COVID-19 weekly update

3rd October 2022

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**clinical management**

**title:** Effect of High-Flow Nasal Cannula Oxygen vs Standard Oxygen Therapy on Mortality in Patients With Respiratory Failure Due to COVID-19: The SOHO-COVID Randomized Clinical Trial

jama | 27th SEPTember 2022  
  
Questions In patients with respiratory failure due to COVID-19, does the use of high-flow nasal cannula oxygen reduce the risk of mortality compared with standard oxygen therapy?

Findings In this randomized clinical trial that included 711 patients, mortality at day 28 was 10% in the high-flow oxygen group and 11% in the standard oxygen therapy group, a difference that was not statistically significant.

Meaning In patients with respiratory failure due to COVID-19, high-flow nasal cannula oxygen did not significantly reduce mortality at day 28 compared with standard oxygen therapy.  
<https://jamanetwork.com/journals/jama/fullarticle/2796693>   
Linked commentary: [Respiratory Support in the Time of COVID-19](https://jamanetwork.com/journals/jama/fullarticle/2796717)

**title:** Repurposed Drugs Failed to Prevent Severe COVID-19

JAMA |27th SEPTember 2022  
  
A trial that evaluated 3 existing generic medications—metformin, ivermectin, and fluvoxamine—for early outpatient treatment of SARS-CoV-2 infection among adults with overweight and obesity did not prevent progression to severe COVID-19.  
<https://jamanetwork.com/journals/jama/fullarticle/2796697>

**title:** Bebtelovimab: considerations for global access to treatments during a rapidly evolving pandemic [correspondence]  
  
the lancet infectious diseases |26th september 2022  
  
…Given the activity of bebtelovimab against current global circulating SARS-CoV-2 variants, Hentzien and colleagues1 raise several questions as to why bebtelovimab is unavailable outside the USA.

Lilly agrees that bebtelovimab should be available outside the USA. We remain open to communication with global health authorities, including presenting the data package upon request;2 however, due to local regulations, health authorities might not have an emergency use pathway or might decide that the current data package for bebtelovimab is insufficient for authorisation.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00592-8/fulltext>

**long term effects**

**title:** Long COVID: defining the role of rheumatology in care and research

the lancet rheumatology | 3rd october 2022  
  
…Given the current global impact of long COVID and our early stages of understanding of the condition, we pose a series of questions for the rheumatology profession, to stimulate reflection and discussion around how to address long COVID.  
<https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(22)00266-1/fulltext>

**title:** Association of SARS-CoV-2 Seropositivity With Myalgic Encephalomyelitis and/or Chronic Fatigue Syndrome Among Children and Adolescents in Germany

BMJ | 27th september 2022  
  
Question Is SARS-CoV-2 seropositivity associated with symptoms of myalgic encephalomyelitis and/or chronic fatigue syndrome (ME/CFS) in children and adolescents?

Findings This cross-sectional study of hospital-based SARS-CoV-2 seroprevalence surveys in Germany compared seropositive and seronegative children and adolescents and identified an excess of possible ME/CFS symptoms with serological evidence of preceding SARS-CoV-2 infection. This association almost disappeared with adjustment for confounders and restriction to children and adolescents unaware of preceding infection.

Meaning These findings suggest that the risk of ME/CFS after SARS-CoV-2 infection in children and adolescents may be small and that recall bias may contribute to risk estimates.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796733>

**rates & variants**

**title:** Further humoral immunity evasion of emerging SARS-CoV-2 BA.4 and BA.5 subvariants

the lancet infectious diseases | 27th september 2022  
  
The number of people testing positive for SARS-CoV-2 has increased in England and Wales but   
Together, our findings suggest that significant humoral immune evasion, especially against convalescents from BA.4 and BA.5 breakthrough infection, contributes to the emergence and rapid spread of multiple Arg346-mutated BA.4 and BA.5 sublineages. The decreased neutralisation titres of plasma samples from BA.5 breakthrough-infection convalescents indicate worrisome potential reinfection of BA.4.6 after the recovery from BA.4 or BA.5 infection. Importantly, individuals that received Evusheld as long-term prophylaxis, especially those that are immunodeficient or exhibit high-risk comorbidities, are at particular risk of those subvariants. Also, BA.4 and BA.5-based vaccine boosting strategies should be evaluated in light of the prevalence of these BA.4 and BA.5 subvariants.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00642-9/fulltext>

**infection control**

**title:** Association of Influenza Vaccination With SARS-CoV-2 Infection and Associated Hospitalization and Mortality Among Patients Aged 66 Years or Older

jama | 28th september 2022  
  
Question Is influenza vaccination associated with SARS-CoV-2 infection and related outcomes, such as hospitalization and mortality in individuals aged 66 years or older?

Findings In this cohort study of 2 279 805 patients, influenza vaccination was found to be associated with a 22% to 24% lower risk of SARS-CoV-2 infection; however, undertaking a periodic health examination (PHE) was also associated with a 15% lower risk of SARS-CoV-2 infection. The negative association between influenza vaccination and SARS-CoV-2–related outcomes differed considerably when the analysis was stratified by the history of PHE in the preceding year.

Meaning The findings of this study suggest that a PHE may at least partially modify the association between influenza vaccination and SARS-CoV-2–associated outcomes in individuals aged 66 years or older owing to the healthy vaccinee bias.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796809>

**title:** Implementation of covid-19 vaccination in the United Kingdom

BMJ | 29th september 2022  
  
Decisions about approving covid-19 vaccines and strategies for their use in the UK must be rapid and transparent, say Azeem Majeed and colleagues, and a sustainable infrastructure should be put in place for delivering covid-19 vaccines to the public

Key messages:

The development of safe and effective covid-19 vaccines is one of the great success stories of the covid-19 pandemic

Decisions about implementing vaccination programmes in the UK must be robust, clear, and open to public and professional scrutiny

A sustainable infrastructure for vaccine delivery is needed that integrates with general practices and pharmacies

The UK needs to ensure that it has the academic and industrial infrastructure to develop, test, and secure vaccines for the current and any future pandemics…  
<https://www.bmj.com/content/378/bmj-2022-070344>

**title:** Waning of vaccine effectiveness against moderate and severe covid-19 among adults in the US from the VISION network: test negative, case-control study

BMJ | 3rd october 2022  
  
Objective To estimate the effectiveness of mRNA vaccines against moderate and severe covid-19 in adults by time since second, third, or fourth doses, and by age and immunocompromised status.

Design Test negative case-control study.

Setting Hospitals, emergency departments, and urgent care clinics in 10 US states, 17 January 2021 to 12 July 2022.  
  
…Conclusion Effectiveness of mRNA vaccines against moderate and severe covid-19 waned with time after vaccination. The findings support recommendations for a booster dose after a primary series and consideration of additional booster doses.   
<https://www.bmj.com/content/379/bmj-2022-072141>

**title:** BNT162b2 COVID-19 vaccination uptake, safety, effectiveness and waning in children and young people aged 12–17 years in Scotland

the lancet regional health europe |27th september 2022  
  
The two-dose BNT162b2 (Pfizer-BioNTech) vaccine has demonstrated high efficacy against COVID-19 disease in clinical trials of children and young people (CYP). Consequently, we investigated the uptake, safety, effectiveness and waning of the protective effect of the BNT162b2 against symptomatic COVID-19 in CYP aged 12–17 years in Scotland…  
  
…During the study period, uptake of BNT162b2 in Scotland has covered more than two-thirds of CYP aged 12–17 years with the first dose and about 40% with the second dose. We found no increased likelihood of admission to hospital with a range of health outcomes in the period after vaccination. Vaccination with both doses was associated with a substantial reduction in the risk of COVID-19 symptomatic disease during both the Delta and Omicron periods, but this protection began to wane after five weeks.  
<https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(22)00209-5/fulltext>

**title:** Effectiveness of primary series and booster vaccination against SARS-CoV-2 infection and hospitalisation among adolescents aged 12–17 years in Singapore: a national cohort study

the lancet infectious diseases| 28th september 2022  
  
…These data help to resolve the dilemma between vaccination and no vaccination: health-care   
Singapore offered the BNT162b2 vaccine (tozinameran; Pfizer-BioNTech) to adolescents aged 12–17 years in May 18, 2021, and extended booster vaccines to this group in Jan 21, 2022. Literature on the effectiveness of primary series and booster vaccination among adolescents is scarce outside of Europe and North America. We aimed to determine primary series and booster vaccine effectiveness against SARS-CoV-2 infection and hospitalisation among adolescents in Singapore…  
  
…Among adolescents aged 12–17 years, vaccine effectiveness against confirmed SARS-CoV-2 infection after two doses of BNT162b2 decreased over time and increased after a third dose. Boosted adolescents were also the most protected from hospitalisation compared with fully vaccinated, partly vaccinated, and unvaccinated adolescents. Therefore, the booster dose of BNT162b2 can help to reduce the burden on the health-care system and individual morbidity during an omicron wave.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00573-4/fulltext>

**title:** Immunogenicity, durability, and safety of an mRNA and three platform-based COVID-19 vaccines as a third dose following two doses of CoronaVac in China: A randomised, double-blinded, placebo-controlled, phase 2 trial  
  
the lancet eclinical medicine | 28th september 2022  
  
More effective vaccine candidates against variants of concern as a booster dose are needed in people primed with two-dose inactivated COVID-19 vaccines.

Methods This randomised, double-blinded, investigator-initiated phase 2 trial aims to evaluate immunogenicity, durability, and safety of an mRNA vaccine candidate (RQ3013) and three other platform vaccines (an adenovirus-vectored vaccine candidate [ChAdTS-S], a recombinant protein vaccine candidate [ZR202-CoV], and an inactivated vaccine [CoronaVac]) as a booster.

…Although all study vaccines boosted neutralising antibodies with no safety concerns, RQ3013 showed much stronger cross-neutralisation and cellular responses, adding more effective vaccine candidates against the omicron variant.   
<https://www.thelancet.com/cms/10.1016/j.eclinm.2022.101680/attachment/f17f53fc-eb08-4bfe-94bc-faf0149862f5/mmc1.pdf>

**recovery**

title: WHAT CAN WE LEARN FROM RAPIDLY DEVELOPED PATIENT DECISION AIDS PRODUCED DURING THE COVID-19 PANDEMIC?

BMJ| 29th september 2022  
  
Supporting people to make decisions during the covid-19 pandemic created new opportunities for shared decision making and rapid development of patient decision aids, say Michael Barry and colleagues.  
<https://www.bmj.com/content/378/bmj-2022-071530>

title: COVID-19: NHS 111 FAILED TO ASSESS SOME VULNERABLE PATIENTS DURING EARLY STAGES OF PANDEMIC

BMJ| 3rd october 2022  
  
The national health telephone helpline NHS 111 did not always clinically assess vulnerable patients who contacted it during the early stages of the covid-19 pandemic, according to a report from a health safety watchdog.

Several concerns about the risk to patients who needed help during the pandemic were highlighted in a report1 from the Healthcare Safety Investigation Branch published on 29 September.

The branch, which independently investigates patient safety concerns in NHS funded care across England, found several failures when it carried out an investigation into NHS 111’s response to callers with covid-19 related symptoms during the early months of the pandemic (March to June 2020).

It found that half of all calls to NHS 111 in one particular month were not answered at all and some patients with underlying conditions, such as diabetes, did not receive a clinical assessment. Many covid-19 related calls were wrongly put through to NHS 111 rather than the covid-19 response service (CRS) that was established as a telephone triage service to which NHS 111 could transfer queries about the disease, the investigation found. It also revealed that the CRS system’s algorithm did not allow for a patient’s comorbidities to be assessed and that audio recordings were not always being made of calls to the response service, as they should have been.  
<https://www.bmj.com/content/378/bmj.o2368>

title: LESSONS IN RESILIENCE: WHAT COVID-19 TAUGHT US ABOUT PREPARING FOR THE CRISES TO COME

BMJ | 29th september 2022  
  
The covid-19 pandemic won't be the last global health crisis. Maha El Akoum and colleagues look at how we can strengthen health systems in preparation

As of September 2022, there have been over 613 million cases of covid-19 and a global death toll of 6.5 million.1 The pandemic caused an unprecedented global crisis, not only because of the millions of lives lost, but through the devastating economic and social disruption that accompanied it. Many health systems—even those considered “robust”—were left stretched far beyond their capacities. According to the Global Health Security Index report, released shortly before the start of the pandemic, no nation in the world was considered equipped to handle a global pandemic of this magnitude.2 We also know that this pandemic won’t be the last, so we need to make changes that ensure we’re better prepared for the emergencies to come. How can we strengthen our fragile health systems?  
<https://www.bmj.com/content/378/bmj.o2351>

**title:** Pandemic preparedness and response: exploring the role of universal health coverage within the global health security architecture

the lancet global health | 27th september 2022  
  
This Health Policy paper outlines major (although often neglected) gaps in pandemic preparedness and response, which are applicable to broader health emergency preparedness and response efforts, and identifies opportunities to reconceptualise health security by scaling up universal health coverage. We then offer a comprehensive set of recommendations to help inform the development of key pandemic preparedness and response proposals across three themes—governance, financing, and supporting initiatives. By identifying approaches that simultaneously strengthen health systems through global health security and universal health coverage, we aim to provide tangible solutions that equitably meet the needs of all communities while ensuring resilience to future pandemic threats.  
<https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(22)00341-2/fulltext>

**public health & health inequalities**

**title:** Bus and Urban Transit Workers Have Highest COVID-19 Risk

JAMA | 27th SEPTEMBER 2022  
  
Workplace COVID-19 outbreaks were about 5 times more common and nearly twice as deadly in the bus and urban transit industry than all industries combined in California, found an analysis led by the California Department of Public Health.  
<https://jamanetwork.com/journals/jama/fullarticle/2796671>

**title:** Parents are urged to vaccinate 2-3 year olds against flu as NHS warns of “twindemic”  
  
BMJ| 28th SEPTember 2022  
  
The UK Health Security Agency has urged parents to take up the offer to vaccinate their 2 and 3 year old children against flu this year, because of fears over a lack of natural immunity.

The UKHSA said that most young children will not have encountered flu yet, owing to pandemic restrictions that have reduced the spread of the virus over the past two winters. It is also urging people in eligible clinical risk groups and pregnant women to get vaccinated (box 1).  
<https://jamanetwork.com/journals/jamaoncology/fullarticle/2796770>

**title:** Rise in diabetic ketoacidosis during the COVID-19 pandemic: several questions remain

the lancet diabetes & endocrinol0gy| 3rd october 2022  
  
…It is now well documented that the provision of routine health-care services across several countries was curtailed during the pandemic,9 with additional delays in people presenting to health-care providers due to a fear of contracting SARS-CoV-2.10 One could reasonably conclude that a primary factor explaining the excess prevalence of diabetic ketoacidosis during the pandemic might be related to these practical issues and this theory is certainly supported by the present analysis.

However, against this backdrop is the hypothesis that SARS-CoV-2 itself might have directly injured pancreatic beta cells, leading to excess cases of insulin-requiring diabetes and diabetic ketoacidosis during the pandemic. Several analyses have shown an increase in paediatric type 1 diabetes cases during the pandemic.4, 5, 6 Although a direct effect of SARS-CoV-2 on the pancreas is a tantalising hypothesis, other explanations such as a viral infection triggering type 1 diabetes in those susceptible, or indeed the rise in obesity during the pandemic unmasking type 1 diabetes earlier in the disease trajectory, must be considered. Segregating these inter-mingling factors from one another is complex.

For now, many questions relating to the rising prevalence of diabetic ketoacidosis during the pandemic remain unanswered and clarity will only emerge with time. Central to this endeavour are analyses of population-level curated datasets, longitudinal follow-up studies, and analysis of trends well beyond the pandemic period. Collaborative, multi-ethnic, real-world data collation will eventually provide these answers; we will wait patiently until then.  
<https://www.thelancet.com/journals/landia/article/PIIS2213-8587(22)00272-8/fulltext>   
Linked research: [Impact of the COVID-19 pandemic on long-term trends in the prevalence of diabetic ketoacidosis at diagnosis of paediatric type 1 diabetes: an international multicentre study based on data from 13 national diabetes registries](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(22)00246-7/fulltext)

**title:** Global environmental climate change, covid-19, and conflict threaten food security and nutrition

BMJ| 29th september 2022  
  
Sheryl L Hendriks and colleagues describe the global risks and vulnerabilities associated with health, food security, and nutrition  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00147-9/fulltext>

**title:** The COVID-19 Dashboard for Real-time Tracking of the Pandemic: The Lasker-Bloomberg Public Service Award

JAMA | 28th september 2022  
  
The 2022 Lasker-Bloomberg Public Service Award has been presented to Lauren Gardner, PhD, for creating the COVID-19 Dashboard, which set a new standard for disseminating authoritative public health data in real time.  
<https://jamanetwork.com/journals/jama/fullarticle/2796722>

**international perspectives:**

**title:** Covid-19: PAHO calls for Americas to reverse vaccination setbacks caused by pandemic

BMJ | 28th september 2022  
  
Senior officials at the Pan American Health Organization (PAHO) have called for renewed efforts to vaccinate the Americas, as setbacks caused by the covid pandemic have left the region vulnerable to preventable diseases.  
<https://www.bmj.com/content/378/bmj.o2344>

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