COVID-19 weekly update

27th June 2022

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**clinical management**

**title:** COVID-19 rapid guideline: vaccine-induced immune thrombocytopenia and thrombosis (VITT)

nice | LAST UPDATED: 22 JUNE 2022  
  
This guideline covers the management of COVID-19 for children, young people and adults in all care   
This guideline covers vaccine-induced immune thrombocytopenia and thrombosis (VITT), a syndrome which has been reported in rare cases after COVID-19 vaccination. VITT may also be called vaccine-induced prothrombotic immune thrombocytopenia (VIPIT) or thrombotic thrombocytopenic syndrome (TTS). Because VITT is a new condition, there is limited evidence available to inform clinical management, identification and management of the condition is evolving quickly as the case definition becomes clearer. This guideline was produced to support clinicians to diagnose and manage this newly recognised syndrome.  
  
On 22 June 2022, we updated the advice on plasma exchange with fresh frozen plasma in people at high risk of a poor prognosis to recommend it is considered earlier in the care pathway.  
<https://www.nice.org.uk/guidance/ng200>

**title:** COVID-19, haemophagocytic lymphohistiocytosis, and infection-induced cytokine storm syndromes

The Lancet Infectious Diseases| JULY 2022  
  
We welcome the Grand Round by Danielle Steed and colleagues1 describing bartonella-associated haemophagocytic lymphohistiocytosis in an immunosuppressed patient. This paper highlights the broader topic of infection-induced cytokine storm syndromes. Recent research in COVID-19 cytokine storm syndrome and Castleman disease has expanded the concept of pathological immune activation and established important principles applicable to other infection-induced cytokine storms…  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00348-6/fulltext>

**title:** Olfactory Dysfunction in Patients With Mild COVID-19 During Gamma, Delta, and Omicron Waves in Rio de Janeiro, Brazil

jama| 24th june 2022  
  
Olfactory dysfunction is a common symptom of COVID-19, with reported rates as high as 70%. This symptom can be associated with mild COVID-19, mostly occurs within 5 days after symptom onset, and can persist for a few days to several months after infection resolution.1 The mechanism of SARS-CoV-2–related olfactory dysfunction is not completely understood.

Host genetics,2 acute inflammation in the olfactory epithelium,3 local ACE2 expression,4 and downregulation of olfactory receptors5 seem to play a role; however, the viral contribution remains to be explored. We conducted a retrospective analysis of individuals with mild COVID-19 during different SARS-CoV-2 variant waves to assess the prevalence of self-reported olfactory dysfunction.  
<https://jamanetwork.com/journals/jama/fullarticle/2793811>

**title:** Baricitinib Is First Approved COVID-19 Immunomodulatory Treatment  
  
JAMA| 21st june 2022  
  
Baricitinib (Olumiant) recently became the first immunomodulatory treatment for COVID-19 to receive FDA approval.

The agency approved it for treating COVID-19 among hospitalized adults requiring supplemental oxygen, noninvasive or invasive mechanical ventilation, or extracorporeal membrane oxygenation (ECMO). Baricitinib, discovered by Incyte and licensed to Eli Lilly, still remains under Emergency Use Authorization (EUA) status for hospitalized patients aged 2 years through 17 years who require breathing help.

The FDA first issued an EUA for baricitinib on November 19, 2020, for its use in combination with remdesivir to treat COVID-19 among hospitalized adult and pediatric patients. The agency revised the EUA on July 28, 2021, to authorize baricitinib as a stand-alone treatment. Nearly 1 million patients with COVID-19 in approximately 15 countries have been treated with the therapy, Patrik Jonsson, president of Lilly Immunology and Lilly USA, said in a statement.  
<https://jamanetwork.com/journals/jama/fullarticle/2793470>

**long-term effects**

**title:** Call for action: Health services in the European region must adopt integrated care models to manage Post-Covid-19 Condition

The Lancet Regional Health – Europe| 21st june 2022  
  
The risk of developing long covid is lower among people with the omicron variant of SARS-CoV-2   
The COVID-19 pandemic has affected more than 216 million individuals in the European Region with more than 1.9 million deaths.1 Most countries have mobilised their resources to manage the waves of hospital admissions and intensive care cases and to prioritise the vaccination effort to protect as many people as possible against severe cases of COVID-19. The emergency response has had a major economic, health and social impact across societies in most of the countries of the European region. While the pandemic is far from over, the pressure on health systems is multiple: Not only do they have to treat the current COVID-19 cases, but also maintain and restore all other essential health services that have often been disrupted throughout the pandemic response, leading to substantial backlogs in many countries.2 Also, they need to provide for the persons suffering with persistent disabling symptoms of COVID-19, referred to as Post-Covid-19 Condition or “Long Covid”.3 The exact number of people affected is not clear, but published evidence indicates that approximately 10–20% of individuals with COVID-19 experience continued symptoms for weeks, months and even up to two years following acute SARS-CoV-2 infection.3,4 This means that there are currently millions of individuals in the European region, struggling with this new condition affecting their function, vocation and quality of life…  
<https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(22)00129-6/fulltext>

**title:** Big data and long COVID

the lancet digital health| 18th june 2022  
  
In this issue, Emily Pfaff and colleagues show that machine learning analysis of electronic health records could be crucial in diagnosing patients with long COVID. This is the latest in a plethora of studies to use big data to determine prevalence, symptoms, or risk factors for long COVID. But is big data helping to treat patients with this heterogeneous condition, or should we be redirecting our efforts elsewhere?  
<https://www.thelancet.com/journals/landig/article/PIIS2589-7500(22)00113-3/fulltext>

**title:** Long COVID symptoms in SARS-CoV-2-positive children aged 0–14 years and matched controls in Denmark (LongCOVIDKidsDK): a national, cross-sectional study

the lancet child & Adolescent health| 22nd june 2022  
  
After the acute phase of SARS-CoV-2 infection, children can develop long COVID symptoms. We aimed to investigate the prevalence of long-lasting symptoms, the duration and intensity of symptoms, quality of life, number of sick days and absences from daycare or school, and psychological and social outcomes in children aged 0–14 years who had been infected with SARS-CoV-2 relative to controls with no history of SARS-CoV-2 infection…

…Compared with controls, children aged 0–14 years who had a SARS-CoV-2 infection had more prevalent long-lasting symptoms. There was a tendency towards better quality-of-life scores related to emotional and social functioning in cases than in controls in older children. The burden of symptoms among children in the control group requires attention. Long COVID must be recognised and multi-disciplinary long COVID clinics for children might be beneficial.  
<https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00154-7/fulltext>

**title:** Difficult questions about long COVID in children

THE LANCET CHILD & ADOLESCENT HEALTH | 22nd june 2022  
  
The COVID-19 pandemic is likely to leave long-lasting marks on a generation of children and young people, mainly from indirect effects, including those of school closures, social isolation,1, 2, 3 and a so-called immunity debt resulting from 2 years with reduced exposure to common pathogens.4 A small proportion of children have had serious sequelae of SARS-CoV-2 infection itself, with the most dramatic being multisystem inflammatory syndrome in children (MIS-C).5 Furthermore, a less well-defined entity, termed long COVID or post-COVID-19 condition, has been suggested, referring to children with long-lasting symptoms after SARS-CoV-2 infection that are not explained by another disease.6 In contrast to MIS-C, the symptoms attributed to long COVID are non-specific and occur frequently in otherwise healthy children; headache, mood swings, abdominal pain, and fatigue are all common, and, although they can be symptoms of a disease, they often are not.7 Accordingly, the occurrence of these symptoms after infection with SARS-CoV-2 does not necessarily mean that they are caused by the infection.  
  
Paediatricians frequently meet children with non-specific symptoms. Since the pandemic started, parents have occasionally considered whether a child's symptoms could be caused by COVID-19 occurring in the preceding months. Therefore, Selina Kikkenborg Berg and colleagues should be applauded for their study, published in The Lancet Child & Adolescent Health, assessing whether non-specific symptoms are more frequent in children after infection with SARS-CoV-2 than in children who have never had the infection…  
<https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00167-5/fulltext>

**rates & variants**

**title:** Covid-19: How has the pandemic differed across the four UK nations?

BMJ| 22nd june 2022  
  
And can that tell us anything about the relative effectiveness of the varying restrictions and guidance they put in place? The Nuffield Trust’s Sarah Scobie analyses the data.

We examined trends over the first two years of the pandemic in terms of the proportion of the population with covid-19 (from the Office for National Statistics’ infection survey), people in hospital with covid per head of population, and the number of deaths registered with covid-19 mentioned on the death certificate per head of population (see box 1 for sources)…  
<https://www.bmj.com/content/377/bmj.o1482>

**title:** Omicron subvariants escape antibodies elicited by vaccination and BA.2.2 infection [correspondence]

The Lancet Infectious Diseases| 20th june 2022  
  
The BA.1, BA.2, and BA.3 omicron subvariants of SARS-CoV-2 showed similar but substantial resistance to vaccine-induced and infection-induced serum neutralising activity.1, 2 The new BA.2.12.1, BA.2.13, BA.4, and BA.5 omicron subvariants containing Leu452 substitutions show more infectious potential than BA.2.3 We examined neutralising activity against the BA.1, BA.2, BA.2.11, BA.2.12.1, BA.2.13, BA.4, and BA.5 omicron subvariants in serum from people who received BBIBP-CorV (Sinopharm) primary immunisation, people who received BBIBP-CorV or ZF2001 (Anhui Zhifei Longcom) boosters, and people with omicron breakthrough infections (appendix pp 4, 7).   
  
25 individuals received two doses of BBIBP-CorV. Using an in-house pseudovirus neutralisation assay we found that two BBIBP-CorV doses induced detectable neutralising antibodies against spike protein mutation D614G in 21 (84%) individuals, but neutralising activity against omicron subvariants (BA.1, BA.2, BA.2.11, BA.2.12.1, BA.2.13, and BA.4/BA.5) was not or only minimally detectable (appendix pp 2–3, 8).  
[Omicron subvariants escape antibodies elicited by vaccination and BA.2.2 infection - PubMed (nih.gov)](https://pubmed.ncbi.nlm.nih.gov/35738299/)

**title:** Low neutralisation of the omicron BA.2 sublineage in boosted individuals who had breakthrough infections

the lancet microbe| 22nd june 2022  
  
The omicron variant of SARS-CoV-2 comprises several sublineages (BA.1, BA.1·1, BA.2, and BA.3, etc) with an increasing prevalence of the sublineage BA.2.1 Although the receipt of a third (booster) dose of an mRNA-based SARS-CoV-2 vaccine is associated with improved protection against the omicron variant, many breakthrough infections occurred during the initial omicron surge,2, 3 and it is unknown whether a breakthrough infection with BA.1 in an individual who had received a booster vaccine would provide protection from infection from another sublineage.

To address this question, we compared surrogate neutralisation against BA.1, BA.2, and BA.3 omicron sublineages, in addition to the vaccine strain, in plasma from individuals who were boosted (N=36) or had a breakthrough infection during the BA.1 surge after boosting (N=18). All participants were enrolled according to protocols approved by the Johns Hopkins University institutional review board and provided written informed consent. From boosted uninfected participants, a total of 28 samples were taken 1–3 weeks post-boost and 16 samples were taken 1–3 months post-boost; and from individuals with a breakthrough infection, 18 samples were taken 1–3 weeks post-infection and 14 samples were taken 4–7 weeks post-infection. The samples were tested for surrogate neutralisation…  
<https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(22)00180-X/fulltext>

**title:** Neutralization Escape by SARS-CoV-2 Omicron Subvariants BA.2.12.1, BA.4, and BA.5

new england journal of medicine| 22nd june 2022  
  
… These data show that the BA.2.12.1, BA.4, and BA.5 subvariants substantially escape neutralizing antibodies induced by both vaccination and infection. Moreover, neutralizing antibody titers against the BA.4 or BA.5 subvariant and (to a lesser extent) against the BA.2.12.1 subvariant were lower than titers against the BA.1 and BA.2 subvariants, which suggests that the SARS-CoV-2 omicron variant has continued to evolve with increasing neutralization escape. These findings provide immunologic context for 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.  
<https://www.nejm.org/doi/full/10.1056/NEJMc2206576>

**infection control**

**title:** mRNA COVID-19 Vaccine Booster After Inactivated Vaccine Primary Series

JAMA | 21st june 2022  
  
A booster shot of mRNA vaccine after 2 doses of inactivated virus vaccine significantly increases immune response to the SARS-CoV-2 virus, and may offer better protection against severe COVID-19 than 3 doses of inactivated vaccine, suggests a preliminary study published in Nature Communications…  
<https://jamanetwork.com/journals/jama/fullarticle/2793443>

**title:** COVID-19 mRNA Vaccine Booster During Pregnancy Increases Maternal and Fetal Antibodies

JAMA |22nd june 2022  
  
Pregnant individuals who received a booster dose of the BNT162b2 (Pfizer-BioNTech) COVID-19 mRNA vaccine during their second trimester developed higher antibody levels than those who received the second shot in their primary vaccine series during the same trimester, researchers in Israel recently reported in Obstetrics & Gynecology. Infants in the booster group also had higher antibody levels at birth than those in the 2-dose group. The study’s authors say the findings support a COVID-19 maternal booster following full COVID-19 vaccination to protect both pregnant people and their infants…  
<https://jamanetwork.com/journals/jama/fullarticle/2793740>

**title:** Maternal Vaccination and Risk of Hospitalization for Covid-19 among Infants

new england journal of medicine| 22nd june 2022  
  
…Maternal vaccination with two doses of mRNA vaccine was associated with a reduced risk of hospitalization for Covid-19, including for critical illness, among infants younger than 6 months of age.  
<https://www.nejm.org/doi/full/10.1056/NEJMoa2204399>

**title:** Evaluation of Acute Adverse Events after Covid-19 Vaccination during Pregnancy  
  
new england journal of medicine | 22nd june 2022  
  
The US Centers for Disease Control and Prevention and the Food and Drug Administration have   
Pregnant women with symptomatic coronavirus disease 2019 (Covid-19) have a higher risk of adverse outcomes than do women who are not pregnant.1,2 In part because of these findings, Covid-19 vaccination has been recommended for pregnant women. However, uptake has been lower in pregnant women than among women who are not pregnant.3,4 The concern of many women regarding safety remains a barrier to maternal vaccination.

We performed a retrospective, observational, matched-cohort study involving pregnant women between the ages of 16 and 49 years at eight Vaccine Safety Datalink sites from December 15, 2020, through July 1, 2021. We matched each dose of a Food and Drug Administration–authorized Covid-19 vaccine received by a pregnant woman to an unvaccinated pregnant woman, according to study site and pregnancy start date. Included in the pregnancy cohort were women who were subsequently found to be pregnant within 28 days after receiving the vaccine. Vaccinations were captured through electronic health records, claims data, and bidirectional linkages with state and local immunization registries…  
  
Medically attended acute adverse events after Covid-19 vaccination immediately preceding or during pregnancy were uncommon. Covid-19 vaccines were not associated with an increased risk of the clinically serious acute adverse events that were evaluated. The present data add to the growing literature supporting the safety of Covid-19 vaccination during pregnancy.  
<https://www.nejm.org/doi/full/10.1056/NEJMc2205276>

**title:** Epidemiology of Myocarditis and Pericarditis Following mRNA Vaccination by Vaccine Product, Schedule, and Interdose Interval Among Adolescents and Adults in Ontario, Canada

JAMA| 24th june 2022  
  
Question Do rates of reported myocarditis or pericarditis following COVID-19 mRNA vaccination vary by vaccine product and interdose interval?

Findings This population-based cohort study of 297 individuals in Ontario, Canada, with myocarditis or pericarditis following COVID-19 vaccination found higher rates of myocarditis or pericarditis associated with receipt of mRNA-1273 compared with BNT162b2 as a second dose, particularly among male individuals aged 18 to 24 years. Higher rates were also observed with shorter interdose intervals.

Meaning The results suggest that there may be product-specific differences in rates of myocarditis or pericarditis after receiving mRNA vaccines and that programmatic strategies may be associated with reduced risk of myocarditis or pericarditis after receiving mRNA vaccines.  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793551>

**title:** MYOCARDITIS OR PERICARDITIS FOLLOWING MRNA COVID-19 VACCINATION

JAMa| 24th june 2022  
  
Buchan and colleagues1 describe findings from a population-based cohort study in Ontario, Canada, that used data from a passive vaccine-safety surveillance system to evaluate reported rates of myocarditis or pericarditis following receipt of an mRNA COVID-19 vaccine, mRNA-1273 (Moderna Spikevax) or BNT162b2 (Pfizer-BioNTech Comirnaty). The authors found that reported rates of myocarditis or pericarditis were higher after vaccination with mRNA-1273 compared with BNT162b2 and that for both vaccines, the rate was higher following dose 2 of the primary 2-dose series when the interdose interval (the timing between dose 1 and dose 2) was 30 days or less. These findings add to the body of knowledge about the association of mRNA COVID-19 vaccination with myocarditis and pericarditis and offer additional insight into the differential risk between the 2 mRNA COVID-19 vaccine products and the possible association of the interdose interval with risk of myocarditis or pericarditis…  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793555>

**title:** COVID-19 vaccinations for children

The Lancet Infectious Diseases | 24th june 2022  
  
It is widely accepted that vaccination is key to bringing the COVID-19 pandemic under control by preventing severe disease. Due to the global disease distribution and diverse populations affected, multiple vaccine platforms are needed to overcome limitations in manufacture, logistics, and efficacy. Despite the global administration of up to 11·84 billion doses1 of COVID-19 vaccine to healthy adults and people at increased risk of disease, vaccinations for children are an emerging consideration.

In The Lancet Infectious Diseases, Krishna Mohan Vadrevu and colleagues2 provide initial safety and immunity data in children in India, who received a whole-virion adjuvanted inactivated SARS-CoV-2 vaccine (BBV152, Bharat Biotech International, Hyderabad, India). In Vadrevu and colleagues’ study, participants were enrolled into one of three groups (ages ≥2 to 6 years, >6 to 12 years, and >12 to ≤18 years), and monitored for solicited and unsolicited adverse events after vaccination. The vaccine is authorised for use in adults by WHO, although not by the US, UK, or EU regulatory authorities.

To grant licensure, regulatory authorities must consider the potential risks and benefits of vaccination. In paediatric populations, both sides of this equation are not yet fully understood. Risks that must be considered include patients at additional risk of severe disease, long COVID, and the potential for children to contribute to disease transmission to other vulnerable groups such as older people, or to teachers and caregivers (which could, in turn, lead to super-spreader events)…  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00414-5/fulltext>

**title:** Global impact of the first year of COVID-19 vaccination: a mathematical modelling study  
  
the lancet infectious diseases| 23rd june2022  
  
The first COVID-19 vaccine outside a clinical trial setting was administered on Dec 8, 2020. To ensure global vaccine equity, vaccine targets were set by the COVID-19 Vaccines Global Access (COVAX) Facility and WHO. However, due to vaccine shortfalls, these targets were not achieved by the end of 2021. We aimed to quantify the global impact of the first year of COVID-19 vaccination programmes…  
  
…COVID-19 vaccination has substantially altered the course of the pandemic, saving tens of millions of lives globally. However, inadequate access to vaccines in low-income countries has limited the impact in these settings, reinforcing the need for global vaccine equity and coverage.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00320-6/fulltext>

**title:** Duration of effectiveness of vaccination against COVID-19 caused by the omicron variant

The Lancet Infectious Diseases | 22nd june 2022  
  
Emerging subvariants of the B.1.1.529 (omicron) variant of severe acute respiratory syndrome   
We recently conducted a systematic review and meta-regression of the duration of effectiveness of primary series COVID-19 vaccination against clinical outcomes before the predominance of the omicron (B.1.1.529) SARS-CoV-2 variant.1 Here we assess the duration of vaccine protection, after a primary vaccine series and after the first booster dose, against omicron, the current predominant variant, using the same methods.  
<https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(22)00409-1.pdf>

**title:** Association of Receipt of the Fourth BNT162b2 Dose With Omicron Infection and COVID-19 Hospitalizations Among Residents of Long-term Care Facilities  
  
JAMA| 23rd june 2022  
  
Question What is the association of receiving the fourth dose of BNT162b2 vaccine with Omicron variant infection among residents of long-term care facilities?

Findings In this cohort study of 24 088 recipients of a fourth dose of vaccine and 19 687 individuals who received a third dose only (4 months previously or earlier), receipt of the vaccine dose was associated with 34% protection against infection, 64% to 67% against hospitalizations for mild-to-moderate and severe illness, and 72% against deaths.

Meaning The study results suggest that a fourth BNT162b2 dose was associated with high protection against COVID-19 hospitalizations and deaths among residents of long-term care facilities during a surge associated with the Omicron variant.  
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2793699>

**recovery**

**title:** 2 years of the Access to COVID-19 Tools-Accelerator

the lancet infectious diseases| july 2022  
  
The parliamentary watchdog on public spending has accused the Department of Health and Social   
The 2-year impact report for the Access to COVID-19 Tools Accelerator was published on April 26, 2022, to mixed reviews. Vijay Shankar Balakrishnan reports.

In April, 2020, WHO and partners started an unprecedented initiative to end the COVID-19 pandemic. Naming it the Access to COVID-19 Tools-Accelerator (ACT-A), WHO rolled out this global collaboration to speed up development, production, and equitable access to COVID-19 tests, treatments, vaccines, and personal protective equipment. Officially launched in June, 2020, ACT-A brings together governments, academia, industry, civil society, and philanthropic and global health organisations to a virtual table to negotiate with high-income countries and industry to support nations that need COVID-19 tools…

According to a report on the 2-year impact of ACT-A, published on April 26, 2022, ACT-A has enabled 40 countries to start their COVID-19 vaccination campaigns, supported building of sequencing capacity in southern Africa, and negotiated novel deals with the world's largest oxygen suppliers to increase access in more than 120 low-income and middle-income countries (LMICs). The report breaks down the numbers in an attempt to be transparent; however, critics debate the quality of the work done, the quantity of the remaining work, and the accountability of the initiative.  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00378-4/fulltext>

**title:** Covid-19: UK makes first payments to compensate injury or death from vaccines

bmj | 24th june 2022  
  
The first compensation payments in the UK have been made to families who have been bereaved, or to people who have been injured, as a result of a covid-19 vaccine.

Vikki Spit from Cumbria is believed to be the first person to receive compensation, after her 48 year old partner, Zion, became ill eight days after receiving the AstraZeneca vaccine. Zion, a former rock singer, died at the Royal Victoria Infirmary in Newcastle in May 2021.

A handful of other people have received payments in the past few days under the government’s vaccine damage payment scheme (VDPS), which pays out up to a maximum of £120 000 (€140 000; $150 000).

Sarah Moore, a partner at the Hausfeld law firm, which is representing people seeking compensation, told The BMJ it was an important moment. “While the VDPS payments are very modest in amount, and will do very little to alleviate the financial difficulties with which many families are now struggling as a consequence of injury or bereavement, the fact of payment for some will mark a moment of vindication in that it is the clearest statement yet, by the government, that in some rare instances the covid-19 vaccines have caused very significant injury or death.”…  
<https://www.bmj.com/content/377/bmj.o1565>

**title:** Moderna to open mRNA vaccine research and manufacturing centre in the UK

BMJ| 23rd june 2022  
  
The biotech company Moderna is to build a research and manufacturing centre in the UK which the government says will “future proof” the UK against potential emerging health threats.

The new mRNA Innovation and Technology Centre will develop mRNA vaccines for a wide range of respiratory diseases including covid-19, influenza, and respiratory syncytial virus. The company will also establish a global clinical trial base in the UK.

Under the strategic partnership agreed in principle between the UK government and Moderna, patients will have guaranteed access to covid-19 vaccines, including those against new variants. The centre will be able to scale up production rapidly in the event of a health emergency.

The news came as Moderna announced that its new combined bivalent covid vaccine, which specifically targets the omicron variant, “demonstrates a potent neutralising antibody response against the subvariants BA.4 and BA.5.”…  
<https://www.bmj.com/content/377/bmj.o1556>

**public health & health inequalities**

**title:** The covid-19 pandemic will end with public health tools, not clinical ones

BMJ | 24th june 2022  
  
We need public health innovation from our governments, writes Abraar Karan

As a clinician, I rarely see a patient die from covid-19 anymore. Those who end up in the hospital these days have benefited from the immense advances in clinical science that have brought us vaccines, monoclonal antibodies, and antivirals, and taught us how best to use these and other existing medications, such as steroids, to save our patients’ lives. Collectively, this is an enormous accomplishment. It’s not, however, the end of the pandemic.

The end of covid-19 will not be a clinical feat, but a public health one.

For months, doctors and health officials have been reminding people that they “have the tools”—specifically, the clinical tools—that mean most people won’t end up hospitalised or dead. But many people are still getting sick from infection, enough so to miss work; end up in the emergency department for evaluation; or end up with longer, lingering side effects, the consequences of which we cannot fully appreciate yet. Our current vaccines are not effective enough at stopping transmission1; and while future vaccines, such as intranasal formulations, may be, we are still several months away from these at best.

This month, as covid cases climbed in the US,2 my own infectious disease team was down from five doctors to just two—me and one other—because of staffing shortages at the hospital due to covid-19. This meant some consultations had to be moved to the next day, while others couldn’t wait. I had to work well past the end of my shift to make sure patients received the care they needed. This is unsustainable, and these are real costs that are harming not only our healthcare system but also many other industries where sick employees are unable to work. Big surges of infection are inherently disruptive to the functioning of our society.

I personally was able to avoid infection for two years until this past January when I was infected for the first time; I was then infected again just five months later in May. I had to miss work both times to enter isolation, meaning another infectious disease doctor had to leave their research laboratory to cover for me. The first time I felt quite ill and had lingering symptoms—especially fatigue—for a few months afterward. Both times, I was likely exposed by a loved one who became sick first and was staying in my small apartment. By the time we diagnosed them, it was too late to prevent onward transmission.

Surges make life less safe for everyone, but particularly those who have serious health conditions or are old enough that covid-19 may never be an afterthought for them. We are only as protected as the people who are around us; they are only as protected as those in their extended circles, and onwards. With the level of viral transmission we’ve had during omicron, most people now have no idea how or where they were infected. This is at least in part because of super spreading, whereby one person can infect a disproportionately large number of other people. This can occur even after the contagious person has left the area as infectious aerosols that linger in the air can infect people.3

With covid able to spread in this way, the idea that we can indefinitely protect ourselves as individuals breaks down very quickly. We cannot expect every person we come into close contact with to follow all public health prevention measures perfectly at all times—and to stop transmission of a virus that is this contagious, that is what would be needed if we only depended on the actions of individuals. Instead, strategies should be focused on preventing super spreading. This would likely stop big surges of infections now and in the future when we are confronted again with new variants.

Colleagues of mine have taken matters into their own hands: one has cleaned the air in his child’s classroom through building and installing low cost ventilation and filtration devices.4 What if all public shared spaces had these so that our air was constantly cleaned and exchanged the way it is in hospital airborne isolation rooms? In California, for instance, the public transportation system in San Francisco known as The BART has advanced air filtration systems that provide over 50 changes in the air per hour.5 With this in place, super spreading in these train cars would be unlikely. We need public health innovation from our governments to prevent transmission.

As more people survive from covid-19, we are still learning about and being surprised by the clinical complications that arise soon after infection. These may or may not be related to their initial infection, but since they started weeks to months afterwards, it suggests to us that they may be connected. I now often hear doctors saying, “This could be related to covid.” More data are needed and are being gathered over time, but this is a reminder that governments that are allowing widespread infection solely because there are fewer deaths are still gambling with people’s health.

Clinical tools are excellent—as a doctor, I use them every day to save patients’ lives. But as a public health researcher, I know that the pandemic will only end when we successfully minimise airborne transmission.  
<https://www.bmj.com/content/377/bmj.o1561>

**title:** Covid-19 failures show the US needs a national public health system, commission finds

BMJ| 23rd june 2022  
  
The high covid-19 death rate in the US and the nation’s failures to tackle public health problems such as drug overdoses, diabetes, and maternal mortality show the need for a national public health system, a non-partisan commission has concluded

The commission organised by the Commonwealth Fund laid out a plan for a national public health system on 21 June 2022 and said work should now begin on creating it.1

The Commonwealth Fund is a private, non-profit foundation that supports independent research on health policy reform and a high performance health system. The commission of public health experts was chaired by Margaret Hamburg, former head of the Food and Drug Administration and former assistant secretary of the Health and Human Services Administration for Planning and Evaluation.

More than one million Americans died from covid-19, one of the highest death rates in the world. “The scale of this catastrophe demands a commensurate response: the development of a national public health system to protect millions more from ongoing health crises and future emergencies,” the report said…  
<https://www.bmj.com/content/377/bmj.o1552>

**title:** The global impact of disproportionate vaccination coverage on COVID-19 mortality

the lancet infectious diseases| 23rd JUNE 2022  
  
Over the course of the first year of COVID-19 vaccination, between Dec 8, 2020, and Dec 8, 2021, 8·33 billion doses were administered among 4·36 billion people globally.1 In their study in The Lancet Infectious Diseases, by fitting a mathematical model to excess mortality, Oliver J Watson and colleagues2 estimated that in 185 countries and territories 31·4 million COVID-19-related deaths would have occurred during this timeframe in the absence of COVID-19 vaccination. They estimated that 19·8 million deaths were averted by COVID-19 vaccination. Consequently, the number of lives saved by COVID-19 vaccination markedly exceeded the death toll that has occurred. Nonetheless, even more lives could have been saved by improving the equitability of vaccination coverage worldwide. Specifically, an estimated 156 900 additional deaths would have been averted if the COVID-19 Vaccines Global Access (COVAX) Facility's vaccination target of 20% (for each Advance Market Commitment country) had been attained, and an estimated 599 300 additional deaths would have been averted if WHO's 2021 COVID-19 vaccination target of 40% (for each country) had been attained.2 Meeting these targets, particularly in low-income countries, is challenged by myriad obstacles that require international support to overcome…  
<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00417-0/fulltext>

**title:** Assessment of Digital and Community-Based Outreach Interventions to Encourage COVID-19 Vaccination Uptake in an Underserved Community

JAMA | 22nd june 2022  
  
Non-Hispanic Black (hereafter, Black) and Hispanic patients have higher risk for COVID-19 infection and hospitalization,1,2 but have lower rates of COVID-19 vaccination3 because of factors such as limited access to care, lack of outreach, technology and language barriers, and mistrust of health systems.4 To address this, we conducted 2 concurrent interventions at the NewYork-Presbyterian Hospital’s vaccination site at the Armory, located in a racially and ethnically diverse neighborhood in Northern Manhattan: (1) a digital redesign to restrict online self-scheduling for vaccination to local zip codes with underserved racial and ethnic minority patient populations4 and (2) direct outreach to educate and schedule patients through community-based organizations (CBO).4,5 Here we describe changes in race and ethnicity makeup of COVID-19 vaccine recipients before and after these interventions…  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793437>

**title:** Environmental Outcomes Associated With Transition From In-Person to a Virtual Oncology Conference During the COVID-19 Pandemic

JAMA oncology |23rd june 2022  
  
As worldwide conferences have transitioned from in-person to virtual formats, benefits have been discovered including expanded access and equity.1,2 However, the environmental benefits associated with reduced travel remain largely uncharacterized. It is estimated that conference attendance accounts for 35% of a scientist’s total carbon emissions.3 Given that climate change is an increasing problem with regard to human health and oncologic outcomes,4,5 it is imperative to begin to quantify, understand, and promote sustainable practices. In response to the COVID-19 pandemic, the 2021 American Radium Society (ARS) Annual Meeting transitioned to a virtual online conference. We aimed to estimate the travel-related carbon dioxide (CO2) emissions associated with the transition of this meeting to a virtual platform…  
<https://jamanetwork.com/journals/jamaoncology/fullarticle/2793716>

**international perspectives**

**title:** COVID-19 in North Korea

the lancet |25th june 2022  
  
1 month ago, North Korea declared its first COVID-19 cases. Information is scare, but the outbreak now appears to be huge, amid a food crisis and without mass vaccination. Talha Burki reports.  
<https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(22)01133-3.pdf>

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