

COVID-19 Scientific and Public Health Policy Update¹ – (25 August 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

- This study reports on the clinical presentation, infectivity and immune response to SARS-CoV-2 among 192 children. Findings of the study suggest that children can carry a high viral load, meaning they are more contagious, regardless of their susceptibility to developing a COVID-19 infection.
- A modeling study for selected East African countries, suggests that the estimates of the cumulative COVID-19 infections in Ethiopia, Djibouti, Somalia and Sudan would be increased by 3–4 times than the current figures for the next four months if effective preventive measures are not taken seriously.
- A study investigated the infectivity of SARS-COV-2 using a plaque-purified strain and subsequently studied its stability in liquid medium, on dry filter paper, and under acidic condition at room temperature. Findings suggest that the virus can survive for 3 days in liquid medium or on dry filter paper, and the virus at a high titer can survive under acidic condition.
- Russia's second vaccine, EpiVacCorona, developed by the country's Vector State Research Center of Virology and Biotechnology appears to be safe in early tests in humans. The agency expects that clinical trials of the "EpiVacCorona" vaccine will be completed in September.
- A mathematical modelling study suggests that the potential impact of the spread of COVID-19 on the malaria burden in Nigeria could result in 81,000 (44,000–119,000) additional deaths in Nigeria.

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.**

B. New guidelines and resources

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 that Rhesus macaques 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. [Results suggest that primary SARS-CoV-2 exposure protects against subsequent reinfection in rhesus macaques.](#)
- Findings from this study report that after the initial viral clearance in rhesus macaque model of SARS-CoV-2 infection, the animals were rechallenged with SARS-CoV-2 and showed reductions in median viral loads in bronchoalveolar lavage and nasal mucosa compared with after the primary infection. [These data show that SARS-CoV-2 infection induced protective immunity against reexposure in nonhuman primates.](#)
- A prospective observational cohort study (PROTECT) conducted at seven public hospitals in Singapore, [compared individuals infected with the 382-nucleotide deletion \(\$\Delta\$ 382\) variant with those infected with wild-type SARS-CoV-2. Findings suggest the \$\Delta\$ 382 variant of SARS-CoV-2 seems to be associated with a milder infection.](#) The observed clinical effects of deletions in ORF8 could have implications for the development of treatments and vaccines.
- A study investigated the infectivity of SARS-COV-2 using a plaque-purified strain nCoV-SH01 isolated from a patient in Shanghai and subsequently studied its stability in liquid medium, on dry filter paper, and under acidic condition at room temperature. [Findings suggest that the virus can survive for 3 days in liquid medium or on dry filter paper, and the virus at a high titer can survive under acidic condition that mimics the gastric environment.](#)
- This study shows that loss of furin in either donor or acceptor cells reduces, but does not prevent, TMPRSS2-dependent cell-cell fusion, unlike mutation of the multi basic site that completely prevents syncytia formation. [Findings suggest that while furin promotes both SARS-CoV-2 infectivity and cell-cell spread it is not essential, suggesting furin inhibitors will not prevent viral spread.](#) (Not peer reviewed).
- A cohort study of 175 hospitalized patients with mild COVID-19 examined the association between clinical characteristics and levels of Neutralizing Antibodies in patients who recovered from COVID-19. [Findings suggest that neutralizing antibody titers to SARS-CoV-2 appeared to vary substantially. Further research is needed to understand the clinical implications of differing neutralizing antibody titers for protection against future infection.](#)

Epidemiology

- [A case report using virus sequencing to determine if infection of a healthcare worker who cared for 2 SARS-CoV-2–infected patients was acquired in a healthcare setting or in the community. The sequence from the HCW was identical to that of the HCW's family member but distinct from that of the 2 patients.](#) Findings suggest HCWs caring for COVID-19 patients with appropriate PPE may be protected against hospital-acquired SARS-CoV-2 infection.
- This study reports the prevalence of SARS-CoV-2 infection among 1,958 health care workers at a large tertiary community hospital in New York, by widespread screening for SARS-CoV-2 exposure. [Results indicate that 9.8% were seropositive while 29.8% had a RT-PCR positive test. Findings of the study suggest that the rate of SARS-CoV-2 infection among health care workers is lower than what has been reported for the general public in the surrounding region.](#)
- A study reports on the clinical presentation, infectivity and immune response to SARS-CoV-2 among 192 Children. Results indicate that 49 children (26%) were diagnosed with acute SARS-CoV-2 infection while 51% of the children with SARS-CoV-2 infection were asymptomatic. [Findings of the study suggest that children can carry a high viral load, meaning they are more contagious, regardless of their susceptibility to developing a COVID-19 infection.](#)
- [This study provides first-time evidence for maternal-fetal transmission of SARS-CoV-2, likely propagated by circulating virus-infected fetal mononuclear cells.](#) Of 101 placentas from mothers in Italy, a single case showed robust expression of the SARS-CoV-2 Spike and Nucleocapsid proteins in the placenta of a COVID-19 pregnant woman whose newborn tested positive for viral RNA and developed COVID-19 pneumonia soon after birth. The findings provided in this study reveal the passage of SARS-CoV-2 across the maternal-foetal interface to infect foetal-derived cells of the placenta.
- This rapid scoping review of the literature reports on the inferred duration of the infectious period of COVID-19. Based on the literature published up to 01 April 2020, the authors report large variations in infectious duration estimates; [one study provided an approximate median infectious period for asymptomatic cases of 6.5–9.5 days while median pre-symptomatic infectious period reported in some studies varied over <1–4 days.](#) The estimated mean duration from symptom onset to hospital discharge or death was 18.1 days and time to discharge was on average 4 days shorter than time to death.

Care and Treatment

- [Single-cell RNA sequencing in peripheral blood samples of 5 healthy donors and 13 patients with moderate, severe or convalescent COVID-19 suggests that most cell types in patients with COVID-19 showed a strong interferon- \$\alpha\$ response and an overall acute inflammatory response.](#) Findings suggest that intensive expansion of highly cytotoxic effector T cell subsets, such as CD4+ effector-GNLY (granulysin), CD8+ effector-GNLY and NKT CD160 was associated with convalescence in moderate patients. Severe patients showed a deranged interferon response, profound immune exhaustion with skewed T cell receptor repertoire and broad T cell expansion.

- A randomized, open-label trial of 596 hospitalized patients with confirmed SARS-CoV-2 infection reports on the efficacy of remdesivir treatment compared with standard care on day 11 after initiation of treatment. [Findings indicate that those randomized to a 10-day course of remdesivir did not have a statistically significant difference in clinical status compared with standard care.](#) Those randomized to a 5-day course of remdesivir had a statistically significant difference in clinical status compared with standard care, but the difference was of uncertain clinical importance.
- A retrospective observational cohort study at 13 hospitals with 764 COVID-19 patients who needed support in the ICU, 210 received tocilizumab. [Findings suggest an association between receiving tocilizumab and decreased hospital-related mortality.](#)
- The [emergency approval of blood plasma as a potential treatment for coronavirus by the US Food and Drug Administration \(FDA\) has been put on hold, however FDA has issued guidance to provide recommendations to health care providers and investigators on the administration and study of investigational convalescent plasma](#) collected from individuals who have recovered from COVID-19 (COVID-19 convalescent plasma) during the public health emergency.

Vaccines

- A placebo-controlled, observer-blinded dose-escalation study among 45 healthy adults, randomized to receive 2 doses, separated by 21 days, of 10 µg, 30 µg, or 100 µg of BNT162b1, a lipid nanoparticle-formulated, nucleoside-modified mRNA vaccine that encodes trimerized SARS-CoV-2 spike glycoprotein receptor-binding domain (RBD). [Findings suggest that mean neutralizing titers reached 1.9- to 4.6-fold that of a panel of COVID-19 convalescent human sera at least 14 days after a positive SARS-CoV-2 PCR.](#)
- A phase I and II trial evaluated the safety and immunogenicity of an investigational inactivated whole-virus COVID-19 vaccine in 96 participants in China. [Findings of this study suggest that patients had a low rate of adverse reactions and demonstrated immunogenicity.](#) This study is still ongoing.
- This study suggests that the mucosal vaccination may provide a desirable protective efficacy and this delivery mode is worth further investigation in human clinical trials. [Findings suggest that single vaccination with a replication-defective human type 5 adenovirus encoding the SARS-CoV-2 spike protein \(Ad5-nCoV\) protect mice completely against mouse-adapted SARS-CoV-2 infection in the upper and lower respiratory tracts.](#) Additionally, a single vaccination with Ad5-nCoV protects ferrets from wild-type SARS-CoV-2 infection in the upper respiratory tract.
- [EpiVacCorona, second Russian COVID-19 vaccine developed by the country's Vector State Research Center of Virology and Biotechnology appears to be safe in early tests in humans.](#) According to Russia's Federal Service for Surveillance on Consumer Rights Protection and Human EpiVacCorona produced no side effects in 57 volunteers who received the first shot of the vaccine and the vaccine elicits an immune

response after double administration with the interval of 14-21 days. The clinical trials of the “EpiVacCorona” vaccine should be completed in September.

Infection, Prevention and Control

- This quality-improvement study assessed fitted filtration efficiencies (FFE) for face mask alternatives used during the COVID-19 pandemic. [Results indicate that expired N95 respirators and sterilized, used N95 respirators can be used when new N95 respirators are not available. Other alternatives may provide less effective filtration.](#)
- This study examined the impact of the COVID-19 pandemic on hand hygiene performance (HHP) rates in acute care hospitals, were estimated using an automated hand hygiene monitoring system (AHHMS) in 74 adult inpatient units and 10 paediatric inpatient units. [Although hand hygiene performance initially increased at the outset of the COVID-19 crisis, HHP opportunities and events decreased as COVID-19 progressed and improvements in hand hygiene performance during COVID-19 were not sustained.](#)

Non-Pharmaceutical Interventions

- A mathematical model examines the potential for contact tracing to reduce the spread of SARS-CoV-2 in the context of relaxed physical distancing, under different assumptions for case detection, tracing, and quarantine efficacy. [Results indicate that contact tracing must be implemented alongside prompt and extensive community case detection, and a high proportion of contacts must be reached. Findings suggest that the estimates imply that contact tracing could support partial relaxation of physical distancing measures but not a full return to levels of contact before lockdown.](#)

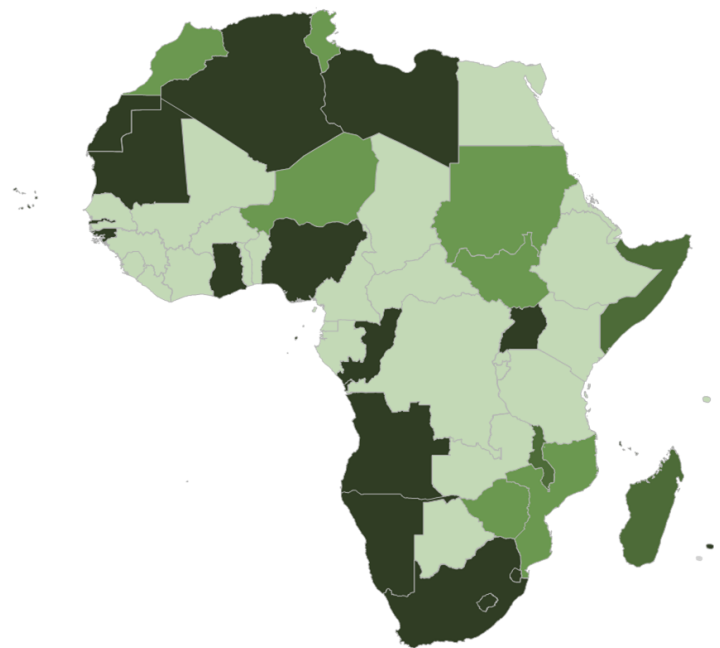
Mathematical Modelling

- Using an Autoregressive Integrated Moving Average (ARIMA) modelling approach for selected East African countries, [the estimates of this study suggest that at the end of October, the cumulative COVID-19 infections in Ethiopia, Djibouti, Somalia and Sudan would be 56,610; 8,336; 3,961 and 21,388 respectively.](#) This further suggests, the infected cases will be increased by 3–4 times than the current figures for the next four months if effective preventive measures will not be taken seriously.
- A modelling study analysed the initial phase of the epidemic of COVID-19 in Africa between 01 March and 13 April 2020, by using the simple exponential growth model. [Findings estimate the exponential growth rate as 0.22 per day and the basic reproduction number, R₀, as 2.37 based on the assumption that the exponential growth starting from 1 March 2020.](#) The initial growth of COVID-19 cases in Africa was rapid and showed large variations across countries.

- This mathematical modelling quantifies the potential impact of the spread of COVID-19 on Plasmodium falciparum malaria morbidity and mortality in Nigeria, [findings suggest if reducing case management for 6 months and delaying long-lasting insecticidal nets \(LLIN\) campaigns activities are halted, the malaria burden in 2020 could be more than double that of 2019 and could result in 81,000 \(44,000–119,000\) additional deaths.](#)

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 23 August 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 Entry or exit of passengers through COVID-19 screening

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

F. Registered Clinical Trials in Africa (84)

Key updates:

Clinical trial initiatives and networks

- The Drug for Neglected Diseases Initiative ([DNDI](#)) and several expert groups from the [COVID-19 Clinical Research Coalition](#) have launched the [ANTICOV clinical trial](#) in about 15 African countries. This trial aims to compare the current standard of care with other existing repurposed treatments that could be used to treat mild and moderate cases of COVID-19 early. The objective pursued by the ANTICOV Consortium is to prevent mass hospitalizations and preserve fragile health systems.

Vaccine trials

- On 20 August 2020, the updated [WHO landscape of COVID-19 vaccines](#) was published. Thirty vaccine candidates were at the clinical evaluation stage and 139 candidates at the preclinical stage.
- On 04 August 2020, [the COVID-19 Research Outcomes Worldwide Network for CORONAVIRUS prevention \(Crown Coronation\)](#) [registered the phase 3 clinical trial evaluation of MR or M-M-R II vaccine](#) aiming to assess its effectiveness in preventing COVID-19 disease in healthcare workers. In Africa, this intervention will be evaluated in 5 countries: Ghana, Uganda, South Africa, Zambia, Zimbabwe. Crown Coronation is [funded by the Covid-19 therapeutics accelerator](#).
- On 10 August 2020, [Johnson & Johnson registered the phase 3 clinical trial of the Ad26.COVS.2.S](#), an adenovirus serotype 26 (Ad26) vector-based vaccine candidate, which will be evaluated in 60,000 volunteers. The phase 3 trial is scheduled to start in September and will be conducted in 178 sites across the United States and other countries, [including a target of 12,000 volunteers across nearly 30 sites in South Africa](#).
- On 11 August 2020, the [Russian President announced](#) that the Russian health regulator had approved the Gam-Covid-Vac Lyo vaccine candidate (renamed Sputnik V) for [widespread use](#) after completion of trials. The vaccine has been developed by Russia Gamaleya Federal Research Center for Epidemiology and Microbiology. The global scientific community has [expressed serious concerns](#) about issuance of this approval before the completion of phase 3 clinical trials.
- On 17 August 2020, [Novavax announced the launch of a placebo-controlled Phase 2b clinical trial in South Africa](#) to evaluate the efficacy, safety and immunogenicity of its NVX-CoV2373 COVID-19 vaccine candidate, supported in part by the Bill & Melinda Gates Foundation. NVX-CoV2373 is a stable, prefusion protein made using a nanoparticle technology. The trial will include 2 cohorts: 2,665 healthy adults and 240 medically stable, HIV-positive adults, which will allow evaluation of the vaccine across a diverse, representative study population.

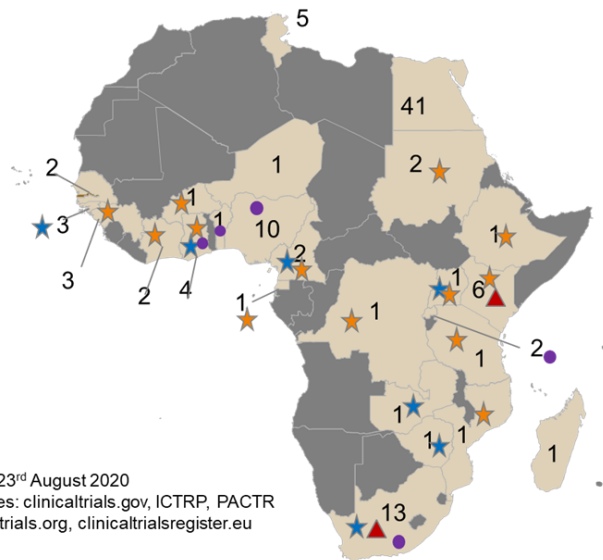
Therapeutics trials:

- On 11 August 2020, [Romark, a research-based pharmaceutical company, announced the initiation of a Phase 3 clinical trial of its investigational new drug candidate NT-300](#) (nitazoxanide, a viral replication inhibitor) as a treatment for mild or moderate COVID-19. Up to 800 people twelve years and older with fever and respiratory symptoms consistent with COVID-19 will be enrolled in this trial.
- On 19 August 2020, [Vanda Pharmaceuticals announced positive data from an interim analysis of Phase III ODYSSEY clinical trial](#) of tradipitant, a neurokinin-1 receptor (NK-1R) antagonist, in patients hospitalised with Covid-19 pneumonia. Results indicated that after 7 days of treatment, patients treated with tradipitant recovered earlier than those receiving placebo.

Immunotherapy trials:

- On 23 August 2020, the USA Food and Drug Administration (FDA) issued [a guidance](#) for health care providers and investigators on the administration and study of investigational convalescent plasma collected from individuals who have recovered from COVID-19 under 3 pathways: clinical trials, expanded access and single patient emergency IND.

By 23 August 2020, **there were 84 interventional clinical trials registered in Africa, including 4 multi-centric trials.**



Date: 23rd August 2020
Sources: clinicaltrials.gov, ICTRP, PACTR
Covid-trials.org, clinicaltrialsregister.eu

Registered 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)
- Johnson & Johnson Ad26.COV2.S vaccine (South Africa)
- MR or M-M-R II repurposed vaccine under the Crown Coronation trial for COVID-19 prevention in HCW (Ghana, South Africa, Uganda, Zambia, Zimbabwe)

-  WHO Solidarity trial
-  ANTICOV trial
-  Crown Coronation trial
-  Protect-Surg trial

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

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