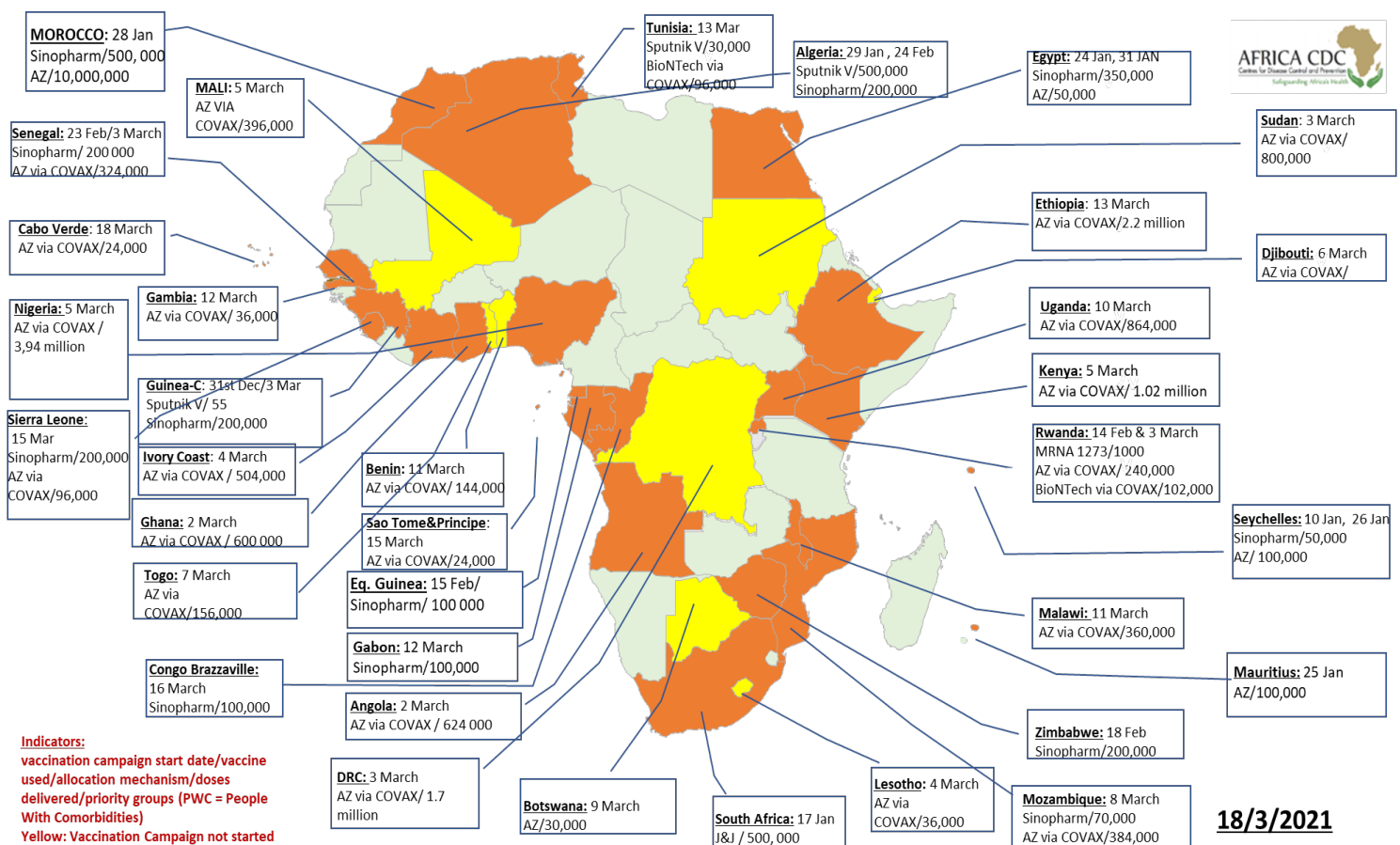


COVID-19 Scientific and Public Health Policy Update¹ – (23 March 2021)

In addition to the Weekly Outbreak Brief and other documents on the spread of COVID-19 and the actions that the African Union- Africa CDC and WHO/AFRO are taking to help African Union Member States, we share a weekly brief detailing the latest developments in scientific knowledge and public health policy from around the world, as well as updates to the latest guidance from Africa CDC, WHO and other public health agencies. Contents of this document are *not intended to serve as recommendations* from the African Union-Africa CDC or WHO/AFRO; rather, it is a summary of the scientific information available in the public space to Member States. It is important to note that the outbreak is evolving rapidly and that the nature of this information will continue to change. We will provide regular updates to ensure Member States are informed of the most critical developments in these areas.

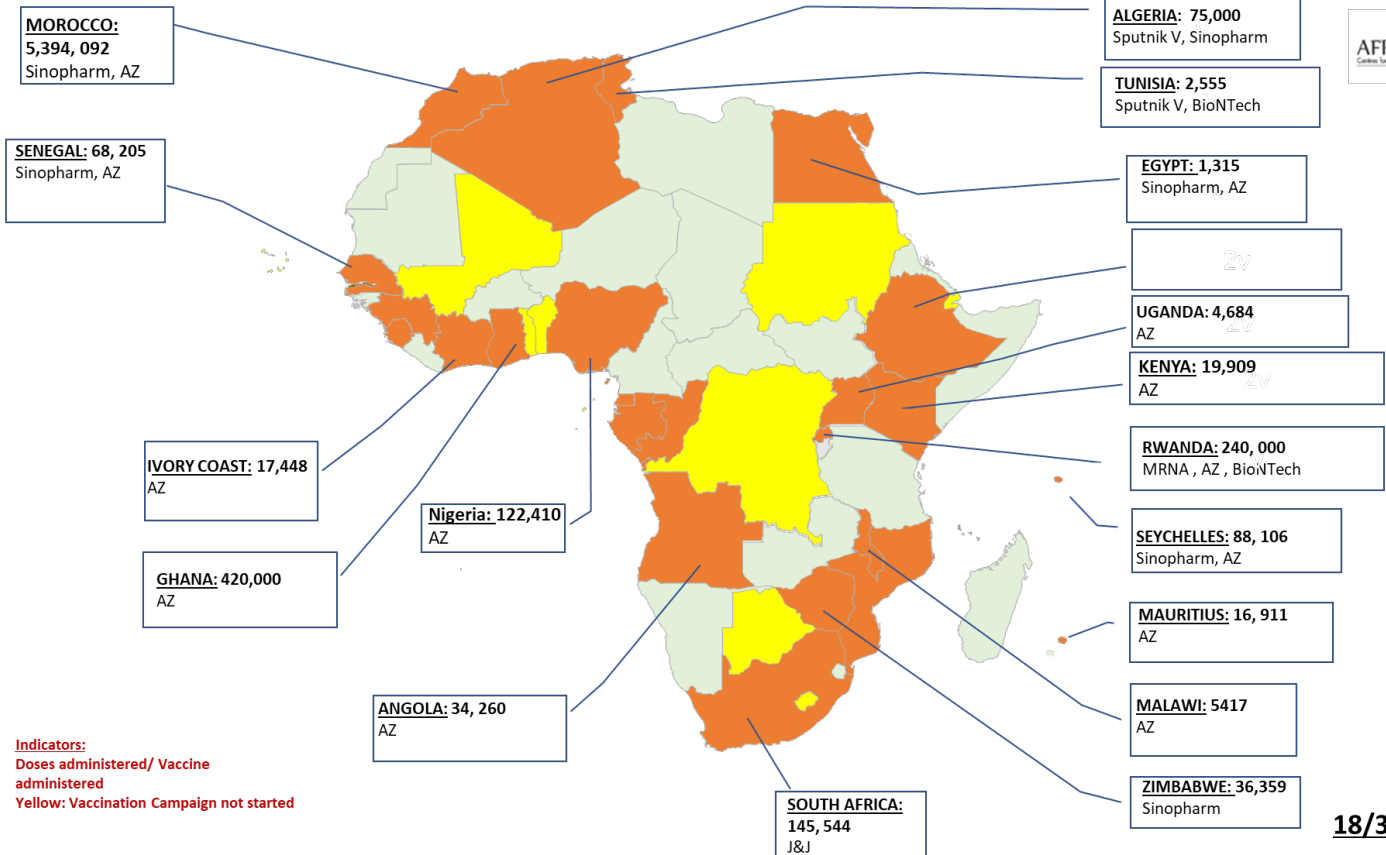
A. Trending Topics

Status of Vaccines in Africa



18/3/2021

¹ This update compiled for use by African Union Member States and is developed collaboratively by the African Union- Africa CDC and World Health Organization - Regional Office for Africa. **This is a preliminary summary of information and not considered policy, guidance, or final conclusions of the African Union- Africa CDC or WHO/AFRO.**



18/3/2021

Updated 18 March 2021

- SARS-CoV-2 prevalence for the combined measure was 10.6%, an estimated 454,708 SARS-CoV-2 infections occurred in the six districts in Zambia between March and July, 2020, compared with 4917 laboratory-confirmed cases reported in official statistics from the Zambia National Public Health Institute.
- A case report of the first known case of an infant with SARS-CoV-2 IgG antibodies detectable in cord blood after maternal vaccination. Cord blood antibodies (IgG) were detected to the S-protein of SARS-CoV-2 at time of delivery. (Not Peer-reviewed)

B. New guidelines and resources

Since 06 March 2021,

- Africa CDC has published new guidance and resources on:
 - [Report: Virtual Meeting on The African COVID-19 Vaccine Financing and Deployment Strategy](#)
 - [COVID 19 Vaccine Perceptions: A 15 country study](#)
 - [African Union and the Africa Centers for Disease Control and Prevention's Africa Regulatory Taskforce has endorsed the Emergency Use Authorization for Janssen COVID-19 Vaccine](#)
 - [Statement to African Union Member States on the deployment of the AstraZeneca COVID-19 Vaccine to the continent and concerns about adverse event reports coming from Europe](#)
 - [Outbreak Brief 60: Coronavirus Disease 2019 \(COVID-19\) Pandemic](#)
- US CDC has published new guidance and resources on:

- [Operational Considerations for Community Isolation Centers for COVID-19 in Low-Resource Settings](#)
- [Guidance for Large or Extended Families Living in the Same Household](#)
- [Screening K-12 Students for Symptoms of COVID-19: Limitations and Considerations](#)
- [Interim Guidance for SARS-CoV-2 Testing in Correctional and Detention Facilities](#)
- [Interim Guidance for SARS-CoV-2 Testing in Non-Healthcare Workplaces](#)
- [Interim Guidance for SARS-CoV-2 Testing in Homeless Shelters and Encampments](#)
- [Interim Guidance for SARS-CoV-2 Testing and Screening at Institutions of Higher Education \(IHEs\)](#)
- [Overview of Testing for SARS-CoV-2 \(COVID-19\)](#)
- [Interim Guidelines for COVID-19 Antibody Testing](#)
- [Healthcare Facilities: Managing Operations During the COVID-19 Pandemic](#)
- [Guidance for COVID-19](#)
- [Testing Strategies for SARS-CoV-2](#)
- [Guidance for Operating Child Care Programs during COVID-19](#)
- [Guidance for Organizing Large Events and Gatherings](#)
- [Guidance for Large or Extended Families Living in the Same Household](#)
- [Strategies to Mitigate Healthcare Personnel Staffing Shortages](#)
- [Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 \(COVID-19\)](#)
- [Interim Public Health Recommendations for Fully Vaccinated People](#)
- [Interim U.S. Guidance for Risk Assessment and Work Restrictions for Healthcare Personnel with Potential Exposure to SARS-CoV-2](#)
- [Interim Guidance for Homeless Service Providers to Plan and Respond to Coronavirus Disease 2019 \(COVID-19\)](#)
- [Overview of Testing for SARS-CoV-2 \(COVID-19\)](#)
- [Interim Considerations for Health Departments for SARS-CoV-2 Testing in Homeless Shelters and Encampments](#)
- WHO has published new guidance and resources on:
 - [Background document on the Janssen Ad26.CO2.S \(COVID-19\) vaccine](#)
 - [Interim recommendations for the use of the Janssen Ad26.CO2.S \(COVID-19\) vaccine](#)
 - [How to monitor and report COVID-19 vaccine side effects](#)
 - [Monitoring COVID-19 vaccination: Considerations for the collection and use of vaccination data](#)
- FDA has issued press releases on:
 - [FDA has released a total of 399 COVID – 19 Test Kits \(132 – PCR based, 115 – Rapid Antibody, 70 – Immunoassay and 82 – Others\)](#)
 - [Public Health Warning on the Purchase and Use of Ivermectin Veterinary Products for COVID-19](#)
 - [FDA-Special Certification for COVID-19 Test Kits](#)
- ECDC has issued new resource on:
 - [Stress test on logistical aspects of COVID-19 vaccination deployment plans for the Western Balkans: final report](#)

- [Introducing a coherent European framework for tuning COVID-19 response measures](#)
- [Considerations on the use of self-tests for COVID-19 in the EU/EEA](#)
- [Guidance for COVID-19 quarantine and testing of travellers](#)
- [One-day in-action review \(IAR\) protocol in the context of COVID-19](#)
- [Guidance for COVID-19 quarantine and testing of travellers](#)
- PHE has issued new resource on:
 - [COVID-19: investigation and management of suspected SARS-CoV-2 reinfections](#)

The full list of latest guidance and resources from WHO and other public health institutions can be found in this [link](#).

C. Scientific updates

Basic Science

- [This study reports the first cases of infection of domestic cats and dogs by the British B.1.1.7 variant of SARS-CoV-2 diagnosed at a specialist veterinary hospital in the South-East of England.](#) Author discovered that many owners and handlers of these pets had developed COVID-19 respiratory symptoms 3-6 weeks before their pets became ill and had also tested PCR positive for COVID-19. *(Not Peer-reviewed)*
- [A case report of the first known case of an infant with SARS-CoV-2 IgG antibodies detectable in cord blood after maternal vaccination.](#) A vigorous, healthy, full-term female was born to a COVID-19 naïve mother who had received a single dose of mRNA vaccine for SARS-CoV-2 three weeks prior to delivery. Cord blood antibodies (IgG) were detected to the S-protein of SARS-CoV-2 at time of delivery. *(Not Peer-reviewed)*
- [This study shows that unlike the initial SARS-CoV-2 virus, VOCs are able to infect common laboratory mice, replicating to high titers in the lungs.](#) This host range expansion is explained in part by the acquisition of changes at key positions of the receptor binding domain that enable binding to the mouse angiotensin-converting enzyme 2 (ACE2) cellular receptor, although differences between viral lineages suggest that other factors are involved in the capacity of SARS-CoV-2 VOCs to infect mice. *(Not Peer-reviewed)*
- Researchers from Texas A&M College of Veterinary Medicine & Biomedical Sciences, [report the B.1.1.7 variant confirmed in two pets, a senior black lab-mix dog and a senior domestic shorthair cat, from the household where the owner was diagnosed with COVID-19 in mid-February.](#)
- The antibody response to the 501Y.V2 variant was examined in a cohort of patients hospitalized with COVID-19 in early 2021, when over 90% of infections in South Africa were attributed to 501Y.V2. [The antibodies were able to inactivate viruses incorporating the form of spike protein found in B.1.351, earlier strains, and an emerging variant identified in Brazil called P.1. Suggesting that vaccines based on B.1.351's genetic sequence might protect people from multiple strains of the coronavirus.](#) *(Not Peer-reviewed)*
- [Data from a massive online survey in the United States indicates an increased risk of COVID-19-related outcomes among respondents living with a child attending school in-person.](#) School-based mitigation measures are associated with significant reductions in risk, particularly daily symptoms screens, teacher masking, and closure of extra-curricular activities. *(Not Peer-reviewed)*

- Researchers performed a comprehensive analysis of SARS-CoV-2-specific CD4+ and CD8+ T cell responses from COVID-19 convalescent subjects recognizing the ancestral strain, compared to variant lineages B.1.1.7, B.1.351, P.1, and CAL.20C as well as recipients of the Moderna (mRNA-1273) or Pfizer/BioNTech (BNT162b2) COVID-19 vaccines. [The results demonstrate that CD4+ and CD8+ T cell responses in convalescent COVID-19 subjects or COVID-19 mRNA vaccine recipients are not substantially affected by mutations found in the SARS-CoV-2 variants.](#) (Not Peer-reviewed)
- This study describes a meta-transcriptomic study of 411 samples collected from 23 bat species in a region in Yunnan province, China. [One of the viruses isolated from a Rhinolophus pusillus bat shared 94.5% of its genome with the pandemic virus, making it the second-closest known relative to SARS-CoV-2. The results suggest that viruses closely related to SARS-CoV-2 continue to circulate in bats.](#) (Not Peer-reviewed)
- This study uses a reverse genetics approach, to show that, of the 8 individual spike protein substitutions, [only N501Y exhibited consistent fitness gains for replication in the upper airway in the hamster model as well as primary human airway epithelial cells. Compared with the other strains, they also spread more readily between animals.](#) (Not Peer-reviewed)
- This study characterises and further evaluates the recently identified human monoclonal MD65 antibody for its ability to provide protection against a lethal SARS-CoV-2 infection of K18-hACE2 transgenic mice. [80% of the untreated mice succumbed 6–9 days post-infection, while administration of the MD65 antibody as late as 3 days after exposure rescued all infected animals. In addition, the efficiency of the treatment is supported by prevention of morbidity and ablation of the load of infective virions in the lungs of treated animals. The data demonstrate the therapeutic value of human monoclonal antibodies as a life-saving treatment for severe COVID-19 infection.](#)
- This study investigated in-flight transmission of COVID-19 on a flight from the United Arab Emirates to New Zealand. Among 86 passengers on a flight from Dubai that arrived in New Zealand on September 29, test results were positive for 7 persons in managed isolation and quarantine (MIQ). These passengers originated from 5 different countries before a layover in Dubai; 5 had negative pre-departure SARS-CoV-2 test results. To assess possible points of infection, information about their journeys, disease progression, and virus genomic data was analyzed. All 7 SARS-CoV-2 genomes were genetically identical, except for a single mutation in 1 sample. [Findings suggest that despite pre-departure testing, multiple instances of in-flight SARS-CoV-2 transmission are likely.](#)
- This study investigated the antibody response of a single SARS-CoV-2 spike mRNA vaccine dose (Pfizer and Moderna) in persons with previous Covid-19. [Findings suggest that a single dose of mRNA vaccine elicited rapid immune responses in seropositive participants, with post vaccination antibody titers that were similar to or exceeded titers found in seronegative participants who received two vaccinations. Whether a single dose of mRNA vaccine provides effective protection in seropositive persons requires investigation](#)
- A study assessed whether health care workers with previous COVID-19 infection could mount recall responses to a single dose of an mRNA-based COVID-19 vaccine. [Results indicate that healthcare workers with previous COVID-19 infection, based on laboratory-confirmed serology testing, had](#)

[higher antibody titer responses to a single dose of mRNA vaccine than those who were not previously infected. Antibody titers started peaking at 7 days and achieved higher titers and neutralization in 14 days compared with Ab-negative volunteers.](#)

- This study compared the neutralizing-antibody response to 4 variants in infected and vaccinated individuals to determine how mutations within the spike protein are associated with virus neutralization. [This study found neutralizing activity of infection- and vaccine-elicited antibodies against 4 SARS-CoV-2 variants, including B.1, B.1.1.7, and N501Y. These results suggest that infection- and vaccine-induced immunity may be retained against the B.1.1.7 variant and as additional variants emerge, neutralizing-antibody responses after infection and vaccination should be monitored.](#)

Epidemiology

- This population-level observational study collected individual-level data on patients who had been tested in Denmark in 2020 (first surge from March to May 2020, second surge from Sept 1 to Dec 31 2020) to describe the degree to which infection with SARS-CoV-2 confers protection towards subsequent reinfection. [Findings suggest protection against repeat infection was 80.5%, with no significant difference in reinfection rates between men and women. Those aged 65 years and older, protection against repeat infection was 47.1%. There was evidence of waning protection over time.](#)
- This study estimates the risk of death following confirmation of SARS-CoV2 infection in England, comparing infection with VOC to non-VOC. [Findings suggest an increased risk of death for VOC compared with non-VOC cases in England. Absolute risk of death by 28-days increased with age and comorbidities. VOC has potential to spread faster with higher mortality than the pandemic to date. \(Not Peer-reviewed\)](#)
- Using whole-genome sequencing (WGS) of SARS-CoV-2 from Congolese individuals sampled between April and July 2020. [Results suggest all genomes carried the spike mutation D614 G and were classified as part of the GH clade. The Congolese SARS-CoV-2 sequences belong to lineage B1 and nextclade 20A and 20C, which split into distinct clusters, indicating two separate introductions of the virus into the Republic of Congo.](#)
- [This study analyzed proportions of the clinical spectrum of COVID-19, factors associated with risk of severe COVID-19 and in-hospital mortality in Ethiopia. Factors associated with risk of in-hospital mortality included older age, malignancy and surgery/trauma. Significant proportion of SARS-CoV-2 infection were asymptomatic and key comorbid conditions increased risk of COVID-19 severity and in-hospital mortality.](#)
- [A total of 53 peer-reviewed articles were selected, including 173,353 HCWs \(32.7% male\) from the United States, ten European, and three East Asian countries. The overall seropositive prevalence rate of IgG antibodies was 8.6% in these regions. Pooled seroprevalence of IgG antibodies was higher in studies conducted in the USA \(12.4%\) than in Europe \(7.7%\), and East Asia \(4.8%\).](#)
- This systematic review and meta-analysis of 2,523 studies evaluating SARS-CoV-2 seroprevalence in human studies representing tests in 5,168,360 individuals, 404 serological studies were included in the meta-analysis. [A higher prevalence of SARS-CoV-2-specific antibodies was observed in close contacts \(18.0%\) and high-risk health-care workers](#)

(17.1%) than in low-risk health-care workers (4.2%) and the general population (8.0%).

- A cross-sectional cluster-sample survey of households in six districts of Zambia, aimed to estimate SARS-CoV-2 prevalence in six districts of Zambia, with 4,258 people from 1,866 households. SARS-CoV-2 prevalence for the combined measure was 10.6%, an estimated 454,708 SARS-CoV-2 infections occurred in the six districts between March and July 2020, compared with 4,917 laboratory-confirmed cases reported in official statistics from the Zambia National Public Health Institute. Findings suggest the estimated number of SARS-CoV-2 infections was much higher than the number of reported cases in six districts in Zambia.
- Public Health England initiated a study, COVID-19 Surveillance in School KIDs (sKIDs), an active, prospective, surveillance study in primary schools when they partially reopened from June 1, 2020, to estimate the incidence of symptomatic and asymptomatic SARS-CoV-2 infection, seroprevalence, and seroconversion in staff and students in England. Their findings suggest SARS-CoV-2 infection rates were low in primary schools following their partial and full reopening in June and September 2020.
- This study presents the COVID-19 early warning system (CovEWS), a risk scoring system for assessing COVID-19 related mortality risk that we developed using data amounting to a total of over 2,863 years of observation time from a cohort of 66,430 patients seen at over 69 healthcare institutions. On an external cohort of 5005 patients, CovEWS predicts mortality from 78.8% specificity at sensitivities greater than 95% between, respectively, 1 and 192 h prior to mortality events. CovEWS could enable earlier intervention, and may therefore help in preventing or mitigating COVID-19 related mortality.
- This study included 1,733 patients who were hospitalized in Wuhan, China, to determine presence of symptoms 6 months after they became ill. Fatigue and ongoing muscle weakness were reported by 63% of the patients and roughly one-quarter reported difficulty sleeping or anxiety and depression. A subset of patients still had reduced lung function and below normal results on a 6-minute walking test. Ongoing lung and mobility impairments were more prevalent among the most severely ill patients. Among 1,378 patients with estimated glomerular filtration rates available during their acute illness and at follow-up, about one-third had reduced kidney function at 6 month
- This study provides clinical status of a cohort of patients 4 months after hospitalization for COVID-19. In an uncontrolled cohort study of 478 survivors of COVID-19, at least 1 new-onset symptom was reported by telephone interview by 244 patients (51%), including fatigue in 134 of 431 (31%), cognitive symptoms in 86 of 416 (21%), and dyspnea in 78 of 478 (16%). Computed tomographic lung scan abnormalities were reported in 63% of 171 patients assessed at an ambulatory visit, mainly subtle ground-glass opacities. Fibrotic lesions were observed in 19% of these 171 patients.
- This cohort study of 47 infants and young children in Italy examine whether the use of surgical facial masks among children is associated with episodes of oxygen desaturation or respiratory distress. Results showed that wearing surgical face masks for 30 minutes was not associated with changes in respiratory parameters or clinical signs of respiratory distress. These findings suggest that the use of surgical masks among children may be promoted during the COVID-19 pandemic, especially in view of the reopening of schools.

Care and Treatment

- This study assesses the safety and efficacy of sarilumab, an interleukin-6 receptor inhibitor, in patients with severe or critical COVID-19. [The randomised, double-blind, placebo-controlled, multinational phase 3 trial was conducted in 45 hospitals in Argentina, Brazil, Canada, Chile, France, Germany, Israel, Italy, Japan, Russia, and Spain. This trial did not show efficacy of sarilumab in patients admitted to hospital with COVID-19 and receiving supplemental oxygen.](#)
- This study analysed records of 1,113 patients in the Mayo Clinic Electronic Health Record (EHR) database who were admitted to the hospital for COVID-19, [compared the clinical outcomes in patients who received Heparin and Enoxaparin. Results indicate that COVID-19 patients administered unfractionated Heparin but not Enoxaparin have higher rates of 28-day mortality.](#)
- A multicentre, double-blind, randomised trial was done at seven hospitals in the USA, to evaluate whether [mavrilimumab, a monoclonal antibody to the GM-CSF receptor, would improve outcomes in patients with COVID-19 pneumonia and systemic hyperinflammation. Findings suggest there was no significant difference in the proportion of patients alive and off oxygen therapy at day 14.](#)

Vaccines

- A double-blind, randomised, multicentre, phase 2 clinical trial to evaluate the immunogenicity and safety of BBV152, in healthy adults and adolescents (aged 12–65 years) at nine hospitals in India. 380 were enrolled and randomly assigned to the 3 µg with Algel-IMDG group or 6 µg with Algel-IMDG group. [Results of the phase 2 trial, BBV152 showed better reactogenicity and safety outcomes, and enhanced humoral and cell-mediated immune responses compared with the phase 1 trial. The 6 µg with Algel-IMDG formulation has been selected for the phase 3 efficacy trial.](#)
- The BNT162b2 mRNA COVID-19 vaccine showed high efficacy in clinical trials but This study describes [immunogenicity of BNT162b2 mRNA COVID-19 21 days post-dose 1 among 514 Israeli healthcare workers prior COVID-19 infection. Immunogenicity was similar by ethnicity and sex but decreased with age. Those with prior infection had antibody titres one magnitude order higher than naïve individuals regardless of the presence of detectable IgG antibodies pre-vaccination.](#)
- This study used a mathematical model structured by age and UK region, fitted to a range of epidemiological data in the UK and planned rollout of a two-dose vaccination programme. [Findings suggest that vaccination alone is insufficient to contain the outbreak. In the absence of NPIs, even with the most optimistic assumption that the vaccine will prevent 85% of infections, authors estimate R to be 1.58 once all eligible adults have been offered both doses of the vaccine.](#) For all vaccination scenarios investigated, predictions highlight the risks associated with early or rapid relaxation of NPIs.
- A multicenter, double-blind, randomized, controlled trial assessed the safety and efficacy of the ChAdOx1 nCoV-19 vaccine (AZD1222) in people not infected with the human immunodeficiency virus (HIV) in South Africa. [Results indicate that a two-dose regimen of the ChAdOx1 nCoV-19 vaccine](#)

[did not show protection against mild-to-moderate Covid-19 due to the B.1.351 variant.](#)

- A study investigated acute allergic reaction incidence after more than 60 000 mRNA COVID-19 vaccine administrations. Of 64 900 who received their first dose of a COVID-19 vaccine, 25 929 (40%) received the Pfizer-BioNTech vaccine and 38 971 (60%) received the Moderna vaccine. [Acute allergic reactions were reported by 1365 employees overall, more frequently with the Moderna vaccine \(2.20%\) compared with Pfizer-BioNTech \(1.95%\)](#)
- This randomized, double-blind, placebo-controlled phase 1 clinical trial of Ad26.COV2.S evaluated the immunogenicity of the Ad26.COV2.S vaccine (Janssen/Johnson & Johnson) in humans, including the kinetics, magnitude, and phenotype of SARS-CoV-2 spike-specific humoral and cellular immune responses. [Results indicate that a single immunization with Ad26.COV2.S induced rapid binding and neutralization antibody responses as well as cellular immune responses. Two phase 3 clinical trials are currently underway to determine the efficacy of the Ad26.COV2.S vaccine.](#)

Non-pharmaceutical interventions: social distancing

- This study compares incident cases of SARS-CoV-2 in students and staff in Massachusetts public schools among districts with [different physical distancing requirements with \$\geq 3\$ versus \$\geq 6\$ feet of physical distancing.](#) [Findings suggest that lower physical distancing policies can be adopted in school settings with masking mandates without negatively impacting student or staff safety.](#)

Diagnostics

- This study investigated the results of RT-PCR on nasopharyngeal swabs tested from December 2020 to February 2021, to verify any difference on the viral load and persistence between people infected by lineage B.1.1.7 and others, in Abruzzo region, Italy. [Statistically significant higher RNA loads were observed in nasopharyngeal swabs collected from individuals infected with lineage B.1.1.7 with respect to those infected by other SARS-CoV-2 lineages.](#)
- This study assessed the performance and implementation of rapid antigen-based SARS-CoV-2 testing in a setting with a low prevalence of COVID-19 infections, such as Australia. [The Abbott PanBio™ COVID-19 Ag point-of-care test was performed alongside RT-PCR. The specificity of the Abbott PanBio™ COVID-19 Ag test was 99.96%.](#) Given the high specificity, antigen-based tests may be most useful in rapidly triaging public health and hospital resources while expediting confirmatory RT-PCR testing.
- This study assessed the analytical performances of the antigen-rapid diagnosis test (Ag-RDT) SIENNA™ COVID-19 Antigen Rapid Test Cassette (Nasopharyngeal Swab). Overall, the Ag-RDT showed high sensitivity, specificity, positive and negative predictive values of 90.0%, 100.0%, 100.0% and 98.1%. [The SIENNA™ Ag-RDT presents excellent analytical performances for viral loads \$\leq 33\$ Ct, classically corresponding to situations of symptomatic COVID-19 and/or proven contagiousness.](#)

Economic Studies

- Using an age-structured dynamic transmission and economic model to explore different scenarios of [UK mass immunisation programmes over 10 years, this study compared vaccinating 75% of individuals aged 15 years or older \(and annually revaccinating 50% of individuals aged 15–64 years and 75% of individuals aged 65 years or older\) to no vaccination. Also explored the additional impact of physical distancing on vaccination. Findings highlight the substantial health and economic value of introducing SARS-CoV-2 vaccination.](#)

Infection Prevention and Control

- This cross-sectional study, including 6,003 participants wearing face masks in public places, [found that face mask airtightness was commonly suboptimal, mostly secondary to gaps at the upper face mask edge. Using simple and tolerable approach of sealing the upper face mask edge with an adhesive tape was associated with significant improvement of face mask airtightness. These findings suggest that compromised protection due to suboptimal face mask airtightness was common, and use of adhesive tape to seal the upper edge was associated with easily and quickly improving the airtightness of existing masks.](#)

Contributors

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