COVID-19 weekly update

26th September 2022

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**clinical management**

**title:** Effect of Helmet Noninvasive Ventilation vs Usual Respiratory Support on Mortality Among Patients With Acute Hypoxemic Respiratory Failure Due to COVID-19: The HELMET-COVID Randomized Clinical Trial

jama | 20th SEPTember 2022  
  
Question What is the effect of noninvasive ventilation delivered by helmet compared with usual respiratory support (mask noninvasive ventilation, high-flow nasal oxygen, and standard oxygen) on the risk of mortality among adults with acute hypoxemic respiratory failure due to COVID-19?

Findings In this randomized clinical trial that included 320 adults with acute hypoxemic respiratory failure related to COVID-19, randomization to helmet use compared with usual respiratory support resulted in mortality within 28 days in 27.0% vs 26.1%, respectively. This difference was not statistically significant.

Meaning Helmet noninvasive ventilation did not significantly reduce 28-day mortality compared with usual respiratory support among patients with acute hypoxemic respiratory failure due to COVID-19 pneumonia; however, interpretation of the findings is limited by imprecision in the effect size estimate.  
<https://jamanetwork.com/journals/jama/fullarticle/2796380>

**title:** The Dreaded “Twindemic” of Influenza and COVID-19 Has Not Yet Materialized—Might This Be the Year?

JAMA |21st SEPTember 2022  
  
We read with great interest the study by Leonard Mndala and colleagues published in The Lancet   
With influenza, as with hurricanes, “[w]e have to expect the unexpected,” Osterholm, founder and director of the Center for Infectious Disease Research and Policy at the University of Minnesota, explained in an interview with JAMA. “We have to plan as if this could be a severe flu season.”

Some experts, including National Institute of Allergy and Infectious Diseases Director Anthony Fauci, MD, have pointed to Australia’s 2022 flu season—in the temperate regions of the Southern Hemisphere, flu season typically runs from April to September—as a warning about what could be in store for the US. Influenza cases in 2022 peaked earlier and higher in Australia than in any of the previous 5 flu seasons, according to preliminary data in a government report, and children and teens were more likely to have been affected than adults.

Despite the high number of cases, the impact of the 2022 flu season in Australia, as measured by the number of patients hospitalized or patients unable to go to work or school as usual, was low to moderate, the government report noted. The number of patients hospitalized with influenza in Australia peaked early but not higher than in the previous 5 flu seasons…  
<https://jamanetwork.com/journals/jama/fullarticle/2796806>

**title:** Comparison of maternal and neonatal outcomes of COVID-19 before and after SARS-CoV-2 omicron emergence in maternity facilities in Malawi (MATSurvey): data from a national maternal surveillance platform  
  
the lancet global health |22nd september 2022  
  
Outcomes of omicron-associated COVID-19 in pregnancy have not been reported from low-resource settings, and data from sub-Saharan Africa before the emergence of omicron are scarce. Using a national maternal surveillance platform (MATSurvey), we aimed to compare maternal and neonatal outcomes of COVID-19 in Malawi during the omicron wave to the preceding waves of beta and delta.  
<https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(22)00265-X/fulltext>   
  
Linked commentary: [COVID-19 in pregnancy: evidence from LMICs](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(22)00410-7/fulltext)

**long term effects**

**title:** How “long covid” is shedding light on postviral syndromes

BMJ |21st SEPTember 2022  
  
The global burden of long covid has put a spotlight on the long neglected mystery of postviral syndromes. Brian Owens asks what’s changing

Long covid really shouldn’t have been a surprise, says Vett Lloyd, a biologist at Mount Allison University in Sackville, Canada. “When the pandemic started, the general assumption was that there were two possible outcomes to an infection—you’d either get better or die,” she says.

But there’s a possible third outcome. It’s long been known that a number of disease causing pathogens—some viral and some bacterial—are associated with ongoing post-infection symptoms in a significant minority of patients.

“There was no real reason to think SARS-CoV-2 should be any different than the original SARS, which also caused post-infection syndromes,” says Lloyd. She is one of many researchers who hope that the attention and funding directed towards long covid will help to shed light on how and why other infections can lead to persistent and sometimes debilitating symptoms.  
<https://www.bmj.com/content/378/bmj.o2188>

**title:** Long covid—an update for primary care  
  
BMJ | 22nd SEPTember 2022  
  
What you need to know

- Long covid (prolonged symptoms following covid-19 infection) is common

- The mainstay of management is supportive, holistic care, symptom control, and detection of treatable complications

- Many patients can be supported effectively in primary care by a GP with a special interest

This article updates and extends a previous BMJ Practice Pointer published in August 2020 when almost no peer reviewed research or evidence based guidance on the condition was available.1 In this update we outline how clinicians might respond to the questions that patients ask.  
<https://www.bmj.com/content/378/bmj-2022-072117>

**title:** The needs of patients with long covid must not be ignored

BMJ | 21st september 2022  
  
Members of Long Covid SOS write an open letter to the new secretary of state for health and social care

The covid-19 pandemic continues to have an impact on the nation’s health. It is encouraging that deaths are now at a comparatively low level, but sadly morbidity as a result of SARS-CoV-2 affects a large number of people, many of whom are effectively disabled and unable to work and live a normal life. The Office for National Statistics estimates that two million people in the United Kingdom have long covid, of whom 384 000 are severely affected.1 One startling statistic is that more than 2% of 35-49 year olds in the UK have had long covid for more than a year: equivalent to around 266 000 people out of a total of nearly 900 000 in their prime working years with long covid.

With so many people of working age affected, this widespread health burden falls on both the NHS and the economy. NHS England has been ahead of the curve in setting up clinics to treat people with long covid, but at present there are no validated treatments, no prospect of a cure, and the best that can be offered is symptom relief. Moreover, the clinics are accepting no more than 5000 new referrals each month.2 NHS England’s stated priority is “to ensure that those with the most clinically urgent needs are diagnosed and treated rapidly”: at this rate it will take more than five years for those currently most severely affected in England to be seen…  
<https://www.bmj.com/content/378/bmj.o2287>

**rates & variants**

**title:** Covid-19: Cases rise in England and Wales as hospital admissions remain steady

BMJ | 23rd september 2022  
  
The number of people testing positive for SARS-CoV-2 has increased in England and Wales but decreased in Northern Ireland and Scotland, latest data show.

The Office for National Statistics has estimated that around one in 70 people in England tested positive in the week ending 14 September 2022, a rise from one in 75 the previous week. In Wales the number rose from one in 110 people to one in 75.

Meanwhile, in Scotland one in 155 people tested positive in the week ending 13 September 2022, a drop from around one in 45 the week before. In Northern Ireland cases fell from around one in 55 to one in 80.

Over a similar period (the week ending 18 September) the ONS reported that admissions to hospital of patients with confirmed covid-19 (4.91 per 100 000) and intensive care units and high dependency units (0.16 per 100 000) were the lowest seen since early June (weeks ending 5 and 13 June, respectively)….  
<https://www.bmj.com/content/378/bmj.o2307>

**infection control**

**title:** Hybrid immunity and strategies for COVID-19 vaccination

the lancet infectious diseases| 21st September 2022  
  
…These data provide immunological context for the importance of hybrid immunity in managing the current surges caused by the BA.2.12.1, BA.4, and BA.5 subvariants in populations with high frequencies of vaccination and BA.1 or BA.2 infection.2, 3, 4, 5, 6 Another important factor in reducing infection risk is heterologous booster vaccination with different platforms to maximise the breadth of vaccine-induced immunity, especially in countries primarily using inactivated vaccine; T-cell immunity is not affected by changes in spike protein and remains effective in preventing severe disease, hospitalisation, and death.7, 8, 9 Finally, second-generation BA.4 or BA.5-based vaccines should be considered in managing the current threat due to the widely circulating BA.5 variant…  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00640-5>   
  
Linked research: [Protection against omicron (B.1.1.529) BA.2 reinfection conferred by primary omicron BA.1 or pre-omicron SARS-CoV-2 infection among health-care workers with and without mRNA vaccination: a test-negative case-control study](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00578-3/fulltext)

**title:** Odds of Hospitalization for COVID-19 After 3 vs 2 Doses of mRNA COVID-19 Vaccine by Time Since Booster Dose

JAMA | 23RD september 2022  
  
Vaccination with a booster dose of COVID-19 mRNA vaccine has been associated with decreased risk of developing severe COVID-19 compared with no vaccination.1,2 However, among individuals already fully vaccinated with the primary series of an mRNA vaccine, less is known about how much protection is added by a booster and how long that protection lasts. We assessed the association between COVID-19 mRNA booster immunization compared with vaccination with the primary mRNA vaccination series alone and the odds of hospitalization for COVID-19…  
  
…In a large US population, mRNA boosters were associated with decreased odds of hospitalization compared with the mRNA vaccine primary series alone, with the magnitude of the association attenuated with more time since the booster dose.  
<https://jamanetwork.com/journals/jama/fullarticle/2796847>

**title:** Inhibition of SARS-CoV-2 Omicron BA.1 and BA.4 Variants After Fourth Vaccination or Tixagevimab and Cilgavimab Administration in Patients With Cancer  
  
JAMA ONCOLOGY | 22nd SEPTember 2022  
  
…Findings suggest that passive immunization with tixagevimab and cilgavimab may not be effective in blocking Omicron sublineages BA.1 and BA.4. However, there was an increase in humoral immunity after the fourth vaccination. Further prospective studies are needed to corroborate these findings and guide vaccination recommendations.  
<https://jamanetwork.com/journals/jamaoncology/fullarticle/2796770>

**title:** Estimated Effectiveness of COVID-19 Vaccines Against Omicron or Delta Symptomatic Infection and Severe Outcomes

JAMA | 22nd september 2022  
  
Question What is the estimated effectiveness of COVID-19 vaccines for preventing symptomatic infections due to the Omicron and Delta variants and severe outcomes (hospitalization or death) associated with these infections?

Findings In this test-negative case-control study of 134 435 adults in Ontario, Canada, the estimated effectiveness of 2 doses of COVID-19 vaccine was high against symptomatic Delta infection and severe outcomes and was lower against symptomatic Omicron infection. After a third dose, estimated vaccine effectiveness against Omicron was 61% for symptomatic infection and 95% for severe outcomes.

Meaning The findings suggest that 3 doses of COVID-19 vaccine may protect against symptomatic Omicron infection and severe outcomes, but other measures are also likely needed to prevent Omicron infection.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796615>

**title:** Risk factors for SARS-CoV-2 infection after primary vaccination with ChAdOx1 nCoV-19 or BNT162b2 and after booster vaccination with BNT162b2 or mRNA-1273: A population-based cohort study (COVIDENCE UK)

the lancet regional health europe |22nd september 2022  
  
Little is known about how demographic, behavioural, and vaccine-related factors affect risk of post-vaccination SARS-CoV-2 infection. We aimed to identify risk factors for SARS-CoV-2 infection after primary and booster vaccinations…  
  
…Vaccine type, socioeconomic status, age, and behaviours affect risk of breakthrough infection after primary and booster vaccinations.  
<https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(22)00197-1/fulltext>

**title:** Recovery from mRNA COVID-19 vaccine-related myocarditis

the lancet child & Adolescent health |21st september 2022  
  
…These data help to resolve the dilemma between vaccination and no vaccination: health-care providers and individuals should be reassured by the high rate of cardiac recovery in mRNA COVID-19 vaccine-related myocarditis. Nonetheless, the psychosocial burden after a myocarditis diagnosis remains substantial and has been under-recognised. The value of vaccination in protecting against SARS-CoV-2-associated acute myocarditis and in lowering the risk of hospitalisation after SARS-CoV-2 exposure has been shown.10 Kracalik and colleagues should be applauded because they, to our knowledge, are the first to explore in detail the quality of life and impact of psychological symptoms in young patients after acute myocarditis. Future prospective studies of myocarditis should also include patient-reported outcomes to capture the full illness spectrum.  
<https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00272-3/fulltext>   
  
Linked research: [Outcomes at least 90 days since onset of myocarditis after mRNA COVID-19 vaccination in adolescents and young adults in the USA: a follow-up surveillance study](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00244-9/fulltext)

**title:** Decrease in uptake of SARS-CoV-2 vaccine in patients with inflammatory bowel disease on intravenous biological therapy  
  
the lancet gastroenterology & hepatology| 21st september 2022  
  
..In conclusion, we report a concerning reduction in uptake of the SARS-CoV-2 vaccines in patients younger than 70 years receiving vedolizumab or infliximab. Potential reasons for these differences in uptake could be the relaxation in concerns about COVID-19 in the population and reduced messaging from the government and clinicians, including retraction of the IBD risk grid for COVID-19 severity6 but with ongoing promotion of fourth dose boosters to those older than 70 years. Hesitancy due to more pronounced side-effects in younger individuals and their belief that they are less likely to be severely affected by COVID-19 might also have a role.7 The identification of vedolizumab as a factor contributing to reduced uptake of the SARS-CoV-2 vaccines is intriguing and might reflect a heightened concern of patients treated with infliximab  
<https://www.thelancet.com/journals/langas/article/PIIS2468-1253(22)00302-8/>

**title:** UPDATED REPORT OF COVID-19 VACCINE SAFETY MONITORING IN JAPAN: BOOSTER SHOTS AND PAEDIATRIC VACCINATIONS

the lancet regional health western pacific | 20th september 2022  
  
International sharing of coronavirus disease 2019 (COVID-19) vaccine safety information is important for discussing the benefit-risk balance of COVID-19 vaccination at individual and population levels. We previously introduced the Japanese systems for COVID-19 vaccines safety monitoring, which represented the first and second COVID-19 vaccinations in Japan.1 The implementation of the booster (third) shot began December 2021, and the mass vaccination of children aged 5–11 years started in February 2022. The current report is a COVID-19 vaccine safety information update for December 2021 to May 2022.  
<https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(22)00215-2/fulltext>

**workforce well-being**

**title:** A PERIPANDEMIC EXAMINATION OF HEALTH CARE WORKER BURNOUT AND IMPLICATIONS FOR CLINICAL PRACTICE, EDUCATION, AND RESEARCH

JAMA | 21st SEPTEMBER 2022  
  
…Prior to the pandemic, burnout in particular was common, with almost half of practicing US physicians reporting at least 1 symptom of burnout.2 This prompted the National Academy of Medicine in 2019 to publish a report outlining the causes and consequences of burnout, as well as proposing a framework for a systems approach to take action to mitigate burnout risk. Now, almost 3 years later, and in light of the current pandemic, the US Surgeon General published an advisory on addressing HCW burnout, further underscoring that conducting investigations and supporting HCW well-being must be a national priority.

In this present study, Sexton and colleagues reported their findings examining emotional exhaustion (EE, one dimension of burnout) before (September 2019) and at 2 time points during the COVID-19 pandemic (September 2020 and September 2021/December 2021/January 2022) in more than 30 000 participants across 76 community hospitals in the US…  
<https://www.nejm.org/doi/full/10.1056/NEJMp2206851>   
Linked research: [Emotional Exhaustion Among US Health Care Workers Before and During the COVID-19 Pandemic, 2019-2021](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796562)

**recovery**

**title:** The Future of Diagnostic Excellence

the lancet digital health | 1st october 2022  
  
Routine health care and research have been profoundly influenced by digital-health technologies. These technologies range from primary data collection in electronic health records (EHRs) and administrative claims to web-based artificial-intelligence-driven analyses. There has been increased use of such health technologies during the COVID-19 pandemic, driven in part by the availability of these data. In some cases, this has resulted in profound and potentially long-lasting positive effects on medical research and routine health-care delivery. In other cases, high profile shortcomings have been evident, potentially attenuating the effect of—or representing a decreased appetite for—digital-health transformation. In this Series paper, we provide an overview of how facets of health technologies in routinely collected medical data (including EHRs and digital data sharing) have been used for COVID-19 research and tracking, and how these technologies might influence future pandemics and health-care research. We explore the strengths and weaknesses of digital-health research during the COVID-19 pandemic and discuss how learnings from COVID-19 might translate into new approaches in a post-pandemic era.  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00147-9/fulltext>

title: AN EVALUATION OF PROSPECTIVE COVID-19 MODELLING STUDIES IN THE USA: FROM DATA TO SCIENCE TRANSLATION

the lancet digital health | 1st october 2022  
  
Infectious disease modelling can serve as a powerful tool for situational awareness and decision support for policy makers. However, COVID-19 modelling efforts faced many challenges, from poor data quality to changing policy and human behaviour. To extract practical insight from the large body of COVID-19 modelling literature available, we provide a narrative review with a systematic approach that quantitatively assessed prospective, data-driven modelling studies of COVID-19 in the USA. We analysed 136 papers, and focused on the aspects of models that are essential for decision makers. We have documented the forecasting window, methodology, prediction target, datasets used, and geographical resolution for each study. We also found that a large fraction of papers did not evaluate performance (25%), express uncertainty (50%), or state limitations (36%). To remedy some of these identified gaps, we recommend the adoption of the EPIFORGE 2020 model reporting guidelines and creating an information-sharing system that is suitable for fast-paced infectious disease outbreak science.  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00148-0/fulltext>

title: REAL-TIME COVID-19 FORECASTING: CHALLENGES AND OPPORTUNITIES OF MODEL PERFORMANCE AND TRANSLATION

The lancet digital health | 1st october 2022  
  
The COVID-19 pandemic brought mathematical modelling into the spotlight, as scientists rushed to use data to understand transmission patterns and disease severity, and to anticipate future epidemic outcomes. However, the use of COVID-19 modelling has been criticised, in part because of a few particularly erroneous projections at the start of the pandemic.1 More than 2 years into the pandemic, models continue to face serious obstacles as tools for informing outbreak response.1 Population-level health outcomes are difficult to predict accurately, especially cases and hospitalisations,2 as discussed in the International Institute of Forecasters blog. This Comment, drawn from our experiences with real-time prospective COVID-19 modelling, details these obstacles. We aim to highlight areas where further research and investment can improve the use of models for informing outbreak responses in the USA, with a summary of recommendations in the Panel.  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00167-4/fulltext>

title: THE IMPORTANCE OF LINKAGE: LESSONS FROM ONE PANDEMIC TO ANOTHER

The lancet digital health | 1st october 2022  
  
In this issue, The Lancet Digital Health publishes a Series entitled “Translating data in a pandemic”, composed of two Series papers and a Comment. This Series highlights the need to increase standards of robustness for research conducted rapidly in a pandemic and to improve data sharing systems for future outbreaks. But what challenges have persisted since the initial COVID-19 outbreak, and how likely are they to affect future epidemics, such as monkeypox?  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00175-3/fulltext>

title: SENSOR-BASED SURVEILLANCE FOR DIGITISING REAL-TIME COVID-19 TRACKING IN THE USA (DETECT): A MULTIVARIABLE, POPULATION-BASED, MODELLING STUDY

The lancet digital health | 1st october 2022  
  
Traditional viral illness surveillance relies on in-person clinical or laboratory data, paper-based data collection, and outdated technology for data transfer and aggregation. We aimed to assess whether continuous sensor data can provide an early warning signal for COVID-19 activity as individual physiological and behavioural changes might precede symptom onset, care seeking, and diagnostic testing…

… Our study showed that passively collected sensor data from consenting participants can provide real-time disease tracking and forecasting. With a growing population of wearable technology users, these sensor data could be integrated into viral surveillance programmes.  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00156-X/fulltext>

**public health & health inequalities**

**title:** Living in an Age of Pandemics—From COVID-19 to Monkeypox, Polio, and Disease X

JAMA | 22nd SEPTEMBER 2022  
  
… Pandemic risks are escalating, with new outbreaks projected to increase up to 3-fold.1 Pandemics reverse human and economic development. Why are they occurring more frequently, and what lessons can we learn?  
<https://jamanetwork.com/journals/jama-health-forum/fullarticle/2796824>

**title:** Characterising adults in Scotland who are not vaccinated against COVID-19

the lancet| 24th september 2022  
  
We used data from linked national health records to estimate the number and describe the characteristics of adults living in Scotland for whom there is no record of any COVID-19 vaccination. This analysis was conducted using the Early Pandemic Evaluation and Enhanced Surveillance of COVID-19 (EAVE II) platform,2 a national COVID-19 surveillance platform using anonymised individual patient-level records from all 940 general practices in Scotland, deterministically linked to multiple datasets recording morbidity, mortality, virology, vaccination, and prescribing (appendix p 1). Linkage was done with a unique identifier for each resident in Scotland who is registered with a GP…  
  
…In summary, this national analysis revealed that, even after accounting for possible overinflation of population size, a considerable proportion of the adult population of Scotland remains unvaccinated against COVID-19. We also identified predictors of unvaccinated status, which can help with formulating a revised national vaccination strategy.  
<https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)01653-1/fulltext>

**international perspectives:**

**title:** Covid-19 sets back progress on neglected diseases in India

BMJ | 21st september 2022  
  
Government interventions to treat neglected tropical diseases such as lymphatic filariasis and kala-azar were cut back during 2020 and 2021, reports Cheena Kapoor  
<https://www.bmj.com/content/378/bmj.o2181>

**title:** Covid-19: China reopens borders to medical students, but problems remain

BMJ | 21st september 2022  
  
Medical students from India who have been studying in China have been heartened by the decision to allow them to return to resume their studies in person, although they admit that many obstacles remain including exorbitant air fares and “zero covid” policies.

The Chinese government updated its visa policies for international students on 22 August, allowing them to return. China’s borders were sealed off to international travellers in January 2020, shortly after covid-19 struck.  
<https://www.bmj.com/content/378/bmj.o2280>

**title:** Long covid: protesters outside the White House demand better care

BMJ | 21st september 2022  
  
Protesters took to the pavement outside the White House on 19 September to demand a better deal for people affected by long covid, complaining that the Biden administration’s plans fell short on action and funding.   
<https://www.bmj.com/content/378/bmj.o2266>

**title:** COVID-19 Health Policies and Economies in Nordic Countries

JAMA| 12th september 2022  
  
Looser COVID-19 health policies in Sweden during the pandemic did not translate into better short-term economic performance, according to a study in the Journal of Global Health. Early in the pandemic, other Nordic countries implemented stricter measures such as lockdowns and took more protective actions to try to limit COVID-19.

The study examined epidemiological, health system utilization, health policy, and economic data from the 5 countries in the Nordic region (Denmark, Finland, Iceland, Norway, and Sweden) for January 2020 through January 3, 2021. Minimal socioeconomic, cultural, and geographical differences between the countries allow for comparative analysis.  
<https://jamanetwork.com/journals/jama/fullarticle/2796367>

We

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