

COVID-19 Scientific and Public Health Policy Update¹ – (14 July 2020)

In addition to our Weekly Outbreak Brief on the spread of COVID-19 and the actions that Africa CDC is taking to help African Union Member States. Africa CDC shares 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 WHO and other public health agencies. Contents of this document are not intended to serve as recommendations from the Africa CDC; 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. Executive summary

- Three systematic review studies highlight the neurological manifestations of SARS-CoV-2. Commonly reported symptoms included hyposmia, headaches, weakness and altered consciousness. Further, encephalitis, demyelination, neuropathy, and stroke have been associated with COVID-19.
- Several studies published associating public gatherings such as church gathering and choir practice highlight transmission dynamics that further community transmission. One study reports attendance of a symptomatic case at a choir rehearsal, 53 of 61 in attendance were confirmed or strongly suspected to have contracted COVID-19 and two died. Another investigated and established links between three clusters of COVID-19 in using SARS-CoV-2 serological assays. Results suggested that three clusters of COVID-19, comprising of 28 locally transmitted cases were linked to two churches and a family gathering.
- An algorithm used to improve the performance of Rapid Diagnostics Tests for the diagnosis of SARS-CoV-2 in Uganda, indicate that the individual sensitivities of the RDTs ranged between 18% and 74% and the combinations of the 2 RDTs improved the sensitivities to 90%.
- Seroprevalence studies indicate that most of the population, even in areas with widespread virus circulation, appears to have remained unexposed to SARS-CoV-2. Results suggest that any proposed approach to achieve herd immunity through natural infection might be unachievable. Further, a seroprevalence of SARS-CoV-2 antibodies among blood donors in Kenya found an estimated prevalence of antibodies to SARS-CoV-2 among blood donors in Kenya ranging from 1.1% to 12.4% in two counties.

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

- The African Union Commission launched the Africa Centres for Disease Control and Prevention (Africa CDC) Consortium for COVID-19 Vaccine Clinical Trial (CONCVACT) under the Africa Joint Continental Strategy for COVID-19. CONCVACT aims to secure late stage vaccine clinical trials on the continent to ensure that sufficient data is generated on the safety and efficacy of the most promising vaccine candidates for the African population so they can be confidently rolled out once approved. The three key objectives are (i) Accelerate African involvement in the clinical development of a vaccine; (ii) Ensure Africa can access sufficient share of the global vaccine supply; (iii) Remove barriers to widespread delivery and uptake of the vaccine across Africa

B. New guidelines and resources

Since 27 June 2020,

- Africa CDC has published new guidance on:
 - [Guidance on Environmental decontamination in the context of COVID-19;](#)
 - [Statement on herbal remedies and medicines for prevention and treatment of COVID-19;](#)
 - [Statement on the use of Dexamethasone for severely ill COVID-19 Patients;](#)
 - [Position Statement on transmission of SARS-CoV-2 by pre-symptomatic and asymptomatic individuals – Africa CDC;](#)
 - [Africa's Leadership Role in the Development and Access to Potential COVID-19 Vaccine: Highlights for Day One;](#)
 - [Africa's Leadership Role in the Development and Access to Potential COVID-19 Vaccine: Rapporteur's Report for Day Two](#)
- WHO has published new guidance and resources on:
 - [Infection prevention and control during health care when coronavirus disease \(COVID-19\) is suspected or confirmed;](#)
 - [Preparedness for cyclones, tropical storms, tornadoes, floods and earthquakes during the COVID-19 pandemic;](#)
 - [Smoking and COVID-19;](#)
 - [Investing in and building longer-term health emergency preparedness during the COVID-19 pandemic;](#)
 - [Transmission of SARS-CoV-2: implications for infection prevention precautions;](#)
 - [Maintaining a safe and adequate blood supply during the pandemic outbreak of coronavirus disease \(COVID-19\)](#)
- US CDC has published new and updated guidance and resources on:
 - [Toolkit for Businesses and Workplaces;](#)
 - [Toolkit for Community and Faith-Based Organizations;](#)
 - [Toolkit for Domestic Travelers;](#)

- [Strategies for Optimizing the Supply of Eye Protection;](#)
- [Strategies for Optimizing the Supply of Facemasks;](#)
- [Performing Broad-Based Testing for SARS-CoV-2 in Congregate Settings;](#)
- [About Cloth Face Coverings;](#)
- [Considerations for Wearing Cloth Face Coverings;](#)
- [Management of Visitors to Healthcare Facilities in the Context of COVID-19: Non-US Healthcare Settings;](#)
- [Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 \(COVID-19\) Pandemic;](#)
- [COVID-19 Overview and Infection Prevention and Control Priorities in Non-US Healthcare Settings;](#)
- [Multistate Assessment of SARS-CoV-2 Seroprevalence in Blood Donors;](#)
- [Guidance for General Laboratory Safety Practices during the COVID-19 Pandemic;](#)
- [Resources for Laboratories Working on Coronavirus \(COVID-19\); CDC's Diagnostic Multiplex Assay for Flu and COVID-19 and Supplies;](#)
- [Operational Considerations for Immunization Services during COVID-19 in Non-US Settings Focusing on Low-Middle Income Countries;](#)
- [Guidance on Integration of COVID-19 in Existing Acute Febrile Illness \(AFI\) Surveillance Systems;](#)
- [Interim Considerations for Health Departments for SARS-CoV-2 Testing in Homeless Shelters and Encampments;](#)
- [Information for Laboratories about Coronavirus \(COVID-19\)](#)
- ECDC has published new resources on:
 - [COVID-19 Aviation Health Safety Protocol: Guidance for the management of airline passengers in relation to the COVID-19 pandemic;](#)
 - [Use of gloves in healthcare and non-healthcare settings in the context of the COVID 19 pandemic;](#)
 - [Infection prevention and control and surveillance for coronavirus disease \(COVID-19\) in prisons in EU/EEA countries and the UK;](#)
 - [Guidance on the provision of support for medically and socially vulnerable populations in EU/EEA countries and the United Kingdom during the COVID-19 pandemic;](#)
 - [Infection prevention and control and preparedness for COVID-19 in healthcare settings - fourth update;](#)
 - [Infographic: Use of gloves in healthcare and non-healthcare settings in the context of COVID-19;](#)

- [Rapid Risk Assessment: Resurgence of reported cases of COVID 19 in the EU/EEA, the UK and EU candidate and potential candidate countries](#)
- FDA has issued press releases on:
 - [FDA Issued Emergency Use Authorization for Point of Care Antigen Test;](#)
 - [FDA Takes Action to Warn, Protect Consumers from Dangerous Alcohol-Based Hand Sanitizers Containing Methanol; FDA Takes Action to Help Facilitate Timely Development of Safe, Effective COVID-19 Vaccines](#)
- UNHCR has issued resources on:
 - [Communities Getting Involved: Supporting Community Leadership in the Response to the COVID-19 Pandemic;](#)
 - [Supporting Continued Access to Education during COVID-19 - Emerging Promising Practices Issue 2](#)
- PAHO has issued resources on:
 - [Emergency use of unproven interventions outside of research: Ethics guidance for the COVID-19 pandemic;](#)
 - [Caribbean shelter guide: COVID-19 considerations — Preparatory measures to be taken in emergency shelters during hurricane season inclusive of basic infection control, hygiene, space management and COVID-19 precautions](#)
- UNICEF has issued a resource on:
 - [Nutrition and education collaboration - Checklist for reopening schools: A coordinated response for children to return to school](#)
- OCHA has issued a resource on:
 - [Global Humanitarian Response Plan: COVID-19 \(April – December 2020\) Progress Report: First Edition, 26 June 2020 \[EN/AR\]](#)
- 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

- A case study of five male patients who presented with the sole complaint of unilateral sudden sensorineural hearing loss (SSNHL) in Turkey. [Findings report COVID-19 in one of five \(20%\) patients with SSNHL symptoms with no prior risk factors for hearing loss.](#) Even though the sample size is small, the current results carry importance for global public health as there have been no other reports of COVID-19 patients diagnosed with isolated SSNHL. There is a need for further studies on COVID-19 and SSNHL.

- A systematic review of 28 studies describing the radiological manifestations of CNS infection by different strains of coronaviruses (SARS-CoV, MERS-CoV, COVID-19, and other CoV strains). [Neuroimaging modalities such as CT and MRI demonstrated imaging abnormalities in different areas of the brain, including acute cerebrovascular events \(ischemic and hemorrhagic types\), myelitis, demyelinating disorders \(ADEM\), meningitis, encephalopathy and so on. Cerebrovascular events \(both ischemic and hemorrhagic\) are found to be the most common neuroradiologic abnormality seen among COVID-19 patients.](#)
- A systematic review of 67 studies describing neurological manifestations of SARS-CoV-2 and other human coronavirus infections reports that SARS-CoV-2 receptor is expressed in the nervous system. [Common reported symptoms included hyposmia, headaches, weakness, altered consciousness. Encephalitis, demyelination, neuropathy, and stroke have been associated with COVID-19.](#) Infection through the cribriform plate and olfactory bulb and dissemination through trans-synaptic transfer are some of the mechanisms proposed.
- A systematic review of seven clinical studies (409 patients) on cases that had neurological manifestations associated with COVID-19 and other coronaviruses, [findings suggest coronaviruses have important neurotropic potential and they cause neurological alterations that range from mild to severe.](#) The main neurological alterations were headache, dizziness, altered consciousness, vomiting, epileptic crisis, neuralgia, and ataxia.
- A systematic review of 1,773 COVID-19 patients, [reports the most common ENT manifestations of COVID-19 were sore throat and headache. While the other reported ENT manifestations were pharyngeal erythema, nasal congestion, runny nose or rhinorrhea, upper respiratory tract infection \(URTI\), and tonsil enlargement.](#) ENT manifestations for COVID-19 are not common as fever and cough.
- A review of 58 articles was summarised to highlight the differential distribution of neurological impairments in COVID-19 positive patients and to establish the neurovirulence of SARS-CoV2 beyond its classical manifestations in the cardiorespiratory system. [Findings suggest that the extent of neuroinvasion of the virus depends on its ability to disrupt the BBB, infect neuroglial cells and on the cytokine mediated inflammatory response as a sequela of it.](#) Angiotensin-converting enzyme-2 (ACE2) expression dynamics in neuronal and non-neuronal tissue in CNS and PNS with neuroinvasive potential of SARS-CoV2.
- A study reports on the [transmission of the SARS-CoV-2 via direct contact and air in ferrets 1 to 3 days and 3 to 7 days after exposure respectively. Findings indicate a similar pattern of virus shedding in the direct contact and indirect recipient ferrets to that of the inoculated ferrets and infectious virus is isolated](#)

[from all positive animals](#). Results show experimental evidence of robust transmission of SARS-CoV-2 via the air.

- Authors collected 34 particulate matter (PM10) samples in the Bergamo area in Italy, by using two air samplers over a continuous 3-weeks period. Filters were properly stored and underwent RNA extraction and amplification. [Findings demonstrate the presence of SARS-CoV-2 viral RNA by detecting highly specific “RtDR gene” on 8 filters](#). The study presents evidence that SARS-CoV-2 RNA can be present on outdoor particulate matter in defined conditions of atmospheric stability and high concentrations of PM10.
- This study explored the SARS-CoV-2 contamination of environmental surfaces and air by collecting air and swabbing environmental surfaces among 39 COVID-19 cases in China. [Findings suggest that 3.1% of the specimen tested positive from 9 COVID-19 cases. Air specimens in the room and car were all negative.](#) (Not peer reviewed)
- A study analysed the air and the surfaces most usually touched by passengers inside a city bus during normal operation in Italy. [During the whole observation period about 1,100 passengers travelled using the trolleybus, with an average of 123 people for each measurement shift. All the surface samples were negative for two or all the genes to RT-PCR analysis for SARS-CoV-2 virus. Similarly, the same results were obtained for all the air samples during the whole study period.](#) (Not peer reviewed)
- This study reports an outbreak which occurred following attendance of a symptomatic index case at a regular weekly rehearsal on 10 March of the Skagit Valley Chorale (SVC). After that rehearsal, 53 members of the SVC among 61 in attendance were confirmed or strongly suspected to have contracted COVID-19 and two died. [The results indicate an emission rate of the order of a thousand quanta per hour \(mean \[interquartile range\] for this event = 970 \[680-1190\] quanta per hour\) and demonstrate that the risk of infection is modulated by ventilation conditions, occupant density, and duration of shared presence with an infectious individual.](#) (Not peer reviewed)
- Authors performed confocal analysis on human small intestinal organoids (hSIOs) under four different culture conditions (EXP, DIF, DIF-BMP, and EEC) to SARS-CoV and SARS-CoV-2 at a multiplicity of infection of 1. [This study shows that SARS-CoV and SARS-CoV-2 infect enterocyte lineage cells in an hSIO model. Findings reports similar infection rates of enterocyte precursors and enterocytes, whereas ACE2 expression increased ~1000-fold upon differentiation at the mRNA level.](#) This suggests that low levels of ACE2 may be sufficient for viral entry.
- A systematic review and meta-analysis of 17 studies examined the detection rate of SARS-CoV-2 RNA in fecal specimens of these patients according to their clinical characteristics, [reports the pooled detection rate of fecal SARS-CoV-2 RNA as 43.7% and 33.7% by patient and number of specimens as a](#)

[unit count, respectively. A significant proportion of COVID-19 patients carry SARS-CoV-2 in their intestinal tract.](#) Specific infection control strategies focusing on spread via fecal contamination and faulty toilet drainage should be explored.

- Rhesus macaques were reinfected with the identical SARS-CoV-2 strain during the early recovery phase of the initial SARS-CoV-2 infection did not show detectable viral dissemination, clinical manifestations of viral disease, or histopathological changes. Findings indicate that comparing the humoral and cellular immunity between primary infection and re-challenge revealed notably enhanced neutralizing antibody and immune responses. [Results suggest that primary SARS-CoV-2 exposure protects against subsequent reinfection in rhesus macaques.](#)

Epidemiology

- A quasi-experimental interrupted time series analysis with 230 patients with Kawasaki disease over the past 15 years in a tertiary paediatric centre in Paris. Findings identified a rapid increase of Kawasaki disease, in April 2020 that was related to SARS-CoV-2 (six cases per month; a 497% increase [95% CI 72–1082]; $p=0.0011$), starting 2 weeks after the peak of the COVID-19 epidemic. [Study results further suggest that viral respiratory infections, including SAR-CoV-2, could be triggers for Kawasaki disease and indicates the potential timing of an increase in incidence of the disease in COVID-19 epidemics.](#)
- A targeted surveillance study for multisystem inflammatory syndrome in children (MIS-C) from 15 March to 20 May 2020, in pediatric health centers across the United States report 186 patients with MIS-C in 26 states, with a median age of 8.3 years. Of these, 70% were positive for SARS-CoV-2 by RT-PCR or antibody testing, and 164 (88%) were hospitalized. [Multisystem inflammatory syndrome in children associated with SARS-CoV-2 led to serious and life-threatening illness in previously healthy children and adolescents.](#)
- A study reports on the seroprevalence of SAR-CoV -2 antibodies among blood donors in Kenya. Findings indicate that estimated prevalence of antibodies to SARS-CoV-2 among blood donors in Kenya ranged from 1.1% in Uasin Gishu county to 12.4% in Nairobi county. [Results of the antibody testing suggests that many more Kenyans have already been exposed to COVID-19 than have been identified by surveillance activities.](#)
- [A seroprevalence study reports a relatively low seroprevalence of antibodies among HCWs at the peak of the COVID-19 epidemic in Spain.](#) Of the 578 participants recruited 9.3% were seropositive for IgM and/or IgG and/or IgA against SARS-CoV-2, the cumulative prevalence of SARS-CoV-2 infection (presence of antibodies or past or current positive rRT-PCR) was 11.2%.

- A population-based study on COVID-19 using three rounds of probability sample household surveys in southern Brazil carried out in nine large municipalities using the Wondfo lateral flow point-of-care test, [reports that the seroprevalence was 0.048% on 11–13 April 2020, 0.135% on 25–27 April 2020 and 0.222% on 9–11 May, with a significant upward trend over the course of the surveys. The epidemic is at an early stage in the state of Rio Grande do Sul and there is high compliance with social distancing, unlike in other parts of Brazil.](#)
- An article provides an analysis of the seroprevalence studies from COVID-19 hotspots (China, the USA, Switzerland, and Spain). [Findings from the representative cohorts indicate that most of the population, even in areas with widespread virus circulation, appears to have remained unexposed to SARS-CoV-2. Results suggest that any proposed approach to achieve herd immunity through natural infection is unachievable.](#)
- A retrospective cohort study reports on the rate of ischemic stroke between patients with COVID-19 as compared to patients with influenza, a respiratory viral illness previously associated with stroke. [Findings indicate approximately 1.6% of adults with COVID-19 who visited the emergency department or were hospitalized experienced ischemic stroke which is a higher rate of stroke compared with a cohort of patients with influenza.](#)
- A study reports on the transmission of COVID-19 between 3 families who ate in an air conditioned restaurant in China. Among the 83 customers, 10 became ill with COVID-19; however, none of the staff or other diners in the restaurant were infected. [Results suggest that droplet transmission was prompted by air-conditioned ventilation and the key factor for infection was the direction of the airflow.](#)
- This study investigated and established links between three clusters of COVID-19 in Singapore using SARS-CoV-2 serological assays. Results suggested that [three clusters of COVID-19, comprising 28 locally transmitted cases, were identified in Singapore; these clusters were from two churches \(Church A and Church B\) and a family gathering.](#) The clusters in Church A and Church B were linked by an individual from Church A, who transmitted SARS-CoV-2 infection to the primary case from Church B at a family gathering they both attended.

Care and Treatment

- A review of medications in the 7th edition of COVID-19 diagnosis and treatment guideline issued by the National Health Commission (NHC) of the People's Republic of China and relevant clinical studies. [The review reports antiviral therapies remdesivir, lopinavir/ritonavir and umifenovir, if considered, could be initiated before the peak of viral replication for optimal outcomes.](#) Ribavirin may be beneficial as an add-on therapy and is ineffective as a

monotherapy. Corticosteroids use should be limited to indicating comorbidities. IVIG is not recommended due to lack of data in COVID-19. Supportive care remains the cornerstone of COVID-19 management.

- A retrospective cohort study of 2,541 consecutive patients in the USA treated with various treatment regimens for azithromycin and hydroxychloroquine or no treatment. [The analysis suggested that hydroxychloroquine, with or without azithromycin, was associated with a reduced hazard ratio for death when compared to receipt of neither medication.](#)

Diagnosics

- A systematic review and meta-analysis of 16 studies reporting data on sensitivity or specificity of diagnostic tests for COVID-19 using any human biological samples. [Meta-analysis reported that computed tomography has high sensitivity but low specificity and RT-PCR as the gold standard for the diagnosis of COVID-19 in sputum samples.](#) For RT-PCR tests, rectal stools/swab, urine, and plasma were less sensitive while sputum presented higher sensitivity for detecting the virus. The combination of IgM and IgG antibodies demonstrated promising results. However, the combination of different diagnostic tests is highly recommended to achieve adequate sensitivity and specificity.
- A systematic review and meta-analysis on 40 studies reports on the diagnostic accuracy of serological tests for coronavirus disease-2019 (COVID-19). [Findings suggest that higher quality clinical studies assessing the diagnostic accuracy of serological tests for COVID-19 are urgently needed and the available evidence does not support the continued use of existing point-of-care serological tests.](#)
- A study reports on the concept of using a combination of Rapid Diagnostic Tests (RDTs) in [an algorithm to improve their performance for the diagnosis of SARS-CoV-2 in Uganda. Results indicate that the individual sensitivities of the RDTs ranged between 18% and 74% and the combinations of the 2 RDTs improved the sensitivities to 90%.](#) Findings suggest that use of RDTs in combinations can improve their overall sensitivity and this approach when used on a wider range of combinations of RDTs may yield combinations that can give sensitivities that are of diagnostics relevance in mass testing and low resource setting. (*Not peer reviewed*)
- This study provides a comprehensive and independent comparison of analytical performance of primer–probe sets for SARS-CoV-2 testing in various parts of the world; four commonly used SARS-CoV-2 RT–qPCR assays. [Findings show a high similarity in the analytical sensitivities for SARS-CoV-2 detection, which indicates that outcomes of different assays are](#)

[comparable. The primary exception to this is the RdRp-SARSr \(Charité\) primer–probe set, which had the lowest sensitivity.](#)

Infection Prevention and Control

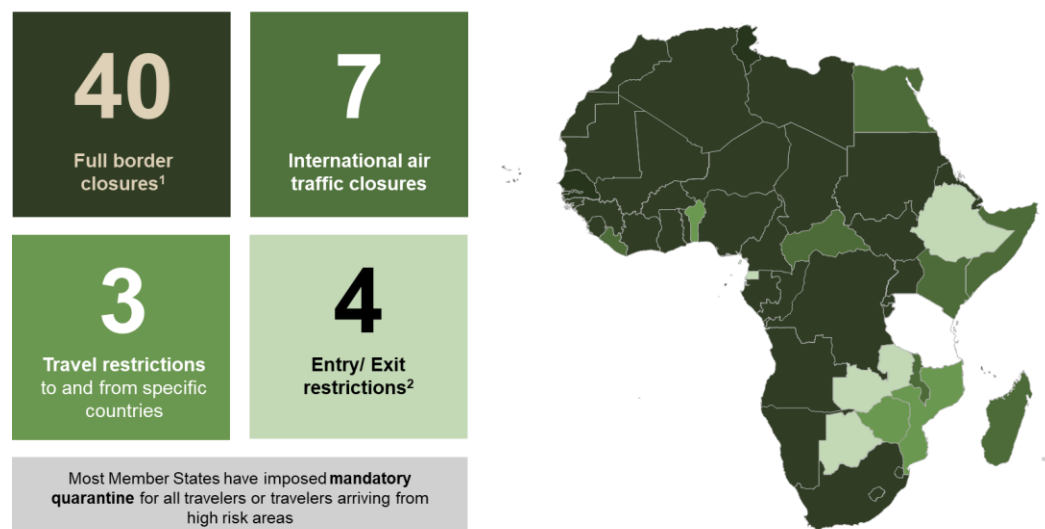
- This study evaluated the [presence of SARS-CoV-2 viral RNA in septic tanks of Wuchang Cabin Hospital and found a striking high level of \(0.5–18.7\) × 10³ copies/L after disinfection with sodium hypochlorite according to WHO and China guidelines.](#) Findings suggest that the effluents showed negative results for SARS-CoV-2 viral RNA when overdosed with sodium hypochlorite but had a high level of disinfection by-product residual.

Non-Pharmaceutical Interventions

- This study describes the design, timing and implementation of lockdowns in nine countries in Sub Saharan Africa: Ghana, Nigeria, South Africa, Sierra Leone, Sudan, Tanzania, Uganda, Zambia and Zimbabwe. It further discusses in which lockdowns are enforced, the need to mitigate the harms of lockdowns, and the association between lockdown and the reported number of COVID-19 cases and deaths. [Finding report the number of COVID-19 deaths per million population varies, but is generally low when compared to countries in Europe and North America.](#) While lockdown measures may have helped inhibit some community transmission, the pattern and nature of the epidemic remains unclear. (*Not peer reviewed*)

D. Summary of travel restrictions implemented by Member States

Contents of this section include only publicly announced public health policies. Sources of this section include official government communique, embassy alerts and press search. (As of 12 July 2020)



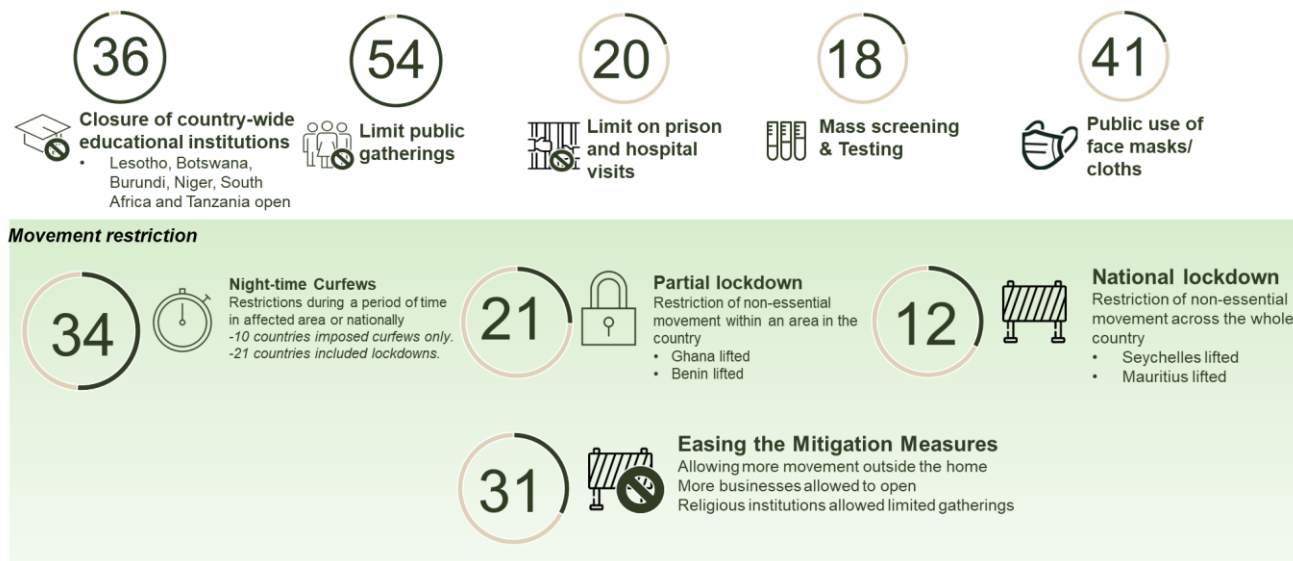
¹ Some countries still allow cargo, freight and emergency transport into and out of the country; Some MSs will still allow citizens and residents to enter but all borders are essentially closed

² Banning entry or exit of citizens or suspending visa issuance to specific countries

For further detailed information for each country, refer to the full table [here](#).

E. Summary of physical distancing measures taken by Member States

Contents of this section include only publicly announced public health policies. Sources of this section include official government communique and press search. (as of 12 July 2020)



*Source of information based on official reports, embassy alerts and press scanning

For further detailed information for each country, refer to the full table [here](#).

F. Registered Clinical Trials in Africa (64)

Key updates:

Clinical trial initiatives and networks

- On 8 July 2020, [NIH launched the COVID-19 Prevention Trials Network \(COVPN\)](#). As part of “Operation Warp Speed” partnership led by the U.S. Department of Health and Human Services (HHS), this network aims to leverage existing infrastructure and engage communities to conduct large-scale phase III clinical trials to test COVID-19 vaccines and other prevention tools, such as monoclonal antibodies.
- On 9 July 2020, the African Union Commission launched the [Africa Centres for Disease Control and Prevention \(Africa CDC\) Consortium for COVID-19 Vaccine Clinical Trial \(CONCVACT\)](#) under the Africa Joint Continental Strategy for COVID-19. CONCVACT aims to secure late stage vaccine clinical trials on the continent to ensure that sufficient data is generated on the safety and efficacy of the most promising vaccine candidates for the African population so they can be confidently rolled out once approved.

Vaccine trials

- On 29 June 2020, [CanSino Biologics Inc announced](#) that their recombinant novel coronavirus vaccine, Ad5-nCoV, was granted a special one year approval by the Health

Bureau of the Logistics Support Department of the Central Military Commission on June 25 for use by the Chinese military.

- On 1 July 2020, [Pfizer Inc and BioNTech SE announced](#) the positive preliminary data from the ongoing phase 1/2 trial of their BNT162 COVID-19 vaccine candidate. BNT 162 is a nucleoside-modified messenger RNA (modRNA) candidate which encodes an optimized SARS-CoV-2 receptor binding domain (RBD) antigen. [Preliminary clinical data from the trial is available](#) on a preprint server.
- On 2 July 2020, the first [human trial of COVAX-19, a COVID-19 vaccine candidate developed in Australia](#), started at Royal Adelaide Hospital's PARC Clinical Research facility. The vaccine's initial safety and immune response will be assessed in 40 candidates aged between 18 and 65.
- The Drug Controller General of India (DCGI) has [granted India-based biotechnology company Bharat Biotech approval](#) to begin to conduct Phase I and II clinical trials of its Covid-19 vaccine candidate, Covaxin, a recombinant inactivated rabies virus engineered to carry proteins from SARS-CoV-2. On 3 July 2020, [a second regulatory approval was also granted to Zydus Cadila](#) to conduct Phase I/II human trials of its ZyCoV-D DNA-based COVID-19 vaccine candidate.
- On 7 July 2020, the updated [WHO landscape of COVID-19 vaccines](#) included 21 vaccines candidate at the clinical evaluation stage and 129 candidates at the preclinical stage.

Therapeutics trials:

- On 29 June 2020, the [Chief Investigators of the RECOVERY trial announced](#) the Steering Committee had concluded that there was no beneficial effect of lopinavir-ritonavir in patients hospitalised with COVID-19 and closed the randomisation to that treatment arm.
- On 2 July 2020, [Sanofi and Regeneron Pharmaceuticals announced that the Phase 3 trial of the rheumatoid arthritis drug Kevzara \(sarilumab\) in COVID-19 patients requiring mechanical ventilation did not meet its primary and key secondary endpoints](#) leading to the interruption of the US clinical trial.
- On 4 July 2020, [WHO accepted the recommendation from the Solidarity Trial's International Steering Committee to discontinue the trial's hydroxychloroquine and lopinavir/ritonavir arms](#), as interim trial results indicated that both interventions produce little or no reduction in the mortality of hospitalized COVID-19 patients when compared to standard of care
- On 8 July 2020, [Gilead Sciences announced the launch of a Phase I placebo-controlled clinical trial](#) of an inhaled version of Remdesivir to treat Covid-19 patients in the outpatient setting. The study will evaluate the safety, tolerability and pharmacokinetics of the new formulation in 60 healthy participants aged 18-45 in the US.

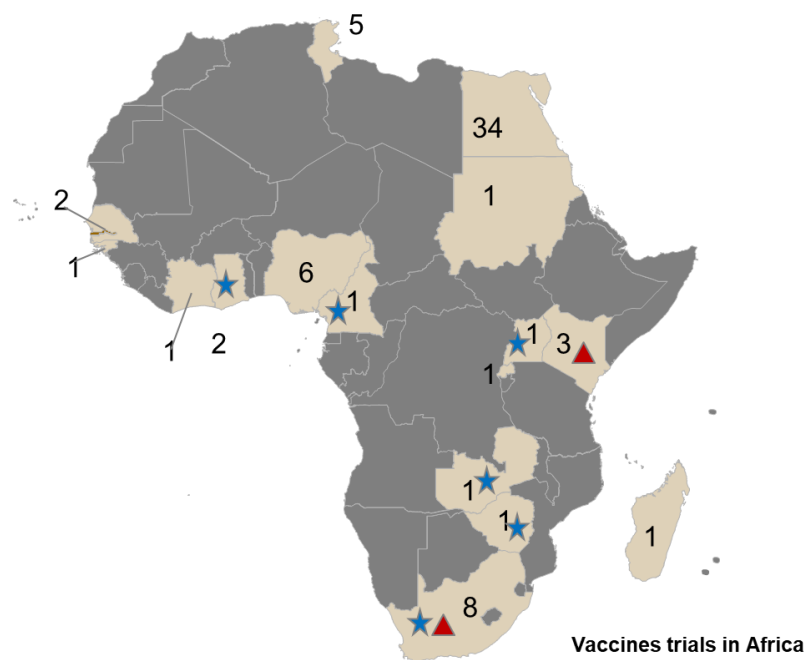
Immunotherapy trials:

- On 6 July 2020, in collaboration with the US National Institute of Allergy and Infectious Diseases (NIAID), [Regeneron announced the start of a phase 3 prevention trial](#) to evaluate the ability of REGN-COV2, an investigational double antibody cocktail, to treat COVID19 patients and to prevent infection among uninfected close contacts of COVID-19 patients.

List of registered interventional clinical trials in Africa

- By 12 July 2020, there were 64 clinical trials registered in Africa.

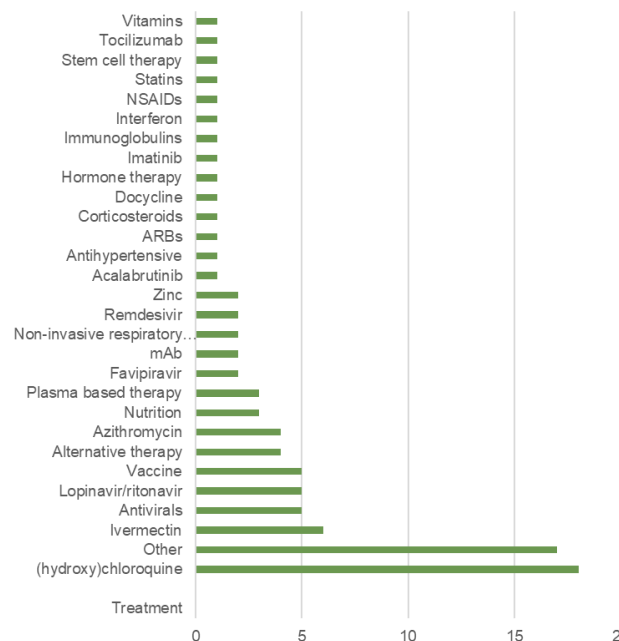
Search strategy: The following clinical trials registers have been scanned: clinicaltrials.gov, covid-trials.org, the [Pan African Clinical Trial Registry \(PACTR\)](#) and [WHO international clinical trials registry \(ICTRP\)](#). The following search terms were used: “COVID” (subject field) AND “interventional” OR “Randomized” (study type). Studies conducted in all 55 African Union member states are listed below after cross checking for duplicates across registries. Multi-centric trials are listed as one entry.



▲ WHO Solidarity trial
★ Crown Coronation trial

- Vaccines trials in Africa**
- Repurposed BCG (Egypt and South Africa)
 - Repurposed measles (Egypt)
 - Repurposed OPV (Guinea Bissau)
 - Oxford University ChAdOx1 nCoV-19 vaccine (Kenya and South Africa)

Interventions evaluated in Africa



For further detailed information for each country, refer to the full table [here](#).