COVID-19 weekly update

25th April 2022

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**clinical management**

**title:** Update to living WHO guideline on drugs for covid-19

bmj| 21st april 2022  
  
This living guideline by Agarwal and colleagues (BMJ 2020;370:m3379) has been updated. For the latest update, visit doi:10.1136/bmj.m3379. The latest version of this WHO living guidance provides two new recommendations for patients with non-severe covid-19: (a) a strong recommendation for use of nirmatrelvir/ritonavir in patients at highest risk of hospitalisation; and a conditional recommendation against its use in patients at low risk of hospitalisation; (b) a conditional recommendation for use of remdesivir in patients at highest risk of hospitalisation.  
<https://www.bmj.com/content/377/bmj.o1005.full>

**title:** One in two people admitted to hospital with covid-19 develop complications and may need support

BMJ| 22nd april 2022  
  
The study: Drake TM, Riad AM, Fairfield CJ, et al. Characterisation of in-hospital complications associated with covid-19 using the ISARIC WHO Clinical Characterisation Protocol UK: a prospective, multicentre cohort study. Lancet 2021;398:10296.

To read the full NIHR Alert, go to: https://evidence.nihr.ac.uk/alert/one-in-two-people-hospitalised-with-covid-19-develop-complications-may-need-support/  
  
Why was the study needed? As of February 2022, more than 18 million people in the UK had been infected with SARS-CoV-2. More than 717 000 people had been admitted to hospital with covid-19 as a result. People who have complications from covid-19 tend to need help to look after themselves once they have left hospital. Research into the longer term health issues associated with covid-19 will inform policymakers about extra health resources that might be needed.

Understanding someone’s chances of developing a complication will inform treatment decisions and long term planning. It will help people manage their expectations about recovery. This study describes the complications in people admitted to hospital with covid-19. It looks at factors that might increase the risk, such as age, sex, ethnicity, and pre-existing illness.

What did the study do? In early 2020, the researchers looked at data from 73 197 adults with confirmed or strongly suspected covid-19. The study covered 302 hospitals in the UK. Just over half (56%) the participants were men; most (81%) had at least one other illness. The researchers followed people until discharge from hospital, or for 28 days if they were not discharged.

What did it find? The researchers found that half of all patients admitted to hospital with covid-19 developed complications. Overall, the most common complications were:

-- Renal—in one in four people (24%)  
-- Respiratory (related to lungs but not typical of covid-19)—in almost one in five (18%)  
- Systemic—in one in six (16.3%).

Other complications were slightly less common. Cardiovascular complications affected 12%, gastrointestinal complications 11%, and neurological complications 4% of people.

Different groups of people had different rates. Complications were seen in:

-- 58% black people versus 49% white people   
-- 55% men over 60 versus 48% women over 60   
-- 49% men under 60 versus 37% women under 60.

Other conditions increased the risk. Complication rates were increased among:

-- People with obesity  
-- People with pre-existing conditions, which could be made worse with covid-19 (those with heart disease, for example, were more likely than others to develop a heart complication)  
-- People with more than one pre-existing condition.

People who received respiratory or critical care support while in hospital were also at increased risk. Overall, people in their 60s who had two or more other conditions were some of the most likely to develop complications (58%). People aged 19-29 with no other illness had the lowest rate, and only one in five (21%) developed complications.

Of those with a complication, one in four needed more support to care for themselves when they returned home than they had before going into hospital. This was particularly so for:

-- People under 50  
-- Men  
-- People who received critical care support while in hospital  
-- People who developed neurological complications (such as seizures or strokes).

Almost one in three people in this study died (32%). Complications were more common in those who died, especially among younger people. Cardiovascular and respiratory complications were associated with the largest increases in death across all age groups.

Why is this important? Complications were common in all age groups. Covid-19 and its complications place a burden on patients and on the healthcare system. This study will help healthcare services plan to provide resources for hospitals, plus the extra support that many people need after they are discharged.

The researchers found that commonly used hospital scores (such as NEWS2, qSOFA, and the 4C Mortality score) correlated with complications. These scores might therefore help clinicians to predict the groups of people most at risk of developing long term complications. The next step is to design interventions to prevent complications.

The research suggests that earlier treatments and improved monitoring would be useful.

What’s next? This study was carried out when covid-19 first hit the UK, before testing was commonplace and vaccinations had been rolled out. The researchers would like to explore the complications in more detail to find ways of preventing or treating them. They would like to explore the longer term outcomes for these patients to see whether they eventually return to health. This would help people to manage their expectations around their own recovery. It would also inform the allocation of healthcare resources.  
<https://www.bmj.com/content/377/bmj.o880>

**title:** Covid-19: Has the spread of omicron BA.2 made antibody treatments redundant?

BMJ | 20th april 2022  
  
Drug regulators are reviewing authorisations for monoclonal antibody treatments just months after they were issued. Elisabeth Mahase asks what the future holds for this class of biologicals.

The US Food and Drug Administration has removed its authorisation for anti-SARS-CoV-2 monoclonal antibody treatment sotrovimab because of concerns that it is ineffective against the omicron subvariant BA.2, which is now dominant in the US. The UK’s Medicines and Healthcare Products Regulatory Agency (MHRA) authorised sotrovimab for high risk over 12s with mild to moderate covid-19 in December 20212 after reporting that a single dose, given as an intravenous infusion over 30 minutes, reduced the risk of hospital admission and death by 79% in high risk adults with symptomatic covid-19. The regulator has told The BMJ that it is also now reviewing the treatment to see if the “benefit-risk balance remains favourable.” Laura Squire, the MHRA’s chief officer for healthcare access and quality, said, “We are in contact with the FDA and are looking closely at the data supporting their decision.”

Developed by GlaxoSmithKline and Vir Biotechnology, sotrovimab is a single monoclonal antibody that works by binding to the SARS-CoV-2 spike protein, thereby preventing the virus from attaching to and entering human cells. The drug was first authorised by the FDA in May 2021,3 and the agency announced on 5 April 2022 that “the authorised dose of sotrovimab is unlikely to be effective against the BA.2 subvariant . . . Sotrovimab is not authorised in any US state or territory at this time.”

This is not the first time that authorisation for a covid-19 monoclonal antibody treatment has been affected by the spread of omicron. In January the FDA announced that, because of the high frequency of BA.1, both REGEN-COV (casirivimab and imdevimab) and the combination treatment of bamlanivimab and etesevimab were “not currently authorised for use in any US region because of markedly reduced activity against the omicron variant.” …  
<https://www.bmj.com/content/377/bmj.o1009>

title: ACUTE UPPER AIRWAY DISEASE IN CHILDREN WITH THE OMICRON (B.1.1.529) VARIANT OF SARS-COV-2—A REPORT FROM THE US NATIONAL COVID COHORT COLLABORATIVE  
  
jama pediatrics| 15th april 2022  
  
…SARS-CoV-2–positive pediatric UAI rates increased during the Omicron surge. More than one-fifth of children hospitalized with SARS-CoV-2 and UAI developed severe disease. Given the high proportion of UAI cases during the Omicron period, these results appear to support recent mechanistic reports. A limitation of this analysis is that diagnosis codes will only be present for completed encounters; as such, children who are still hospitalized are not represented, and the frequency of severe disease observed in the Omicron period may be an underestimate.

Children with severe UAI are at risk of cardiac arrest from rapid-onset upper airway obstruction. They may require therapies typically provided in intensive care units, including frequent administration of nebulized racemic epinephrine, helium-oxygen mixtures, and intubation. While the rate of SARS-CoV-2 pediatric UAI is not overwhelmingly high, understanding this new clinical phenotype and the potential for acute upper airway obstruction may help guide therapeutic decision-making.e 2020, preliminary results for the Randomised Evaluation of COVID-19 Therapy (RECOVERY)   
<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2791278>

**title:** Identification of Drug Interaction Adverse Events in Patients With COVID-19: A Systematic Review

JAMA OPEN NETWORK | 19th april 2022  
  
Question Is it possible to assess adverse events associated with drug-drug interactions (DDIs) by drug interaction checkers in patients with COVID-19?

Findings The DDIs identified in this systematic review involved 46 different drugs, with 575 DDIs for 58 drug pairs (305 associated with at least 1 adverse drug reaction) reported. Drug interaction checkers could have identified such events, including severe and life-threatening ones.

Meaning Notwithstanding the emergency context of the COVID-19 pandemic, DDI-related adverse events should never be overlooked to customize the most effective and safest therapy.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791291>

**title:** Unethical studies of ivermectin for covid-19 [editorial]

bmj| 14th april 2022  
  
Flawed research means we still do not know if the drug is safe or effective.

During disease outbreaks, it can be tempting to sacrifice the scientific rigour of research in favour of speed, given the urgency to develop new treatments. After the 2014-16 Ebola outbreak in west Africa, however, a report on the ethics of research from the US National Academy of Medicine stated clearly that “research during an epidemic is still subject to the same core scientific and ethical requirements that govern all research on human subjects.”1 Early in the covid-19 pandemic ethicists warned researchers against “pandemic research exceptionalism”—lowering ethical standards because of the urgency of the crisis.2 Despite these warnings, there have been many examples of researchers treating covid-19 as exactly that: an exception to the rigorous standards to which we should hold medical research.3 There is no better example of such exceptionalism than the research into ivermectin for covid-19…  
<https://www.bmj.com/content/377/bmj.o917>

**title:** Effect of Androgen Suppression on Clinical Outcomes in Hospitalized Men With COVID-19: The HITCH Randomized Clinical Trial

jama network open | 19th april 2022  
  
Question Does androgen suppression improve clinical outcomes in hospitalized men with COVID-19?

Findings In this randomized clinical trial including 96 men, androgen suppression with the addition of degarelix vs placebo plus standard care did not show reduction of the composite end point of mortality, ongoing hospitalization, or requirement for mechanical ventilation at day 15 after randomization.

Meaning This randomized clinical trial found that androgen suppression did not improve outcomes in men hospitalized for COVID-19.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791293>

**title:** Prevalence of and Short-term Changes in Conjunctival Manifestations Among Patients With SARS-CoV-2 Infection [research letter]

jama network open| 19th april 2022  
  
Studies suggest that SARS-CoV-2 can infect the conjunctival mucosa.1-4 Signs of ocular involvement have been reported in 11% to 32% of SARS-CoV-2 cases, with a rate of conjunctival swab (CS) positivity from 0% to 57%. Previous studies lacked a predetermined sample size, relied on questionnaires and/or interviews, or analyzed nonhospitalized and hospitalized patients receiving anti-inflammatory agents. In this study, we assessed the prevalence of SARS-CoV-2–related conjunctival manifestations and CS positivity on hospital admission (T1) and 3 days thereafter (T2) for a predetermined sample of patients not receiving anti-inflammatory treatment…  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791299>

**long-term effects**

**title:** Clinical characteristics with inflammation profiling of long COVID and association with 1-year recovery following hospitalisation in the UK: a prospective observational study  
  
the lancet respiratory medicine| 23rd april 2022  
  
Background. No effective pharmacological or non-pharmacological interventions exist for patients with long COVID. We aimed to describe recovery 1 year after hospital discharge for COVID-19, identify factors associated with patient-perceived recovery, and identify potential therapeutic targets by describing the underlying inflammatory profiles of the previously described recovery clusters at 5 months after hospital discharge.

Methods. The Post-hospitalisation COVID-19 study (PHOSP-COVID) is a prospective, longitudinal cohort study recruiting adults (aged ≥18 years) discharged from hospital with COVID-19 across the UK. Recovery was assessed using patient-reported outcome measures, physical performance, and organ function at 5 months and 1 year after hospital discharge, and stratified by both patient-perceived recovery and recovery cluster. Hierarchical logistic regression modelling was performed for patient-perceived recovery at 1 year. Cluster analysis was done using the clustering large applications k-medoids approach using clinical outcomes at 5 months. Inflammatory protein profiling was analysed from plasma at the 5-month visit. This study is registered on the ISRCTN Registry, ISRCTN10980107, and recruitment is ongoing.

Findings. 2320 participants discharged from hospital between March 7, 2020, and April 18, 2021, were assessed at 5 months after discharge and 807 (32·7%) participants completed both the 5-month and 1-year visits. 279 (35·6%) of these 807 patients were women and 505 (64·4%) were men, with a mean age of 58·7 (SD 12·5) years, and 224 (27·8%) had received invasive mechanical ventilation (WHO class 7–9). The proportion of patients reporting full recovery was unchanged between 5 months (501 [25·5%] of 1965) and 1 year (232 [28·9%] of 804). Factors associated with being less likely to report full recovery at 1 year were female sex (odds ratio 0·68 [95% CI 0·46–0·99]), obesity (0·50 [0·34–0·74]) and invasive mechanical ventilation (0·42 [0·23–0·76]). Cluster analysis (n=1636) corroborated the previously reported four clusters: very severe, severe, moderate with cognitive impairment, and mild, relating to the severity of physical health, mental health, and cognitive impairment at 5 months. We found increased inflammatory mediators of tissue damage and repair in both the very severe and the moderate with cognitive impairment clusters compared with the mild cluster, including IL-6 concentration, which was increased in both comparisons (n=626 participants). We found a substantial deficit in median EQ-5D-5L utility index from before COVID-19 (retrospective assessment; 0·88 [IQR 0·74–1·00]), at 5 months (0·74 [0·64–0·88]) to 1 year (0·75 [0·62–0·88]), with minimal improvements across all outcome measures at 1 year after discharge in the whole cohort and within each of the four clusters.

Interpretation. The sequelae of a hospital admission with COVID-19 were substantial 1 year after discharge across a range of health domains, with the minority in our cohort feeling fully recovered. Patient-perceived health-related quality of life was reduced at 1 year compared with before hospital admission. Systematic inflammation and obesity are potential treatable traits that warrant further investigation in clinical trials.  
<https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00127-8/fulltext>

**title:** Microgliosis and neuronal proteinopathy in brain persist beyond viral clearance in SARS-CoV-2 hamster model  
  
the lancet ebiomedicine| may 2022  
  
Neurological symptoms such as cognitive decline and depression contribute substantially to post-COVID-19 syndrome, defined as lasting symptoms several weeks after initial SARS-CoV-2 infection. The pathogenesis is still elusive, which hampers appropriate treatment. Neuroinflammatory responses and neurodegenerative processes may occur in absence of overt neuroinvasion.  
Here we determined whether intranasal SARS-CoV-2 infection in male and female syrian golden hamsters results in persistent brain pathology. Brains 3 (symptomatic) or 14 days (viral clearance) post infection versus mock (n = 10 each) were immunohistochemically analyzed for viral protein, neuroinflammatory response and accumulation of tau, hyperphosphorylated tau and alpha-synuclein protein.

Findings. Viral protein in the nasal cavity led to pronounced microglia activation in the olfactory bulb beyond viral clearance. Cortical but not hippocampal neurons accumulated hyperphosphorylated tau and alpha-synuclein, in the absence of overt inflammation and neurodegeneration. Importantly, not all brain regions were affected, which is in line with selective vulnerability.

Interpretation. Thus, despite the absence of virus in brain, neurons develop signatures of proteinopathies that may contribute to progressive neuronal dysfunction. Further in depth analysis of this important mechanism is required.  
<https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(22)00183-9/fulltext>

**rates and variants**

**title:** Global COVID-19 Death Toll May Be Triple the Reported Deaths

jama | 19th april 2022  
  
More than 3 times as many people may have died around the world due to direct and indirect effects of the COVID-19 pandemic than officially reported, according to an estimate of excess mortality by the Institute for Health Metrics and Evaluation at the University of Washington. Whereas global reported COVID-19 deaths for the 18 months ending December 31, 2021, totaled 5.94 million, the authors estimated that 18.2 million people died because of the pandemic. The pandemic accounted for 120.3 extra deaths per 100 000 people during the study period, and 300 extra deaths per 100 000 people in 21 countries, according to the researcher’s modeling…  
<https://jamanetwork.com/journals/jama/fullarticle/2791213>

**infection control**

**title:** Covid-19: NHS relaxes infection prevention and control measures  
  
BMJ |22nd april 2022  
  
The NHS has relaxed infection prevention and control (IPC) requirements for hospitals and GP practices that were introduced during the pandemic as it seeks to free up capacity to tackle the huge treatment backlog.

Revised guidance from NHS England and NHS Improvement1 published last week says that healthcare providers will no longer be required to adhere to routine physical distancing measures but should carry out risk assessments to determine whether some precautions such as hand hygiene and personal protective equipment (PPE) are required in specific settings.

Isolation precautions for hospital inpatients with covid-19 are also being relaxed. Isolation periods can reduce from 10 days to 7 days if patients have two negative lateral flow tests taken 24 hours apart as well as showing clinical improvement, the guidance states. Inpatients who are contacts of SARS-CoV-2 cases are no longer required to isolate if they are asymptomatic…  
<https://www.bmj.com/content/377/bmj.o1029>

**title:** Rates of COVID-19 Among Unvaccinated Adults With Prior COVID-19  
  
jama open network|20th april 2022  
  
Risk of SARS-CoV-2 reinfection among unvaccinated people with prior COVID-19 is a subject of debate.1,2 We performed a survival analysis in a large US population to assess the degree and duration of protection associated with natural immunity in unvaccinated individuals…  
  
…Among 121 615 patients with more than 10 million days of follow-up, unvaccinated individuals with prior symptomatic COVID-19 had 85% lower risk of acquiring COVID-19 than unvaccinated individuals without prior COVID-19. Prior studies investigating protection against SARS-CoV-2 reinfection found similar results, with protection associated with natural immunity ranging from 80.5% to 100%.2-4 This level of protection is similar to that reported for mRNA vaccines.5 The findings that patients with prior COVID-19 had 88% protection against hospitalization for COVID-19 and 83% protection against COVID-19 not requiring hospitalization suggest that natural immunity was associated with similar protection against mild and severe disease. mRNA vaccines are associated with similar prolonged protection from severe COVID-19 as found in our study, although vaccine-associated protection from mild COVID-19 has been shown to wane at 6 months.6

Limitations include possible COVID-19 testing or vaccination at outside health care facilities, but undetected infection should have been balanced between cases and controls. Patients who have recovered from COVID-19 may behave differently from those without immunity, potentially confounding results. Strengths include large sample size, long duration of follow-up, and inclusion of only unvaccinated individuals with symptomatic COVID-19. The findings of this study may have important implications for vaccine policy and public health.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791312>

**title:** Intramuscular AZD7442 (Tixagevimab–Cilgavimab) for Prevention of Covid-19

new england journal of medicine| 20th april 2022  
  
BACKGROUND. The monoclonal-antibody combination AZD7442 is composed of tixagevimab and cilgavimab, two neutralizing antibodies against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that have an extended half-life and have been shown to have prophylactic and therapeutic effects in animal models. Pharmacokinetic data in humans indicate that AZD7442 has an extended half-life of approximately 90 days.

METHODS. In an ongoing phase 3 trial, we enrolled adults (≥18 years of age) who had an increased risk of an inadequate response to vaccination against coronavirus disease 2019 (Covid-19), an increased risk of exposure to SARS-CoV-2, or both. Participants were randomly assigned in a 2:1 ratio to receive a single dose (two consecutive intramuscular injections, one containing tixagevimab and the other containing cilgavimab) of either 300 mg of AZD7442 or saline placebo, and they were followed for up to 183 days in the primary analysis. The primary safety end point was the incidence of adverse events after a single dose of AZD7442. The primary efficacy end point was symptomatic Covid-19 (SARS-CoV-2 infection confirmed by means of reverse-transcriptase–polymerase-chain-reaction assay) occurring after administration of AZD7442 or placebo and on or before day 183.

RESULTS. A total of 5197 participants underwent randomization and received one dose of AZD7442 or placebo (3460 in the AZD7442 group and 1737 in the placebo group). The primary analysis was conducted after 30% of the participants had become aware of their randomized assignment. In total, 1221 of 3461 participants (35.3%) in the AZD7442 group and 593 of 1736 participants (34.2%) in the placebo group reported having at least one adverse event, most of which were mild or moderate in severity. Symptomatic Covid-19 occurred in 8 of 3441 participants (0.2%) in the AZD7442 group and in 17 of 1731 participants (1.0%) in the placebo group (relative risk reduction, 76.7%; 95% confidence interval [CI], 46.0 to 90.0; P<0.001); extended follow-up at a median of 6 months showed a relative risk reduction of 82.8% (95% CI, 65.8 to 91.4). Five cases of severe or critical Covid-19 and two Covid-19–related deaths occurred, all in the placebo group.

CONCLUSIONS. A single dose of AZD7442 had efficacy for the prevention of Covid-19, without evident safety concerns.  
<https://www.nejm.org/doi/full/10.1056/NEJMoa2116620>

**title:** Covid-19: UK approves Valneva vaccine for adults under 50

BMJ| 14th april 2022

Background. Real-world evidence supporting vaccination against COVID-19 in individuals who have   
There are many situations in general practice where history and examination alone are enough to   
The UK’s Medicines and Healthcare Products Regulatory Agency (MHRA) has granted Valneva’s covid-19 vaccine (VLA2001) conditional marketing authorisation for use in people aged 18 to 50 years, with the first and second doses to be taken at least 28 days apart.

The approval makes VLA2001 the first whole virus inactivated vaccine approved for use against covid-19 in the UK. Unlike most other covid-19 vaccines, Valneva’s does not just target the SARS-CoV-2 spike protein, but rather the whole virus. Valneva is now in discussion with the Scottish government to supply up to 25 000 doses of the vaccine to the NHS and frontline workers in Scotland.

The MHRA announcement follows a rocky relationship between Valneva and the UK government, after the latter initially partnered with the French biotech company to trial and manufacture the vaccine.1 A year later (September 2021), however, the government suddenly terminated its supply agreement citing an alleged breach of contract.2 At the time, Valneva’s chief executive officer Thomas Lingelbach said that the company had been thrown “under the bus.”…  
<https://www.bmj.com/content/377/bmj.o985>

**title:** The performance of wearable sensors in the detection of SARS-CoV-2 infection: a systematic review

the lancet digital health| may 2022  
  
Containing the COVID-19 pandemic requires rapidly identifying infected individuals. Subtle changes in physiological parameters (such as heart rate, respiratory rate, and skin temperature), discernible by wearable devices, could act as early digital biomarkers of infections. Our primary objective was to assess the performance of statistical and algorithmic models using data from wearable devices to detect deviations compatible with a SARS-CoV-2 infection. We searched MEDLINE, Embase, Web of Science, the Cochrane Central Register of Controlled Trials (known as CENTRAL), International Clinical Trials Registry Platform, and ClinicalTrials.gov on July 27, 2021 for publications, preprints, and study protocols describing the use of wearable devices to identify a SARS-CoV-2 infection. Of 3196 records identified and screened, 12 articles and 12 study protocols were analysed. Most included articles had a moderate risk of bias, as per the National Institute of Health Quality Assessment Tool for Observational and Cross-Sectional Studies. The accuracy of algorithmic models to detect SARS-CoV-2 infection varied greatly (area under the curve 0·52–0·92). An algorithm's ability to detect presymptomatic infection varied greatly (from 20% to 88% of cases), from 14 days to 1 day before symptom onset. Increased heart rate was most frequently associated with SARS-CoV-2 infection, along with increased skin temperature and respiratory rate. All 12 protocols described prospective studies that had yet to be completed or to publish their results, including two randomised controlled trials. The evidence surrounding wearable devices in the early detection of SARS-CoV-2 infection is still in an early stage, with a limited overall number of studies identified. However, these studies show promise for the early detection of SARS-CoV-2 infection. Large prospective, and preferably controlled, studies recruiting and retaining larger and more diverse populations are needed to provide further evidence.  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00019-X/fulltext>

**title:** Dynamic zero COVID policy in the fight against COVID

the lancet respiratory medicine| 20th april 2022  
  
On April 11, 2022, the authorities in Shanghai, China, announced that they would ease the citywide lockdown. Residents in zones that have reported no new cases of COVID-19 for 2 weeks were granted permission to leave their homes, on condition that they restrict their movements to specific areas. “After a long period of lockdown, it is understandable that people want to go out and get some air, and they need to go shopping for food and medicine and go for medical treatment”, stated city health official Wu Qianyu. “But if lots of people gather in a disorderly way, it will cause hidden dangers to our epidemic prevention work.”

25 million people live in Shanghai. The city went into full lockdown on April 5, 2022. The decision was made in pursuit of the national “dynamic zero COVID” policy, which deploys mass testing and strict quarantine measures to stamp out any outbreak of COVID-19 before it can spread. Shanghai registered more than 23 000 new cases of COVID-19 for April 11. Fewer than 1000 of these cases were symptomatic. The city has not reported any deaths from COVID-19 during the current wave, which is being driven by the highly transmissible omicron variant. Reports have emerged of children who test positive for SARS-CoV-2 being separated from their parents. City dwellers have complained of food shortages and difficulties in securing delivery slots for essential supplies. Video footage has circulated of people yelling in frustration from their balconies.

The municipal authorities in Shanghai had hoped to address the outbreak without a full lockdown. In March, they established localised restrictions. But these proved insufficient to stem the rising number of new infections. Other Chinese cities have taken a stricter approach. Xi'an, which is home to 13 million people, went into lockdown late last year after mass testing detected 127 infections with SARS-CoV-2. In January, 2022, Yuzhou locked down its 1·1 million population after detecting three asymptomatic cases of COVID-19. At the time of writing, around 200 million people in more than 20 cities in China were under full or partial lockdown.

The rest of the world has mostly adopted a strategy of living with SARS-CoV-2. Yanzhong Huang is a senior fellow for global health at the US-based think tank, the Council on Foreign Relations (New York City, NY, USA). “The Chinese government has placed a high premium on the politics of the pandemic response”, he explained. “From this perspective, the debate between zero COVID and co-existence with the virus becomes a competition between two political systems, which raises the stakes for any decision in Beijing as to whether to pivot away from their approach.”..  
<https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00142-4/fulltext>

**title:** WHO Urges Monitoring SARS-CoV-2 in Wildlife to Prevent Animal Reservoirs  
  
jama | 19th april 2022  
  
Monitoring SARS-CoV-2 infections in animals is critical to prevent formation of animal reservoirs and to reduce risks of transmission to humans, according to a joint statement by the World Health Organization (WHO) and animal health partners. SARS-CoV-2 infection has been detected in wild, free-ranging, or captive animals including big cats, minks, ferrets, North American white-tailed deer, and great apes, in addition to domestic animals…  
<https://jamanetwork.com/journals/jama/fullarticle/2791212>

**title** Fractionating COVID-19 Vaccine Doses May Save Lives  
  
jama | 19th april 2022  
  
Aministering smaller doses of COVID-19 vaccines could be economically viable and could save more lives than either full-dose vaccination or no vaccination in low- and middle-income countries (LMICs)—even with the emergence of new, more highly transmissible variants, according to a cost-effectiveness modeling study.

Assuming a vaccine supply shortage, the study estimated the costs of hospitalization and vaccination and the economic benefits of averting COVID-19 deaths that would accrue if lower doses were administered in India. Shortages are most likely to occur in LMICs, where about 82% of the world’s population resides; the vaccination rate was 11% for low-income countries and 47% for middle-income countries in mid-January of this year…  
<https://jamanetwork.com/journals/jama/fullarticle/2791211>

**title:** Sustainability of surveillance systems for SARS-CoV-2  
  
the lancet infectious diseases| 22nd april 2022  
  
…How can we ensure that we will be able to identify, track, and assess the epidemiological situation for SARS-CoV-2, including new variants, with less comprehensive systems? Surveillance systems, testing, and sequencing efforts need to be representative and targeted, interlinked, robust, and detailed enough to establish rapid evidence for a situation overview. The balance between specific or marker PCRs accompanied by the right level of full genomic data needs to be found for the best cost-effectiveness and system sustainability. Expanding such a system to include diseases other than COVID-19 could benefit public health as a whole.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00174-8/fulltext>

**title:** Severity of omicron variant of concern and effectiveness of vaccine boosters against symptomatic disease in Scotland (EAVE II): a national cohort study with nested test-negative design  
  
the lancet infectious diseases | 22nd april 2022  
  
Background. Since its emergence in November, 2021, in southern Africa, the SARS-CoV-2 omicron variant of concern (VOC) has rapidly spread across the world. We aimed to investigate the severity of omicron and the extent to which booster vaccines are effective in preventing symptomatic infection.  
  
Methods. In this study, using the Scotland-wide Early Pandemic Evaluation and Enhanced Surveillance of COVID-19 (EAVE II) platform, we did a cohort analysis with a nested test-negative design incident case-control study covering the period Nov 1–Dec 19, 2021, to provide initial estimates of omicron severity and the effectiveness of vaccine boosters against symptomatic disease relative to 25 weeks or more after the second vaccine dose. Primary care data derived from 940 general practices across Scotland were linked to laboratory data and hospital admission data. We compared outcomes between infection with the delta VOC (defined as S-gene positive) and the omicron VOC (defined as S-gene negative). We assessed effectiveness against symptomatic SARS-CoV-2 infection, with infection confirmed through a positive RT-PCR.

Findings. By Dec 19, 2021, there were 23 840 S-gene-negative cases in Scotland, which were predominantly among those aged 20–39 years (11 732 [49·2%]). The proportion of S-gene-negative cases that were possible reinfections was more than ten times that of S-gene-positive cases (7·6% vs 0·7%; p<0·0001). There were 15 hospital admissions in S-gene-negative individuals, giving an adjusted observed-to-expected admissions ratio of 0·32 (95% CI 0·19–0·52). The booster vaccine dose was associated with a 57% (54–60) reduction in the risk of symptomatic S-gene-negative infection relative to individuals who tested positive 25 weeks or more after the second vaccine dose.

Interpretation. These early national data suggest that omicron is associated with a two-thirds reduction in the risk of COVID-19 hospitalisation compared with delta. Although offering the greatest protection against delta, the booster dose of vaccination offers substantial additional protection against the risk of symptomatic COVID-19 for omicron compared with 25 weeks or more after the second vaccine dose.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00141-4/fulltext>

**title:** Durability of BNT162b2 vaccine against hospital and emergency department admissions due to the omicron and delta variants in a large health system in the USA: a test-negative case–control study  
  
the lancet respiratory medicine| 22nd april 2022  
  
Background. The duration of protection against the omicron (B.1.1.529) variant for current COVID-19 vaccines is not well characterised. Vaccine-specific estimates are especially needed. We aimed to evaluate the effectiveness and durability of two and three doses of the BNT162b2 (Pfizer–BioNTech) mRNA vaccine against hospital and emergency department admissions due to the delta (B.1.617.2) and omicron variants.

Methods. In this case–control study with a test-negative design, we analysed electronic health records of members of Kaiser Permanente Southern California (KPSC), a large integrated health system in California, USA, from Dec 1, 2021, to Feb 6, 2022. Vaccine effectiveness was calculated in KPSC patients aged 18 years and older admitted to hospital or an emergency department (without a subsequent hospital admission) with a diagnosis of acute respiratory infection and tested for SARS-CoV-2 via PCR. Adjusted vaccine effectiveness was estimated with odds ratios from adjusted logistic regression models. This study is registered with ClinicalTrials.gov (NCT04848584).

Findings. Analyses were done for 11 123 hospital or emergency department admissions. In adjusted analyses, effectiveness of two doses of the BNT162b2 vaccine against the omicron variant was 41% (95% CI 21–55) against hospital admission and 31% (16–43) against emergency department admission at 9 months or longer after the second dose. After three doses, effectiveness of BNT162b2 against hospital admission due to the omicron variant was 85% (95% CI 80–89) at less than 3 months but fell to 55% (28–71) at 3 months or longer, although confidence intervals were wide for the latter estimate. Against emergency department admission, the effectiveness of three doses of BNT162b2 against the omicron variant was 77% (72–81) at less than 3 months but fell to 53% (36–66) at 3 months or longer. Trends in waning against SARS-CoV-2 outcomes due to the delta variant were generally similar, but with higher effectiveness estimates at each timepoint than those seen for the omicron variant.

Interpretation. Three doses of BNT162b2 conferred high protection against hospital and emergency department admission due to both the delta and omicron variants in the first 3 months after vaccination. However, 3 months after receipt of a third dose, waning was apparent against SARS-CoV-2 outcomes due to the omicron variant, including hospital admission. Additional doses of current, adapted, or novel COVD-19 vaccines might be needed to maintain high levels of protection against subsequent waves of SARS-CoV-2 caused by the omicron variant or future variants with similar escape potential.  
<https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00101-1/fulltext>

**title:** Covid-19 Vaccine Effectiveness against the Omicron (B.1.1.529) Variant

new england journals of medicine| 21st april 2022  
  
Background. A rapid increase in coronavirus disease 2019 (Covid-19) cases due to the omicron (B.1.1.529) variant of severe acute respiratory syndrome coronavirus 2 in highly vaccinated populations has aroused concerns about the effectiveness of current vaccines.

Methods. We used a test-negative case–control design to estimate vaccine effectiveness against symptomatic disease caused by the omicron and delta (B.1.617.2) variants in England. Vaccine effectiveness was calculated after primary immunization with two doses of BNT162b2 (Pfizer–BioNTech), ChAdOx1 nCoV-19 (AstraZeneca), or mRNA-1273 (Moderna) vaccine and after a booster dose of BNT162b2, ChAdOx1 nCoV-19, or mRNA-1273.

Results. Between November 27, 2021, and January 12, 2022, a total of 886,774 eligible persons infected with the omicron variant, 204,154 eligible persons infected with the delta variant, and 1,572,621 eligible test-negative controls were identified. At all time points investigated and for all combinations of primary course and booster vaccines, vaccine effectiveness against symptomatic disease was higher for the delta variant than for the omicron variant. No effect against the omicron variant was noted from 20 weeks after two ChAdOx1 nCoV-19 doses, whereas vaccine effectiveness after two BNT162b2 doses was 65.5% (95% confidence interval [CI], 63.9 to 67.0) at 2 to 4 weeks, dropping to 8.8% (95% CI, 7.0 to 10.5) at 25 or more weeks. Among ChAdOx1 nCoV-19 primary course recipients, vaccine effectiveness increased to 62.4% (95% CI, 61.8 to 63.0) at 2 to 4 weeks after a BNT162b2 booster before decreasing to 39.6% (95% CI, 38.0 to 41.1) at 10 or more weeks. Among BNT162b2 primary course recipients, vaccine effectiveness increased to 67.2% (95% CI, 66.5 to 67.8) at 2 to 4 weeks after a BNT162b2 booster before declining to 45.7% (95% CI, 44.7 to 46.7) at 10 or more weeks. Vaccine effectiveness after a ChAdOx1 nCoV-19 primary course increased to 70.1% (95% CI, 69.5 to 70.7) at 2 to 4 weeks after an mRNA-1273 booster and decreased to 60.9% (95% CI, 59.7 to 62.1) at 5 to 9 weeks. After a BNT162b2 primary course, the mRNA-1273 booster increased vaccine effectiveness to 73.9% (95% CI, 73.1 to 74.6) at 2 to 4 weeks; vaccine effectiveness fell to 64.4% (95% CI, 62.6 to 66.1) at 5 to 9 weeks.

Conclusions. Primary immunization with two doses of ChAdOx1 nCoV-19 or BNT162b2 vaccine provided limited protection against symptomatic disease caused by the omicron variant. A BNT162b2 or mRNA-1273 booster after either the ChAdOx1 nCoV-19 or BNT162b2 primary course substantially increased protection, but that protection waned over time. Funded by the U.K. Health Security Agency.  
<https://www.nejm.org/doi/full/10.1056/NEJMoa2119451>

**title:** Estimated Health Outcomes and Costs of COVID-19 Prophylaxis With Monoclonal Antibodies Among Unvaccinated Household Contacts in the US  
  
jama network open| 22nd april 2022  
  
Question What are the potential health outcomes and costs of SARS-CoV-2 monoclonal antibody postexposure prophylaxis (PEP) for household contacts of people with COVID-19 in the US?

Findings In this decision analytical model study, for a month with transmission intensity similar to that of May 2021, a monoclonal antibody PEP program reaching 50% of exposed, unvaccinated household members aged 50 years and older was estimated to avert 528 hospitalizations and 84 deaths in a low-transmission scenario and 1404 hospitalizations and 223 deaths in a high-transmission scenario. The program was also estimated to be cost saving to payers in the high-transmission scenario as a result of averted hospitalizations.

Meaning These findings suggest that COVID-19 PEP with monoclonal antibodies may be associated with reduced costs and improved population health.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791451>

**title:** Short-term Adverse Events After the Third Dose of the BNT162b2 mRNA COVID-19 Vaccine in Adults 60 Years or Older

jama network open| 18th april 2022  
  
On July 29, 2021, concerns of waning immunity after Pfizer-BioNTech BNT162B2 mRNA vaccination led the Israeli Ministry of Health to start a campaign to administer booster (third) doses to individuals who received their second dose at least 5 months prior.1,2 The booster was initially approved for individuals 60 years or older. This survey study assessed the occurrence of adverse effects (AEs) in adults 60 years or older who received a booster dose…

…We found that AEs after the BNT162b2 mRNA vaccine booster dose were generally mild and usually did not require medical care. The proportion of self-reported AEs that occurred in our study was similar or lower than that after the administration of the second vaccine dose in several previous studies.3,4 A study by Menni et al4 found a similar proportion of systemic reactions among older individuals after the second vaccine dose as after the third dose in our study (16.4% vs 16.6%).

The proportion of female respondents who reported systemic AEs was greater than the proportion of male respondents, with higher proportions among participants in the younger age group (60-69 years) than in the older age groups. Similar results were reported in previous studies after administration of the second vaccine dose.3-5 A limitation of our study was the different survey methods in different age groups, which might have resulted in differences in reported proportions of AEs.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791203>

**title:** SARS-CoV-2 Vaccination and Myocarditis in a Nordic Cohort Study of 23 Million Residents  
  
jama cardiology| 20th april 2022  
  
Question Is SARS-CoV-2 messenger RNA (mRNA) vaccination associated with risk of myocarditis?

Findings In a cohort study of 23.1 million residents across 4 Nordic countries, risk of myocarditis after the first and second doses of SARS-CoV-2 mRNA vaccines was highest in young males aged 16 to 24 years after the second dose. For young males receiving 2 doses of the same vaccine, data were compatible with between 4 and 7 excess events in 28 days per 100 000 vaccinees after second-dose BNT162b2, and between 9 and 28 per 100 000 vaccinees after second-dose mRNA-1273.

Meaning The risk of myocarditis in this large cohort study was highest in young males after the second SARS-CoV-2 vaccine dose, and this risk should be balanced against the benefits of protecting against severe COVID-19 disease.  
<https://jamanetwork.com/journals/jamacardiology/fullarticle/2791253>

**title:** Importance of nasal secretions in the evaluation of mucosal immunity elicited by mRNA BNT162b2 COVID-19 Vaccine [correspondence]

the lancet ebiomedicne| 14th april 2022  
  
We read with great interest the recent publication by Azzi et al. Authors analysed serum and saliva samples of subjects after mRNA COVID-19 vaccine, reporting that vaccination elicits an immune response by increasing both total and neutralising antibodies concentration in serum and in saliva. However, since antibodies levels are much higher in serum than in the salivary compartment, Authors concluded that oral mucosal immunity is poorly activated by this vaccination failing in limiting virus acquisition by mucosal routes. Notably, results and conclusions of this study are different as compared to our recently published data and other reports, that detected significant levels of anti-SARS-CoV-2 specific IgA and IgG in saliva and, as a novelty, in nasal secretions after mRNA COVID-19 Vaccine, thus eliciting an antigen-specific mucosal immune response directly at the site of virus entry….  
<https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(22)00190-6/fulltext>

**title:** Assessment of T-cell Reactivity to the SARS-CoV-2 Omicron Variant by Immunized Individuals

JAMA open network | 22nd april 2022  
  
Question What is the cellular immunity associated with the Omicron variant of SARS-CoV-2 among immunized individuals?

Findings In this cohort study among 61 individuals who had been vaccinated against COVID-19, cellular responses to the mutated regions of the Omicron spike protein were detected in 80% of participants. The mutations were associated with significantly reduced T-cell recognition compared with the vaccine strain, while reactivity to the whole spike protein was present in 100% of participants, and the proportion of remaining immunity to SARS-CoV-2 was estimated to be 87%.

Meaning These findings suggest that cellular immunity to the Omicron variant was maintained despite the mutations in its spike protein; thus, immunization may confer protection from severe COVID-19 from the Omicron variant.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791449>

**title:** Evaluation of the Durability of the Immune Humoral Response to COVID-19 Vaccines in Patients With Cancer Undergoing Treatment or Who Received a Stem Cell Transplant

JAMA oncology| 21st april 2022  
  
Question What is the durability of the antibody response to COVID-19 vaccines in patients with cancer undergoing treatment or who received a stem cell transplant?

Findings In this cross-sectional study of 453 patients with cancer undergoing treatment or who received a stem cell transplant, the geometric mean titers for the anti–SARS-CoV-2 spike protein receptor binding domain were 470.38 U/mL 1 month after the second dose of the vaccine, 447.23 U/mL 6 months after the second dose, and 9224.85 U/mL 1 month after a third dose.

Meaning This study suggests that for patients with cancer undergoing treatment or who received a stem cell transplant, antibody titers peak 1 month after the second dose of a messenger RNA vaccine and are sustained over 6 months; compared with the primary vaccine course, a 20-fold increase in geometric mean titers after a third suggests a robust B-cell response.  
<https://jamanetwork.com/journals/jamaoncology/fullarticle/2791560>

**title:** Effectiveness of mRNA-1273, BNT162b2, and JNJ-78436735 COVID-19 Vaccines Among US Military Personnel Before and During the Predominance of the Delta Variant

jama network open | 20th april 2022  
  
Question Did the effectiveness of the mRNA-1273, BNT162b2, and JNJ-78436735 COVID-19 vaccines change among US-based military personnel before and during the predominance of the SARS-CoV-2 Delta (B.1.617.2) variant?

Findings In this case-control study of 441 379 active US military personnel, overall COVID-19 vaccine effectiveness decreased by 19% from the pre-Delta to the Delta period. JNJ-78436735 had the lowest overall vaccine effectiveness in the pre-Delta (81.8%) and Delta (38.3%) periods.

Meaning In this study, COVID-19 vaccine effectiveness decreased among US-based military personnel during the time of SARS-CoV-2 Delta variant predominance, especially for recipients of the JNJ-78436735 vaccine; this finding supports the use of booster doses to increase effectiveness.e first 6 months of the US COVID-19 vaccination campaign, most adverse events reported.   
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791306>

**title:** Estimated Transmission Outcomes and Costs of SARS-CoV-2 Diagnostic Testing, Screening, and Surveillance Strategies Among a Simulated Population of Primary School Students

jama pediatrics| 20th april 2022  
  
Question What are the costs and benefits of COVID-19 testing in primary schools (students in kindergarten through eighth grade)?

Findings In this decision analytic model of COVID-19 transmission in simulated US elementary and middle schools, test-to-stay strategies were associated with reduced quarantine time but minimal increases in transmission across all levels of community incidence. Compared with no testing, weekly screening was associated with substantial reductions to in-school transmission when community incidence was high and had lower societal cost than remote instruction, while an adaptive surveillance strategy offered a more efficient option to detect outbreaks when local incidence was lower or poorly characterized.

Meaning With federal funding available, schools should use COVID-19 testing to facilitate in-person education, adapting their testing strategy to changes in local COVID-19 risk.  
<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2791525>

**title:** A SARS-CoV-2 omicron (B.1.1.529) variant outbreak in a primary school in Geneva, Switzerland

the lancet infectious diseases | 14th april 2022  
  
...In summary, this prospective, school class-based study provides evidence of higher transmission of infections in school settings with the omicron variant than was reported with previous variants. Children appear to be an important source of extra-household infections and have a key role in community transmission.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00267-5/fulltext>

**title:** Receipt of COVID-19 Booster Dose Among Fully Vaccinated Pregnant Individuals Aged 18 to 49 Years by Key Demographics

jama| 22nd april 2022  
  
...Booster doses of COVID-19 vaccines were recommended for people aged 18 years or older in November 2021 following the recommendation of an additional primary dose of COVID-19 vaccine for select immunocompromised populations on August 13, 2021.1 As of February 26, 2022, more than 93 million booster doses of COVID-19 vaccines had been administered in the US2; however, data on receipt of booster doses among pregnant individuals are lacking. We present findings on receipt of booster doses among pregnant individuals in the Vaccine Safety Datalink (VSD).  
<https://jamanetwork.com/journals/jama/fullarticle/2791659>

**title:** COVID-19 Vaccination and Estimated Public Health Impact in California

jama | 22nd april 2022  
  
Question How many COVID-19 cases, hospitalizations, and deaths were averted because of COVID-19 vaccination in California?

Findings In this modeling study using data from the California Department of Public Health, COVID-19 vaccination was estimated to have prevented more than 1.5 million COVID-19 cases, 72 000 hospitalizations, and 19 000 deaths during the first 10 months of vaccination, through October 16, 2021.

Meaning These findings suggest that COVID-19 vaccination had a large public health benefit in California, which can be generalized across the United States.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791453>

**title:** Vaccine effectiveness against SARS-CoV-2 infection and severe outcomes among individuals with immune-mediated inflammatory diseases tested between March 1 and Nov 22, 2021, in Ontario, Canada: a population-based analysis

the lancet rheumatology| 14th april 2022  
  
We estimated COVID-19 vaccine effectiveness against SARS-CoV-2 infection and severe COVID-19 outcomes among individuals with immune-mediated inflammatory diseases in Ontario, Canada…  
<https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(22)00096-0/fulltext>

**title:** Effectiveness of COVID-19 vaccination in immune-mediated inflammatory diseases

the lancet rheumatology | 14th april 2022  
  
The COVID-19 pandemic has elevated the world’s attention to olfactory impairment (OI). As a cardinal symptom of the many early variants of the SARS-CoV-2 virus, we have never seen such   
The rapid development of safe and effective COVID-19 vaccines was a hallmark achievement in the pandemic. However, patients with immune-mediated inflammatory diseases were excluded from vaccine clinical trials and might be vulnerable to SARS-CoV-2 breakthrough infection due to immunosuppression and altered immunity…  
<https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(22)00109-6/fulltext>

**title:** Parental preferences for a mandatory vaccination scheme in England: A discrete choice experiment  
  
the lancet regiONAL HEALTH EUROPE | 13th april 2022  
  
Background. Mandatory vaccination has been mooted to combat falling childhood vaccine uptake rates in England. This study investigated parental preferences for a mandatory vaccination scheme.

Methods. Discrete choice experiment. Six attributes were investigated: vaccine, child age group, incentive, penalty, ability to opt out, and compensation scheme. Mixed effects conditional logit regression models were used to investigate parental preferences and relative importance of attributes.

Findings. Participants were 1,001 parents of children aged 5 years and under in England (53% female; mean age=33·6 years, SD=7·1; 84% white). Parental preferences were mostly based on incentives (30·7% relative importance; 80·9% [95% confidence interval 76·3–85·0%] preference for parent and 74·8% [71·0–78·3%] for child incentive; reference: no incentive) and penalties (25·4% relative importance; 69·5% [65·7–73·1%] preference for schemes where unvaccinated children cannot attend school or day care and 67·6% [63·6–71·4%] for those withholding financial benefits for parents of unvaccinated children; reference: £450 fine). Parents also preferred schemes that: offered a compensation scheme (18·1% relative importance; 66·4% [62·7–69·8%] preference; reference: not offered), mandated vaccination in children aged 2 years (versus 5 years; 11·4% relative importance; 42·6% [39·4–45·9%] preference; reference: 2 years), mandated the 6-in-1 vaccine (10·5% relative importance; 58·2% [54·6–61·7%] preference; reference: MMR), and that offered only medical exemptions (versus medical and religious belief exemptions; 4·0% relative importance; 45·5% [41·1–50·0%] preference; reference: medical exemptions).

Interpretation. These findings can inform policymakers’ decisions about how best to implement a mandatory childhood vaccination scheme in England.  
<https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(22)00052-7/fulltext>

**HEALTH MANGEMENT & recovery**

**title:** Covid-19: Health leaders accuse government of ignoring crisis in NHS

BMJ | 14th april 2022  
  
Hospitals and ambulance services in England are facing “extreme pressures” and a high volume of   
The BMA has accused the UK government of “burying its head in the sand” over current high levels of covid-19 and the threat they pose to health services and recovery plans.

It warned that the government was failing to grasp the reality of the situation as NHS trusts around the country struggled to cope with the rise in patients with covid, widespread staffing problems, bed shortages, and delays in ambulance handovers.

The Independent newspaper reported that at least two major hospitals in Newcastle and York had dropped routine covid testing of new patients to alleviate pressure on beds. It said that some trusts had begun to drop “red” covid-only wards, while some were considering not separating patients in the emergency department.1

Christina Pagel, director of the clinical operational research unit at University College London, wrote on Twitter, “If more hospitals do this, there goes another covid surveillance tool.” She warned that such policies would inevitably lead to more intra-hospital transmission.

Saffron Cordery, deputy chief executive of NHS Providers, commented, “The NHS still needs appropriate infection control measures to separate covid and non-covid patients to do everything possible to keep rates of hospital acquired infections down.

“Reducing infection control procedures can help trusts significantly in dealing with mounting pressures as they tackle existing care backlogs on top of growing demands, but, given the ongoing risk from covid-19 and the need to protect patients, staff, and visitors, trusts must strike a careful balance.”

Staffing problems

On 12 April some 20 032 patients were in UK hospitals with covid, including 378 patients in ventilation beds.2 Admissions seem to have peaked around 29 March. In England 1792 patients were admitted to hospital with covid on 12 April, down 15% on a week earlier.

Health services continue to experience staffing problems, with almost 200 000 NHS staff absent because of covid in a single week.3

On 11 April the NHS Confederation accused the government of “abandoning interest in covid” and called for a revamp of its “living with covid” plan. In response, a No 10 spokesperson said that the plan still stood and that covid could be managed “like any other respiratory illness.”

The NHS Confederation’s chief executive, Matthew Taylor, said, “The brutal reality for staff and patients is that this Easter in the NHS is as bad as any winter. But instead of the understanding and support NHS staff received during 2020 and 2021, we have a government that seems to want to wash its hands of responsibility for what is occurring in plain sight in local services up and down the country.”

Chaand Nagpaul, BMA chair of council, said, “It beggars belief that the government thinks we can treat covid-19 ‘like any other respiratory virus,’ when its impact on people’s health and the NHS is manifestly far more damaging.”

The BMA reported that NHS hospitals such as the Royal Stoke were introducing measures to protect urgent cancer care, and NHS leaders in Hampshire and the Isle of Wight issued an “urgent plea” for families to take relatives home from hospital even if they continued to test positive for covid. In addition, waits as long as 22 hours for an ambulance have been reported.4  
  
An internal letter sent to North West health leaders by NHS England and NHS Improvement on 12 April stated that a number of discussions had taken place at top regional and trust level to respond to the escalating pressures on the NHS.

The letter, shared on Twitter, said that acute inpatients with covid in the region had increased by around 90% in March from 1134 to 2159. It said that the figure was still growing and was greater than the number of patients in hospital during spring 2021.

At the same time, overall staff sickness levels increased by 8%, with numerous providers citing significant staffing challenges. The letter said that a significant number of acute beds were closed owing to infection prevention and control restrictions and that over 1700 care home beds were closed across the region for a range of reasons. Similar letters have gone out in other regions.  
<https://www.bmj.com/content/377/bmj.o981>

**title:** The delivery plan for tackling the covid-19 backlog of elective care falls short

BMJ| 19th april 2022

When hospitals face surges of patients with COVID-19, fair allocation of scarce medical resources   
Treating the more than six million people currently on the elective waiting list in the UK is a gargantuan task. There are no easy solutions, and the list is likely to get longer before it gets shorter.1 But the backlog is also a direct result of a poor national response to covid-19, coupled with an NHS that was under resourced, underfunded, and understaffed even before the pandemic.2 The NHS lacked the right balance of hardware (infrastructure, finance, workforce) and software (management knowledge, skills, trust) or any necessary excess capacity to respond to the shock of the pandemic.3 A plan to tackle the backlog needed to start from this foundational point. Sadly, NHS England and Improvement’s recent plan: Delivery plan for tackling the covid-19 backlog of elective care, does not.

By any measure, the extent of the backlog is a serious failure. Patients are suffering physically and emotionally, which contributes to poorer health. Confidence and trust in the system are weakened, and the economic consequences are huge for individuals and society. How we respond to the backlog is therefore crucial. Getting it right will provide a “resilience dividend” of improved future care in both good times and bad times.5 The plan acknowledges the scale of the problem, recognises it as an opportunity to transform care, and—importantly—recognises the unequal distribution of waiting times: waiting lists in the most deprived areas have grown by 55% whereas those in the least deprived areas have grown by 36%.6 But the plan fails to acknowledge the legacy of policies introduced over the past decade. It promises to increase elective activity by 30% by 2024-25, but does not acknowledge that before the pandemic, the waiting list grew from 2.9 million pathways in January 2015 to 4.4 million pathways in December 2019.7 It would, of course, be politically difficult to make such an admission, but avoiding this means the ambitions of the plan start from the wrong place.

Perhaps what is most problematic about the report is that it never defines which health systems it is talking about. The World Health Organisation’s broad definition of a health system is one that “comprises all organisations, institutions, and resources that produce actions whose primary purpose is to improve health.”8 The report often uses phrases like “Systems will be expected to . . .” but the boundaries are never defined. Are they hospitals? Integrated care systems? This is important because without that detail, clear underpinning governance cannot be developed…  
<https://www.bmj.com/content/377/bmj.o995>

**public health & health inequalities**

**title:** Psychological Distress Before and During the COVID-19 Pandemic Among Adults in the United Kingdom Based on Coordinated Analyses of 11 Longitudinal Studies

JAMA NETWORK OPEN | 22ND april 2022  
  
Question How has the mental health of the UK population changed from before to during the COVID-19 pandemic?

Findings This cohort study of 49 993 participants in 11 longitudinal studies found that mental health has deteriorated from before the start of the COVID-19 pandemic, and this deterioration was sustained across the first year of the pandemic. Deterioration in mental health varied by sociodemographic factors, namely age, sex, and education, and did not recover when social restrictions were eased.

Meaning The substantial deterioration in mental health during the ongoing COVID-19 pandemic observed in this study highlights the need for improved mental health care provision and broader support to minimize the risk of longer-term mental health consequences and widening health inequalities.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791456>

**title:** Association of Short-term Air Pollution Exposure With SARS-CoV-2 Infection Among Young Adults in Swede

jama network open | 20th april 2022  
  
Question Is exposure to residential short-term air pollution associated with SARS-CoV-2 infection in young adults?

Findings In this case-crossover study of 425 participants with SARS-CoV-2 infection identified within a Swedish population-based birth cohort, short-term air pollution exposure was associated with increased risk of SARS-CoV-2 infection despite relatively low levels of air pollution exposure.

Meaning These findings suggest that air pollution may play a role in COVID-19 and support the potential benefit of reducing air pollutant levels.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791305>

**title:** Stagnant US Mammography Rates and the Influence of COVID-19

jama | 20th april 2022  
  
Mammography rates had stagnated over recent years in the US, and then came COVID-19. The pandemic put life on hold for many people, including their receipt of preventive care such as mammography screenings. The aftermath of the pandemic on mammography rates isn’t clear yet because, as the American Cancer Society (ACS) notes in its recent 2022 cancer projections report, quantifying “secondary consequences of the pandemic at the population level will take several years because of the lag in dissemination of population-based surveillance data.” Nevertheless, some studies already offer insight into the pandemic’s effect.

As the pandemic emerged, some facilities considered mammography screenings to be elective procedures, so they were delayed or cancelled to help curb the spread of COVID-19.

A study in JAMA Oncology found breast cancer screenings plunged in March through May of 2020 (the sharpest decline of nearly 91% in April) but rebounded almost completely by July 2020. Still, that translated to an estimated absolute deficit in screening for 3.9 million women across the US population, according to the 2021 study, which used administrative claims data and enrollment information covering about 60 million people in Medicare Advantage and commercial health plans…  
<https://jamanetwork.com/journals/jama/fullarticle/2791573>

**title:** Occupation and Educational Attainment Characteristics Associated With COVID-19 Mortality by Race and Ethnicity in California

jama network open | 22nd april 2022  
  
Question To what extent are inequities in educational attainment and occupational characteristics associated with racial and ethnic inequities in COVID-19 mortality?

Findings In this cohort study of 25 million working-age adults in California, differences in the distribution of education and occupation across racial and ethnic groups were associated with racial and ethnic inequities in COVID-19 mortality, particularly for Latinx adults. If every working-age Californian had the COVID-19 mortality risk associated with the lowest-risk educational and occupational position, there would have been an estimated 8441 (43%) fewer deaths in this population.

Meaning Educational and occupational disadvantage are important factors associated with risk for COVID-19 mortality, but eliminating avoidable excess risk associated with low-education, essential, on-site, and low-wage jobs is unlikely to be sufficient alone to achieve equity.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791454>

**international perspectives**

**title:** Covid-19: What went wrong after initial success in Laos?

bmj | 20th april 2022  
  
Bordering China, and one of South East Asia’s poorest countries, Laos at first contained covid-19 well. But initial success could not in the long term mask the country’s lack of investment in healthcare and workforce. Andrew Silver reports  
<https://www.bmj.com/content/377/bmj.o994>

**title:** Covid-19: Is the US compensation scheme for vaccine injuries fit for purpose?

bmj | 19th april 2022  
  
Patients and lawyers say that America’s system for covid vaccine injury claims is costly, opaque, and yet to issue a single payout. Maryanne Demasi reports  
<https://www.bmj.com/content/377/bmj.o919>

**title:** Covid-19: Mask mandate is struck down although US cases are rising

bmj | 19th april 2022  
  
Covid-19 cases in the US rose by 43% over the past two weeks, with especially high rates seen in north eastern states, according to the New York Times coronavirus tracker.1

Cases rose to a seven day average of 39 000 on 18 April, up from 27 000 on 4 April, although health officials say that the actual numbers are uncertain because the results of many home tests are not reported to public health authorities. The number of cases is far below that at the height of the latest wave, however, which stood at 806 795 new cases on 14 January. Both hospital admissions and deaths are trending downward, but the number of US deaths from covid-19 is expected to pass the one million mark in the next few weeks.

Despite the increase in cases, the requirement that people wear masks on aeroplanes and trains and in airports and railway stations was struck down on 18 April 2022 by a Trump appointed federal judge in Florida, Kathryn Kimball Mizelle. She said that the mask mandate by the Centers for Disease Control and Prevention (CDC) exceeded its authority. The CDC had recently extended the requirement until 5 May because of the rise in covid cases…  
https://www.bmj.com/content/377/bmj.o998

**title:** Covid-19: US sees increase in sexually transmitted diseases and teen drug overdose deaths

bmj | 19th april 2022  
  
The prevalence of sexually transmitted diseases (STDs) and deaths from drug overdoses increased in the US over the past two years, showing the pandemic’s effect on public health.

“Even in the face of a pandemic, 2.4 million cases of chlamydia, gonorrhoea, and syphilis were reported,” the US Centers for Disease Control and Prevention (CDC) said.

STDs declined during the early months of the pandemic in 2020 but then increased rapidly.1 Cases of gonorrhoea increased by 10% during 2020 compared with 2019. Cases of primary and secondary syphilis increased by 7% and congenital syphilis in newborns increased by 13%.2 New data suggest that primary and secondary syphilis—the most infectious stages of the disease—continued to increase during 2021, the CDC said.2 Cases of chlamydia, usually the most reported STD, declined by 13%, but that may be because of decreased screening and underdiagnosis during the pandemic, the CDC said…  
<https://www.bmj.com/content/377/bmj.o991>

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We also produce a range of subject-specific news feeds to ensure our clinical and professional teams stay up to date with developments in their work areas. Please visit our [website](http://www.trftlibraryknowledge.com/) for more information

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