COVID-19 weekly update

14th May 2021

clinical management

**Title:**  EMA starts rolling review of sotrovimab (VIR-7831) for COVID-19

European Medicines Agency | 7th May 2021

EMA’s human medicines committee (CHMP) has started a ‘rolling review’ of data on sotrovimab (also known as VIR-7831 and GSK4182136), a monoclonal antibody developed by GlaxoSmithKline and Vir Biotechnology, Inc. for the treatment of COVID-19.

Sotrovimab is a monoclonal antibody with activity against COVID-19. A monoclonal antibody is a type of protein that attaches to a specific structure (called an antigen). Sotrovimab is designed to attach to the spike protein of SARS-CoV-2, the virus that causes COVID-19. When it attaches to the spike protein, the ability of the virus to enter the body’s cells is reduced. This is expected to reduce the need for hospitalisation in patients with COVID-19.

The decision to start the rolling review is based on preliminary results from an ongoing study looking at the ability of the medicine to prevent hospitalisation or death in non-hospitalised patients with COVID-19. However, EMA has not yet received the full dataset and it is too early to draw any conclusions regarding the benefit-risk balance of the medicine.

EMA has started evaluating the first batch of data, which come from laboratory and animal studies, in addition to data on the quality of the medicine.

EMA will evaluate all data on this medicine, including evidence from clinical trials, as they become available. The rolling review will continue until enough evidence is available to support a formal marketing authorisation application.

EMA will assess the medicine’s compliance with the usual EU standards for effectiveness, safety and quality. While the overall review timeline cannot be forecast yet, the process should be quicker than a regular evaluation due to the time gained during the rolling review.

Full detail: [EMA starts rolling review of sotrovimab (VIR-7831) for COVID-19](https://www.ema.europa.eu/en/news/ema-starts-rolling-review-sotrovimab-vir-7831-covid-19)

**Title:** International COVID-19 trial to restart with focus on immune responses

Nature | 7th May 2021

A landmark programme to test potential COVID-19 therapies in dozens of countries is restarting - this time aimed at tempering the raging immune responses that can worsen severe disease.

The clinical trial, named Solidarity and coordinated by the World Health Organization (WHO), will test three drugs that dampen inflammation, an approach that has already shown promise in people hospitalized with COVID-19. All three drugs were carefully chosen on the basis of the promise they showed in smaller clinical trials and widespread availability

One of the drugs to be tested is infliximab, used to treat autoimmune conditions, including Crohn’s disease and rheumatoid arthritis. It blocks a protein called tumour necrosis factor alpha (TNF-α), which is released by immune cells called macrophages and promotes inflammation.

A second treatment in the trial is a cancer drug called imatinib. Researchers hope that it will target both the coronavirus and inflammation, blocking viral infiltration of human cells and reducing the activity of pro-inflammatory proteins called cytokines. Finally, Solidarity is testing artesunate, an anti-malaria drug with potential anti-inflammatory effects. Each of these drugs will be given alongside standard care, which in many regions includes dexamethasone, says Røttingen.

Full detail: [International COVID-19 trial to restart with focus on immune responses](https://www.nature.com/articles/d41586-021-01090-z)

**Title:** Non-steroidal anti-inflammatory drug use and outcomes of COVID-19 in the ISARIC Clinical Characterisation Protocol UK cohort: a matched, prospective cohort study

The Lancet Rheumatology | 7th May 2021

Early in the pandemic it was suggested that pre-existing use of non-steroidal anti-inflammatory drugs (NSAIDs) could lead to increased disease severity in patients with COVID-19. NSAIDs are an important analgesic, particularly in those with rheumatological disease, and are widely available to the general public without prescription.

Evidence from community studies, administrative data, and small studies of hospitalised patients suggest NSAIDs are not associated with poorer COVID-19 outcomes. This study aimed to characterise the safety of NSAIDs and identify whether pre-existing NSAID use was associated with increased severity of COVID-19 disease.

The authors conclude NSAID use is not associated with higher mortality or increased severity of COVID-19. Policy makers should consider reviewing issued advice around NSAID prescribing and COVID-19 severity.

Full article: [Non-steroidal anti-inflammatory drug use and outcomes of COVID-19 in the ISARIC Clinical Characterisation Protocol UK cohort: a matched, prospective cohort study](https://www.thelancet.com/action/showPdf?pii=S2665-9913%2821%2900104-1)

**Title:** LUCAS: A highly accurate yet simple risk calculator that predicts survival of COVID-19 patients using rapid routine tests

medRxiv | 30th April 2021

*This article is a preprint and has not been peer-reviewed. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.*

There is an urgent need to develop a simplified risk tool that enables rapid triaging of SARS CoV-2 positive patients during hospital admission, which complements current practice. Many predictive tools developed to date are complex, rely on multiple blood results and past medical history, do not include chest X ray results and rely on Artificial Intelligence rather than simplified algorithms.

The aim of this research was to develop a simplified risk-tool based on five parameters and CXR image data that predicts the 60-day survival of adult SARS CoV-2 positive patients at hospital admission.

This simplified prognostic tool derived from objective parameters can be used to obtain valid predictions of mortality in patients within 60 days SARS CoV-2 RT-PCR results. This free-to-use simplified tool can be used to assist the triage of patients into low, moderate, high or very high risk of fatality and is available at <https://mdscore.net/>.

Full paper: [LUCAS: A highly accurate yet simple risk calculator that predicts survival of COVID-19 patients using rapid routine tests](https://www.medrxiv.org/content/10.1101/2021.04.27.21256196v1.full.pdf)

**Title:** LENZILUMAB EFFICACY AND SAFETY IN NEWLY HOSPITALIZED COVID-19 SUBJECTS: RESULTS FROM THE LIVE-AIR PHASE 3 RANDOMIZED DOUBLE-BLIND PLACEBO-CONTROLLED TRIAL

medRxiv | 5th May 2021

*This article is a preprint and has not been peer-reviewed. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.*

Lenzilumab is a novel Humaneered anti-human GM-CSF monoclonal antibody that directly binds GM-CSF and prevents signaling through its receptor. The LIVE-AIR Phase 3 randomized, double-blind, placebo-controlled trial investigated the efficacy and safety of lenzilumab to assess the potential for lenzilumab to improve the likelihood of ventilator-free survival (referred to herein as survival without ventilation, SWOV), beyond standard supportive care, in hospitalized subjects with severe COVID-19.

The study concludes that Lenzilumab significantly improved SWOV in hospitalized, hypoxic subjects with COVID-19 pneumonia over and above treatment with remdesivir and/or corticosteroids. Subjects with CRP<150 mg/L and age <85 years demonstrated an improvement in survival and had the greatest benefit from lenzilumab.

Full paper: [Lenzilumab efficacy and safety in newly hospitalized Covid-19 subjects: Results from the LIVE-AIR phase 3 randomized double-blind placebo-controlled trial](https://www.medrxiv.org/content/10.1101/2021.05.01.21256470v1.full.pdf)

**Title:** Factors associated with deaths due to COVID-19 versus other causes: population-based cohort analysis of UK primary care data and linked national death registrations within the OpenSAFELY platform

The Lancet Europe | 8th May 2021

Mortality from COVID-19 shows a strong relationship with age and pre-existing medical conditions, as does mortality from other causes. This research aimed to investigate how specific factors are differentially associated with COVID-19 mortality as compared to mortality from causes other than COVID-19.

The study found that most factors associated with COVID-19 death were similarly associated with non-COVID death, but the magnitudes of association differed. Older age was more strongly associated with COVID-19 death than non-COVID death, as was male sex, deprivation, obesity, and some comorbidities. Smoking, history of cancer and chronic liver disease had stronger associations with non-COVID than COVID-19 death. All non-white ethnic groups had higher odds than white of COVID-19 death but lower odds than white of non-COVID death.

Similar associations of most individual-level factors with COVID-19 and non-COVID death suggest that COVID-19 largely multiplies existing risks faced by patients, with some notable exceptions. Identifying the unique factors contributing to the excess COVID-19 mortality risk among non-white groups is a priority to inform efforts to reduce deaths from COVID-19.

Full paper: [Factors associated with deaths due to COVID-19 versus other causes: population-based cohort analysis of UK primary care data and linked national death registrations within the OpenSAFELY platform](https://www.thelancet.com/action/showPdf?pii=S2666-7762%2821%2900086-7)

**Title:** Management of severe covid-19: progress and promise

BMJ | 2021; 373: n1147 | 7th May 2021

This editorial looks at the management of SARS-CoV-2 infection as it continues to evolve. It argues that progress in our understanding SARS-CoV-2 and the development of therapeutics and practices to treat moderate-to-severe covid-19 has been impressive, driven by unprecedented collaboration, dedication, and hard work by patients, healthcare professionals, and clinician scientists around the globe. Developing treatments while sharing knowledge, data, and tools provides the promise of ending the current pandemic and preparing for the next global threat.

Full editorial: [Management of severe covid-19: progress and promise](https://www.bmj.com/content/373/bmj.n1147)

Related briefing: [Where are we with drug treatments for covid-19?](https://www.bmj.com/content/373/bmj.n1109) | BMJ

**Title:** Use of repurposed and adjuvant drugs in hospital patients with covid-19: multinational network cohort study

BMJ | 2021; 373: n1038 | 11th May 2021

The objective of this study was to investigate the use of repurposed and adjuvant drugs in patients admitted to hospital with covid-19.

The authors found that multiple drugs were used in the first few months of the covid-19 pandemic, with substantial geographical and temporal variation. Hydroxychloroquine, azithromycin, lopinavir-ritonavir, and umifenovir (in China only) were the most prescribed repurposed drugs. Antithrombotics, antibiotics, H2 receptor antagonists, and corticosteroids were often used as adjunctive treatments.

Research is needed on the comparative risk and benefit of these treatments in the management of covid-19.

Full paper: [Use of repurposed and adjuvant drugs in hospital patients with covid-19: multinational network cohort study](https://www.bmj.com/content/bmj/373/bmj.n1038.full.pdf)

**Title:** Management of vaccine-induced thrombosis and thrombocytopenia

Royal College of Surgeons | May 2021

There are increasing reports of a rare adverse event of thrombosis and thrombocytopenia following the first dose of the AstraZeneca COVID-19 vaccine, a syndrome labelled vaccine-induced thrombotic thrombocytopenia syndrome (VITT). The colleges and surgical specialty associations have produced guidance on the features and management of VITT, taking into account vascular, gastrointestinal and neurosurgical considerations.

Neurosurgical

* [Management of cerebral venous sinus thrombosis following Covid-19 vaccination A neurosurgical guide](https://www.rcseng.ac.uk/-/media/files/rcs/coronavirus/cvstguide_--1942020.pdf)

Gastrointestinal

* [Diagnosis and management of gastrointestinal manifestations of vaccine induced thrombosis & thrombocytopenia (VITT) syndrome](https://www.rcseng.ac.uk/-/media/files/rcs/coronavirus/vitt-guidance--gi-manifestations--6-may-2021.pdf)

Vascular

* [Management of thromboembolic events following COVID-19 vaccination](https://www.rcseng.ac.uk/-/media/files/rcs/coronavirus/vitt-guidance-vascular-surgery-30-april-2021.pdf)

recovery

**Title:** Covid-19 and the nation's mental health

Centre for Mental Health | 12th May 2021

The implications of the pandemic are wide-reaching. Covid-19 has hospitalised nearly half a million people in the UK, over 127,000 people have died, and the economy has shrunk significantly. All of this has an impact on the mental health of the nation, and a new model by The Centre for Mental Health forecasts how many people are likely to need mental health support as a result of the pandemic.

This report confirms that 10 million people (8.5 million adults and 1.5 million children and young people) in England will need support for their mental health as a direct result of the pandemic over the next three to five years.

Based on an analysis of over 200 high-quality studies from around the world, the model (developed by clinicians, researchers and economists from the NHS and Centre for Mental Health) identifies key groups of people who face an especially high risk of poor mental health as a result of the pandemic. These groups include people who have survived severe Covid-19 illness (especially those treated in intensive care), those working in health and care services during the pandemic, people economically impacted by the pandemic, and those who have been bereaved.

While the NHS is already investing in additional mental health services, the predicted levels of demand are two to three times that of current NHS mental health capacity within a 3-5 year window. This briefing makes it clear that Government and the NHS must take action now to meet a very steep increase in demand for mental health support. It is also vital to develop services to meet the specific needs arising from the pandemic – for example, specialist bereavement support and evidence-based help for those with trauma symptoms.

Full report: [Covid-19 and the nation's mental health. Forecasting needs and risks in the UK: May 2021](https://www.centreformentalhealth.org.uk/sites/default/files/publication/download/CentreforMentalHealth_COVID_MH_Forecasting4_May21.pdf)

**Title:** Tackling the mental health impact of the COVID-19 crisis: An integrated, whole-of-society response

OECD | 12th May 2021

The COVID‑19 crisis has heightened the risk factors generally associated with poor mental health – financial insecurity, unemployment, fear – while protective factors – social connection, employment and educational engagement, access to physical exercise, daily routine, access to health services – fell dramatically.

This has led to a significant and unprecedented worsening of population mental health. Across countries, the mental health of unemployed people and those experiencing financial insecurity was worse than that of the general population – a trend that pre‑dates the pandemic, but seems to have accelerated in some cases.

OECD countries have responded with decisive efforts to scale‑up mental health services, and put into place measures to protect jobs and incomes, thereby reducing mental distress for some. However, the scale of mental distress since the start of the pandemic requires more integrated, whole‑of-society mental health support if it is not to lead to permanent scarring.

An integrated whole‑of-society response means:

* Access to existing mental health services should be assuredeither in-person or via telemedicine, or both, and increasing access to evidence‑based services should be a priority, including alternatives to mental health promotion programmes in schools or workplaces which have been particularly disrupted;
* Employers must contribute to supporting the mental health of employees, including those who have been on job retention schemes. Policy makers should look further at the implications of long-term teleworking on mental health, and countries should consider scaling-up mental health support for jobseekers through public employment services.

Full detail: [Tackling the mental health impact of the COVID-19 crisis: An integrated, whole-of-society response](https://read.oecd-ilibrary.org/view/?ref=1094_1094455-bukuf1f0cm&title=Tackling-the-mental-health-impact-of-the-COVID-19-crisis-An-integrated-whole-of-society-response&_ga=2.39258915.1006928773.1620916522-1548871934.1620916522)

**Title:** Lifestyle risk factors and infectious disease mortality, including COVID-19, among middle aged and older adults

Brain, Behavior, and Immunity | 1st May 2021

In this community-based cohort study, researchers investigated the relationship between combinations of modifiable lifestyle risk factors and infectious disease mortality. Participants were 468,569 men and women residing in the United Kingdom.

Lifestyle indexes included traditional and emerging lifestyle risk factors based on health guidelines and best practice recommendations for: physical activity, sedentary behaviour, sleep quality, diet quality, alcohol consumption, and smoking status. The main outcome was mortality from infectious diseases, including pneumonia, and coronavirus disease 2019 (COVID-19).

Meeting public health guidelines or best practice recommendations among combinations of lifestyle risk factors was inversely associated with mortality. The authors found a beneficial dose-response association with a higher lifestyle index against mortality that was consistent across sex, age, BMI, and socioeconomic status.

Improvements in lifestyle risk factors and meeting public health guidelines or best practice recommendations could be used as an ancillary measure to ameliorate infectious disease mortality.

Full article: [Lifestyle risk factors and infectious disease mortality, including COVID-19, among middle aged and older adults: Evidence from a community-based cohort study in the United Kingdom](https://www.sciencedirect.com/science/article/pii/S088915912100180X?via%3Dihub)

**Title:** Post-acute effects of SARS-CoV-2 infection in individuals not requiring hospital admission: a Danish population-based cohort study

The Lancet Infectious Diseases | 10th May 2021

Individuals admitted to hospital for COVID-19 might have persisting symptoms (so-called long COVID) and delayed complications after discharge. However, little is known regarding the risk for those not admitted to hospital. The authors of this study therefore examined prescription drug and health-care use after SARS-CoV-2 infection not requiring hospital admission.

The study concludes that the absolute risk of severe post-acute complications after SARS-CoV-2 infection not requiring hospital admission is low. However, increases in visits to general practitioners and outpatient hospital visits could indicate COVID-19 sequelae.

Full paper: [Post-acute effects of SARS-CoV-2 infection in individuals not requiring hospital admission: a Danish population-based cohort study](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2821%2900211-5)

**Title:** The future role of remote consultations & patient ‘triage’. General practice COVID-19 recovery

Royal College of General Practitioners | 11th May 2021

A key challenge for UK governments and health systems will be to build upon the potential benefits that have emerged from technology advances and new ways of working during the Covid-19 pandemic, while ensuring that relational care and health inequalities do not suffer in the longer-term. This will only be possible with further evaluation, action and government investment.

This paper sets out the challenges which need to be addressed to ensure GPs and practice teams can continue to provide high-quality patient care as we look towards a ‘new normal’.

Full paper: [The future role of remote consultations & patient ‘triage’. General practice COVID-19 recovery](https://www.rcgp.org.uk/-/media/Files/Policy/future-role-of-remote-consultations-patient-triage.ashx?la=en)

Press release: [GP consultations post-COVID should be a combination of remote and face to face, depending on patient need, says College](https://www.rcgp.org.uk/about-us/news/2021/may/gp-consultations-post-covid.aspx)

**Title:** RESTORING PRIMARY CARE: TEN KEY PRIORITIES

NHS Confederation | 10th May 2021

Dramatically rising demand combined with increased public expectation and more complex health needs are putting significant pressure on primary care delivery, primary care leaders across England have warned.  
  
This report from the NHS Confederation sets out what primary care will need to recover its services and support its staff, post-pandemic. It comes as recent figures from NHS Digital show general practices across England carried out nearly 3 million more appointments in March 2021 compared to March 2019.  
  
It highlights the increasing and unsustainable workload in primary care, with services working to provide routine care while simultaneously addressing the ongoing needs of patients with long COVID; those with multiple co-morbidities and long-term conditions, including those who are on the waiting list for elective care; and the rising demand for mental health support. This has also been combined with playing an integral part in the rollout of the biggest vaccination programme the country has ever seen.

The paper outlines ten of the most urgent priorities that primary care are urging Government to address. These include the need for:

* Extra investment in infrastructure to make it fit for the 21st century, notably in management support, estates, IT and digital solutions.
* Recognition that to deliver patient-centered care, different solutions will be required that reflect different population needs and to address the wider determinants of health.
* Clarity on national priorities and transparent analysis of local need.
* A clear set of measures that capture the pressure and workload being put on primary care.
* The need to be open and honest with the public about what is achievable.

Full paper: [Restoring primary care: Ten key priorities](https://www.nhsconfed.org/-/media/Confederation/Files/Publications/Documents/Restoring-primary-care-ten-key-priorities.pdf)

See also:

[Government must invest in primary care to aid pandemic recovery, say leaders](https://www.bmj.com/content/373/bmj.n1208) | BMJ

[“Exhausted” GPs need more support for future crises, says leader](https://www.bmj.com/content/373/bmj.n1206) | BMJ

**Title:** NHS’s £160 million ‘accelerator sites’ to tackle waiting lists

NHS England | 13th May 2021

The NHS has today announced a £160 million initiative to tackle waiting lists and develop a blueprint for elective recovery as early reports show the health service is recovering faster after the second wave of the coronavirus pandemic. Indicators suggest operations and other elective activity were already at four fifths of pre-pandemic levels in April.

NHS England is now seeking to accelerate the recovery by trialling new ways of working in a dozen areas and five specialist children’s hospitals. The ‘elective accelerators’ will each receive a share of £160 million along with additional support to implement and evaluate innovative ways to increase the number of elective operations they deliver.

Virtual wards and home assessments, 3D eye scanners, at-home antibiotic kits, ‘pre-hab’ for patients about to undergo surgery, AI in GP surgeries and ‘Super Saturday’ clinics – where multi-disciplinary teams come together at the weekend to offer more specialist appointments – will also be trialled.

The aim is to exceed the same number of tests and treatments as they did before the pandemic and develop a blueprint for elective recovery to enable hospitals to go further and faster.

Full detail: [NHS’s £160 million ‘accelerator sites’ to tackle waiting lists](https://www.england.nhs.uk/2021/05/nhss-160-million-accelerator-sites-to-tackle-waiting-lists/)

Infection control

**Title:** Better access to healthcare for Gypsy, Roma and Traveller communities is key to increasing vaccination rates: research makes five recommendations

National Institute for Health Research | 11th May 2021

NIHR- funded research highlights how better access to healthcare services is the most important step in improving vaccination rates for people in Gypsy, Roma and Traveller communities. Researchers interviewed 51 Gypsy, Roma and Traveller (GRT) representatives and 25 healthcare providers, and later held workshops with various Gypsy, Roma and Traveller communities: Eastern European Roma, English Gypsy, Irish Traveller, and Scottish Show people.

The study's findings suggest that easier access is more important than addressing beliefs about vaccine safety or the need for vaccination*.* Five interventions emerged as most consistently supported across GRT communities and/or their Service Providers to improve uptake of immunisation among GRT who are housed or settled on an authorised site

1. Protected funding for Specialist Health Visitor
2. Flexible and diverse appointment booking, recall and reminder systems
3. Identify GRT in health records to monitor uptake and support
4. Named frontline person in GP practice
5. Cultural competence training for Health Professionals and frontline professionals

Further detail: [Better access to healthcare for Gypsy, Roma and Traveller communities is key to increasing vaccination rates: research makes five recommendations](https://evidence.nihr.ac.uk/alert/better-access-healthcare-gypsy-roma-traveller-communities-key-increasing-vaccination-rates/)

Full paper: [Identifying interventions with Gypsies, Roma and Travellers to promote immunisation uptake: methodological approach and findings](https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-09614-4) | BMC Public Health 

**Title:** Fever, chills, and aches more common when AstraZeneca and Pfizer vaccines are mixed, early data show

BMJ | 2021; 373: n1216 | 12th May 2021

Mixing doses of the Oxford AstraZeneca and the Pfizer BioNTech covid-19 vaccine leads to more frequent mild to moderate reactions compared with standard dosing schedules, researchers have reported.

Researchers running the University of Oxford led Com-COV study - which is investigating the reactogenicity and immunogenicity from mixing doses of the two vaccines - reported their preliminary results in a peer reviewed research letter in the *Lancet*.

The study is comparing all four prime and boost permutations of the AstraZeneca and the Pfizer vaccines (Pfizer followed by AstraZeneca, AstraZeneca followed by Pfizer, AstraZeneca twice unmixed, and Pfizer twice unmixed) both at 28 day and 84 day prime boost intervals.

A total of 830 participants were enrolled and randomised—463 to the four groups with a 28 day prime boost interval, and 367 to groups with an 84 day prime boost interval.

When given at a four week interval, both of the heterologous (or “mixed”) schedules created more frequent reactions after the second boost dose than the standard, homologous (or “non-mixed”) schedules.

Further detail: [Fever, chills, and aches more common when AstraZeneca and Pfizer vaccines are mixed, early data show](https://www.bmj.com/content/373/bmj.n1216#ref-1)

Related research: [Heterologous prime-boost COVID-19 vaccination: initial reactogenicity data](https://www.thelancet.com/action/showPdf?pii=S0140-6736%2821%2901115-6) | The Lancet

**Title:** New measures to boost response to the B1.617.2 variant

Department of Health and Social Care | 13th May 2021

The B1.617.2 variant of concern is beginning to spread increasingly rapidly in certain areas across the country and decisive action is being taken to further control its spread including additional surge testing, increased genomic sequencing and enhanced contact tracing.

While there is no firm evidence yet to show this variant has any greater impact on severity of disease or evades the vaccine, the speed of growth is concerning and the government is considering additional action if deemed necessary, including how to best utilise the vaccine roll-out to best protect the most vulnerable in the context of the current epidemiology.

The latest data on the B1.617.2 variant, published by PHE this evening, shows the number of cases across the UK has risen from 520 last week, to 1,313 cases this week. Most cases are in the North West of England, with some in London.

Full detail: [New measures to boost response to the B1.617.2 variant](https://www.gov.uk/government/news/new-measures-to-boost-response-to-the-b16172-variant)

See also:

[Investigation of SARS-CoV-2 variants of concern: variant risk assessments](https://www.gov.uk/government/publications/investigation-of-sars-cov-2-variants-of-concern-variant-risk-assessments) | Public Health England

[Surge testing for new coronavirus (COVID-19) variants [Guidance]](https://www.gov.uk/guidance/surge-testing-for-new-coronavirus-covid-19-variants) | Department of Health and Social Care

**Title:** Caution urged while lockdown eases in England because of vaccine succes

BMJ | 2021;373:n1203 | 11th May 2021

The effectiveness of covid vaccines in reducing infections, hospital admissions, and deaths means that lockdown restrictions can be eased “very considerably” from next week, the prime minister has announced, although he urged people to “exercise caution and common sense.”

Pubs and restaurants will be able to serve customers indoors from 17 May, theatres, cinemas, and other indoor venues can open, and up to six people or two households can socialise inside.

The announcement stated that the changes were possible because four tests for easing restrictions had been met, namely: successful vaccine rollout, evidence of vaccine effectiveness, control of infection rates, and no changes in new variants.

Full detail: [Caution urged while lockdown eases in England because of vaccine success](https://www.bmj.com/content/373/bmj.n1203)

See also: [Further easing of COVID restrictions confirmed for 17 May](https://www.gov.uk/government/news/further-easing-of-covid-restrictions-confirmed-for-17-may)

**Title:** UK offers under 40s alternative to AstraZeneca vaccine to boost confidence

BMJ | 2021; 373: n1185 | 10th May 2021

Adults under 40 with no underlying health conditions that put them at risk of serious covid-19 illness will be offered an alternative to the Oxford-AstraZeneca vaccine, the UK’s Joint Committee on Vaccination and Immunisation has said, as long as one is available and it does not cause a substantial delay.

This decision, which is based on a risk-benefit calculation, was informed by the committee’s review of the latest evidence on the AstraZeneca vaccine and the extremely rare cases of concurrent blood clots and low platelet count, as well as the current infection rates and vaccine supply plans in the UK.

Younger people with no underlying conditions are less likely to develop serious covid-19 illness than those with underlying conditions or older people, so their risk-benefit profile is different.

Full detail: [UK offers under 40s alternative to AstraZeneca vaccine to boost confidence](https://www.bmj.com/content/373/bmj.n1185)

**Title:** Public health impact of delaying second dose of BNT162b2 or mRNA-1273 covid-19 vaccine: simulation agent based modeling study

BMJ | 2021; 373: n1087 | 12th May 2021

Multiple public health authorities have proposed prioritizing single dose vaccination for as many people as possible, even if this means delaying a second dose beyond the studied 21 or 28 day time frame. The justification for this relies on the assumption that meaningful protection against covid-19 can be achieved after a single dose of vaccine, a point that is the subject of intense debate.

This study used agent based modeling to measure the relative impact of delayed second dose vaccine policies on infections, hospital admissions, and mortality compared with the current on-schedule two dose regimen. The authors also examined a novel dosing strategy in which a delayed second dose regimen is used for people younger than 65 years old, but not before fully vaccinating older people.

The study concludes that a delayed second dose vaccination strategy, at least for people aged under 65, could result in reduced cumulative mortality under certain conditions.

Full paper: [Public health impact of delaying second dose of BNT162b2 or mRNA-1273 covid-19 vaccine: simulation agent based modeling study](https://www.bmj.com/content/bmj/373/bmj.n1087.full.pdf)

**Title:** Interim Results of a Phase 1–2a Trial of Ad26.COV2.S Covid-19 Vaccine

New England Journal of Medicine | 13th May 2021

Efficacious vaccines are urgently needed to contain the ongoing coronavirus disease 2019 (Covid-19) pandemic of infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). A candidate vaccine, Ad26.COV2.S, is a recombinant, replication-incompetent adenovirus serotype 26 (Ad26) vector encoding a full-length and stabilized SARS-CoV-2 spike protein.

In this interim phase 1–2a trial of Ad26.COV2.S, participants were divided into two age groups and received one or two injections of either a low-dose or high-dose vaccine or placebo. The vaccine elicited a local injection response in most patients and high titers of neutralizing antibodies in all vaccinated groups. In addition, T-cell responses were noted.

The authors conclude the safety and immunogenicity profiles of Ad26.COV2.S support further development of this vaccine candidate.

Full paper: [Interim results of a Phase 1–2a Trial of Ad26.COV2.S Covid-19 Vaccine](https://www.nejm.org/doi/pdf/10.1056/NEJMoa2034201?articleTools=true)

**Title:** NHS to invite people aged 38 and 39 for life saving COVID-19 jab

NHS England | 12th May 2021

The NHS COVID vaccination programme will from this week be open to people in their thirties. Those aged 38 and 39 are the first to qualify for a jab with around a million people being sent text messages that allow them to access the national booking service with further invitations to follow in the coming days and weeks.

The move to the next age group comes alongside nearly three quarters of people aged between 40 and 49 having had their first dose, less than a fortnight after they were offered a jab.

Since the vaccination rollout began in December, nearly 30 million people have been vaccinated with a first dose in England, two thirds of the total adult population. More than one third of adults have had both doses, meaning they have maximum protection from the virus, with second doses remaining a priority.

Full detail: [NHS to invite people aged 38 and 39 for life saving COVID-19 jab](https://www.england.nhs.uk/2021/05/nhs-to-invite-people-aged-38-and-39-for-life-saving-covid-19-jab/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+NHSCBoard+%28NHS+England%29)

**Title:** Effectiveness of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines on covid-19 related symptoms, hospital admissions, and mortality in older adults in England: test negative case-control study

BMJ | 2021; 373: n1088 | 13th May 2021

The objective of this study was to estimate the real world effectiveness of the Pfizer-BioNTech BNT162b2 and Oxford-AstraZeneca ChAdOx1-S vaccines against confirmed covid-19 symptoms (including the UK variant of concern B.1.1.7), admissions to hospital, and deaths.

156 930 adults aged 70 years and older who reported symptoms of covid-19 between 8 December 2020 and 19 February 2021 took part in the study and were successfully linked to vaccination data in the National Immunisation Management System.

The study concludes that vaccination with either one dose of BNT162b2 or ChAdOx1-S was associated with a significant reduction in symptomatic covid-19 in older adults, and with further protection against severe disease. Both vaccines showed similar effects. Protection was maintained for the duration of follow-up (>6 weeks). A second dose of BNT162b2 was associated with further protection against symptomatic disease. A clear effect of the vaccines against the B.1.1.7 variant was found.

Full paper: [Effectiveness of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines on covid-19 related symptoms, hospital admissions, and mortality in older adults in England: test negative case-control study](https://www.bmj.com/content/bmj/373/bmj.n1088.full.pdf)

Related editorial: [Effectiveness of England’s initial vaccine roll out](https://www.bmj.com/content/373/bmj.n1201) | BMJ

**Title:** COVID-19 vaccines: further evidence of success

Public Health England | 10th May 2021

New evidence continues to show vaccination is highly effective in protecting against death and hospitalisation from coronavirus. Public Health England (PHE) analysis shows for the first time that individuals who receive a single dose of the AstraZeneca vaccine have approximately 80% lower risk of death with COVID-19 compared with unvaccinated individuals. The report also shows protection against death from the Pfizer-BioNTech vaccine rises from approximately 80% after one dose to 97% after 2 doses.

Separate [new PHE analysis](https://khub.net/documents/135939561/430986542/Effectiveness+of+BNT162b2+mRNA+and+ChAdOx1+adenovirus+vector+COVID-19+vaccines+on+risk+of+hospitalisation+among+older+adults+in+England.pdf/9e18c525-dde6-5ee4-1537-91427798686b) also confirms the Pfizer-BioNTech vaccine is highly effective in reducing the risk of hospitalisation, especially in older ages.

Further detail: [COVID-19 vaccines: further evidence of success](https://www.gov.uk/government/news/covid-19-vaccines-further-evidence-of-success)

Full research:

* [Effectiveness of BNT162b2 mRNA vaccine and ChAdOx1 adenovirus vector vaccine on mortality following COVID-19](https://khub.net/documents/135939561/430986542/Effectiveness+of+BNT162b2+mRNA+vaccine+and+ChAdOx1+adenovirus+vector+vaccine+on+mortality+following+COVID-19.pdf/9884d371-8cc8-913c-211c-c2d7ce4dd1c3)
* [Effectiveness of BNT162b2 mRNA and ChAdOx1 adenovirus vector COVID-19 vaccines on risk of hospitalisation among older adults in England: an observational study using surveillance data](https://khub.net/documents/135939561/430986542/Effectiveness+of+BNT162b2+mRNA+and+ChAdOx1+adenovirus+vector+COVID-19+vaccines+on+risk+of+hospitalisation+among+older+adults+in+England.pdf/9e18c525-dde6-5ee4-1537-91427798686b)

**Title:** Delaying second Pfizer vaccines to 12 weeks significantly increases antibody responses in older people

University of Birmingham | Public Health England | 14th May 2021

A new study led by the University of Birmingham in collaboration with Public Health England has found antibody response in people aged over 80 is three-and-a-half times greater in those who have the second dose of the Pfizer COVID-19 vaccine after 12 weeks compared to those who have it at a three-week interval.

The study, supported by the UK Coronavirus Immunology Consortium, of 175 people who were aged over 80 and living independently is the first direct comparison of the immune response in any age group between those who are given the second Pfizer vaccine at a three-week interval and those at a 12-week interval.

The research found that extending the second dose interval to 12 weeks increased the peak SARS-CoV-2 spike specific antibody response 3.5-fold compared to those who had the second vaccine at three weeks. Although the peak cellular immune responses were lower after the delayed second vaccine, responses were comparable between the groups when measured at a similar time point following the first dose.

The team concluded that extending administration of the second Pfizer vaccine to 12 weeks potentially enhances and extends antibody immunity, which is believed to be important in virus neutralisation and prevention of infection.

Full detail: [Delaying second Pfizer vaccines to 12 weeks significantly increases antibody responses in older people](https://www.birmingham.ac.uk/news/latest/2021/05/covid-pfizer-vaccination-interval-antibody-response.aspx)

See also: [Expert reaction to preprint looking at the immune response in older people after vaccination the Pfizer-BioNTech COVID-19 vaccine with either a 3-week or a 12-week dosing schedule](https://www.sciencemediacentre.org/expert-reaction-to-preprint-looking-at-the-immune-response-in-older-people-after-vaccination-the-pfizer-biontech-covid-19-vaccine-with-either-a-3-week-or-a-12-week-dosing-schedule/) | Science Media centre

**Title:** Findings from latest COVID-19 REACT-1 study published

Department of Health & Social Care | Imperial College London | 13th May 2021

Findings from Imperial College London and Ipsos MORI show infections have halved since the last REACT-1 study in March, with only 1 in 1,000 people infected. Data suggest the vaccination rollout continues to impact positively on prevalence, but new variants remain a threat.

The main findings from the eleventh round of the REACT study show:

* between rounds 10 (11-30 March) and 11 (15 April-3 May), national prevalence has dropped by 50% from 0.20% to 0.10%
* an R number of 0.90 in England for the period of rounds 10 to 11
* the number of infections was similar across regions during round 11
* prevalence has fallen in 55 to 64 year olds from 0.17% in round 10 to 0.06% in round 11, which may reflect the rollout of the vaccination programme to this age group
* prevalence was highest in 25 to 34 year olds at 0.21%, and lowest in the over-75s at 0.05%
* COVID-19 prevalence was highest in participants of Asian ethnicity (0.31%) compared with white participants at 0.09%
* data on variants show 92% of infections were from the B.1.1.7 (first identified in Kent) variant compared to 7.7% B.1.617.2 (first identified in India) variant

Further detail: [Findings from latest COVID-19 REACT-1 study published](https://www.gov.uk/government/news/findings-from-latest-covid-19-react-1-study-published)

Full report [pre-print]: [REACT-1 round 11 report: low prevalence of SARS-CoV-2 infection in the community prior to the third step of the English roadmap out of lockdown](https://spiral.imperial.ac.uk/bitstream/10044/1/88507/10/react1_r11_preprint_v1_1.pdf)

**Title:** Effects of different types of written vaccination information on COVID-19 vaccine hesitancy in the UK

The Lancet Public Health | 12th May 2021

The effectiveness of the COVID-19 vaccination programme depends on mass participation: the greater the number of people vaccinated, the less risk to the population. Concise, persuasive messaging is crucial, particularly given substantial levels of vaccine hesitancy in the UK. The aim of this study was to test which types of written information about COVID-19 vaccination, in addition to a statement of efficacy and safety, might increase vaccine acceptance.

In the approximately 10% of the population who are strongly hesitant about COVID-19 vaccines, provision of information on personal benefit reduces hesitancy to a greater extent than information on collective benefits. Where perception of risk from vaccines is most salient, decision making becomes centred on the personal. As such, messaging that stresses the counterbalancing personal benefits is likely to prove most effective.

The messaging from this study could be used in public health communications. Going forwards, the study highlights the need for future health campaigns to engage with the public on the terrain that is most salient to them.

Full paper: [Effects of different types of written vaccination information on COVID-19 vaccine hesitancy in the UK (OCEANS-III): a single-blind, parallel-group, randomised controlled trial](https://www.thelancet.com/action/showPdf?pii=S2468-2667%2821%2900096-7)

**Title:** Vaccinating children against SARS-CoV-2

BMJ | 2021; 373: n1197 | 13th May 2021

Following widespread vaccination against SARS-CoV-2 of older adults and other highly vulnerable groups, some high income countries are now considering vaccinating children; just days ago, the US Food and Drug Administration authorized the use of the Pfizer/BioNTech vaccine in children 12-15 years of age.

Young people have been largely spared from severe covid-19 so far, and the value of childhood vaccination against respiratory viruses in general remains an open question for three reasons:

1. the limited benefits of protection in age groups that experience only mild disease
2. the limited effects on transmission because of the range of antigenic types and waning vaccine induced immunity
3. the possibility of unintended consequences related to differences in vaccine induced and infection induced immunity.

This editorial discusses each in turn.

Full detail: [Vaccinating children against SARS-CoV-2](https://www.bmj.com/content/373/bmj.n1197)

**Title:** Tackling Covid-19: A case for better financial support to self-isolate

Nuffield Trust and the Resolution Foundation | 14th May 2021

Asking people with Covid-19 to self-isolate is vital to keep the pandemic under control as lockdown measures ease, yet only 52% of people who have symptoms isolate. This briefing by the Nuffield Trust and the Resolution Foundation argues that financial support through schemes similar to furlough should be expanded so that workers isolating can continue to receive their full wages.

Full briefing: [Tackling Covid-19: A case for better financial support to self-isolate](https://www.nuffieldtrust.org.uk/files/2021-05/tackling-covid-19-6.pdf)

See also:

* [Increase self-isolation support or risk undermining exit from lockdown, think tanks warn](https://www.nuffieldtrust.org.uk/news-item/increase-self-isolation-support-or-risk-undermining-exit-from-lockdown-think-tanks-warn) | Nuffield Trust

[Boost self-isolation payments or risk Covid resurgence, experts say](https://www.theguardian.com/world/2021/may/14/boost-self-isolation-payments-or-risk-covid-resurgence-experts-say)| The Guardian

**Title:** Immunogenicity of COVID-19 mRNA Vaccines in Pregnant and Lactating Women

JAMA | 13th May 2021

This study assesses the immunogenicity of the current COVID-19 mRNA vaccines in pregnant and lactating women against both the original SARS-CoV-2 USA-WA1/2020 strain as well as against the B.1.1.7 and B.1.351 variants of concern.

In this cohort study involving 103 women who received a COVID-19 mRNA vaccine, 30 of whom were pregnant and 16 of whom were lactating, immunogenicity was demonstrated in all, and vaccine-elicited antibodies were found in infant cord blood and breast milk. Pregnant and nonpregnant vaccinated women developed cross-reactive immune responses against SARS-CoV-2 variants of concern.

Full detail: [Immunogenicity of COVID-19 mRNA vaccines in pregnant and lactating women](https://jamanetwork.com/journals/jama/fullarticle/2780202)

workforce wellbeing

**Title:** BMA demands better psychological support for trainees

BMJ | 2021; 373: n1199 | 11th May 2021

The government, the NHS, and education bodies must provide better support for trainee doctors to deal with the psychological effects of the covid-19 pandemic, the BMA has said. Speaking at the BMA’s junior doctor conference on 8 May, Sarah Hallett, chair of the association’s Junior Doctors Committee, warned that staff wellbeing must be taken more seriously.

A BMA survey in April found that more than 40% of junior doctors (295 of 721) said they were experiencing depression, anxiety, stress, or burnout that had been worsened by the pandemic, while 60% (430 of 722) said their current levels of fatigue or exhaustion were higher than normal.

Full detail: [BMA demands better psychological support for trainees](https://www.bmj.com/content/373/bmj.n1199)

**Title:** Doctors feel under pressure to work extra shifts unpaid, survey shows

BMJ | 2021; 373: n1189 | 10th May 2021

Thousands of doctors feel under pressure from their employers to work extra shifts, often unpaid, to help tackle the backlog of care caused by the covid pandemic, the BMA has warned.

The warning came after results from the BMA’s latest tracker survey showed that more than half its respondents (58%, 2834 of 4876) had worked extra hours in the previous month as part of the response to the pandemic. Almost a third (29%, 1387) said they were not paid for the additional time they worked.

More than two fifths (44%) of respondents (2086 of 4719) said they felt under pressure from their employer to do extra hours in the last month. And more than a third (36%, 1759) had either skipped taking full breaks altogether or taken them on rare occasions in the past fortnight.

Nearly six in 10 doctors who responded (57%, 2889 of 5059) reported a higher than normal level of fatigue or exhaustion because of working or studying during the pandemic.

Full detail: [Doctors feel under pressure to work extra shifts unpaid, survey shows](https://www.bmj.com/content/373/bmj.n1189)

Health management

**Title:** Quality improvement at times of crisis

BMJ | 2021; 373: n928 | 11th May 2021

This paper offers evidence of how quality improvement has been applied during the pandemic and how it has contributed to the response, and reflects on what might be learnt.

Quality improvement has been increasingly used globally over the past decade to change healthcare. This analysis asks have such approaches added any value to healthcare service delivery during these unparalleled rapid changes? Are scientifically based approaches to complex system change, such as quality improvement, helping healthcare providers during a crisis?

Full detail: [Quality improvement at times of crisis](https://www.bmj.com/content/373/bmj.n928)

**Title:** What happened to English NHS hospital activity during the COVID-19 pandemic?

Institute for Fiscal Studies | 13th May 2021

This briefing uses administrative hospital data from across the NHS in England to describe how the use of inpatient (elective and emergency) and outpatient hospital care in 2020 compared with that in the previous year.

It shows how overall levels of care changed in the period after the start of the pandemic in March until the end of December 2020 and examines how changes in activity varied across regions and clinical specialties. It also looks at how these patterns differ across patient age, ethnicity and local area deprivation.

The findings suggest a complex response to the pandemic driven by large drops in supply for non-COVID services and demand-side responses to the pandemic. They also underline the need to increase available resources to address care backlogs and to direct resources to the people, local areas and groups that have been most affected.

Full briefing: [What happened to English NHS hospital activity during the COVID-19 pandemic?](https://ifs.org.uk/uploads/BN328-What-happened-to-English-NHS-hospital-activity-during-the-COVID-19-pandemic.pdf)

Press release: [Elective hospital admissions dropped by a third last year, while outpatient appointments and non-COVID emergency admissions each fell by a fifth](https://www.ifs.org.uk/publications/15435)

other

**Title:** The incidence, characteristics and outcomes of pregnant women hospitalized with symptomatic and asymptomatic SARS-CoV-2 infection in the UK from March to September 2020: A national cohort study using the UK Obstetric Surveillance System (UKOSS)

PLOS ONE | 5th May 2021

There is a lack of population level data on risk factors, incidence and impact of SARS-CoV-2 infection in pregnant women and their babies. The primary aim of this study was to describe the incidence, characteristics and outcomes of hospitalized pregnant women with symptomatic and asymptomatic SARS-CoV-2 in the UK compared to pregnant women without SARS-CoV-2.

The authors identified factors that increase the risk of symptomatic and asymptomatic SARS-CoV-2 in pregnancy. The paper concludes that Clinicians can be reassured that the majority of women do not experience severe complications of SARS-CoV-2 in pregnancy.

Full paper: [The incidence, characteristics and outcomes of pregnant women hospitalized with symptomatic and asymptomatic SARS-CoV-2 infection in the UK from March to September 2020: A national cohort study using the UK Obstetric Surveillance System (UKOSS)](https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0251123&type=printable)

**Title:** COVID-19 alert level: update from the UK Chief Medical Officers

Department of Health and Social Care | 10th May 2021

Joint statement from the UK Chief Medical Officers (CMOs) recommending that the UK COVID-19 alert level move from level 4 to level 3:

‘Following advice from the Joint Biosecurity Centre and in the light of the most recent data, the UK Chief Medical Officers and NHS England National Medical Director agree that the UK alert level should move from level 4 to level 3.

Thanks to the efforts of the UK public in social distancing and the impact we are starting to see from the vaccination programme, case numbers, deaths and COVID hospital pressures have fallen consistently. However COVID is still circulating with people catching and spreading the virus every day so we all need to continue to be vigilant. This remains a major pandemic globally.

It is very important that we all continue to follow the guidance closely and everyone gets both doses of the vaccine when they are offered it’.

Full detail: [COVID-19 alert level: update from the UK Chief Medical Officers](https://www.gov.uk/government/news/covid-19-alert-level-update-from-the-uk-chief-medical-officers-10-may-2021)

**Title:** COVID-19: Make it the Last Pandemic

Independent Panel for Pandemic Preparedness and Response | 12th May 2021

This report examines the state of pandemic preparedness before COVID-19, the circumstances of the identification of SARS-CoV-2 and the disease it causes, and responses globally, regionally, and nationally, particularly in the early months of the pandemic.

The report provides a definitive account to date of what happened, why it happened, and how it could be prevented from happening again. The panel has also analysed the wide-ranging impacts of the pandemic on health and health systems, and the social and economic crises that it has precipitated.

The report finds that COVID-19 exposed the extent to which pandemic preparedness was limited and disjointed, leaving health systems overwhelmed when actually confronted by a fast-moving and exponentially spreading virus. The report concludes that the global outbreak was "due to a myriad of failures, gaps and delays in preparedness and response".

Full report: [COVID-19: Make it the Last Pandemic](https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf)

See also:

[Report of the Independent Panel for Pandemic Preparedness and Response: making COVID-19 the last pandemic](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01095-3/fulltext) | The Lancet

[Covid pandemic was preventable, says WHO-commissioned report](https://www.theguardian.com/world/2021/may/12/covid-pandemic-was-preventable-says-who-commissioned-report) | The Guardian

[Serious failures in WHO and global response, report finds](https://www.bbc.co.uk/news/world-57085505) | BBC News

**Title:** Study claims real global deaths are twice official figures

BMJ | 2021; 373: n1188 | 10th May 2021

Global deaths from covid-19 are not 3.27 million, as official figures suggest, but 6.93 million up to 3rd May, a new analysis based on changes in overall mortality claims.

The virus is claiming about 33 000 lives a day around the world, more than twice reported figures, according to the study by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. The study predicts that the pandemic’s true overall toll will reach 9.43 million deaths by 1 September.

In the UK, the researchers estimated, the true covid death toll up to May 2021 was not 150 519 as officially reported, but 209 661. They estimated the true US death toll at 905 289, compared with an official figure of 574 043.

The institute predicts a further 44 000 US deaths by September, and only 750 deaths in the UK, because of its lower rate of vaccine refusal. India is forecast to lose a further 842 000 people in that period.

Full detail: [Study claims real global deaths are twice official figures](https://www.bmj.com/content/373/bmj.n1188)

**Title:** Use of scientific advice in the UK response to COVID-19: government response to Science and Technology Committee report

Department of Health and Social Care | 13th May 2021

This document sets out the government response to the recommendations made by the House of Commons Science and Technology Committee in its report [The UK response to COVID-19: use of scientific advice](https://publications.parliament.uk/pa/cm5801/cmselect/cmsctech/136/13602.htm), published on 8 January 2021.

Full report: [The Government’s Response to the Science and Technology Committee report: The UK Response to Covid-19: Use of Scientific Advice](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/986148/government-response-to-science-and-technology-committee-report-uk-response-to-covid-19-use-of-scientific-advice.pdf)

**Title:** Who is hacking the NHS during a pandemic?

BMJ | 2021; 373: n1230 | 14th May 2021

The NHS has long been an attractive target for hackers, and covid-19 has left its vulnerabilities even more exposed. This BMJ feature piece asks the following:

* What is hacking?
* What do the hackers want?
* Why hack the NHS?
* What’s happened since WannaCry?
* How has covid-19 exacerbated the threat?
* How do hackers hack?
* How can we stop the NHS being hacked?

Further detail: [Who is hacking the NHS during a pandemic?](https://www.bmj.com/content/373/bmj.n1230) [Athens account required for full text]

We

[TRFT Library & Knowledge Service](https://www.trftlibraryknowledge.com/) aim to bring together the latest guidelines, research and news on Covid-19 through our [Covid-19 portal](https://www.trftlibraryknowledge.com/coronavirus.html). For daily updates on Covid-19 visit our '[Latest Health](https://trfthealthweeklydigest.wordpress.com/)' newsfeed, or use the hashtag [#covid19rftlks](https://twitter.com/hashtag/covid19rftlks?src=hashtag_click) to see our latest tweets on Covid-19 research, guidelines and news.

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