COVID-19 Scientific and Public Health Policy Update – (12 May 2020)

In addition to our weekly brief on the spread of COVID-19 and the actions that Africa CDC is taking to help member states, Africa CDC has begun to share a weekly brief detailing the latest changes in scientific knowledge and public health policy changes, as well as updates to the latest guidance from WHO and others. Contents of this document are not intended to serve as recommendations from the Africa CDC; rather, it is a summary of the fact base to help inform 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 continue to provide regular updates to ensure member states are informed of the most critical developments in these areas.

A. Executive summary

- A number of studies from Italy and France have shown an increase of reported Kawasaki-like disease showing as up to a 30-fold increased incidence of Kawasaki-like disease.
- A case report detected the SARS-CoV-2 in the eye sample of one COVID-19 patient with obstruction of common lacrimal ducts. Findings suggest that eye swabs should be collected from COVID-19 patients, especially from those immunocompromised, those with eye symptoms and those with a history of ocular diseases.
- A review of evidence which included 1,315 articles reports that there are no proven effective therapies currently available. Findings highlight that the most promising therapy so far is remdesivir, oseltamivir has not been shown to have efficacy, and corticosteroids are currently not recommended. Current clinical evidence does not support stopping angiotensin-converting enzyme inhibitors or angiotensin receptor blockers in patients with COVID-19.
- This study evaluated the extent of environmental contamination in air samples and environmental surface samples in a Wuhan hospital. Findings suggest that most of the touchable surfaces in the designated hospital for COVID-19 were heavily contaminated, suggesting that the environment is a potential medium of disease transmission. These results emphasize the need for strict environmental surface hygiene practices and enhanced hand hygiene to prevent the spread of the virus.
- All nursing homes in New York State will be required to test staff twice a week for the novel coronavirus. Including mandating that hospitals cannot discharge a COVID-19 patient to a nursing home until the person has tested negative for the disease.
- More than 140 world leaders and experts; including the Chair of the African Union, President of South Africa, H.E Cyril Ramaphosa, the Prime Minister of Pakistan, H.E Imran Khan, the President of the Republic of Senegal, H.E Macky Sall and the President of the Republic of Ghana, H.E Nana Addo Dankwa Akufo-Addo have signed an open letter calling on all governments to unite behind a people's vaccine against COVID-19.

B. New guidelines and resources

- Since 09 May 2020, Africa CDC has published new and updated guidance on: Guidance on Community Physical Distancing During COVID-19 Pandemic; Simple instructions on how to use a face mask; Simple instructions on how not to use a face mask

- WHO has published new and updated guidance and resources on: Considerations for public health and social measures in the workplace in the context of COVID-19; Considerations for school-related public health measures in the context of COVID-19; Public health criteria to adjust public health and social measures in the context of COVID-19; Considerations for Mass Gatherings in the context of COVID-19; Surveillance strategies for COVID-19 human infection; Contact tracing in the context of COVID-19; Laboratory biosafety guidance related to coronavirus disease (COVID-19; Updated Country Preparedness and Response Status for COVID-19 as of 14 May 2020

- US CDC has published new and updated guidance and resources on: Schools and Child Care Programs: Plan, Prepare, and Respond; Colleges and Universities: Plan, Prepare, and Respond; Correctional and Detention Facilities: Plan, Prepare and Respond; Gatherings and Community Events: Plan, Prepare, and Respond; Businesses and Workplaces: Plan, Prepare, and Respond; Community and Faith-Based Organizations: Plan, Prepare, and Respond; Evaluation for SARS-CoV-2 Testing in Animals; Information for Pediatric Healthcare Providers; COVID-19 Contact Tracing Training: Guidance, Resources and Sample Training Plan; Air Travel Toolkit for Airline Partners; Factors to Consider When Planning to Purchase Respirators from Another Country; NPPTL Respirator Assessments to Support the COVID-19 Response; Interim Infection Prevention and Control Guidance for Veterinary Clinics Treating Companion Animals During the COVID-19 Response; Funeral Guidance for Individuals and Families; Public Health Recommendations for Community-Related Exposure; Standard Operating Procedure (SOP) for Triage of Suspected COVID-19 Patients in non-US Healthcare Settings: Framework for Healthcare Systems Providing Non-COVID-19 Clinical Care During the COVID-19 Pandemic; Preparedness Tools for Healthcare Professionals and Facilities Responding to Coronavirus (COVID-19); Interim Operational Considerations for Public Health Management of Healthcare Workers Exposed to or with Suspected or Confirmed COVID-19: non-U.S. Healthcare Settings; Operational Considerations for Containing COVID-19 in non-US Healthcare Settings

- ECDC has issued new resource on: Rapid risk assessment: Pediatric inflammatory multisystem syndrome and SARS -CoV-2 infection in children;

- FDA has issued a press release on: Coronavirus (COVID-19) Update: FDA Authorizes First Antigen Test to Help in the Rapid Detection of the Virus that Causes COVID-19 in Patients

- PHE has issued new and updated guidance and resources on: COVID-19: guidance for young people on staying at home and away from others; COVID-19: guidance for care of the deceased; COVID-19: management of exposed staff and patients in health and social care settings; COVID-19: rapid tests for use in community pharmacies or at home; COVID-19: guidance for sampling and for diagnostic laboratories

- 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 (virology, immunology, pathogenesis)

- Eight adult rhesus macaques were inoculated with SARS-CoV-2 isolate nCoV-WA1-2020 findings show that SARS-CoV-2 causes respiratory disease in infected rhesus macaques, with disease lasting 8-16 days. Pulmonary infiltrates, a hallmark of human disease, were visible in lung radiographs. High viral loads were detected in swabs from the nose and throat of all animals as well as in broncho-alveolar lavages; in one animal, prolonged rectal shedding.
- This study investigated the impact of respiratory tract temperature on SARS-CoV and SARS-CoV-2 replication. Findings suggest SARS-CoV-2 replicated more efficiently at 33 °C than at 37 °C but this was not observed for SARS-CoV. Primary human airway epithelial cells (hAECs) were infected and maintained at 33 °C or 37 °C to mimic the human upper and lower respiratory tracts, respectively.
- This study reports the cryoelectron microscopy structure of COVID-19 virus full-length nsp12 in complex with cofactors nsp7 and nsp8 at 2.9-angstrom resolution. In addition to the conserved architecture of the polymerase core of the viral polymerase family, nsp12 possesses a newly identified β-hairpin domain at its N terminus. A comparative analysis model shows how remdesivir binds to this polymerase. The structure provides a basis for the design of new antiviral therapeutics that target viral RdRp.
- A case report detected the SARS-CoV-2 in the eye sample of one COVID-19 patient with obstruction of common lacrimal ducts. Findings suggest that nasopharyngeal swabs were positive for 22 days, but eye swabs were still continuously positive for 2 weeks after nasopharyngeal swabs turned negative. Findings suggest that eye swabs should be collected from COVID-19 patients, especially from those immunocompromised, those with eye symptoms and those with a history of ocular diseases.

Epidemiology

- A retrospective study of 29 patients diagnosed with a Kawasaki-like disease in General Paediatric Unit of Hospital Papa Giovanni XXIII, Bergamo, Italy in the past 5 years were divided according to symptomatic presentation before (group 1) or after (group 2) the beginning of the SARS-CoV-2 epidemic. Findings suggest a 30-fold increased incidence of Kawasaki-like disease. The SARS-CoV-2 epidemic was associated with high incidence of a severe form of Kawasaki disease.
- This study describes an outbreak of cases of Kawasaki disease (KD) in the general paediatrics department of a university hospital in Paris, France in an 11-day period from 27 April to 11 May 2020. A total of 17 children were admitted for Kawasaki Disease over an 11-day period, in contrast with a mean of 1.0 case per 2-week period over 2018-2019. The ongoing outbreak of KD in Paris might be related to SARS-CoV2, and shows an unusually high proportion of children with gastrointestinal involvement. *(Not peer reviewed)*
- A retrospective study of 257 laboratory-confirmed COVID-19 patients in Jiangsu Province, over 90% of the patients were co-infected with one or more pathogens and in total, 24 respiratory pathogens were found among the patients. Bacterial co-infections were dominant in all COVID-19 patients, *Streptococcus pneumoniae* was the most common, followed by *Klebsiella pneumoniae* and *Haemophilus influenzae*.

Diagnostics

- A comparative study between Abbot ID NOW COVID-19 and Cepheid Xpert Xpress SARS-CoV-2 using nasopharyngeal swabs transported in VTM as well as dry nasal swabs for the Abbott assay. Findings suggest regardless of method of collection and sample type, Abbot ID NOW COVID-19 missed a third of the samples detected positive by Cepheid Xpert Xpress when using NP swabs in VTM and over 48% when using dry nasal swabs. *(Not peer reviewed)*
- This study demonstrates a point-of-care system integrated with a smartphone for detecting live virus from nasal swab media using a panel of equine respiratory infectious diseases as a model system for corresponding human diseases such as COVID-19. Specific nucleic acid sequences of five pathogens were amplified by loop-mediated isothermal amplification on a microfluidic chip and detected at the end of reactions by the smartphone. Findings suggest that pathogen-spiked horse nasal swab samples were correctly diagnosed using this system, a limit of detection comparable to that of the traditional lab-based test, polymerase chain reaction, with results achieved in ~30 minutes.

Care and Treatment

- A multicentre, open-label, randomised, trial of 127 adults with COVID-19 in Hong Kong assessed the efficacy and safety of combined interferon beta-1b, lopinavir–ritonavir, and ribavirin for treating patients with COVID-19. Findings suggest early triple antiviral therapy was safe and superior to lopinavir–ritonavir alone in alleviating symptoms and shortening the duration of viral shedding and hospital stay in patients with mild to moderate COVID-19. Future clinical study of a double antiviral therapy with interferon beta-1b as a backbone is warranted.
- A review of evidence which included 1,315 articles reports that there are no proven effective therapies currently available. Findings highlight that the most promising therapy so far is remdesivir, Oseltamivir has not been shown to have efficacy, and corticosteroids are currently not recommended. Current clinical evidence does not support stopping angiotensin-converting enzyme inhibitors or angiotensin receptor blockers in patients with COVID-19.
- A retrospective multicentre cohort study of 1,438 patients hospitalized in New York, treated with hydroxychloroquine and azithromycin, hydroxychloroquine alone, azithromycin alone, or neither. Results suggests that treatment with hydroxychloroquine, azithromycin, or both, compared with neither treatment, was not significantly associated with differences in in-hospital mortality. However, the interpretation of these findings may be limited by the observational design.
- A multicentre, open label, randomised controlled trial with 150 mainly mild to moderate COVID-19 patients in China, treated with hydroxychloroquine plus standard of care or standard of care only. Findings suggest that administration of hydroxychloroquine did not result in a significantly higher probability of negative conversion than standard of care alone in patients admitted to hospital with mainly persistent mild to moderate COVID-19.Adverse events were higher in hydroxychloroquine recipients than in non-recipients.
- A comparative observational study of 181 COVID-19 patients who required oxygen but not intensive care conducted in France, found that hydroxychloroquine treatment at 600 mg/day added to standard care was not associated with a reduction of admissions to the intensive care unit or death 21 days after hospital admission compared with standard care alone. Additionally, the rate of survival without acute respiratory distress syndrome did not increase.
- A clinical trial by National Institute of Allergy and Infectious Diseases (NIAID), has begun to evaluate whether the malaria drug hydroxychloroquine, given together with the antibiotic azithromycin, can prevent hospitalization and death from COVID-19. The Phase

2B trial will enrol approximately 2,000 adults at participating AIDS Clinical Trials Group (ACTG) sites across the United States.

- A cohort of 77 moderate cases of COVID-19 in Wuhan, China, patients were either treated with IFN-α2b, arbidol (ARB), or a combination of IFN-α2b plus ARB. Findings suggest a significantly different rate of viral clearance for each treatment group and notably, IFN-α2b treatment accelerated viral clearance by approximately 7 days. Treatment with IFN-α2b, whether alone or in combination with ARB, accelerated viral clearance when compared to ARB treatment alone. IFN treatment was also demonstrated to significantly reduce circulating levels of IL-6 and CRP, whether alone or in combination with ARB.
- Abivax SA a clinical-stage biotechnology company announced preliminary results suggesting that ABX464 inhibits replication of SARS-CoV-2 in an in vitro reconstituted human respiratory epithelium model, as assessed by Trans-epithelial electrical resistance and RT-qPCR.
- A matched case-population study of 1,139 cases and 11,390 population controls in Spain suggests renin–angiotensin–aldosterone system (RAAS) inhibitors do not increase the risk of COVID-19 requiring admission to hospital, including fatal cases and those admitted to intensive care units, and should not be discontinued to prevent a severe case of COVID-19.
- This prospective (compassionate), open-label study of remdesivir, which was conducted at Luigi Sacco Hospital, Milan, Italy, suggest that remdesivir can benefit patients with SARS-CoV-2 pneumonia hospitalised outside ICU where clinical outcome was better and adverse events are less frequently observed. However, the real efficacy and safety can be clarified in ongoing randomised controlled trials.
- A prospective study of 85 patients admitted to the Montichiari Hospital, Italy with COVID-19 related pneumonia and respiratory failure, not needing mechanical ventilation, compared standard therapy (hydroxychloroquine, lopinavir and ritonavir) with Tocilizumab. Results suggest that patients receiving tocilizumab showed significantly greater survival rate as compared to control patients.
- The United Kingdom has launched the world's largest clinical trial the Randomised Evaluation of COVID-19 (RECOVERY) trial led by University of Oxford researchers, with over 5,000 patients enrolled in a month since the trial's launch in March. Drugs included in the trial protocol are all existing medicines repurposed for COVID-19: AbbVie's Kaletra (lopinavir/ritonavir); dexamethasone; hydroxychloroquine; and azithromycin.

Infection Prevention and Control

- This study evaluated the extent of environmental contamination in air samples and environmental surface samples in a Wuhan hospital. Findings suggest that most of the touchable surfaces in the designated hospital for COVID-19 were heavily contaminated, suggesting that the environment is a potential medium of disease transmission. These results emphasize the need for strict environmental surface hygiene practices and enhanced hand hygiene to prevent the spread of the virus.
- A rapid review of evidence suggests that the most promising methods for disinfection of face masks are the use of hydrogen peroxide vapor, ultraviolet radiation, moist heat, dry heat and ozone gas. Soapy water, alcohol, bleach immersion, ethylene oxide, ionizing radiation, microwave, high temperature, autoclave or steam are not fully recommended.

Vaccines

- This review describes the background to the rationale for the development of mRNA-based SARS-CoV-2 vaccines and the current status of the mRNA-1273 vaccine. Results suggest that although mRNA vaccines are commencing human clinical trials, due to the

rapid global spread of this new viral pandemic, it may not be possible to develop a safe and effective vaccine for SARS-CoV-2 in time to prevent the increasing number of deaths due to this novel RNA virus.

- A preliminary report suggests ChAdOx1 nCoV-19 vaccine trials have shown signs of producing an immune response in rhesus macaque monkeys' immune systems against the deadly coronavirus, without any side effects. Authors report significantly reduced viral load in bronchoalveolar lavage fluid and respiratory tract tissue of vaccinated animals challenged with SARS-CoV-2 (COVID-19) compared with control animals, and no pneumonia was observed in vaccinated rhesus macaques. *(Not peer reviewed)*
- More than 140 world leaders and experts; including the Chair of the African Union, President of South Africa,Cyril Ramaphosa, the Prime Minister of Pakistan, Imran Khan, the President of the Republic of Senegal, Macky Sall and the President of the Republic of Ghana, Nana Addo Dankwa Akufo-Addo have signed an open letter calling on all governments to unite behind a people's vaccine against COVID-19.

D. Related Public Health Policy

Contents of this section include only publicly announced public health policies. Sources of this section include official government communique, embassy alerts and press search.

Africa

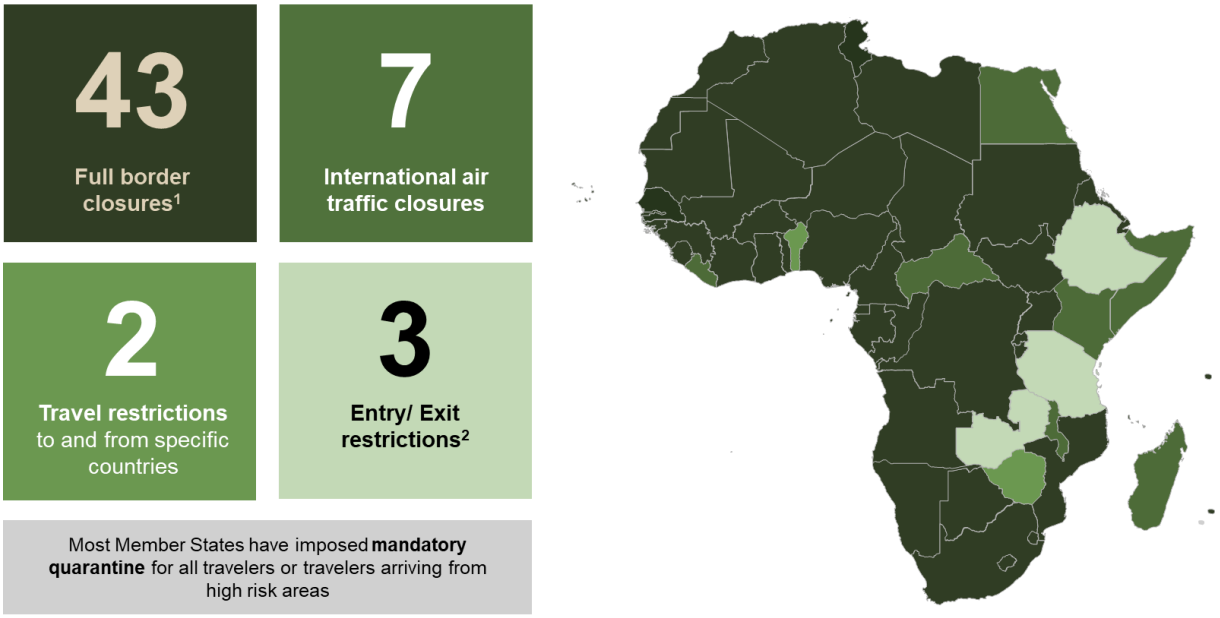
- Over the past week, as cases in the continent continue to rise, Member States have **continued to extend imposed public health measures:**
  - **Curfew:** Egypt, Sudan, Tunisia
  - **Shutdown of educational / religious institutions:** Morocco
  - **Border closure:** Zambia
- While, some Member States allow **partial reopening of the economy, public transport and/or Schools** including Botswana, Cote d'Ivoire, Djibouti, Niger and Senegal. But, precautionary measures, such as wearing face masks and gloves while maintaining social distancing remain in place.
- Member States have got logistic support e.g. Mali, South Africa
- Burkina Faso unveils free and open online school as coronavirus pandemic affects system.
- Ethiopia has offered life insurance cover to health care professionals and members of supporting staff who are battling with COVID-19 pandemic in the country.
- Kenya to deploy mobile labs at borders as pandemic cases hit 737.
- Mauritius has introduced bills in Parliament to deal with future pandemic.
- Morocco has rapidly expanded its fleet of drones as it battles the coronavirus pandemic, deploying them for aerial surveillance, public service announcements and sanitisation.
- Rwanda has initiated dubbed "Corona Action Rwanda" to encourage young Rwandan to be open-minded in proposing innovative solutions to address the impact of COVID-19.
- Seychelles has banned cruise ships until 2022 out of coronavirus fears.
- South Africa will grant parole for 19,000 more low-risk prisoners.
- Member States get financial support from The World Bank, IMF and Other developed countries ;- Burkina Faso ($21.15 M), Egypt ($2.77 B), Ethiopia (€40 M), Guinea (2.5 M).

Rest of World

- All nursing homes in New York State will be required to test staff twice a week for the novel coronavirus. Including mandating that hospitals cannot discharge a COVID-19 patient to a nursing home until the person has tested negative for the disease.
- UK will introduce a 14-day quarantine period for most people arriving from abroad.
- The Chinese city of Wuhan has planned to conduct city-wide nucleic acid testing over a period of 10 days. Hong Kong has started easing major social distancing measures with bars, gyms, beauty parlours and cinemas reopening their doors.
- France to keep borders closed until at least 15 June.
- Spain has ordered a two-week quarantine for all overseas travellers coming to the country from 15-24 May, when the state of emergency is due to end.
- The European Commission will start dispatching a stock of 10 million masks to healthcare workers across the 27-country bloc and in the United Kingdom.
- Countries have started easing of lockdown and opening of business/schools e.g. Argentina, Australia, Georgia, Jordan, Latvia, New Zealand, Norway, Pakistan, Russia.
- Countries have extended lockdown, closing of schools, curfew or state emergency e.g. Britain, El Salvador, Kuwait, Lebanon, Malaysia, Saudi Arabia, Turkey.
- Countries are implementing **additional measures** to curb the outbreak:
  - Iceland has planned to give travellers a choice between a COVID-19 test on arrival, or two weeks quarantine.
  - Singapore has planned to test all 323,000 migrant workers who live in company dormitories for the coronavirus.
- Chile would give out "health passports" to people who are deemed to have recovered from the illness
- Qatar Airways has planned to provide 100,000 free tickets to health professionals around the world to thank them for their courage in fighting the coronavirus.
- Twitter is introducing labels and warnings on some posts containing disputed or misleading information on the coronavirus pandemic
- The World Health Organization (WHO) has launched an official Android, iOS and online app called “WHO COVID-19” to keep people informed during the coronavirus pandemic and to combat misinformation.
- The International Monetary Fund (IMF) has approved requests for emergency pandemic aid from 50 of its 189 members for a total of about $18 B.

E. 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.

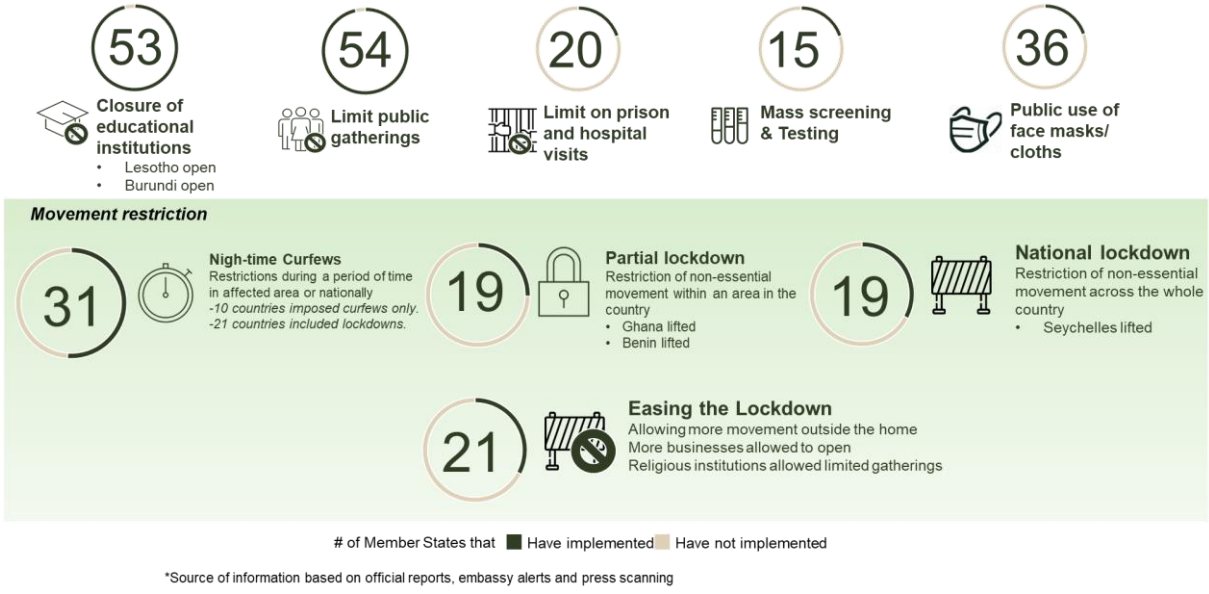


1 Some countries still allow cargo, freight and emergency transport into and out of the country; Some MSs will still allow citizens and residents to enter but all borders are essentially closed
2 Banning entry or exit of citizens or suspending visa issuance to specific countries

For further detailed information for each country, refer to the full table here.

F. Summary of physical distancing measures implemented 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 17 May 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.

G. Modelling Studies for Africa

Africa CDC has enlisted the support of a group of modelling experts, with various backgrounds, to support the efforts to estimate the impact of the pandemic in the African continent. This section presents new models and dynamic tools with capacity for country-level forecasting as they become available. As the epidemic evolves in Africa, the potential to improve and refine forecasts for the countries of the continent increases. Member states are encouraged to share updated case, intervention, and risk factor data with Africa CDC, and with the groups mentioned in this section who are members of the Africa CDC modelling working group. For further support kindly email for more information.

Interactive scenario analysis tool to explore PHSM impact

- The COVID-19 Scenario Analysis Tool allows the user to make projections of daily prevalence of infections, expected number of people requiring hospitalisation and critical care, timing of the epidemic peak and total deaths. By inputting start and end dates of an intervention and an estimate of transmission reduction, users can explore the effect of an intervention on these parameters. The model is an age-structured SEIR model with the infectious class divided reflecting progression through different levels of disease severity. It is adjusted for population size, contact pattern, effect on mortality if critical care is not available, as well proxy contextual factors including access to electricity, rurality, government health expenditure, maternal and infant mortality, school enrolments, geographical region and income group. Underlying COVID-19 characteristics reflect global information due to lack of case characterisation on the continent to date. Assumptions are made about the efficacy of interventions. The model re-calibrates daily using cumulative reported COVID-19 deaths.
  — *Imperial College London COVID-19 Response Team/MRC Centre for Global Infectious Disease Analysis/J-IDEA*

Model assesses effect of widespread community transmission in WHO AFRO region

- This study estimates 22% of the population of the WHO AFRO region will be infected in the first year, with 37 million symptomatic cases, of which 4.6 million will require hospitalisation, including 140,000 needing oxygen, and 89,000 breathing support. The model predicts 150,000 deaths. These estimates are lower than other models and result, according to the researchers, from lower risks of exposure in countries of the AFRO region than other parts of the world. The model is a static Markov Chain SEIR structure, with the disease characteristics based on global knowledge, adjusted for African contexts using an exposure risk calculation, a vulnerability index based on % population above 65 years, HIV prevalence as a proxy for chronic communicable conditions, and diabetes prevalence as a proxy for chronic non-communicable chronic conditions, and four composite factors reflecting 'gathering', weather, ease of movement, and watsan provision. The model customises country attack rates by the level of implementation of 10 non-pharmaceutical interventions. Greater detail on the innovative parameters used will be needed to fully evaluate the model.
  — *World Health Organization, Regional Office for Africa*

Risk analytics for individual member states

This tool facilitates analysis of risk by bringing together country-level (and for some countries sub-national) demographics, health system information, implementation of public health and social measures, prevalence of HIV and diabetes, COVID-19 statistics.
— *The Situation Hub, for Tony Blair Institute*

Note: Two links were misplaced in last week's brief. They were:

- Oxford COVID-19 Government Response Tracker : listing and mapping of public health and social measures implemented by country

- COVID-19 impact on non-COVID-19 disease burden: HIV, TB, Malaria: assessment of the long term effect of the pandemic disruption to services for prevalent diseases.

Interactive Modelling Tools List

To assist in comparing different models and projections, the following lists the interactive modelling tools reviewed by Africa CDC to date by institution involved. All tools mentioned below have some level of adaptation to Africa context and allow some manipulation of input data and visualisation of intervention impact. The list will be updated as other tools are launched and reviewed. For further details, click on the institution to be taken to the model and to the Africa CDC review.

- *London School of Hygiene & Tropical Medicine : (Review)*
- *Neher Research Group, University of Basel : (Review)*
- *EpidemicForecasting.org (University of Oxford/ Australian National University/Harvard University/Google/GitLab et al.) : (Review)*

H. Clinical Trials for COVID-19

- On 08 May, WHO published the proceedings of an Informal consultation on the dose of chloroquine and hydroxychloroquine for the SOLIDARITY Clinical Trial.
- As of 15 May, 8 candidates vaccines are at the clinical evaluation stage (phase I and II) and 110 candidates at the preclinical stage.

- As of 15 May, in Africa, there has been at least 33 registered clinical trials as listed below.

List of registered interventional clinical trials in Africa

Location	Name	Interventions	Sponsor/Collaborators	Phase	Enrolment Target	Start date
Egypt	Administration of Chloropromazine as a Treatment for COVID-19	*Drug:* Chlorpromazine Injection	Cairo University	I/II	60	May 2020
	Efficacy of Faviprevir in COVID-19 Treatment	*Drug:* Favipiravir *Drug:* Placebos	Tanta University	II/ III	40	17 April 2020
	Angiotensin Converting Enzyme Inhibitors in Treatment of Covid 19	*Drug:* ACEIs *Drug:* Conventional treatment	Tanta University	III	60	15 April 2020
	A Real-life Experience on Treatment of Patients With COVID 19	*Drug:* Chloroquine *Drug:* Favipiravir *Drug:* Nitazoxanide *Drug:* Ivermectin *Drug:* Niclosamide	Tanta University	II/ III	100	15 April 2020

	The Efficacy of Ivermectin and Nitazoxanide in COVID-19 Treatment	*Drug:* Chloroquine *Drug:* Nitazoxanide *Drug:* Ivermectin	Tanta University	II/ III	60	17 April 2020
	Efficacy of Natural Honey Treatment in Patients With Novel Coronavirus	*Dietary Supplement:* Natural Honey *Other:* Standard Care	Misr University for Science and Technology	III	1,000	25 March 2020
	PRA-001: Plasma Rich Antibodies From Recovered Patients From COVID19	*Other:* Antibody-Rich Plasma from COVID-19 recovered patients	Ain Shams University	NA	20	20 April 2020
	FAV-001: Efficacy and Safety of Favipiravir in Management of COVID-19	*Drug:* Favipiravir *Drug:* Standard of care therapy	Ain Shams University	III	100	20 April 2020
	Levamisole and Isoprinosine in Immune-prophylaxis of Egyptian Healthcare Workers Facing COVID-19	*Drug:* Levamisole *Drug:* Isoprinosine *Drug:* Levamisole and Isoprinosine	Ain Shams University	III	100	20 April 2020

	Application of BCG Vaccine for Immune-prophylaxis Among Egyptian Healthcare Workers During the Pandemic of COVID-19	*Biological:* intradermal injection of BCG vaccine. *Other:* Placebo	Ain Shams University	III	900	20 April 2020
	Efficacy of Chloroquine in COVID-19 Treatment	*Drug:* Chloroquine	Tanta University	II/III	40	17 April 2020
	Assessment the Activity Value of 13-Cis-Retinoic Acid(Isotretinoin) in the Treatment of COVID-19	*Drug:* Isotretinoin (13 cis retinoic acid) capsules + standard treatment. *Drug:* Isotretinoin (Aerosolized 13 cis retinoic acid) + standard treatment. *Drug:* Standard treatment	Kafrelsheikh University	III	45	April 2020
	MV-COVID19: Measles Vaccine in HCW	*Drug:* Measles-Mumps-Rubella Vaccine	Kasr El Aini Hospital	III	200	01 May 2020
	Management of Covid-19 Patients During Home Isolation	*Device:* Oxygen Therapy Procedure: Physical Therapy	Cairo University	N/A	60	15 March 2020
Egypt	Isotretinoin: Assessment the Activity Value of 13-Cis-Retinoic Acid(Isotretinoin) in	*Drug:* Isotretinoin (13 cis retinoic acid) capsules+standard treatment	Kafrelsheikh University	III	45	01 April 2020

	the Treatment of COVID-19	*Drug:* Isotretinoin(Aerosolized 13 cis retinoic acid) +standard treatment *Drug:* Standard treatment				
	Exchange Transfusion Versus Plasma From Convalescent Patients With Methylene Blue in Patients With COVID-19	*Biological:* exchange blood transfusion from normal donor *Biological:* plasma from convalescent patients with COVID-19 *Drug:* Methylene Blue 5 MG/ML	Ain Shams University	II	15	05 May 2020
	Inhalable Sodium Bicarbonate: A Possible Adjuvant Treatment of Patients With Novel COVID-19	*Drug:* Sodium Bicarbonate	Mansoura University	I	20	01 April 2020
	Unplanned Shifting to Online Distance Learning: Nursing Students' Perception and Achievement	*Other:* implementing Online Distance Learning	Kasr El Aini Hospital	N/A	180	01 February 2020
	SnPPIX Efficacy of Sn-protoporphyrin IX (SnPPIX) and Sulfonatoporphyrin(TPPS)Against Covid-19	*Drug:* SnPP Protoporphyrin *Drug:* Sulfonatoporphyrin(TPPS)	Kafrelsheikh University	I	56	01 May 2020

Kenya	SOLIDARITY Public health emergency SOLIDARITY trial of treatments for COVID-19 infection in hospitalized patients	1. Local standard of care alone OR local standard of care plus one of 2. Remdesivir 3. Chloroquine or hydroxychloroquine 4. Lopinavir + ritonavir 5. Lopinavir + ritonavir plus interferon-beta	WHO	III	10000	01 March 2020
Nigeria	CRASH-19: Coronavirus Response - Active Support for Hospitalised Covid-19 Patients	*Drug:* Aspirin *Drug:* Losartan *Drug:* Simvastatin	London School of Hygiene and Tropical Medicine	III	10,000	April 2020
	LACCTT Lagos COVID-19 Chloroquine Treatment Trial	*Drug:* Chloroquine phosphate *Drug:* Hydroxychloroquine sulphate	Lagos State Governement Nigerian Institute of Medical Research	N/A	600	17 April 2020
	IHP Detox tea trial: Efficacy and safety of IHP Detox Tea for treatment of Corona virus disease 2019: a pilot placebo-controlled randomized trial	IHP Detox tea	Neimeth International Pharmaceuticals Plc.	N/A	72	01 May 2020

Senegal	SEN-CoV-Fadj Efficacy and Safety Evaluation of Treatment Regimens in Adult COVID-19 Patients in Senegal	*Drug:* Hydroxychloroquine *Drug:* Hydroxychloroquine + Azithromycin	Institut Pasteur de Dakar Fann Hospital, Senegal Ministry of Health, Senegal Diamniadio Children Hospital, Senegal Dalal Jamm Hospital, Senegal Epicentre, Paris, France	III	258	01 June 2020
South Africa	CQOTE Chloroquine Outpatient Treatment Evaluation for HIV-Covid-19	*Drug:* Chloroquine or hydroxychloroquine	University of Cape Town	III	560	01 May 2020
	SOLIDARITY: Public health emergency SOLIDARITY trial of treatments for COVID-19 infection in hospitalized patients	Local standard of care alone OR Local standard of care plus one of: 1. Remdesivir 2. Chloroquine or hydroxychloroquine 3. Lopinavir + ritonavir 4. Lopinavir + ritonavir plus interferon-beta	WHO	III	10,000	01 March 2020
	BCG Vaccination for Healthcare Workers in COVID-19 Pandemic	*Biological:* Bacille Calmette-Guerin (BCG) *Other:* Placebo Comparator	TASK Applied Science (University of Cape Town)	III	500	04 May 2020
South Africa, Zambia and 11 other	CROWN CORONA :CROWN CORONATION:	*Drug:* Low-dose chloroquine/hydroxychloroquine	Washington University School of Medicine	III	55,000	April 2020

countries outside Africa	Chloroquine RepurpOsing to healthWorkers for Novel CORONAvirus mitigaTION	*Drug:* Mid dose chloroquine or hydroxychloroquine *Drug:* High does chloroquine or hydroxychloroquine *Drug:* Placebo	Bill and Melinda Gates Foundation			
Sudan	GA&COVID19 Potential Role of Gum Arabic as Immunomodulatory Agent Among COVID 19 Patients	*Dietary Supplement:* Acacia Senegal *Dietary Supplement:* Pectin	Al-Neelain University University of Khartoum	II/III	110	01 June 2020
Tunisia	Assessment of the Efficacy and Safety of (HCQ) as a Prophylaxis or COVID19 for Health Professionals	*Drug:* Hydroxychloroquine *Drug:* Placebo oral tablet	Abderrahmane Mami Hospital	III	530	15 April 2020
	COVID+PA: Assessment of Efficacy and Safety of HCQ and Antibiotics Administrated to Patients COVID19(+)	*Drug:* Hydroxychloroquine *Drug:* Azithromycin	Abderrahmane Mami Hospital Eshmoun Clinical Research Centre	IV	400	15 April 2020

	TRONCHER: Assessment of Efficacy and Safety of Tocilizumab Compared to DefeROxamine, Associated With Standards Treatments in COVID-19 (+) Patients Hospitalized In Intensive Care in Tunisia	*Drug:* Tocilizumab Injection *Drug:* Deferoxamine	Abderrahmane Mami Hospital Eshmoun Clinical Research Centre Datametrix	III	260	04 May 2020
	COVID-Milit A Study of Hydroxychloroquine and Zinc in the Prevention of COVID-19 Infection in Military Healthcare Workers	*Drug:* Hydroxychloroquine *Drug:* Hydroxychloroquine (placebo) *Drug:* Zinc *Drug:* Zinc (Placebo)	Military Hospital of Tunis UR17DN02 : Autoimmune Diseases Research Unit Dacima Consulting	III	660	04 May 2020