COVID-19 weekly update

28th February 2022

**clinical management**

**Title:** Covid-19: Severe infection in pregnancy significantly increases risks, study shows

bmj| 24th february 2022

Severe covid-19 infection in pregnant women significantly increases the risk of harmful outcomes for mothers and babies, a study has found.The study, led by researchers at Oxford Population Health, examined data from the UK Obstetric Surveillance System which holds records for the 1.1 million women who gave birth in UK hospitals between 1 March 2020 and 31 October 2021. Results, published in Acta Obstetricia et Gynecologica Scandinavica, show that in this period, 4436 pregnant women were admitted to hospital with confirmed covid-19 infection. Some 14% (616) had severe infection, 21% (917) had moderate infection, and 65% (2903) had mild infection. Marian Knight, Wellbeing of Women researcher and professor of maternal and child population health at the University of Oxford’s National Perinatal Epidemiology Unit and lead author, said, “Most women give birth safely and have healthy babies, but we know that pregnant women are at greater risk of developing severe covid-19 infection, particularly in the third trimester. This can lead to tragic outcomes, including premature birth and stillbirth.”
<https://www.bmj.com/content/376/bmj.o480>

**Title:** COVID-19 Linked With Increased Incidence of Youth Diabetes

JAMA| 22nd february 2022

COVID-19 increases the risk of diabetes among children and adolescents, according to a recent study in the Morbidity and Mortality Weekly Report. Although people with diabetes have a higher risk of developing severe COVID-19, growing evidence shows that COVID-19 may contribute to new-onset diabetes. Previous studies have found that on average, 14% of adults hospitalized with COVID-19 have new diabetes onset. To assess the risk in children and adolescents, the authors analyzed health care claims from about 1.7 million pediatric patients in the IQVIA database, including nearly 81 000 patients who were diagnosed with COVID-19 between March 2020 and February 2021. Patients with COVID-19 were 166% more likely to receive a new diabetes diagnosis than were age- and sex-matched patients without COVID-19. Those with COVID-19 also were 116% more likely to be newly diagnosed with diabetes than similar patients who had an acute respiratory infection before the pandemic began.
<https://jamanetwork.com/journals/jama/fullarticle/2789303>

**Title:** Mortality Among Adults With Cancer Undergoing Chemotherapy or Immunotherapy and Infected With COVID-19

JAMA| 21 february 2022

Is there an association between COVID-19 infection and mortality among adults with varying cancer types undergoing active treatment? In this cohort study of 2515 adult patients with cancer and COVID-19, hematological malignant neoplasms and lung cancer were associated with increased mortality. No association was found between recent treatment with chemotherapy and overall or COVID-19–specific mortality, and treatment with immunotherapy before COVID-19 diagnosis was associated with a significant reduction in mortality. In this study, active systemic anticancer treatment was not associated with mortality in patients who also had COVID-19.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789152>

**title:** Severity of Hospitalizations from SARS-CoV-2 vs Influenza and Respiratory Syncytial Virus Infection in Children Aged 5 to 11 Years in 11 US State

jama| 21 FEBRUARY 2022

In October 2021, the US Food and Drug Administration granted emergency use authorization for the BNT162b2 (Pfizer-BioNTech) COVID-19 vaccine to be used in children aged 5 to 11 years to reduce costly hospitalizations. By that time, for children in this age group, there had been 1.8 million people diagnosed with SARS-CoV-2 infection and 143 deaths, with more than 8000 hospitalizations. However, very little is known about the severity of these hospitalizations relative to the 2 most common childhood viruses, the influenza virus and respiratory syncytial virus (RSV), which resemble the SARS-CoV-2 virus. In this study, we compared the January through March 2021 hospitalizations of children aged 5 to 11 years who were diagnosed with SARS-CoV-2 infection and multisystem inflammatory syndrome in children (MIS-C; a sequela of COVID-19 disease) with those hospitalizations of children aged 5 to 11 years infected with influenza and RSV … This cross-sectional study revealed that during the winter of 2020-2021, for children aged 5 to 11 years, there was 1 MIS-C hospitalization for every COVID-19 hospitalization. This finding suggests that MIS-C may not be as rare of a COVID-19 sequela as previously thought. Other long-term COVID-19 complications may also be of concern for children aged 5 to 11 years. Although rarer than influenza infection, the extreme severity of MIS-C made the total economic and health burden of COVID-19 infection combined with MIS-C just as high as that of past influenza outbreaks.
<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2789353>

**title:** Effectiveness of BNT162b2 Vaccine against Critical Covid-19 in Adolescents

NEjm | 24th FEBRUARY 2022

The increasing incidence of pediatric hospitalizations associated with coronavirus disease 2019 (Covid-19) caused by the B.1.617.2 (delta) variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the United States has offered an opportunity to assess the real-world effectiveness of the BNT162b2 messenger RNA vaccine in adolescents between 12 and 18 years of aage … Among hospitalized adolescent patients, two doses of the BNT162b2 vaccine were highly effective against Covid-19–related hospitalization and ICU admission or the receipt of life support.
<https://www.nejm.org/doi/full/10.1056/NEJMoa2117995>

**title:** Omicron-Specific Cytotoxic T-Cell Responses After a Third Dose of mRNA COVID-19 Vaccine Among Patients With Multiple Sclerosis Treated With Ocrelizumab

JAMA Neurology | 25th FEBRUARY 2022

Question: Are T-cell responses to the SARS-CoV-2 Omicron variant conserved in anti-CD20–treated patients with multiple sclerosis after COVID-19 messenger RNA vaccination? Findings: In this cohort study of 20 patients treated with ocrelizumab, Omicron spike-specific CD4 and CD8 T cells were detectable in approximately half of patients 6 months after the second vaccine dose, and cytotoxic T-cell responses increased following the third dose. Frequencies of T cells specific to the Delta and Omicron variants were lower compared with the vaccine strain, both before and after receiving a booster dose. Meaning: In this study of anti-CD20–treated patients with multiple sclerosis, the vaccine-induced T-cell responses were little affected by the mutations carried by Omicron and might prevent severe COVID-19 infection, and a third vaccine dose improved cytotoxic T-cell responses against Omicron.
<https://jamanetwork.com/journals/jamaneurology/fullarticle/2789588>

**title:** Variation in the COVID-19 infection–fatality ratio by age, time, and geography during the pre-vaccine era: a systematic analysis

THE LANCET| 24TH FEBRUARY 2022

The infection–fatality ratio (IFR) is a metric that quantifies the likelihood of an individual dying once infected with a pathogen. Understanding the determinants of IFR variation for COVID-19, the disease caused by the SARS-CoV-2 virus, has direct implications for mitigation efforts with respect to clinical practice, non-pharmaceutical interventions, and the prioritisation of risk groups for targeted vaccine delivery. The IFR is also a crucial parameter in COVID-19 dynamic transmission models, providing a way to convert a population's mortality rate into an estimate of infections.
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02867-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2821%2902867-1/fulltext)

**title:** Understanding of COVID-19 from infection–fatality ratio

THE LANCET| 24TH FEBRUARY 2022

Since the emergence of the COVID-19 pandemic, confirmed cases and cumulative deaths have been the most important numbers released by WHO and raised worldwide attention.1 The two numbers can help to roughly estimate the COVID-19 mortality rate (COVID-19 deaths to population numbers at risk) and case-fatality ratio (COVID-19 deaths to confirmed COVID-19 cases) of a population, although using reported COVID-19 deaths could underestimate the death toll related to the COVID-19 pandemic.2 Another important concept, the infection–fatality ratio (IFR), has been rarely mentioned. The IFR is crucial for risk perception, policy making for epidemic control, and estimation of COVID-19 burden. The IFR is calculated as COVID-19 deaths divided by the number of people infected with SARS-CoV-2, the denominator of which cannot be directly obtained and could be estimated with data from seroprevalence surveys.
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00281-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2822%2900281-1/fulltext)

**title:** Population Immunity and Covid-19 Severity with Omicron Variant in South Africa

NEJM | 23rd FEBRUARY 2022

The B.1.1.529 (omicron) variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first identified on November 25, 2021, in Gauteng province, South Africa. Data regarding the seroprevalence of SARS-CoV-2 IgG in Gauteng before the fourth wave of coronavirus disease 2019 (Covid-19), in which the omicron variant was dominant, are needed. We conducted a seroepidemiologic survey from October 22 to December 9, 2021, in Gauteng to determine the seroprevalence of SARS-CoV-2 IgG  … Widespread underlying SARS-CoV-2 seropositivity was observed in Gauteng before the omicron-dominant wave of Covid-19. Epidemiologic data showed a decoupling of hospitalizations and deaths from infections while omicron was circulating.
[https://www.nejm.org/doi/full/10.1056/NEJMoa2119658#](https://www.nejm.org/doi/full/10.1056/NEJMoa2119658)

**VACCINATION & infection control**

**title:** Duration of effectiveness of vaccines against SARS-CoV-2 infection and COVID-19 disease: results of a systematic review and meta-regression

the lancet |21st FEBRUARY 2022

Background: Knowing whether COVID-19 vaccine effectiveness wanes is crucial for informing vaccine policy, such as the need for and timing of booster doses. We aimed to systematically review the evidence for the duration of protection of COVID-19 vaccines against various clinical outcomes, and to assess changes in the rates of breakthrough infection caused by the delta variant with increasing time since vaccination. Methods

This study was designed as a systematic review and meta-regression. We did a systematic review of preprint and peer-reviewed published article databases from June 17, 2021, to Dec 2, 2021. Randomised controlled trials of COVID-19 vaccine efficacy and observational studies of COVID-19 vaccine effectiveness were eligible. Studies with vaccine efficacy or effectiveness estimates at discrete time intervals of people who had received full vaccination and that met predefined screening criteria underwent full-text review. We used random-effects meta-regression to estimate the average change in vaccine efficacy or effectiveness 1–6 months after full vaccination.

Findings: Of 13 744 studies screened, 310 underwent full-text review, and 18 studies were included (all studies were carried out before the omicron variant began to circulate widely). Risk of bias, established using the risk of bias 2 tool for randomised controlled trials or the risk of bias in non-randomised studies of interventions tool was low for three studies, moderate for eight studies, and serious for seven studies. We included 78 vaccine-specific vaccine efficacy or effectiveness evaluations (Pfizer–BioNTech-Comirnaty, n=38; Moderna-mRNA-1273, n=23; Janssen-Ad26.COV2.S, n=9; and AstraZeneca-Vaxzevria, n=8). On average, vaccine efficacy or effectiveness against SARS-CoV-2 infection decreased from 1 month to 6 months after full vaccination by 21·0 percentage points (95% CI 13·9–29·8) among people of all ages and 20·7 percentage points (10·2–36·6) among older people (as defined by each study, who were at least 50 years old). For symptomatic COVID-19 disease, vaccine efficacy or effectiveness decreased by 24·9 percentage points (95% CI 13·4–41·6) in people of all ages and 32·0 percentage points (11·0–69·0) in older people. For severe COVID-19 disease, vaccine efficacy or effectiveness decreased by 10·0 percentage points (95% CI 6·1–15·4) in people of all ages and 9·5 percentage points (5·7–14·6) in older people. Most (81%) vaccine efficacy or effectiveness estimates against severe disease remained greater than 70% over time.

Interpretation: COVID-19 vaccine efficacy or effectiveness against severe disease remained high, although it did decrease somewhat by 6 months after full vaccination. By contrast, vaccine efficacy or effectiveness against infection and symptomatic disease decreased approximately 20–30 percentage points by 6 months. The decrease in vaccine efficacy or effectiveness is likely caused by, at least in part, waning immunity, although an effect of bias cannot be ruled out. Evaluating vaccine efficacy or effectiveness beyond 6 months will be crucial for updating COVID-19 vaccine policy.
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02867-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2821%2902867-1/fulltext)

**title:** Reported cases of multisystem inflammatory syndrome in children aged 12–20 years in the USA who received a COVID-19 vaccine, December, 2020, through August, 2021: a surveillance investigation

The Lancet Child & Adolescent Health| 22nd FEBRUARY 2022

Multisystem inflammatory syndrome in children (MIS-C) is a hyperinflammatory condition associated with antecedent SARS-CoV-2 infection. In the USA, reporting of MIS-C after vaccination is required under COVID-19 vaccine emergency use authorisations. We aimed to investigate reports of individuals aged 12–20 years with MIS-C after COVID-19 vaccination reported to passive surveillance systems or through clinician outreach to the US Centers for Disease Control and Prevention (CDC).

Methods: In this surveillance activity, we investigated potential cases of MIS-C after COVID-19 vaccination reported to CDC's MIS-C national surveillance system, the Vaccine Adverse Event Reporting System (co-administered by CDC and the US Food and Drug Administration), and CDC's Clinical Immunization Safety Assessment Project. A multidisciplinary team adjudicated cases by use of the CDC MIS-C definition. Any positive SARS-CoV-2 serology test satisfied case criteria; although anti-nucleocapsid antibodies indicate previous SARS-CoV-2 infection, anti-spike protein antibodies indicate either past or recent infection or COVID-19 vaccination. We describe the demographic and clinical features of cases, stratified by laboratory evidence of SARS-CoV-2 infection. To calculate the reporting rate of MIS-C, we divided the count of all individuals meeting the MIS-C case definition, and of those without evidence of SARS-CoV-2 infection, by the number of individuals aged 12–20 years in the USA who received one or more COVID-19 vaccine doses up to Aug 31, 2021, obtained from CDC national vaccine surveillance data.

Findings: Using surveillance results from Dec 14, 2020, to Aug 31, 2021, we identified 21 individuals with MIS-C after COVID-19 vaccination. Of these 21 individuals, median age was 16 years (range 12–20); 13 (62%) were male and eight (38%) were female. All 21 were hospitalised: 12 (57%) were admitted to an intensive care unit and all were discharged home. 15 (71%) of 21 individuals had laboratory evidence of past or recent SARS-CoV-2 infection, and six (29%) did not. As of Aug 31, 2021, 21 335 331 individuals aged 12–20 years had received one or more doses of a COVID-19 vaccine, making the overall reporting rate for MIS-C after vaccination 1·0 case per million individuals receiving one or more doses in this age group. The reporting rate in only those without evidence of SARS-CoV-2 infection was 0·3 cases per million vaccinated individuals.

Interpretation: Here, we describe a small number of individuals with MIS-C who had received one or more doses of a COVID-19 vaccine before illness onset; the contribution of vaccination to these illnesses is unknown. Our findings suggest that MIS-C after COVID-19 vaccination is rare. Continued reporting of potential cases and surveillance for MIS-C illnesses after COVID-19 vaccination is warranted.
[https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00028-1/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642%2822%2900028-1/fulltext)

**title:** When vaccine adverse event reporting generates hope, not fear

The Lancet Child & Adolescent Health| 22nd FEBRUARY 2022

Children have not been spared from the significant morbidity of the COVID-19 pandemic. As of Jan 22, 2022, in the USA alone, there have been 94 COVID-19-associated hospitalisations per 100 000 children (aged <18 years), 883 childhood deaths (aged <19 years) due to COVID-19, and 6431 reported cases of multisystem inflammatory syndrome in children (MIS-C), of which 55 resulted in death. With the development of vaccines against SARS-CoV-2, a crucially important public health endeavour for infection prevention, two questions arose regarding MIS-C: is vaccination associated with development of MIS-C, and can vaccination prevent MIS-C?
[https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00061-X/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642%2822%2900061-X/fulltext)

**title:** The Rollout Of The Covid-19 Vaccination Programme In England

National audit offce | 25th FEBRUARY 2022

According to this report, the Covid-19 vaccination programme met stretching and unprecedented targets, helping to save lives and reduce serious illness and hospitalisation. However, it concludes that there are risks to be managed as the programme continues to evolve in response to the Covid-19 pandemic and to new clinical advice and evidence about vaccines. The report covers the funding and costs of the programme, supply of vaccines, access to the vaccines as well as the attempts to address inequalities in the uptake of the vaccines. The report concludes that the programme has provided value for money to date. [Report](https://www.nao.org.uk/wp-content/uploads/2022/02/The-rollout-of-the-COVID-19-vaccination-programme-in-England.pdf) [National Audit Office - press release](https://www.nao.org.uk/press-release/the-rollout-of-the-covid-19-vaccination-programme-in-england/)

**title:** Real-world serological responses to extended-interval and heterologous COVID-19 mRNA vaccination in frail, older people (UNCoVER): an interim report from a prospective observational cohort study

The Lancet Healthy Longevity| 21st FEBRUARY 2022

The use of COVID-19 vaccines has been prioritised to protect the most vulnerable—notably, older people. Because of fluctuations in vaccine availability, strategies such as delayed second dose and heterologous prime-boost have been used. However, the effectiveness of these strategies in frail, older people are unknown. We aimed to assess the antigenicity of mRNA-based COVID-19 vaccines in frail, older people in a real-world setting, with a rationed interval dosing of 16 weeks between the prime and boost doses.
[https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568(22)00012-5/fulltext](https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568%2822%2900012-5/fulltext)

**title:** COVID-19 immunisation in older people

The Lancet Healthy Longevity| 21st FEBRUARY 2022

Lessons learned from the COVID-19 pandemic and the results of the study by Vinh and colleagues on the strategic use of vaccines in older people suggest how to effectively handle prevention as a whole. The prioritisation of recommended vaccinations among frail, older people should aim to help identify new approaches for promoting the health of this population and support efforts that contribute to healthy ageing.
[https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568(22)00036-8/fulltext](https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568%2822%2900036-8/fulltext)

**title:** Waning of COVID-19 vaccine effectiveness: individual and public health risk

the lancet | 21st FEBRUARY 2022

High coverage rates of vaccination against COVID-19 are envisaged to end the pandemic. However, waning of vaccine-induced protection is a growing concern that has been fostered by data on vaccine effectiveness against the currently circulating omicron SARS-CoV-2 variant of concern (VOC).
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00282-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2822%2900282-3/fulltext)

**title:** The UK’s covid-19 data collection has been “world beating”—let’s not throw it away

BMJ| 25TH FEBRUARY 2022

While the UK’s perceived pandemic missteps abound, the country was truly “world beating” in at least one important arena—investment in crucial population data to help us understand the virus. Despite earlier reports that the Coronavirus Infection Survey carried out by the Office for National Statistics (ONS) was at risk of being scrapped, the government's new “Living with covid” strategy has retained the scheme, although it's not yet clear to what extent. While these efforts could rightfully be scaled back from crisis levels, we need to carefully transition surveillance from pandemic to “endemic” to protect ourselves from lingering and future threats. <https://www.bmj.com/content/376/bmj.o496>

**title:** Covid-19 vaccines: individual patient data should be submitted to the European Medicines Agency

bmj| 24th FEBRUARY 2022

By reiterating the call from 2009 for raw clinical study data, Doshi and colleagues point out that, despite more than a decade of discussion, we are still struggling to adequately inform decision making in our healthcare systems.There has undoubtedly been progress. But the achievements so far mainly apply to aggregate data, not to anonymised individual patient data (IPD). In its 2013 transparency initiative, the European Medicines Agency (EMA) planned for access to IPD, but we are still waiting for progress on this.
<https://www.bmj.com/content/376/bmj.o417>

**title:** Widespread Misinformation About Infertility Continues to Create COVID-19 Vaccine Hesitancy

JAMA| 22nd FEBRUARY 2022

Around the time that COVID-19 vaccines were first rolling out, Alice Lu-Culligan felt compelled to help set the record straight. Baseless rumors were sowing confusion and vaccine hesitancy. In a *New York Times*﻿ opinion piece published in January 2021, the MD-PhD candidate at Yale School of Medicine and her scientific mentor, immunobiologist Akiko Iwasaki, PhD, challenged one false narrative. The rumor spreading on social media claimed that mRNA vaccine-induced antibodies against the SARS-CoV-2 spike protein could attack a placental protein called syncytin-1, causing infertility.
<https://jamanetwork.com/journals/jama/fullarticle/2789477>

**title:** SARS-CoV-2 antigen lateral flow tests for detecting infectious people: linked data analysis

bmj | 23rd FEBRUARY 2022

Objectives To investigate the proportion of lateral flow tests (LFTs) that produce negative results in those with a high risk of infectiousness from SARS-CoV-2, to investigate the impact of the stage and severity of disease, and to compare predictions made by influential mathematical models with findings of empirical studies. Design Linked data analysis combining empirical evidence of the accuracy of the Innova LFT, the probability of positive viral culture or transmission to secondary cases, and the distribution of viral loads of SARS-CoV-2 in individuals in different settings. Setting Testing of individuals with symptoms attending NHS Test-and-Trace centres across the UK, residents without symptoms attending municipal mass testing centres in Liverpool, and students without symptoms screened at the University of Birmingham. Participants Evidence for the sensitivity of the Innova LFT, based on 70 individuals with SARS-CoV-2 and LFT results. Infectiousness was based on viral culture rates on 246 samples (176 people with SARS-CoV-2) and secondary cases among 2 474 066 contacts; distributions of cycle threshold (Ct) values from 231 497 index individuals attending NHS Test-and-Trace centres; 70 people with SARS-CoV-2 detected in Liverpool and 62 people with SARS-CoV-2 in Birmingham (54 imputed). Main outcome measures The predicted proportions who were missed by LFT and viral culture positive and missed by LFT and sources of secondary cases, in each of the three settings. Predictions were compared with those made by mathematical models. Results The analysis predicted that of those with a viral culture positive result, Innova would miss 20% attending an NHS Test-and-Trace centre, 29% without symptoms attending municipal mass testing, and 81% attending university screen testing without symptoms, along with 38%, 47%, and 90% of sources of secondary cases. In comparison, two mathematical models underestimated the numbers of missed infectious individuals (8%, 10%, and 32% in the three settings for one model, whereas the assumptions from the second model made it impossible to miss an infectious individual). Owing to the paucity of usable data, the inputs to the analyses are from limited sources.

Conclusions The proportion of infectious people with SARS-CoV-2 missed by LFTs is substantial enough to be of clinical importance. The proportion missed varied between settings because of different viral load distributions and is likely to be highest in those without symptoms. Key models have substantially overestimated the sensitivity of LFTs compared with empirical data. An urgent need exists for additional robust well designed and reported empirical studies from intended use settings to inform evidence based policy.
<https://www.bmj.com/content/376/bmj-2021-066871>

**title:** Self-testing for asymptomatic non-contacts using rapid antigen tests—is this leading to a cost effective reduction in infection transmission?

bmj | 23rd FEBRUARY 2022

Rapid tests that give near instant results, without the need of a laboratory, offer much promise. But, to ensure value for public money we need rigorous evaluation of test performance in real life settings, and empirical assessment of the consequences—intended and unintended—when mass testing and intervention are applied within a population.Evolution in technology, in the condition being tested for, and other changes in context mean that regular reappraisal of policy is important. Yet commercial and political incentives to promote tests irrespective of evidence can be irresistible. The popularity of testing for asymptomatic people among the public has seldom borne much relationship to actual utility of the test.
<https://www.bmj.com/content/376/bmj.o445>

**title:** Covid-19: Ending the legal requirement to self isolate puts vulnerable people at risk

bmj | 22nd FEBRUARY 2022

The government has just announced that all covid-19 restrictions in England are set to end. Boris Johnson, the UK prime minister, told MPs that he plans to remove the remaining restrictions, including the legal requirement to self isolate for people infected with covid-19. Instead of legislation, voluntary guidance will “advise” people with covid-19 not to attend workplaces. Employers will once again need to develop and implement new rules for their workplaces when the legal requirement to self isolate with covid-19 comes to an end. They should consider carefully how to develop and implement new policies fairly and safely in the workplace so that staff and customers—particularly those who are clinically vulnerable—are not put at risk.
<https://www.bmj.com/content/376/bmj.o461>

**title:** Covid-19: Scientists and medics warn that it is too soon to lift all restrictions in England

bmj | 22nd FEBRUARY 2022

The UK government has announced an end to all covid-19 restrictions in England, saying that vaccines and treatments will be the “first line of defence” from now on. Most of the public will lose access to free tests, and people who become infected with SARS-CoV-2 will no longer be legally required to self isolate, under a “Living with covid” strategy that is designed to shift the focus from government interventions to personal responsibility.But the measures unveiled to MPs by the prime minister on 21 February drew criticism from opposition parties, scientists, and medical leaders, despite some acceptance of the case for rebalancing covid protections and lowering costs. Some experts warned that numbers of omicron cases were still too high to lift restrictions, with a risk of further spread of the virus and insufficient support for certain groups of vulnerable people.
<https://www.bmj.com/content/376/bmj.o469>

**title:** Association of COVID-19 Quarantine Duration and Postquarantine Transmission Risk in 4 University Cohort

jama | 25th FEBRUARY 2022

**Question**  What is the risk of SARS-CoV-2 transmission from individuals leaving test-based quarantines of various durations? **Findings**  In this cohort study of 301 quarantined university students and staff who tested positive for COVID-19, 40 (13.3%) tested negative and were asymptomatic on day 7, implying an approximate 13% postquarantine transmission risk for 7-day test-based quarantine. **Meaning**  To maintain the 5% transmission risk used as the basis for the 7-day guideline, our data suggest that quantitative polymerase chain reaction test–based, nonstrict quarantine should be 10 days.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789427>

**title:** Determining the Optimal Length of Quarantine—Transmission, Social, and Economic Considerations

jama | 25tH FEBRUARY 2022

Elsewhere in *JAMA Network Open*, Liu et al[1](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789434#zic220004r1) used data from 4 universities to empirically estimate the length of time between exposure to COVID-19 and a positive test. They highlight that 13.1% of individuals who went on to test positive were negative and asymptomatic on day 7. Conversion times were shorter for individuals in strict quarantine (7.1% negative and asymptomatic on day 7) and longer for those in nonstrict quarantine (16.0%), likely a result of repeated exposure to infected household. As of December 2021, current US Centers for Disease Control and Prevention (CDC) guidelines for test-based quarantine recommend that individuals test on day 5 and, if the results are negative, may shorten quarantine from 10 or 14 to 7 days.[2](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789434#zic220004r2) However, on the basis of their results, Liu et al[1](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789434#zic220004r1) suggest extensions in test-based quarantine to 8 days for strict quarantine and 10 days for nonstrict quarantine.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789434>

**title:** Transmission of and Infection With COVID-19 Among Vaccinated and Unvaccinated Attendees of an Indoor Wedding Reception in Minnesota

jama | 25th FEBRUARY 2022
 **Question**  What are the characteristics of SARS-CoV-2 infection and transmission among vaccinated and unvaccinated attendees of a large indoor gathering? **Findings**  In this cohort study of 75 individuals, nearly half of attendees at an indoor wedding reception who were tested were infected with the Delta variant of SARS-CoV-2. Unvaccinated attendees had a higher risk of SARS-CoV-2 infection than vaccinated attendees, secondary transmission from vaccinated attendees to vaccinated and unvaccinated contacts was observed, and the index case was identified as an unvaccinated symptomatic child. **Meaning**  These findings suggest that unvaccinated people are at increased risk of contracting SARS-CoV-2 compared with vaccinated people in large social gatherings. <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789424>

**title:** Masks Cut Secondary SARS-CoV-2 Infections by Half

jama | 22nd FEBRUARY 2022

After exposure to someone with SARS-CoV-2 infection, an uninfected person’s risk of infection is cut in half if both people wore masks, researchers reported in *Emerging Infectious Diseases*. Public health authorities in Johnson County, Iowa, launched their study after the Iowa Department of Public Health (IDPH) in September 2020 overrode the CDC’s recommended 14-day quarantine following exposure to SARS-CoV-2. (The CDC has since loosened its quarantine recommendations.) Instead, the IDPH advised that, if both were properly masked, contacts of people with the infection could just monitor their symptoms for 14 days rather than quarantine.
<https://jamanetwork.com/journals/jama/fullarticle/2789302>

**title:** Risk of Second Allergic Reaction to SARS-CoV-2 Vaccines: A Systematic Review and Meta-analysis

jama | 21st FEBRUARY 2022

**Question**  What is the risk of an immediate severe allergic reaction to a second dose of a SARS-CoV-2 mRNA vaccine among individuals who had an immediate allergic reaction of any severity to their first dose? **Findings**  In this systematic review and meta-analysis of 22 studies including 1366 patients revaccinated under the supervision of an allergist, there was a low incidence (0.16%) of immediate severe allergic reactions associated with receiving a second dose of SARS-CoV-2 mRNA vaccine among individuals who had an immediate allergic reaction to their first dose. There were no deaths. **Meaning**  This study suggests that there is a low risk of a severe immediate allergic reaction associated with a second SARS-CoV-2 mRNA vaccine dose among persons who had an immediate allergic reaction to their first dose. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2788991>

**title:** Rare Sudden Sensorineural Hearing Loss Potentially Associated With COVID-19 Vaccination Does Not Outweigh the Benefit of COVID-19 Vaccines

JAMA Otolaryngology | 24th FEBRUARY 2022

Sudden sensorineural hearing loss is an acute onset impairment of hearing that may lead to permanent hearing loss and tinnitus. The exact pathophysiological mechanisms are unknown, and many cases are idiopathic, although viral infection is 1 possible causative factor.[1](https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2789500#oic210015r1) As a result, vaccination against viral infections may play a role in reducing the occurrence of sudden sensorineural hearing loss. However, little is known about sudden sensorineural hearing loss as a potential adverse event after immunization; existing reports of sudden sensorineural hearing loss occurring after vaccination are rare, and an association has not been established.[2](https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2789500#oic210015r2) In this issue of *JAMA Otolaryngology–Head & Neck Surgery*, 2 articles investigate occurrences of sudden sensorineural hearing loss after COVID-19 vaccination.
<https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2789500>

**title:** Association Between the BNT162b2 Messenger RNA COVID-19 Vaccine and the Risk of Sudden Sensorineural Hearing Loss

JAMA Otolaryngology | 24th FEBRUARY 2022

**Question**  Is there an association between the BNT162b2 messenger RNA (mRNA) COVID-19 vaccine and sudden sensorineural hearing loss (SSNHL)? **Findings**  In this cohort study of 2 602 557 patients in Israel, an association was found between the BNT162b2 mRNA COVID-19 vaccine and SSNHL as reflected by the high ratio of observed to expected SSNHL cases; however, the effect size was very small. **Meaning**  Considering the small effect size of this association and the good prognosis for patients with SSNHL, the potential influence of this condition on public health appears to be relatively minor.
<https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2789497>

**title:** Assessment of Sudden Sensorineural Hearing Loss After COVID-19 Vaccination

JAMA Otolaryngology | 24th FEBRUARY 2022

**Question**  Is COVID-19 vaccination associated with sudden sensorineural hearing loss (SSNHL)? **Findings**  In this cross-sectional study and case series involving 555 cases of SSNHL among adults reported to the Centers for Disease Control and Prevention Vaccine Adverse Events Reporting System, no increase in the rate of hearing loss after COVID-19 vaccination was found compared with the incidence in the general population. Assessment of 21 adult patients who presented to tertiary care centers with SSNHL after COVID-19 vaccination did not reveal any apparent associations with respect to clinical or demographic factors. **Meaning**  These results suggest that there is no association between vaccination and the development of SSNHL among adults who received a COVID-19 vaccine.
<https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2789496>

**title:** Myocarditis Following COVID-19 BNT162b2 Vaccination Among Adolescents in Hong Kong

 JAMA Pediatrics | 25th FEBRUARY 2022

Cases of myocarditis following the second dose of messenger RNA (mRNA) vaccine are accruing worldwide, especially in younger male adults and adolescents.[1](https://jamanetwork.com/journals/jamapediatrics/fullarticle/2789584#pld220006r1)-[4](https://jamanetwork.com/journals/jamapediatrics/fullarticle/2789584#pld220006r1) In weighing the risk of myocarditis against the benefit of preventing severe COVID-19, Norway, the UK, and Taiwan have suspended the second dose of mRNA vaccine for adolescents. Similarly, adolescents (aged 12-17 years) in Hong Kong have been recommended to receive 1 dose of BNT162b2 instead of 2 doses 21 days apart since September 15, 2021.
<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2789584>

**recovery / HEALTH MANGEMENT & SERVICES**

**title:** Remote Patient Monitoring During COVID-19: An Unexpected Patient Safety Benefit

jama | 25th FEBRUARY 2022

This Viewpoint explains how some hospitals used home monitoring of pulse oximetry during the COVID-19 pandemic to avoid patient overcrowding and control high patient to staff ratios and how increased use of home monitoring for other vital signs could potentially improve patient safety and decrease costs.
<https://jamanetwork.com/journals/jama/fullarticle/2789635>

**title:** It’s time to trust NHS staff to do the right thing

bmj | 23rd FEBRUARY 2022

The NHS has been warned. The additional funding announced by the government comes with increased scrutiny. Reflecting both public and therefore political concerns, scrutiny will focus on clearing the care backlogs that have built up during the pandemic in line with targets set out in the elective recovery plan … These measures will add to the heavy burden of regulation and reporting requirements under which the NHS already labours. They will ineluctably lead to an increased focus on what is measured with other priorities not covered by targets receiving less attention. The danger then is that the emphasis on delivery disempowers local leaders at best and results in gaming at worst as leaders seek to avoid being penalised or sacked when unable to deliver.
<https://www.bmj.com/content/376/bmj.o473>

**title:** Hospitals to return to being paid by activity from this April

bmj | 23rd FEBRUARY 2022

NHS hospitals in England will return to a “payment by results” system from this April as the government seeks to incentivise trusts to tackle the backlog in elective care, it has been reported. The payment scheme, which funds NHS trusts for each patient seen or treated, has been paused since the start of the pandemic in favour of emergency block payments to give trusts more financial certainty while they were unable to operate at previous activity levels. But ministers now intend to reintroduce the “blended” version of payment by results that was first rolled out in 2019-20, whereby trusts receive a fixed amount of funding based on expected activity and then a “top-up” if they exceed their targets for delivering procedures such as hip and knee operations, the Telegraph reported.
<https://www.bmj.com/content/376/bmj.o484>

**title:** NHS England sets out ambitious new mental health access standards to deal with pandemic demand

bmj | 24th FEBRUARY 2022

People seeking mental health support in the community should get help within four weeks, while those with an urgent mental health need should be seen by a community crisis team within 24 hours, according to new proposed standards set out by NHS England and NHS Improvement.
<https://www.bmj.com/content/376/bmj.o486>

**title:** Successfully Implementing Digital Health to Ensure Future Global Health Security During Pandemics: A Consensus Statement

JAMA | 23rd FEBRUARY 2022

Question  What digital health recommendations should be adopted by the global health community to address the challenges of current and future pandemics? Findings  By engaging a diverse stakeholder group of 13 leaders in the fields of public health, digital health, and health care, a consensus was reached on how to implement digital health recommendations to address the challenges of current and future pandemics across 5 main themes: team, transparency and trust, technology, techquity (the strategic development and deployment of technology in health care and health to achieve health equity), and transformation. Meaning  This consensus statement provides a roadmap for the implementation of digital health policy by stakeholders, including governments, to prepare for and address current and future pandemics.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789277>

**title:** Digital Health Emergency Management—Pandemics and Beyond

JAMA | 23rd FEBRUARY 2022

Major public health emergencies can provide both the impetus and windows of opportunity to innovate and advance existing health care systems. The COVID-19 pandemic has highlighted the critical importance of digital health systems (including digital health data, tools, technologies, and services) in monitoring and combating adverse health effects of the pandemic. Simultaneously, relevant health care stakeholders have often been underprepared to fully embrace digital health solutions and rise to the pandemic challenge.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789276>

**title:** Association of an Advance Care Planning Video and Communication Intervention With Documentation of Advance Care Planning Among Older Adults: A Nonrandomized Controlled Trial

JAMA | 24th FEBRUARY 2022

Question  Can an advance care planning (ACP) video and communication intervention promote ACP for elderly patients during the ongoing COVID-19 pandemic? Findings  This pre-post, open-cohort nonrandomized controlled trial compared ACP documentation during three 6-month periods: pre–COVID-19 (14 107 patients), COVID-19 wave 1 (12 806 patients), and an intervention period (15 106 patients). The ACP documentation rates were 17.9% in the pre–COVID-19 period, 12.5% in the COVID-19 wave 1 period, and 23.7% in the intervention period; ACP rates during the intervention period were highest compared with the 2 other periods. Meaning  The use of an ACP video and communication intervention may promote ACP for elderly adults during the evolving COVID-19 pandemic.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789397>

**title:** Global, regional, and national minimum estimates of children affected by COVID-19-associated orphanhood and caregiver death, by age and family circumstance up to Oct 31, 2021: an updated modelling study

The Lancet Child & Adolescent Health| 24th FEBRUARY 2022

In the 6 months following our estimates from March 1, 2020, to April 30, 2021, the proliferation of new coronavirus variants, updated mortality data, and disparities in vaccine access increased the amount of children experiencing COVID-19-associated orphanhood. To inform responses, we aimed to model the increases in numbers of children affected by COVID-19-associated orphanhood and caregiver death, as well as the cumulative orphanhood age-group distribution and circumstance (maternal or paternal orphanhood).
[https://www.thelancet.com/journals/lanchi/article/piis2352-4642(22)00005-0/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642%2822%2900005-0/fulltext)

**title:** Integrative approaches required to support children affected by COVID-19

The Lancet Child & Adolescent Health| 24th FEBRUARY 2022

In the 6 months following our estimates from March 1, 2020, to April 30, 2021, the proliferation of new coronavirus variants, updated mortality data, and disparities in vaccine access increased the amount of children experiencing COVID-19-associated orphanhood. To inform responses, we aimed to model the increases in numbers of children affected by COVID-19-associated orphanhood and caregiver death, as well as the cumulative orphanhood age-group distribution and circumstance (maternal or paternal orphanhood).
[https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00031-1/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642%2822%2900031-1/fulltext)

**workforce wellbeing**

**title:** Covid-19: Vaccine programme a success, but staff burnout is a major risk, auditors warn

bmj | 25th FEBRUARY 2022

The UK’s covid-19 vaccination programme has been a success and has delivered value for money so far, but future success could be undermined by staff burnout and constrained capacity, the UK’s public spending watchdog has warned. In a report published on 25 February the National Audit Office said the programme had successfully achieved unprecedented moving targets, helping to save lives and reduce serious illness and hospital admissions.1 But it cautioned, “There are considerable risks to the programme’s continuing success. There are still around 3.7 million unvaccinated adults who are unevenly spread throughout the population. Our assessment is that staffing remains a major risk, due to staff burnout, and the lack of surplus capacity in the healthcare system generally.”
<https://www.bmj.com/content/376/bmj.o493>

**HEALTH INEQUALITIES**

**title:** Ethnic differences in covid-19 death rates

bmj | 23rd FEBRUARY 2022

Higher covid-19 mortality among ethnic minority groups in England and Wales has been a constant finding throughout the pandemic. Ethnic differences lessen substantially when factors that increase the risk of infection and adverse outcomes are taken into account—such as geography, deprivation, occupation, household composition, living arrangements, and pre-existing health conditions. The Office for National Statistics is now also examining the effect of vaccination status. Its latest analysis shows that ethnic differences in mortality have changed over time, reflecting the complex relation between ethnicity and risk of dying from the virus, and highlighting the need for ongoing monitoring.
<https://www.bmj.com/content/376/bmj.o427>

**title:** How covid-19 has exposed the weaknesses in rural healthcare

bmj | 25th FEBRUARY 2022

Rural regions made vulnerable by limited healthcare infrastructure, lower rates of vaccination, and opposition to government policies are the new frontlines in the pandemic. Yet support systems have not adjusted to the growing rural needs for health education, testing, vaccination, and treatment. **Michael Forster Rothbart, Kata Karáth,** and**Lungelo Ndhlovu**report from the US, Ecuador, and Zimbabwe.
<https://www.bmj.com/content/376/bmj.o232>

**title:** Addressing Vaccine Inequity — Covid-19 Vaccines as a Global Public Good [editorial]

Nejm | 23rd FEBRUARY 2022

The first peer-reviewed clinical trial evidence that a Covid-19 vaccine provided robust protection against SARS-CoV-2 infection was published in the Journal in December 2020,1 less than a year after the sequence of the viral genome was reported. This unprecedentedly rapid development of vaccines was a scientific triumph. In the year since, about 62% of the world’s population has received at least one dose of a Covid-19 vaccine, and 54% have completed the primary vaccine series.2 This would appear to be a landmark success in global health mobilization.The truth, of course, is very different. The availability of Covid-19 vaccines differs vastly across the globe (Figure 1). While several wealthy countries have exceeded 90% vaccine coverage, only about 11% of all people in low-income countries have received at least one dose, and only 25% of our health care colleagues in Africa were fully vaccinated by November, before the omicron wave.3 Approximately three billion people worldwide have not received a single dose… <https://www.nejm.org/doi/full/10.1056/NEJMe2202547?query=featured_coronavirus>

**title:** Vaccine apartheid: global cooperation and equity

The Lancet| 23rd FEBRUARY 2022

Widening gaps in global vaccine equity have led to a two-track pandemic with booster COVID-19 vaccinations proliferating in high-income countries (HICs) and first doses not yet reaching all populations in low-income countries (LICs). Early in the pandemic, the COVID-19 Vaccines Global Access Facility (COVAX) promised equitable vaccine supplies for all countries. However, with insufficient funds and donations, COVAX has faltered, failing to meet even half of its 2021 target of delivering 2 billion doses.  An open letter to G20 leaders in October, 2021 highlighted how 133 doses per 100 people have been given in HICs compared with four doses per 100 people in LICs.  The WHO Director-General has called the divide a “vaccine apartheid”, speaking beyond the phrase “vaccine inequity” to emphasise the scope of this moral failure and make explicit comparisons to the South African system of institutionalised racial segregation. Unabated SARS-CoV-2 transmission in LICs offers fertile soil for new variants to emerge, and WHO has argued that deracinating the roots of the pandemic will require us to vaccinate the world.  But how do we achieve global vaccination?
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00328-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2822%2900328-2/fulltext)

**title:** The global COVID-19 treatment divide

the lancet | 26th FEBRUARY 2022

Experts warn of huge global inequities in access to new treatments for COVID-19. Ann Danaiya Usher reports. The brutal logic that has divided the world into vaccine haves and have-nots is now being repeated as game-changing COVID-19 drugs like Pfizer's oral antiviral Paxlovid (nirmatrelvir–ritonavir) enter the market. “The global community is sleepwalking into yet another great divergence when it comes to medical technologies”, says Zain Rizvi, lawyer at the Washington-based advocacy organisation Public Citizen. “We have lived through more than a year of vaccine apartheid. And now we are poised at this moment to see huge inequalities in treatment access.”
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00372-5/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2822%2900372-5/fulltext)

**title:** Geographical Representation of Low- and Middle-Income Countries in Randomized Clinical Trials for COVID-19

jama | 25th FEBRUARY 2022

COVID-19 has amplified inequalities in global health and socioeconomic outcomes between HICs and LMICs.2These disparities extend to both participation in and leadership of COVID-19 RCTs published in leading medical journals. The majority of trial participants and sponsors were from HICs reflecting available research infrastructure and opportunities for sponsorship. Our findings have broad implications for global generalizability of results from these RCTs to LMIC populations, prioritization of research questions most relevant to LMIC, and for building research infrastructure in LMICs to perform high-quality RCTs.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789429>

**other**

**title:** Covid-19: Mexico City gave ivermectin kits to people with covid in “unethical” experiment

bmj | 22nd FEBRUARY 2022

The government of Mexico City handed out nearly 200 000 “ivermectin based kits” last year to people who had tested positive for covid-19, without telling them they were subjects in an experiment on the drug’s effectiveness. The results of that experiment were then written up by public officials in an article placed on popular US preprint server SocArXiv. It became one of site’s most viewed articles, claiming that ivermectin had reduced hospital admissions by 52-76%. But those officials have been under fire at home since SocArXiv withdrew the paper earlier this month, calling it “either very poor quality or else deliberately false and misleading.” Opposition deputies in Mexico City’s Congress demanded hearings and said they would bring legal action against the paper’s lead author, José Merino, head of the city’s Digital Agency for Public Innovation.
<https://www.bmj.com/content/376/bmj.o453>

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[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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