.

The Health Information Research Unit (HIRU) in the Department of Health Research Methods, Evidence, and Impact (HEI) at McMaster University conducts research in the field of health information science and has now developed a service in which they alert users to current best evidence for clinical care of people with threatened, suspected or confirmed COVID-19 infection.

It is updated every weekday as evidence reports are published in all journals included in MEDLINE. Reports are critically appraised for scientific merit, and those with acceptable scientific merit are appraised for relevance and importance by frontline clinicians. You can sign up for email alerts here: ([Link](#))

Data

Office for National Statistics: Coronavirus (COVID-19) related deaths by ethnic group, England and Wales: 2 March 2020 to 10 April 2020 ([Link](#))

This report shows that the risk of death involving COVID-19 among some ethnic groups is significantly higher than that of those of White ethnicity. Once age, socio-demographic characteristics and some measures of health are taken into account, the risk of death for males and females of Black ethnicity was 1.9 times that for White ethnicity. Similarly, Bangladeshi and Pakistani ethnicities also had significantly increased risk of death involving COVID-19 compared with White ethnicity.

OpenSAFELY: factors associated with COVID-19-related hospital death in the linked electronic health records of 17 million adult NHS patients ([Link](#))

This is the world's largest analysis of patient records to date. The report sets out preliminary results of analysis of pseudonymised health data of over 17.4 million adults to discover the key factors associated with death from COVID-19. The conclusions are similar to other papers, but given the size of the dataset, the strength of the evidence is greater.

The report concludes that

- Individuals of Asian and Black ethnic origin are at a higher risk of death from COVID-19, and that prior health conditions or deprivation characteristics do not fully explain the excess risk;
- People from deprived social backgrounds are at a higher risk of death, this effect not explained by other risk factors;
- Other key risk factors are sex (males being at higher risk), age and severe diabetes. Those with severe asthma were also found to be at increased risk of death from COVID-19.

And finally...

One of the contributors' daughters has been trying to break the World Record for number of Jenga blocks removed and replaced with one hand in a minute (apparently the record is 21, which feels breakable) – and she's just one of many people looking to break records during the lockdown period:

[Most viewed online dance class](#)

[Largest online art lesson](#)

[Most people visiting a virtual pub](#)

[Longest freestyle rap](#)

If you're thinking about trying to join them over the long weekend, check out the official Guinness World Records evidence requirements, for attempts taking place under COVID-19 social distancing measures: [Link](#)

8 May 2020