COVID-19 weekly update

February 21st, 2022

**clinical management**

**Title:** Early identification of patients admitted to hospital for covid-19 at risk of clinical deterioration: model development and multisite external validation study

bmj| 17th February

**Objective** To create and validate a simple and transferable machine learning model from electronic health record data to accurately predict clinical deterioration in patients with covid-19 across institutions, through use of a novel paradigm for model development and code sharing.

**Design** Retrospective cohort study.

**Setting** One US hospital during 2015-21 was used for model training and internal validation. External validation was conducted on patients admitted to hospital with covid-19 at 12 other US medical centers during 2020-21.

**Participants** 33 119 adults (≥18 years) admitted to hospital with respiratory distress or covid-19.

**Main outcome measures** An ensemble of linear models was trained on the development cohort to predict a composite outcome of clinical deterioration within the first five days of hospital admission, defined as in-hospital mortality or any of three treatments indicating severe illness: mechanical ventilation, heated high flow nasal cannula, or intravenous vasopressors. The model was based on nine clinical and personal characteristic variables selected from 2686 variables available in the electronic health record. Internal and external validation performance was measured using the area under the receiver operating characteristic curve (AUROC) and the expected calibration error—the difference between predicted risk and actual risk. Potential bed day savings were estimated by calculating how many bed days hospitals could save per patient if low risk patients identified by the model were discharged early.

**Results** 9291 covid-19 related hospital admissions at 13 medical centers were used for model validation, of which 1510 (16.3%) were related to the primary outcome. When the model was applied to the internal validation cohort, it achieved an AUROC of 0.80 (95% confidence interval 0.77 to 0.84) and an expected calibration error of 0.01 (95% confidence interval 0.00 to 0.02). Performance was consistent when validated in the 12 external medical centers (AUROC range 0.77-0.84), across subgroups of sex, age, race, and ethnicity (AUROC range 0.78-0.84), and across quarters (AUROC range 0.73-0.83). Using the model to triage low risk patients could potentially save up to 7.8 bed days per patient resulting from early discharge.

**Conclusion** A model to predict clinical deterioration was developed rapidly in response to the covid-19 pandemic at a single hospital, was applied externally without the sharing of data, and performed well across multiple medical centers, patient subgroups, and time periods, showing its potential as a tool for use in optimizing healthcare resources.

Full article: [Early identification of patients admitted to hospital for covid-19 at risk of clinical deterioration: model development and multisite external validation study | The BMJ](https://www.bmj.com/content/376/bmj-2021-068576)

**Title:** Risks of mental health outcomes in people with covid-19: cohort study

BMJ| 16th February

**Objective** To estimate the risks of incident mental health disorders in survivors of the acute phase of covid-19.

**Design** Cohort study.

**Setting** US Department of Veterans Affairs.

**Participants** Cohort comprising 153 848 people who survived the first 30 days of SARS-CoV-2 infection, and two control groups: a contemporary group (n=5 637 840) with no evidence of SARS-CoV-2, and a historical control group (n=5 859 251) that predated the covid-19 pandemic.

**Main outcomes measures** Risks of prespecified incident mental health outcomes, calculated as hazard ratio and absolute risk difference per 1000 people at one year, with corresponding 95% confidence intervals. Predefined covariates and algorithmically selected high dimensional covariates were used to balance the covid-19 and control groups through inverse weighting.

**Results** The covid-19 group showed an increased risk of incident anxiety disorders (hazard ratio 1.35 (95% confidence interval 1.30 to 1.39); risk difference 11.06 (95% confidence interval 9.64 to 12.53) per 1000 people at one year), depressive disorders (1.39 (1.34 to 1.43); 15.12 (13.38 to 16.91) per 1000 people at one year), stress and adjustment disorders (1.38 (1.34 to 1.43); 13.29 (11.71 to 14.92) per 1000 people at one year), and use of antidepressants (1.55 (1.50 to 1.60); 21.59 (19.63 to 23.60) per 1000 people at one year) and benzodiazepines (1.65 (1.58 to 1.72); 10.46 (9.37 to 11.61) per 1000 people at one year). The risk of incident opioid prescriptions also increased (1.76 (1.71 to 1.81); 35.90 (33.61 to 38.25) per 1000 people at one year), opioid use disorders (1.34 (1.21 to 1.48); 0.96 (0.59 to 1.37) per 1000 people at one year), and other (non-opioid) substance use disorders (1.20 (1.15 to 1.26); 4.34 (3.22 to 5.51) per 1000 people at one year). The covid-19 group also showed an increased risk of incident neurocognitive decline (1.80 (1.72 to 1.89); 10.75 (9.65 to 11.91) per 1000 people at one year) and sleep disorders (1.41 (1.38 to 1.45); 23.80 (21.65 to 26.00) per 1000 people at one year). The risk of any incident mental health diagnosis or prescription was increased (1.60 (1.55 to 1.66); 64.38 (58.90 to 70.01) per 1000 people at one year). The risks of examined outcomes were increased even among people who were not admitted to hospital and were highest among those who were admitted to hospital during the acute phase of covid-19. Results were consistent with those in the historical control group. The risk of incident mental health disorders was consistently higher in the covid-19 group in comparisons of people with covid-19 not admitted to hospital versus those not admitted to hospital for seasonal influenza, admitted to hospital with covid-19 versus admitted to hospital with seasonal influenza, and admitted to hospital with covid-19 versus admitted to hospital for any other cause.

**Conclusions** The findings suggest that people who survive the acute phase of covid-19 are at increased risk of an array of incident mental health disorders. Tackling mental health disorders among survivors of covid-19 should be a priority.

Full article: [Risks of mental health outcomes in people with covid-19: cohort study | The BMJ](https://www.bmj.com/content/376/bmj-2021-068993)

**Title:** Association between pharmaceutical modulation of oestrogen in postmenopausal women in Sweden and death due to COVID-19: a cohort study

BMJ OPEN| 14th February

**Objective** Determine whether augmentation of oestrogen in postmenopausal women decreases the risk of death following COVID-19.

**Design** Nationwide registry-based study in Sweden based on registries from the Swedish Public Health Agency (all individuals who tested positive for SARS-CoV-2); Statistics Sweden (socioeconomical variables) and the National Board of Health and Welfare (causes of death).

**Participants** Postmenopausal women between 50 and 80 years of age with verified COVID-19.

**Interventions** Pharmaceutical modulation of oestrogen as defined by (1) women with previously diagnosed breast cancer and receiving endocrine therapy (decreased systemic oestrogen levels); (2) women receiving hormone replacement therapy (increased systemic oestrogen levels) and (3) a control group not fulfilling requirements for group 1 or 2 (postmenopausal oestrogen levels). Adjustments were made for potential confounders such as age, annual disposable income (richest group as the reference category), highest level of education (primary, secondary and tertiary (reference)) and the weighted Charlson Comorbidity Index (wCCI).

**Primary outcome measure** Death following COVID-19.

**Results** From a nationwide cohort consisting of 49 853 women diagnosed with COVID-19 between 4 February and 14 September 2020 in Sweden, 16 693 were between 50 and 80 years of age. We included 14 685 women in the study with 11 923 (81%) in the control group, 227 (2%) women in group 1 and 2535 (17%) women in group 2. The unadjusted ORs for death following COVID-19 were 2.35 (95% CI 1.51 to 3.65) for group 1 and 0.45 (0.34 to 0.6) for group 2. Only the adjusted OR for death remained significant for group 2 with OR 0.47 (0.34 to 0.63). Absolute risk of death was 4.6% for the control group vs 10.1% and 2.1%, for the decreased and increased oestrogen groups, respectively. The risk of death due to COVID-19 was significantly associated with: age, OR 1.15 (1.14 to 1.17); annual income, poorest 2.79 (1.96 to 3.97), poor 2.43 (91.71 to 3.46) and middle 1.64 (1.11 to 2.41); and education (primary 1.4 (1.07 to 1.81)) and wCCI 1.13 (1.1 to 1.16).

**Conclusions** Oestrogen supplementation in postmenopausal women is associated with a decreased risk of dying from COVID-19 in this nationwide cohort study. These findings are limited by the retrospective and non-randomised design. Further randomised intervention trials are warranted.

Full article: [Association between pharmaceutical modulation of oestrogen in postmenopausal women in Sweden and death due to COVID-19: a cohort study | BMJ Open](https://bmjopen.bmj.com/content/12/2/e053032)

**Title:** Paediatric hospitalisations due to COVID-19 during the first SARS-CoV-2 omicron (B.1.1.529) variant wave in South Africa: a multicentre observational study

the lancet child and adolescent health| 17th february

Background

South Africa reported a notable increase in COVID-19 cases from mid-November, 2021, onwards, starting in Tshwane District, which coincided with the rapid community spread of the SARS-CoV-2 omicron (B.1.1.529) variant. This increased infection rate coincided with a rapid increase in paediatric COVID-19-associated admissions to hospital (hereafter referred to as hospitalisations).

Methods

The Tshwane Maternal-Child COVID-19 study is a multicentre observational study in which we investigated the clinical manifestations and outcomes of paediatric patients (aged ≤19 years) who had tested positive for SARS-CoV-2 and were admitted to hospital for any reason in Tshwane District during a 6-week period at the beginning of the fourth wave of the COVID-19 epidemic in South Africa. We used five data sources, which were: (1) COVID-19 line lists; (2) collated SARS-CoV-2 testing data; (3) SARS-CoV-2 genomic sequencing data; (4) COVID-19 hospitalisation surveillance; and (5) clinical data of public sector COVID-19-associated hospitalisations among children aged 13 years and younger.

Findings

Between Oct 31 and Dec 11, 2021, 6287 children and adolescents in Tshwane District were recorded as having COVID-19. During this period, 2550 people with COVID-19 were hospitalised, of whom 462 (18%) were aged 19 years or younger. The number of paediatric cases was higher than in the three previous SARS-CoV-2 waves, uncharacteristically increasing ahead of adult hospitalisations. 75 viral samples from adults and children in the district were sequenced, of which 74 (99%) were of the omicron variant. Detailed clinical notes were available for 138 (75%) of 183 children aged ≤13 years with COVID-19 who were hospitalised. 87 (63%) of 138 children were aged 0–4 years. In 61 (44%) of 138 cases COVID-19 was the primary diagnosis, among whom symptoms included fever (37 [61%] of 61), cough (35 [57%]), shortness of breath (19 [31%]), seizures (19 [31%]), vomiting (16 [26%]), and diarrhoea (15 [25%]). Median length of hospital stay was 2 days [IQR 1–3]). 122 (88%) of 138 children with available data needed standard ward care and 27 (20%) needed oxygen therapy. Seven (5%) of 138 children were ventilated and four (3%) died during the study period, all related to complex underlying copathologies. All children and 77 (92%) of 84 parents or guardians with available data were unvaccinated to COVID-19.

Interpretation

Rapid increases in paediatric COVID-19 cases and hospitalisations mirror high community transmission of the SARS-CoV-2 omicron variant in Tshwane District, South Africa. Continued monitoring is needed to understand the long-term effect of the omicron variant on children and adolescents.

Full article: [Paediatric hospitalisations due to COVID-19 during the first SARS-CoV-2 omicron (B.1.1.529) variant wave in South Africa: a multicentre observational study - The Lancet Child & Adolescent Health](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00027-X/fulltext)

**Title:** Long-term clinical outcomes of COVID-19 patients treated with imatinib

The lancet respiratory medicine| 17th February

Hypoxaemia in COVID-19 is primarily caused by disruption of the alveolocapillary barrier on inflammation and dysfunction of the endothelium.1 To date, antiviral or immune-modulatory treatment options have been thoroughly studied, yet there is no approved therapy targeting endothelial dysfunction. Imatinib is a tyrosine kinase inhibitor that attenuates vascular leakage under inflammatory conditions.2 In the CounterCOVID study, patients admitted to hospital with COVID-19 treated with imatinib had a shorter duration of invasive ventilation and shorter stay at the intensive care unit (ICU).3 Although a signal for reduced mortality was observed, a definite answer on mortality was precluded by correction for imbalances in patient characteristics at baseline and the short follow-up of 28 days. Here we report the 90-day outcomes of the CounterCOVID study and investigate the mechanisms underlying the clinical benefit of imatinib.

Full article: [Long-term clinical outcomes of COVID-19 patients treated with imatinib - The Lancet Respiratory Medicine](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00052-2/fulltext)

**Title:** Geriatric risk factors for serious COVID-19 outcomes among older adults with cancer: a cohort study from the COVID-19 and Cancer Consortium

THE LANCET HEALTH LONGEVITY| 14th February

Background

Older age is associated with poorer outcomes of SARS-CoV-2 infection, although the heterogeneity of ageing results in some older adults being at greater risk than others. The objective of this study was to quantify the association of a novel geriatric risk index, comprising age, modified Charlson comorbidity index, and Eastern Cooperative Oncology Group performance status, with COVID-19 severity and 30-day mortality among older adults with cancer.

Methods

In this cohort study, we enrolled patients aged 60 years and older with a current or previous cancer diagnosis (excluding those with non-invasive cancers and premalignant or non-malignant conditions) and a current or previous laboratory-confirmed COVID-19 diagnosis who reported to the COVID-19 and Cancer Consortium (CCC19) multinational, multicentre, registry between March 17, 2020, and June 6, 2021. Patients were also excluded for unknown age, missing data resulting in unknown geriatric risk measure, inadequate data quality, or incomplete follow-up resulting in unknown COVID-19 severity. The exposure of interest was the CCC19 geriatric risk index. The primary outcome was COVID-19 severity and the secondary outcome was 30-day all-cause mortality; both were assessed in the full dataset. Adjusted odds ratios (ORs) and 95% CIs were estimated from ordinal and binary logistic regression models.

Findings

5671 patients with cancer and COVID-19 were included in the analysis. Median follow-up time was 56 days (IQR 22–120), and median age was 72 years (IQR 66–79). The CCC19 geriatric risk index identified 2365 (41·7%) patients as standard risk, 2217 (39·1%) patients as intermediate risk, and 1089 (19·2%) as high risk. 36 (0·6%) patients were excluded due to non-calculable geriatric risk index. Compared with standard-risk patients, high-risk patients had significantly higher COVID-19 severity (adjusted OR 7·24; 95% CI 6·20–8·45). 920 (16·2%) of 5671 patients died within 30 days of a COVID-19 diagnosis, including 161 (6·8%) of 2365 standard-risk patients, 409 (18·5%) of 2217 intermediate-risk patients, and 350 (32·1%) of 1089 high-risk patients. High-risk patients had higher adjusted odds of 30-day mortality (adjusted OR 10·7; 95% CI 8·54–13·5) than standard-risk patients.

Interpretation

The CCC19 geriatric risk index was strongly associated with COVID-19 severity and 30-day mortality. Our CCC19 geriatric risk index, based on readily available clinical factors, might provide clinicians with an easy-to-use risk stratification method to identify older adults most at risk for severe COVID-19 as well as mortality.

[Geriatric risk factors for serious COVID-19 outcomes among older adults with cancer: a cohort study from the COVID-19 and Cancer Consortium - The Lancet Healthy Longevity](https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568(22)00009-5/fulltext)

**Title:** Which children and young people are at higher risk of severe disease and death after hospitalisation with SARS-CoV-2 infection in children and young people: A systematic review and individual patient meta-analysis

eclinicalmedicine| 11th February

Background

We aimed to describe pre-existing factors associated with severe disease, primarily admission to critical care, and death secondary to SARS-CoV-2 infection in hospitalised children and young people (CYP), within a systematic review and individual patient meta-analysis.

Methods

We searched Pubmed, European PMC, Medline and Embase for case series and cohort studies published between 1st January 2020 and 21st May 2021 which included all CYP admitted to hospital with ≥ 30 CYP with SARS-CoV-2 or ≥ 5 CYP with PIMS-TS or MIS-C. Eligible studies contained (1) details of age, sex, ethnicity or co-morbidities, and (2) an outcome which included admission to critical care, mechanical invasive ventilation, cardiovascular support, or death. Studies reporting outcomes in more restricted groupings of co-morbidities were eligible for narrative review. We used random effects meta-analyses for aggregate study-level data and multilevel mixed effect models for IPD data to examine risk factors (age, sex, comorbidities) associated with admission to critical care and death. Data shown are odds ratios and 95% confidence intervals (CI).

PROSPERO: CRD42021235338

Findings

83 studies were included, 57 (21,549 patients) in the meta-analysis (of which 22 provided IPD) and 26 in the narrative synthesis. Most studies had an element of bias in their design or reporting. Sex was not associated with critical care or death. Compared with CYP aged 1–4 years (reference group), infants (aged <1 year) had increased odds of admission to critical care (OR 1.63 (95% CI 1.40–1.90)) and death (OR 2.08 (1.57–2.86)). Odds of death were increased amongst CYP over 10 years (10–14 years OR 2.15 (1.54–2.98); >14 years OR 2.15 (1.61–2.88)).

The number of comorbid conditions was associated with increased odds of admission to critical care and death for COVID-19 in a step-wise fashion. Compared with CYP without comorbidity, odds ratios for critical care admission were: 1.49 (1.45–1.53) for 1 comorbidity; 2.58 (2.41–2.75) for 2 comorbidities; 2.97 (2.04–4.32) for ≥3 comorbidities. Corresponding odds ratios for death were: 2.15 (1.98–2.34) for 1 comorbidity; 4.63 (4.54–4.74) for 2 comorbidities and 4.98 (3.78–6.65) for ≥3 comorbidities. Odds of admission to critical care were increased for all co-morbidities apart from asthma (0.92 (0.91–0.94)) and malignancy (0.85 (0.17–4.21)) with an increased odds of death in all co-morbidities considered apart from asthma. Neurological and cardiac comorbidities were associated with the greatest increase in odds of severe disease or death. Obesity increased the odds of severe disease and death independently of other comorbidities. IPD analysis demonstrated that, compared to children without co-morbidity, the risk difference of admission to critical care was increased in those with 1 comorbidity by 3.61% (1.87–5.36); 2 comorbidities by 9.26% (4.87–13.65); ≥3 comorbidities 10.83% (4.39–17.28), and for death: 1 comorbidity 1.50% (0.00–3.10); 2 comorbidities 4.40% (-0.10–8.80) and ≥3 co-morbidities 4.70 (0.50–8.90).

Interpretation

Hospitalised CYP at greatest vulnerability of severe disease or death with SARS-CoV-2 infection are infants, teenagers, those with cardiac or neurological conditions, or 2 or more comorbid conditions, and those who are obese. These groups should be considered higher priority for vaccination and for protective shielding when appropriate. Whilst odds ratios were high, the absolute increase in risk for most comorbidities was small compared to children without underlying conditions.

Full article: [Which children and young people are at higher risk of severe disease and death after hospitalisation with SARS-CoV-2 infection in children and young people: A systematic review and individual patient meta-analysis - eClinicalMedicine (thelancet.com)](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(22)00017-7/fulltext)

**Title:** Oral Nirmatrelvir for High-Risk, Nonhospitalized Adults with Covid-19

NEJM| 16th February

**BACKGROUND**

Nirmatrelvir is an orally administered severe acute respiratory syndrome coronavirus 2 main protease (Mpro) inhibitor with potent pan–human-coronavirus activity in vitro.

**METHODS**

We conducted a phase 2–3 double-blind, randomized, controlled trial in which symptomatic, unvaccinated, nonhospitalized adults at high risk for progression to severe coronavirus disease 2019 (Covid-19) were assigned in a 1:1 ratio to receive either 300 mg of nirmatrelvir plus 100 mg of ritonavir (a pharmacokinetic enhancer) or placebo every 12 hours for 5 days. Covid-19–related hospitalization or death from any cause through day 28, viral load, and safety were evaluated.

**RESULTS**

A total of 2246 patients underwent randomization; 1120 patients received nirmatrelvir plus ritonavir (nirmatrelvir group) and 1126 received placebo (placebo group). In the planned interim analysis of patients treated within 3 days after symptom onset (modified intention-to treat population, comprising 774 of the 1361 patients in the full analysis population), the incidence of Covid-19–related hospitalization or death by day 28 was lower in the nirmatrelvir group than in the placebo group by 6.32 percentage points (95% confidence interval [CI], −9.04 to −3.59; P<0.001; relative risk reduction, 89.1%); the incidence was 0.77% (3 of 389 patients) in the nirmatrelvir group, with 0 deaths, as compared with 7.01% (27 of 385 patients) in the placebo group, with 7 deaths. Efficacy was maintained in the final analysis involving the 1379 patients in the modified intention-to-treat population, with a difference of −5.81 percentage points (95% CI, −7.78 to −3.84; P<0.001; relative risk reduction, 88.9%). All 13 deaths occurred in the placebo group. The viral load was lower with nirmaltrelvir plus ritonavir than with placebo at day 5 of treatment, with an adjusted mean difference of −0.868 log10 copies per milliliter when treatment was initiated within 3 days after the onset of symptoms. The incidence of adverse events that emerged during the treatment period was similar in the two groups (any adverse event, 22.6% with nirmatrelvir plus ritonavir vs. 23.9% with placebo; serious adverse events, 1.6% vs. 6.6%; and adverse events leading to discontinuation of the drugs or placebo, 2.1% vs. 4.2%). Dysgeusia (5.6% vs. 0.3%) and diarrhea (3.1% vs. 1.6%) occurred more frequently with nirmatrelvir plus ritonavir than with placebo.

**CONCLUSIONS**

Treatment of symptomatic Covid-19 with nirmatrelvir plus ritonavir resulted in a risk of progression to severe Covid-19 that was 89% lower than the risk with placebo, without evident safety concerns. (Supported by Pfizer; ClinicalTrials.gov number, [**NCT04960202. opens in new tab**](http://clinicaltrials.gov/show/NCT04960202).)

Full article: [Oral Nirmatrelvir for High-Risk, Nonhospitalized Adults with Covid-19 | NEJM](https://www.nejm.org/doi/full/10.1056/NEJMoa2118542?query=featured_coronavirus)

**Title:** Association of COVID-19 Acute Respiratory Distress Syndrome With Symptoms of Posttraumatic Stress Disorder in Family Members After ICU Discharge

JAMA| 18th february

**Question**  Is the risk of posttraumatic stress disorder (PTSD) symptoms in family members of intensive care unit (ICU) patients with acute respiratory distress syndrome (ARDS) due to COVID-19 different from that of family members of patients with non–COVID-19 ARDS?

**Findings**  In a prospective cohort study of 517 family members of ICU patients, PTSD-related symptoms at 90 days after ICU discharge were significantly more common in family members of patients with COVID-19 ARDS compared with non–COVID-19 ARDS (35% vs 19%). In a multivariable analysis adjusting for age, sex, and level of social support, COVID-19 ARDS was independently associated with PTSD-related symptoms in family members (odds ratio, 2.05).

**Meaning**  ARDS due to COVID-19 was associated with a greater risk-adjusted rate of PTSD symptoms among family members compared with ARDS from other causes.

Full article: [Association of COVID-19 Acute Respiratory Distress Syndrome With Symptoms of Posttraumatic Stress Disorder in Family Members After ICU Discharge | Critical Care Medicine | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789436)

**Title:** Estimates of SARS-CoV-2 Omicron Variant Severity in Ontario, Canada

jama| 17th February

The World Health Organization designated Omicron as a variant of concern on November 26, 2021. Omicron has 37 mutations in the spike protein and has rapidly replaced Delta as the dominant variant globally, due to increased immune evasion.[1](https://jamanetwork.com/journals/jama/fullarticle/2789408#jld220012r1) It is less clear how the severity of Omicron compares with that of Delta. Early data from South Africa suggest that Omicron may be less severe than prior lineages[2](https://jamanetwork.com/journals/jama/fullarticle/2789408#jld220012r2); however, the low average age of infected individuals, extent of previous infection, and low vaccination rates affect generalizability to certain other countries. In Ontario, Canada, we examined hospitalizations and deaths associated with Omicron compared with matched patients infected with Delta.

Full research letter: [Estimates of SARS-CoV-2 Omicron Variant Severity in Ontario, Canada | Infectious Diseases | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789408)

**Title:** Efficacy of Ivermectin Treatment on Disease Progression Among Adults With Mild to Moderate COVID-19 and Comorbidities: The I-TECH Randomized Clinical Trial

JAMA Internal medicine: 18th february

**Question**  Does adding ivermectin, an inexpensive and widely available antiparasitic drug, to the standard of care reduce the risk of severe disease in patients with COVID-19 and comorbidities?

**Findings**  In this open-label randomized clinical trial of high-risk patients with COVID-19 in Malaysia, a 5-day course of oral ivermectin administered during the first week of illness did not reduce the risk of developing severe disease compared with standard of care alone.

**Meaning**  The study findings do not support the use of ivermectin for patients with COVID-19.

Full article: [Efficacy of Ivermectin Treatment on Disease Progression Among Adults With Mild to Moderate COVID-19 and Comorbidities: The I-TECH Randomized Clinical Trial | Complementary and Alternative Medicine | JAMA Internal Medicine | JAMA Network](https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2789362)

**Title:** Evaluation of Antimicrobial Drug Use and Concurrent Infections During Hospitalization of Patients With COVID-19 in Japan

jama network open| 18th February

A recent meta-analysis[1](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789175#zld220004r1),[2](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789175#zld220004r2) and a prospective study[3](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789175#zld220004r3) reported that bacterial coinfection and secondary infection among patients with COVID-19 infection are uncommon. However, in these studies, antimicrobial drugs were prescribed for approximately 70% of patients with the disease.[2](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789175#zld220004r2) Therefore, data are needed on patients with COVID-19 infection who do not routinely receive an antimicrobial drug prescription, to identify the true rate of concurrent infection in this patient population. At the National Hospital Organization Tochigi Medical Center in Utsunomiya, Tochigi, Japan, since the beginning of the COVID-19 pandemic, antimicrobial drugs have not been prescribed for patients with COVID-19 infection unless their symptoms are suggestive of another infectious disease. Therefore, we investigated the prevalence of antimicrobial drug use and concurrent infections among patients with COVID-19 during hospitalization.

Full research letter: [Evaluation of Antimicrobial Drug Use and Concurrent Infections During Hospitalization of Patients With COVID-19 in Japan | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789175)

**Title:** COVID-19–Related Chronic Bilateral Dacryoadenitis

jama ophthalmology| 17th february

**Question**  Is SARS-CoV-2 associated with lacrimal gland tissue and dacryoadenitis?

**Findings**  In this case-control study of 2 Japanese women, histopathologic analysis of surgically excised lacrimal gland tissues from the patient with COVID-19 showed characteristic glandular damage and polymorphonuclear leukocyte infiltration within the epithelium, together with marked inflammation made up of lymphocytes and plasma cells surrounding the glands. Immunoreactivity for nucleocapsid protein of SARS-CoV-2 as well as angiotensin-converting enzyme 2 was noted in the lacrimal gland tissue.

**Meaning**  These findings suggest that SARS-CoV-2 may target lacrimal gland tissue and manifest as chronic inflammation.

Full article: [COVID-19–Related Chronic Bilateral Dacryoadenitis: A Clinicopathological Study | External Eye Disease | JAMA Ophthalmology | JAMA Network](https://jamanetwork.com/journals/jamaophthalmology/fullarticle/2788917)

**recovery**

**Title:** Covid-19: Pandemic has disproportionately harmed children’s mental health, report finds

bmj| 18th february

A generation of children and young people are at risk of being left behind because of a combination of soaring waiting times for health services and the pandemic’s disproportionate impact on their mental health, a new analysis has warned.[**1**](https://www.bmj.com/content/376/bmj.o430#ref-1)

Data analysed by QualityWatch, a joint programme between the Nuffield Trust and the Health Foundation, show that the impact of covid-19 has led to an unprecedented increase in demand for mental health services for children and young people in England, most notably for eating disorders.

Jessica Morris, researcher at the Nuffield Trust, said, “In many ways, the wider effects of the pandemic and nationwide lockdowns on children and young people have been greater than the covid-19 infection itself. Despite being much less at risk of hospital admission from the virus, the youngest members of our society have not escaped unscathed and we can see a heavy toll on their mental wellbeing and access to health services.”

Full text: [Covid-19: Pandemic has disproportionately harmed children’s mental health, report finds | The BMJ](https://www.bmj.com/content/376/bmj.o430)

**Title:** Elective Recovery Plan: What You Need To Know

**NHS Confederation| 14th February**

On 8 February 2022, NHS England published the national [Delivery plan for tackling the Covid-19 backlog of elective care](https://www.england.nhs.uk/coronavirus/publication/delivery-plan-for-tackling-the-covid-19-backlog-of-elective-care/). The long-awaited plan sets some clear ambitions and targets to recover the now substantial backlog of care, which sits at the highest number of people waiting to receive planned NHS care since records began in 2007. This briefing summarises the key points from the plan and analyses what it means for our members.

* [Briefing](https://www.nhsconfed.org/publications/elective-recovery-plan-what-you-need-know-0)

**Title:** Running Hot: The Impact Of The Pandemic On Mental Health Services

**NHS Confederation| 21st February**

The Covid-19 pandemic has had a significant impact on people’s mental health, and the knock-on effect is putting services and partner organisations under considerable pressure. NHS Confederation members report a steep post-pandemic increase in the severity of the mental health needs of the people presenting to their services, especially in children and young people. This briefing outlines the current context, the case for change in mental health support, and calls for action from the government including a comprehensive plan to respond to the growing demand for mental health care in England.

* [Briefing](https://www.nhsconfed.org/publications/running-hot)

**Title:** Growing Problems, In Depth: The Impact Of Covid-19 On Health Care For Children And Young People In England

**QualityWatch| 21st February**

This analysis from QualityWatch (a Nuffield Trust and Health Foundation programme) shows that the pandemic has led to an unprecedented increase in demand for mental health services for children and young people. Despite children and young people being ten times less likely to be hospitalised with Covid, the period has had a heavy toll on them. The briefing explains the findings and discusses the potental implications for the younger generation.

* [Briefing](https://www.nuffieldtrust.org.uk/resource/growing-problems-in-detail-covid-19-s-impact-on-health-care-for-children-and-young-people-in-england)
* [More detail](https://www.nuffieldtrust.org.uk/public/files/2022-01/growing-problems)

**Infection control**

**Title:** Covid-19: Antibodies after AstraZeneca and Pfizer vaccines decrease with age and are higher in women, data show

bmj| 18th February

SARS-CoV-2 antibody levels after receiving the AstraZeneca or Pfizer-BioNTech vaccine decrease with age and are higher in females and people with prior infection, show data from the Real-time Assessment of Community Transmission (React-2) study.[**1**](https://www.bmj.com/content/376/bmj.o428#ref-1)

The study, led by Imperial College London, analysed self-reported results from Fortress lateral flow tests to detect antibodies in a drop of blood from a finger prick. Data were collected from 212 102 adults from January to May 2021, of whom 71 923 (33.9%) had received at least one dose of Pfizer-BioNTech and 139 067 (65.6%) at least one dose of AstraZeneca.

Results published in *Nature Communications* showed that, after either of the vaccines, antibody positivity peaked four to five weeks after the first dose and then declined until after second doses were given.[**1**](https://www.bmj.com/content/376/bmj.o428#ref-1) “For both vaccines, there was a clear increase in the proportion of individuals testing positive after second doses,” the researchers said.

Of 68 060 adults who had received their second vaccine dose at least 21 days earlier, nearly 100% of respondents had antibodies to the virus after a second dose of Pfizer. The figure dropped significantly in people who had AstraZeneca, particularly in the oldest age groups (72.7% (95% confidence interval 70.9% to 74.4%) at age 75 and above). Overall, antibody positivity was higher in those who had received the Pfizer vaccine rather than AstraZeneca (odds ratio 3.67 (3.49 to 3.85)).

Data on both vaccines showed that antibody positivity was lower in older people, with an odds ratio of 0.30 (0.24 to 0.37) in those aged over 75 versus those aged 35-44; higher in women than men (1.37 (1.30 to 1.43)); and higher in people with prior infection (2.39 (2.18 to 2.63)).

After two vaccine doses, antibody positivity was substantially lower (0.16 (0.12 to 0.22)) in people who reported being an organ transplant recipient or having a weakened immune system from illness or treatment. Positivity was also lower in people with diabetes, stroke, kidney, liver, lung or neurological disease, cancer, and depression.

Full article: [Covid-19: Antibodies after AstraZeneca and Pfizer vaccines decrease with age and are higher in women, data show | The BMJ](https://www.bmj.com/content/376/bmj.o428)

**Title:** Covid-19: Vaccine will be offered to 5-11 year olds throughout UK

bmj| 16th February

England and Northern Ireland have followed Scotland and Wales in announcing that all children aged 5-11 years will be offered the covid-19 vaccine, in line with advice from the Joint Committee on Vaccination and Immunisation (JCVI).[**1**](https://www.bmj.com/content/376/bmj.o411#ref-1)

England’s health and social care secretary, Sajid Javid, said that the offer was “non-urgent” and would be made to all children in April.

The JCVI’s advice was handed to the UK government more than a week ago and was expected to be published on 11 February. Media reports have suggested that a disagreement with the government led to the delay in publication.[**2**](https://www.bmj.com/content/376/bmj.o411#ref-2)

Full news article: [Covid-19: Vaccine will be offered to 5-11 year olds throughout UK | The BMJ](https://www.bmj.com/content/376/bmj.o411)

**Title:** Covid-19: Mask mandates fall across US against public health advice

bmj| 16th February

Indoor mask mandates are being abandoned in jurisdictions across the United States as politicians grappling with pandemic fatigue seek to restore a sense of normalcy, despite warnings from the US Centers for Disease Control and Prevention that the country is not ready.

“We continue to recommend masking in areas of high and substantial transmission,” said CDC director Rochelle Walensky at a White House briefing. “That’s much of the country right now, in public indoor settings.”

Full news article: [Covid-19: Mask mandates fall across US against public health advice | The BMJ](https://www.bmj.com/content/376/bmj.o405)

**Title:** Covid-19: Vaccinated people are less likely to get long covid, review finds

bmj| 16th february

People who had been fully vaccinated against covid-19 were around half as likely to develop long covid symptoms as people who had received only one vaccine dose or were unvaccinated, the UK Health Security Agency has said.[**1**](https://www.bmj.com/content/376/bmj.o407#ref-1)

The agency conducted a rapid review of evidence, including 15 UK and international studies up to January 2022. Being vaccinated was defined as having two doses of the Pfizer-BioNTech, Oxford-AstraZeneca, or Moderna vaccine or one dose of the Janssen vaccine.

The review found that vaccine effectiveness against most post-covid symptoms in adults was highest in people over 60 and lowest in those aged 19 to 35.

Around 2% of the UK population have reported symptoms of long covid (or “post-covid syndrome”), which can last for more than four weeks after the initial SARS-CoV-2 infection. The most common symptoms are fatigue, shortness of breath, and muscle or joint pain.

Of eight studies that looked at the effect of vaccinations administered before infection, six suggested that vaccinated patients (those with one or two doses) were less likely than unvaccinated patients to develop symptoms of long covid in the short term (four weeks after infection), the medium term (12 to 20 weeks after infection), and the long term (six months after infection). As all eight studies included only participants who had caught covid-19, the researchers noted that the effect of vaccination on reduced incidence of covid-19 was not accounted for.

Full news article: [Covid-19: Vaccinated people are less likely to get long covid, review finds | The BMJ](https://www.bmj.com/content/376/bmj.o407)

**Title:** Covid-19: Show us evidence for lifting restrictions, doctors tell Johnson

BMJ| 15th February

Doctors and scientists have warned the prime minister that SARS-CoV-2, and not politics, should dictate the pace at which the UK lifts measures to contain the pandemic.

They expressed their concern after Boris Johnson’s announcement during prime minister’s questions in parliament on 9 February that he intended to end all remaining restrictions four weeks early if “encouraging trends” continued. The move would see the restrictions, including the current legal requirement to self-isolate after a positive test result, ending as early as 24 February.

The BMA responded by calling for the government to provide evidence for its position. Penelope Toff, chair of the association’s public health medicine committee, said, “With case rates still incredibly high and hundreds of deaths each day, the suggestion that self-isolation may be removed this month runs contrary to good public health practice. We must question on what scientific basis this decision is being made, and the government needs to show the evidence behind its proposals.”

Full news article: [Covid-19: Show us evidence for lifting restrictions, doctors tell Johnson | The BMJ](https://www.bmj.com/content/376/bmj.o383)

**Title:** Generation time of the alpha and delta SARS-CoV-2 variants: an epidemiological analysis

the lancet infectious diseases| 14th February

In May, 2021, the delta (B.1.617.2) SARS-CoV-2 variant became dominant in the UK, superseded by the omicron (B.1.1.529) variant in December, 2021. The delta variant is associated with increased transmissibility compared with the alpha variant, which was the dominant variant in the UK between December, 2020, and May, 2021. To understand transmission and the effectiveness of interventions, we aimed to investigate whether the delta variant generation time (the interval between infections in infector–infectee pairs) is shorter—ie, transmissions are happening more quickly—than that of the alpha variant.

Full article: [Generation time of the alpha and delta SARS-CoV-2 variants: an epidemiological analysis - The Lancet Infectious Diseases](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00001-9/fulltext)

**Title:** The effect of social deprivation on the dynamic of SARS-CoV-2 infection in France: a population-based analysis

THE LANCET PUBLIC HEALTH| 14th February

Background

Data on health inequalities related to the dynamic of SARS-CoV-2 infection in France are scarce. The aim of this study was to analyse the association between an area-based deprivation indicator and SARS-CoV-2 incidence, positivity, and testing rates between May 2020 and April 2021.

Methods

We analysed data reported to the Système d'Information de Dépistage Populationnel surveillance system between May 14, 2020 and April 29, 2021, which records the results of all SARS-CoV-2 tests in France. Residential addresses of tested individuals were geocoded to retrieve the associated aggregated units for the statistical information (IRIS) scale, corresponding to an area comprising 2000 inhabitants relatively homogenous in terms of socioeconomic characteristics. A social deprivation score was assigned to each area using the European Deprivation Index (EDI). We fitted negative binomial generalised additive models to model the age-standardised and sex-standardised ratios for SARS-CoV-2 incidence, positivity rates, and testing rates, and to estimate incidence rate ratios (IRRs) and 95% CIs of their association with EDI quintiles, using the first quintile (least deprived) as the reference category, adjusted for week, population density, and region.

Findings

Analyses were based on 70 990 478 SARS-CoV-2 tests, of which 5 000 972 were positive. SARS-CoV-2 incidence was higher in the most deprived areas than the least deprived areas (IRR 1·148 [95% CI 1·138–1·158]) and positivity rates were also higher (IRR 1·283 [1·273–1·294]), whereas testing rates were lower in the most deprived areas than the least deprived areas (IRR 0·905 [0·904–0·907]). SARS-CoV-2 incidence and positivity rates remained higher in the most deprived areas than the least deprived areas during the second and third national lockdowns, and variation in testing rate was observed according to population density.

Interpretation

Our results highlight a positive social gradient between deprivation and the risk of testing positive for SARS-CoV-2, with the highest risk among individuals living in the most deprived areas and a negative social gradient for testing rate. These findings might reflect structural barriers to health-care access in France and lower capacity of deprived populations to benefit from protective measures.

Full article: [The effect of social deprivation on the dynamic of SARS-CoV-2 infection in France: a population-based analysis - The Lancet Public Health](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(22)00007-X/fulltext)

**Title:** Protection against SARS-CoV-2 after Covid-19 Vaccination and Previous Infection

jama| 16th February 2022

**BACKGROUND**

The duration and effectiveness of immunity from infection with and vaccination against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are relevant to pandemic policy interventions, including the timing of vaccine boosters.

**METHODS**

We investigated the duration and effectiveness of immunity in a prospective cohort of asymptomatic health care workers in the United Kingdom who underwent routine polymerase-chain-reaction (PCR) testing. Vaccine effectiveness (≤10 months after the first dose of vaccine) and infection-acquired immunity were assessed by comparing the time to PCR-confirmed infection in vaccinated persons with that in unvaccinated persons, stratified according to previous infection status. We used a Cox regression model with adjustment for previous SARS-CoV-2 infection status, vaccine type and dosing interval, demographic characteristics, and workplace exposure to SARS-CoV-2.

**RESULTS**

Of 35,768 participants, 27% (9488) had a previous SARS-CoV-2 infection. Vaccine coverage was high: 97% of the participants had received two doses (78% had received BNT162b2 vaccine [Pfizer–BioNTech] with a long interval between doses, 9% BNT162b2 vaccine with a short interval between doses, and 8% ChAdOx1 nCoV-19 vaccine [AstraZeneca]). Between December 7, 2020, and September 21, 2021, a total of 2747 primary infections and 210 reinfections were observed. Among previously uninfected participants who received long-interval BNT162b2 vaccine, adjusted vaccine effectiveness decreased from 85% (95% confidence interval [CI], 72 to 92) 14 to 73 days after the second dose to 51% (95% CI, 22 to 69) at a median of 201 days (interquartile range, 197 to 205) after the second dose; this effectiveness did not differ significantly between the long-interval and short-interval BNT162b2 vaccine recipients. At 14 to 73 days after the second dose, adjusted vaccine effectiveness among ChAdOx1 nCoV-19 vaccine recipients was 58% (95% CI, 23 to 77) — considerably lower than that among BNT162b2 vaccine recipients. Infection-acquired immunity waned after 1 year in unvaccinated participants but remained consistently higher than 90% in those who were subsequently vaccinated, even in persons infected more than 18 months previously.

**CONCLUSIONS**

Two doses of BNT162b2 vaccine were associated with high short-term protection against SARS-CoV-2 infection; this protection waned considerably after 6 months. Infection-acquired immunity boosted with vaccination remained high more than 1 year after infection. (Funded by the U.K. Health Security Agency and others; ISRCTN Registry number, [**ISRCTN11041050. opens in new tab**](https://doi.org/10.1186/ISRCTN11041050).)

Full article: [Protection against SARS-CoV-2 after Covid-19 Vaccination and Previous Infection | NEJM](https://www.nejm.org/doi/full/10.1056/NEJMoa2118691?query=featured_coronavirus)

**Title:** Effectiveness of the BNT162b2 Vaccine after Recovery from Covid-19

NEJM| 16th February

**BACKGROUND**

The risk of infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) decreases substantially among patients who have recovered from coronavirus disease 2019 (Covid-19). However, it is unknown how long protective immunity lasts. Current guidelines recommend vaccination of recovered patients even though data regarding vaccine effectiveness in such cases are still limited.

**METHODS**

In this retrospective cohort study, we reviewed electronic medical records from a large health care organization in Israel to assess reinfection rates in patients who had recovered from SARS-CoV-2 infection before any vaccination against Covid-19. We compared reinfection rates among patients who had subsequently received the BNT162b2 vaccine (Pfizer–BioNTech) and those who had not been vaccinated between March 1 and November 26, 2021. We used a Cox proportional-hazards regression model with time-dependent covariates to estimate the association between vaccination and reinfection after adjustment for demographic factors and coexisting illnesses. Vaccine effectiveness was estimated as 1 minus the hazard ratio. In a secondary analysis, we evaluated the vaccine effectiveness of one dose as compared with two doses.

**RESULTS**

A total of 149,032 patients who had recovered from SARS-CoV-2 infection met the eligibility criteria. Of these patients, 83,356 (56%) received subsequent vaccination during the 270-day study period. Reinfection occurred in 354 of the vaccinated patients (2.46 cases per 100,000 persons per day) and in 2168 of 65,676 unvaccinated patients (10.21 cases per 100,000 persons per day). Vaccine effectiveness was estimated at 82% (95% confidence interval [CI], 80 to 84) among patients who were 16 to 64 years of age and 60% (95% CI, 36 to 76) among those 65 years of age or older. No significant difference in vaccine effectiveness was found for one dose as compared with two doses.

**CONCLUSIONS**

Among patients who had recovered from Covid-19, the receipt of at least one dose of the BNT162b2 vaccine was associated with a significantly lower risk of recurrent infection.

Full article: [Effectiveness of the BNT162b2 Vaccine after Recovery from Covid-19 | NEJM](https://www.nejm.org/doi/full/10.1056/NEJMoa2119497?query=featured_coronavirus)

**Title:** Association of COVID-19 Vaccination With Symptomatic SARS-CoV-2 Infection by Time Since Vaccination and Delta Variant Predominance

jama| 14th february

**Question**  How does the association between prior COVID-19 vaccination and symptomatic SARS-CoV-2 infection change with time since vaccination and the SARS-CoV-2 Delta variant?

**Findings**  In this test-negative, case-control study that included 1 634 271 tests from symptomatic adults, the odds ratio for prior mRNA vaccination and SARS-CoV-2 test positivity was lower before than during Delta variant predominance. The attenuation in effect size related to time since vaccination was greater than the attenuation related to the Delta variant.

**Meaning**  The findings are consistent with a steady decline in estimated mRNA vaccine effectiveness over time, separate from variant-specific differences in protection.

Full article: [Association of COVID-19 Vaccination With Symptomatic SARS-CoV-2 Infection by Time Since Vaccination and Delta Variant Predominance | Vaccination | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789294)

**Title:** Feasibility of Specimen Self-collection in Young Children Undergoing SARS-CoV-2 Surveillance for In-Person Learning

jama Network open| 17th February

**Question**  Can school-aged children effectively self-collect lower nasal swabs for COVID-19 surveillance testing within a school environment?

**Findings**  In this cohort study of 296 school-aged children, participants were able to feasibly self-collect lower nasal swabs for COVID-19 surveillance testing quickly and with few errors.

**Meaning**  Pediatric self-collected lower nasal swabs are a viable and easily tolerated specimen collection method for SARS-CoV-2 surveillance in school settings, as evidenced by the low error rate and short time window of sample self-collection during testing.

Full article: [Feasibility of Specimen Self-collection in Young Children Undergoing SARS-CoV-2 Surveillance for In-Person Learning | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789128)

**Title:** Assessment of SARS-CoV-2 Seropositivity During the First and Second Viral Waves in 2020 and 2021 Among Canadian Adults

jama network open| 16th February

**Question**  What was the cumulative incidence of SARS-CoV-2 infection during the first 2 viral waves (April to July 2020 and October 2020 to March 2021) among the Canadian adult population?

**Findings**  In this cohort study of a representative sample of 19 994 adult Canadians, analyses of serial survey responses and dried blood spots revealed that the cumulative incidence of SARS-CoV-2 infection among unvaccinated adults increased from 1.9% after the first viral wave to 6.5% after the second viral wave. Seropositivity was more demographically and geographically homogeneous during the second wave than the first, and more than 80% of seropositive adults in the first wave who had blood samples retested after the second wave remained seropositive.

**Meaning**  This study found that the cumulative incidence of SARS-CoV-2 infection was modest in Canada until March 2021; this incidence was lower than the levels of population immunity required to substantially reduce transmission of the virus.

Full article: [Assessment of SARS-CoV-2 Seropositivity During the First and Second Viral Waves in 2020 and 2021 Among Canadian Adults | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789086)

**Title:** COVID-19 Vaccines Safe, Effective in Rheumatic Diseases

jama| 15th february

Vaccination against SARS-CoV-2 provides people with inflammatory or noninflammatory rheumatic and musculoskeletal disease similar levels of protection with a similar adverse event profile as the general public, according to [data](https://doi.org/10.1136/annrheumdis-2021-221490) from a registry of 5121 patients from 30 countries.

Patients with inflammatory rheumatic and musculoskeletal diseases (RMDs) were excluded from COVID-19 vaccine trials, leaving unanswered questions about safety and effectiveness in this population. To fill this gap, the European Alliance of Associations for Rheumatology Coronavirus Vaccine registry between February 2021 and July 2021 collected voluntary postvaccination reports from rheumatology clinicians.

Seventy percent of the patients included in the registry received the BNT162b2 (Pfizer-BioNTech) vaccine, 17% received the ChAdOx1 nCoV-19 (Oxford/AstraZeneca) vaccine, and 8% received the mRNA-1273 (Moderna) vaccine. About 1% experienced a breakthrough infection after full vaccination. Thirty-seven percent experienced possible or probable vaccine-associated adverse events, with injection-site pain, fatigue, muscle pain, and fever being the most common. Only 0.5% of the patients experienced a severe adverse event.

About 4% of patients with an inflammatory RMD experienced a disease flare, on average 6 days after their most recent vaccine dose. The most common flare symptoms were arthritis, multiple joint pain, and fatigue. Most flares were mild or moderate and only 1.5% of patients required a new medication or an increased medication dose to treat them.

Full article: [COVID-19 Vaccines Safe, Effective in Rheumatic Diseases | Global Health | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789015)

**Title:** New COVID-19 Vaccine Aims to Increase Global Vaccine Access

jama| 15th february

ACOVID-19 vaccine designed to be inexpensive and easy to mass produce globally has received emergency use authorization from India’s government, according to a [statement](https://biologicale.com/news.html) from the vaccine’s manufacturer, Biological E. Limited.

The CORBEVAX vaccine is the ninth COVID-19 vaccine to receive emergency use authorization in India, which has [administered](https://ourworldindata.org/covid-vaccinations) at least 1 shot to about 66% of its population. Authorization was based on phase 3 trials that enrolled more than 3000 adults aged 18 to 80 years at 33 sites in India. The vaccine was more than 90% effective at preventing symptomatic infections with the original Wuhan strain of SARS-CoV-2 in the trials and more than 80% effective against symptomatic infection with the Delta variant based on published studies, according to a [statement](https://www.texaschildrens.org/texas-children%E2%80%99s-hospital-and-baylor-college-medicine-covid-19-vaccine-technology-secures-emergency) from Texas Children’s Hospital Center for Vaccine Development and Baylor College of Medicine, which developed the vaccine.

The recombinant protein subunit vaccine is composed of the SARS-CoV-2 spike protein receptor binding domain and an adjuvant. Hyderabad-based Biological E. Limited said it plans to produce more than 100 million doses per month starting this February, deliver 300 million doses to India’s government, and distribute 1 billion doses globally.

“Protein-based vaccines have been widely used to prevent many other diseases, have proven safety records, and use economies of scale to achieve low-cost scalability across the world,” Maria Elena Bottazzi, PhD, codirector of the Texas Children’s Hospital Center for Vaccine Development, said in the statement. Bottazzi said she hoped the vaccine “will fill the access gap created by the more expensive, newer vaccine technologies and that today are still not able to be quickly scaled for global production.”

Full article: [New COVID-19 Vaccine Aims to Increase Global Vaccine Access | Global Health | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789016)

**Title:** COVID-19 and Blood Donation

jama| 15th February

Using laboratory tests to screen routine blood donors for COVID-19 isn’t recommended, according to [recently updated information](https://www.fda.gov/vaccines-blood-biologics/safety-availability-biologics/updated-information-blood-establishments-regarding-covid-19-pandemic-and-blood-donation) from the FDA.

Respiratory viruses generally aren’t transmitted via blood transfusion, and there have been no reported cases worldwide of SARS-CoV-2 or any other coronavirus being passed from donor to recipient, the FDA said.

Full article: [COVID-19 and Blood Donation | Bleeding and Transfusion | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789049)

**Title:** Association of COVID-19 Vaccination With Symptomatic SARS-CoV-2 Infection by Time Since Vaccination and Delta Variant Predominance

JAMA|14th February

**Question**  How does the association between prior COVID-19 vaccination and symptomatic SARS-CoV-2 infection change with time since vaccination and the SARS-CoV-2 Delta variant?

**Findings**  In this test-negative, case-control study that included 1 634 271 tests from symptomatic adults, the odds ratio for prior mRNA vaccination and SARS-CoV-2 test positivity was lower before than during Delta variant predominance. The attenuation in effect size related to time since vaccination was greater than the attenuation related to the Delta variant.

**Meaning**  The findings are consistent with a steady decline in estimated mRNA vaccine effectiveness over time, separate from variant-specific differences in protection.

Full article: [Association of COVID-19 Vaccination With Symptomatic SARS-CoV-2 Infection by Time Since Vaccination and Delta Variant Predominance | Vaccination | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2789294)

**workforce wellbeing**

**Title:** The Government Response To The Health And Social Care Committee Report On Workforce Burnout And Resilience In The NHS And Social Care

**Department of Health and Social Care| 16th February**  
In June 2021, the Health and Social Care Select Committee published its report ‘workforce burnout and resilience in the NHS and Social Care’. The report explored several key issues, including: the scale and impact of workforce burnout and its contributing factors; the impact of workplace culture on burnout and the further work needed to create an inclusive and compassionate working environment; the impact that the Covid-19 pandemic has had on the workforce; and how more comprehensive workforce planning is necessary. This response makes several recommendations against these issues.

* [Report](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1054518/the-government-response-to-the-health-and-social-care-committee-report-on-workforce-burnout-and-resilience-in-the-nhs-and-social-care-web-accessible.pdf)
* [Original report, June 2021](https://committees.parliament.uk/publications/6158/documents/68766/default/)
* [Department of Health and Social Care - publications](https://www.gov.uk/government/publications/workforce-burnout-and-resilience-in-the-nhs-and-social-care)

**other**

**Title:** Covid-19: China’s president orders Hong Kong to control outbreak

bmj| 17th February

China’s President Xi Jinping has ordered Hong Kong to get a handle on its covid-19 epidemic amid a wave of newly confirmed cases in the special administrative region.

Xi said the “overriding mission” of Hong Kong’s leaders was to stabilise and control an ongoing outbreak, media reported on16 February.[**1**](https://www.bmj.com/content/376/bmj.o420#ref-1)

There were over 4000 confirmed new cases of covid-19 in Hong Kong on 16 February, a new record, up from 600 cases on 10 February. But modelling released by Hong Kong University on 10 February[**2**](https://www.bmj.com/content/376/bmj.o420#ref-2) estimated there could be 28 000 daily cases by the end of March, for the city with a population of 7.48 million.

Full article: [Covid-19: China’s president orders Hong Kong to control outbreak | The BMJ](https://www.bmj.com/content/376/bmj.o420)

**Title:** Time varying association between deprivation, ethnicity and SARS-CoV-2 infections in England: A population-based ecological study

the lancet regional health europe| 13th February

Background

Ethnically diverse and socio-economically deprived communities have been differentially affected by the COVID-19 pandemic in the UK.

Method

Using a multilevel regression model we assessed the time-varying association between SARS-CoV-2 infections and areal level deprivation and ethnicity from 1st of June 2020 to the 19th of September 2021. We separately considered weekly test positivity rate and estimated debiased prevalence at the Lower Tier Local Authority (LTLA) level, adjusting for confounders and spatio-temporal correlation structure.

Findings

Comparing the least deprived and predominantly White areas with most deprived and predominantly non-White areas over the whole study period, the weekly positivity rate increases from 2·977% (95% CrI 2.913%-3.029%) to 3·347% (95% CrI 3.300%-3.402%). Similarly, prevalence increases from 0·369% (95% CrI 0.361%-0.375%) to 0·405% (95% CrI 0.399%-0.412%). Deprivation has a stronger effect until October 2020, while the effect of ethnicity becomes more pronounced at the peak of the second wave and then again in May-June 2021. In the second wave of the pandemic, LTLAs with large South Asian populations were the most affected, whereas areas with large Black populations did not show increased values for either outcome during the entire period under analysis.

Interpretation

Deprivation and proportion of non-White populations are both associated with an increased COVID-19 burden in terms of disease spread and monitoring, but the strength of association varies over the course of the pandemic and for different ethnic subgroups. The consistency of results across the two outcomes suggests that deprivation and ethnicity have a differential impact on disease exposure or susceptibility rather than testing access and habits.

Full article: [Time varying association between deprivation, ethnicity and SARS-CoV-2 infections in England: A population-based ecological study - The Lancet Regional Health – Europe](https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(22)00015-1/fulltext)

**Title:** A Comparative Analysis of In-Hospital Mortality per Disease Groups in Germany Before and During the COVID-19 Pandemic From 2016 to 2020

jama network open| 15th February

**Question**  What association does the COVID-19 pandemic have with inpatient care in different disease groups?

**Findings**  In this cross-sectional study of 5 821 757 inpatients’ administrative data, hospital admission rates were lower for all investigated disease groups in 2020 compared with previous years. Despite higher relative mortality in some subgroups, a higher absolute incidence of in-hospital deaths was observed only for respiratory diseases, which was associated with patients with SARS-CoV-2 infections.

**Meaning**  In 2020, a higher absolute in-hospital mortality was observed only in patients with respiratory diseases, but not in other disease groups or overall.

Full article: [A Comparative Analysis of In-Hospital Mortality per Disease Groups in Germany Before and During the COVID-19 Pandemic From 2016 to 2020 | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789056)

We

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

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

<https://www.trftlibraryknowledge.com/health-newsfeeds.html>