COVID-19 Scientific and Public Health Policy Update – (05 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 case report suggests that urine sample tested positive for SARS-CoV-2 RNA on day 12 post infection. Another study investigated the aerodynamic nature of SARS-CoV-2 by measuring viral RNA in aerosols and suggests concentration of SARS-CoV-2 RNA in aerosols detected in patients' toilet areas was elevated but was very low in isolation wards and ventilated patient rooms.
- Findings suggest children may be as infectious as adults. Similar findings in a retrospective study in Shenzhen, China report children were as likely to be infected as adults. Further, another study analysed the relationship between patient age and SARS-CoV-2 viral load in 3,712 COVID-19 patients found no significant difference between any pair of age categories including children.
- Researchers from the University of Washington developed a procedure for detecting viral RNA in swabs without the highly sought solutions. Results suggest that 'dry swab, extraction-free' procedure detected viral RNA in 9 out of 11 samples, while conventional extraction methods yielded positive results in only 8 of the 11.
- Results from randomised, multicentre trial at ten hospitals in China suggest that treatment with remdesivir was not associated with statistically significant clinical benefits. On the contrary, US National Institute of Allergy and Infectious Diseases (NIAID) trial reports that the median recovery time was reduced from 15 days to 11 days in the patients receiving remdesivir, although there were no significant differences in survival.
- Imperial College, Imperial College Healthcare NHS Trust, and Ipsos MORI in the U.K have launched REal-time Assessment of Community Transmission (REACT). The REACT-1 will require 100,000 participants to provide samples by swabbing their throat and nose which will be collected by courier for PCR testing for SARS-CoV-2. In REACT-2, serological tests could identify individuals who may have some immunity to the virus. Tests will be gradually introduced, starting with a small cohort of volunteers from Imperial Healthcare NHS Trustee.
- A mathematic modelling study tracking the outbreaks of COVID-19 in the US suggests that in New York, the number of cases will fall below 1,000 around May 10, below 100 around June 7 and below 10 by the end of June, and total estimated cases will reach about 320,000 by the end of June.
- The Director of the Africa Centres for Disease Control and Prevention (Africa CDC), highlighted the newly launched Partnership to Accelerate COVID-19 Testing (PACT) to scale up testing in Africa.

B. New guidelines and resources

- Since 25 April 2020, Africa CDC has published new and updated guidance on: n/a
- WHO has published new and updated guidance and resources on: Operational considerations for COVID-19 management in the accommodation sector; Strengthening Preparedness for COVID-19 in Cities and Urban Settings; COVID-19 SMS Message library
- US CDC has released new or updated guidance on: Screening Clients at Homeless Shelters; Interim Guidance for Homeless Service Providers to Plan and Respond to Coronavirus Disease 2019 (COVID-19); Strategies to Optimize the Supply of PPE and Equipment; Interim Infection Prevention and Control Guidance for Veterinary Clinics During the COVID-19 Response; Interim Guidance for Public Health Professionals Managing People With COVID-19 in Home Care and Isolation Who Have Pets or Other Animals; COVID-19 Travel Recommendations by Country; Information for Clinicians on Investigational Therapeutics for Patients with COVID-19
- ECDC has issued new/updated guidance and resources on: Considerations for infection prevention and control measures public transport in the context of COVID-19;
- PHE has issued new/updated guidance and resources on: Personal protective equipment (PPE): a resource for care workers delivering homecare (domiciliary care) in England; Stay at home guidance for households with possible coronavirus (COVID-19) infection
- FIND has updated the list of SARS-CoV-2 molecular assays evaluation results.
- Gilead Sciences has issued a press release on: Gilead's Investigational Antiviral Remdesivir Receives U.S. Food and Drug Administration Emergency Use Authorization for the Treatment of COVID-19
- 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)

- A case report of a 72 year old man with confirmed COVID-19 infection, reports that urine sample tested positive for SARS-CoV-2 RNA on day 12 post infection. Here, infectious SARS-CoV-2 was successfully isolated from urine of a COVID-19 patient. The virus isolated could infect new susceptible cells and was recognized by its' own patient sera. These findings raise the importance of using appropriate precautions to avoid transmission from urine.
- This study investigated the aerodynamic nature of SARS-CoV-2 by measuring viral RNA in aerosols in different areas of two Wuhan hospitals during the COVID-19 outbreak. Results suggest concentration of SARS-CoV-2 RNA in aerosols detected in patients' toilet areas was elevated but was very low in isolation wards and ventilated patient rooms.
- Clinical evidence suggests that the intestine may present another viral target organ for SARS-CoV-2. In human small intestinal organoids (hSIOs), enterocytes were readily infected by SARS-CoV and demonstrated by confocal and electron-microscopy. This study shows that SARS-CoV and SARS-CoV-2 infect enterocyte lineage cells in a human intestinal organoid model.

Epidemiology

- A study analysing the relationship between patients' age and SARS-CoV-2 viral load in 3,712 COVID-19 patients found no significant difference between any pair of age categories including children. Findings suggest children may be as infectious as adults. *(not peer reviewed)*
- A retrospective study of 391 confirmed SARS-CoV-2 cases and 1,286 of their close contacts, in Shenzhen, China report that the household secondary attack rate was 11·2% and children were as likely to be infected as adults.
- A study of 378 COVID-19 patients in China reports that in about 10% of the patients, viral shedding continued for longer than 30 days. Findings suggest that prolonged viral RNA shedding even after symptomatic relief was not rare, and the median duration of viral RNA shedding was 53.5 days and longest duration of viral RNA shedding could be 83 days. Further study should be conducted to know the infectivity of the virus and the relationship between RNA shedding and antibody expression.
- A research letter reports on the prevalence of COVID-19 in 408 people among a homeless community in Boston. Findings report a 36% positivity rate and that 87.8% were asymptomatic. These results suggest that symptom screening may not adequately capture the extent of the disease transmission in high risk settings.

Diagnostics

- Imperial College, Imperial College Healthcare NHS Trust, and Ipsos MORI in the U.K have launched REal-time Assessment of Community Transmission (REACT). The REACT-1 will require 100,000 participants to provide samples by swabbing their throat and nose which will be collected by courier for PCR testing for SARS-CoV-2. In REACT-2, serological tests could identify individuals who may have some immunity to the virus. Tests will be gradually introduced, starting with a small cohort of volunteers from Imperial Healthcare NHS Trustee.
- A study of 285 COVID-19 patients reports acute antibody responses to SARS-CoV-2. 100% of the patients tested positive for antiviral immunoglobulin-G (IgG) within 19 days after onset of first symptoms. Both IgG and IgM titres plateaued within 6 days after seroconversion. Findings suggest serological testing may be helpful for the diagnosis of suspected patients with negative RT–PCR results and for the identification of asymptomatic infections.
- Authors developed a highly sensitive RT-LAMP assay compatible with current reagents, that utilizes a colorimetric readout in as little as 30 minutes and inexpensive pipeline to further increase sensitivity without requiring highly specialized equipment. (not peer-reviewed)
- An evaluation on 69 primary clinical samples comparing the SARS-CoV-2 detection with the currently WHO recommended RT-PCR (WHO-PCR) workflow. The QIAstat-Dx Respiratory SARS-CoV-2 Panel demonstrated a comparable sensitivity to the WHO recommended assay. The QIAstat-SARS rapid multiplex-PCR panel provides a highly sensitive, robust and accurate assay for rapid detection of SARS-CoV-2 and may allow rapid decisions even in non-PCR trained laboratory or point-of-care testing.
- An in vitro study compared the analytical performance of a laboratory developed test (LDT) based on US CDC primer sets and four commercially available, FDA emergency use authorized assays for SARS-CoV-2 (Cepheid, DiaSorin, Hologic Panther, and Roche Cobas) on a total of 169 nasopharyngeal swabs. All assays were 100% specific, the LDT and Cepheid assays were the most sensitive assays for SARS-CoV-2 with 100% agreement across specimens. The other three only failed to detect positive specimens near the limit of detection of our CDC-based LDT assay.

- Researchers from the University of Washington developed a procedure for detecting viral RNA in swabs without the highly sought solutions. The study compared of conventional (swab → UTM → RNA extraction → RT-qPCR) vs. simplified (direct elution from dry swab → RT-qPCR) on self-collected samples from 11 COVID-19 patients. Results suggest that 'dry swab, extraction-free' procedure detected viral RNA in 9 out of 11 samples, while conventional extraction methods yielded positive results in only 8 of the 11. Although there is a need for further confirmation with a larger sample size. (*not peer reviewed*)

Care and Treatment

- A randomised, double-blind, placebo-controlled, multicentre trial in ten hospitals in China, enrolled 236 adult patients with severe COVID-19, patients were randomly assigned to treatment with remdesivir and placebo. Results suggest that treatment with remdesivir was not associated with statistically significant clinical benefits. However, the numerical reduction in time to clinical improvement in those treated earlier requires confirmation in larger studies.
- A trial sponsored the US National Institute of Allergy and Infectious Diseases (NIAID) with 1,063 hospitalized patients with advanced COVID-19 treated with remdesivir, reports that patients who received remdesivir had a 31% faster time to recovery than those who received placebo. The median recovery time was reduced from 15 days to 11 days in the patients receiving remdesivir, however there was no significant differences in survival.
- The U.S Food and Drug Administration issued an emergency use authorization for remdesivir for the treatment of suspected or laboratory-confirmed COVID-19 in adults and children hospitalized with severe disease.
- A retrospective, observational cohort Dutch study of 95 COVID-19 patients suggests that treatment of COVID-19 patients with chloroquine resulted in a statistically significant and clinically relevant effect on the QTc interval. It is recommended that QTc intervals be monitored by recording a baseline electrocardiogram (ECG) and then a further ECG during chloroquine treatment.
- A prospective, observational study of 201 hospitalized patients treated with chloroquine/hydroxychloroquine ± azithromycin, suggest no instances of Torsade de pointes (TdP) or arrhythmogenic death, although the maximum QTc during treatment was significantly longer in the combination group (chloroquine/hydroxychloroquine and azithromycin) vs. the monotherapy group (chloroquine/hydroxychloroquine). Although use of these medications resulted in QT prolongation, clinicians seldomly needed to discontinue therapy. Further study of the need for QT interval monitoring is needed before final recommendations can be made.
- Sanofi and Regeneron have announced the preliminary results from the Phase 2 portion of an ongoing Phase 2/3 trial evaluating sarilumab, an interleukin-6 (IL-6) receptor antibody, and modified the phase 2/3 trial of sarilumab, to exclude COVID-19 patients classified as 'severe'. The companies will refocus the trial exclusively on patients classified as 'critical', who will only receive either the higher 400 mg dose of sarilumab or a placebo.
- A study of 21 severe or critical COVID-19 patients treated Tocilizumab reports that within 5 days after tocilizumab, 75% of the patients had lowered their oxygen intake and CT scans manifested that the lung lesion opacity absorbed in 90.5% of the patients. The preliminary data suggests that tocilizumab, improved the clinical outcome immediately in severe and critical COVID-19 patients, suggesting it is an effective treatment to reduce mortality.
- A retrospective cohort study of 46 severe patients with COVID-19 compared the clinical outcomes of COVID-19 pneumonia patients with or without methylprednisolone

treatment. Findings suggest early, low-dose and short-term application of methylprednisolone was associated with better clinical outcomes in severe patients with COVID-19 pneumonia, and should be considered before the occurrence of ARDS. Nevertheless, future randomized controlled trials are desperately in need to confirm these findings and further study the mid- and long-term outcomes after discharge.

- A case study of 6 COVID-19 subjects with respiratory failure received convalescent plasma at a median of 21.5 days after first detection of viral shedding, all tested negative for SARS-CoV-2 RNA by 3 days after infusion, and 5 died. Findings suggest that convalescent plasma treatment can discontinue SARS-CoV-2 shedding but cannot reduce mortality in critically end-stage COVID-19 patients, and treatment should be initiated earlier.
- Canadian Blood Services (CBS) announced that received its first COVID-19 convalescent plasma donation, to be used in the national clinical trial to test a possible treatment for the novel coronavirus. After requisite testing and processing, all donations will be provided to Canadian physicians who have COVID-19 patients participating in the CONCOR-1 clinical trial.
- Findings from this review suggest that vitamin D deficiency may partly explain the geographic variations in the reported case fatality rate of COVID-19, implying that supplementation with vitamin D may reduce the mortality from this pandemic. Although finds from a recent RCT suggests high-dose vitamin D appears to have a limited role in the treatment of patients with severe COVID-19 disease.
- Researchers at Beijing's Tsinghua University used a large computed Tomography (CT) database and AI system to provide accurate clinical prognosis that can aid clinicians to consider appropriate early clinical management and allocate resources appropriately.
- A patent has been granted by the UAE's Ministry of Economy for the development of an innovative and promising treatment for coronavirus infections using stem cells. The treatment was developed by a team of doctors and researchers at the Abu Dhabi Stem Cell Centre, and involves extracting stem cells from the patient's own blood and reintroducing them after activating them.

Infection Prevention and Control

- A case report of 3 adults diagnosed with germicidal-range UV irradiation-induced photokeratitis and epidermal phototoxicity after a short period of unprotected exposure to UV germicidal lamps. Findings emphasize the potential consequences of phototoxicity from improper use of UV germicidal lamps for household disinfection and highlight the fact that UV germicidal lamps currently have no established role in household disinfection of SARS-CoV-2.
- Model simulations, using data relevant to COVID-19 dynamics in the US states of New York and Washington, suggest that broad adoption of even relatively ineffective face masks may meaningfully reduce community transmission of COVID-19 and decrease peak hospitalizations and deaths. This mathematical modeling work suggests a possible strong potential benefit to near universal adoption of even weakly effective homemade masks that may synergize with, not replace, other control and mitigation measure.

Vaccines

- Health director-general of Malaysia Dr Noor Hisham Abdullah announced that Malaysia will be one of the countries collaborating with China on a vaccine for COVID-19, as trials are expected to completed by December.
- AstraZeneca and the University of Oxford announced an agreement for the global development and distribution of the University's potential recombinant adenovirus

vaccine aimed at preventing COVID-19 infection from SARS-CoV-2. The collaboration aims to bring patients a potential vaccine known as ChAdOx1 nCoV-19, being developed by the Jenner Institute and Oxford Vaccine Group, at the University of Oxford. Under the agreement, AstraZeneca would be responsible for development and worldwide manufacturing and distribution of the vaccine.

- Pfizer aims to start clinical trials of its COVID-19 candidate in the US next week. The mRNA-based vaccine, partnered with BioNTech, has already started phase 1/2 testing in Germany, the company says it could have it ready for emergency use as early as the autumn if the FDA signs off the study quickly.
- An Australian research and clinical facility is preparing to launch human trial of COVID-19 vaccine developed by China, Linear Clinical Research, Perth-based clinical research company, has begun to recruit healthy adults for the trial within next two months.
- The University of Queensland in Australia has reported positive findings from early preclinical testing of its Covid-19 vaccine candidate. The preclinical analysis revealed high levels of antibodies that could neutralise infection by the live virus in cell culture.

Non-pharmaceutical interventions: social distancing

- A review of 13 studies reports that quarantine measures were consistently associated with negative psychosocial outcomes, including depressive symptoms, anxiety, anger, stress, posttraumatic stress, social isolation, loneliness and stigmatization. Prevention and intervention approaches to attenuate the psychosocial impact should be an integral component of crisis response during pandemic conditions.
- A survey administered within the period of Italian COVID-19 lockdown and quarantine to almost 9000 citizens in Italy and abroad, confirms the key role of mass media on the risk perception, level of knowledge regarding the emergency situation, the level of acceptance of mitigation measures, and the perceived feelings by the Italian population.
- A smart contact tracing based mobile sensor data cross-validated by other big sensor surveillance data was used to identify 627,386 potential contact persons with the mobile geopositioning method and rapid analysis . Big data analytics with smart contact tracing, automated alert message for self-restriction, and the follow-up of the outcome related to COVID-19 using health insurance data could curtail the resources required for conventional epidemiological contact tracing.

D. 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.

Country specific reports on peak size & timing, healthcare demand and intervention impact.

- These reports use country-specific contact patterns and age structure to produce overall and age-specific estimates of the size and timing of peak symptomatic cases and deaths, daily demand for hospital beds, and the effects of five intervention scenarios on transmission for each African Union Member State. The simulation uses global hospital utilisation parameters as African data are not yet available, but severity parameters have been adjusted to take account of the potential effect of different age and comorbidities on severity of illness. Parameters will be further refined as data becomes available. The reports also compare the effect of different levels of physical distancing and shielding and impact on peak timing. As with most models, forecasts are at country-level and in practice peaks may be spread out over time and subnational locations.

  — *COVID-19 Working Group, London School of Hygiene & Tropical Medicine Centre for the Mathematical Modelling of Infectious Diseases*

Case, death and hospitalisation simulations that can be manipulated by country and intervention impact.

- This online tool uses a model interface which allows countries to change basic parameters, such as R_0, infectious period, season, available beds, length of hospital stay and intervention-related transmission reduction and case isolation rates, to explore different epidemic evolution scenarios. The modelled scenarios are shown graphically against actual data and tabulated by age-group. The tool contains country-specific data for 35 of the 55 AU Member States for age distribution and health care capacity, while the R_0, the proportion of cases captured by the country's testing and start date and initial size of the epidemic are calculated from reported cases and deaths. The severity fraction, the proportion of unreported cases, and intervention impact assumptions are based on those reported from China. Forecasts are country level and different regions may follow different patterns: these could be modelled by changing estimates in the population box to represent a region if data is available.

  — *Neher Research Group, Biozentrum, University of Basel together + multiple contributors*

Estimating effects of lockdown and post lockdown intervention.

- This model projects the potential burden of COVID-19 asymptomatic and symptomatic infection for each African country under scenarios of a 60-day lockdown at either 25% or 44% transmission reduction, followed by a post lockdown period of 100 days in which transmission resumes at either 90% or 75% of pre-lockdown levels depending on whether physical distancing regulations and isolation of cases is continued. Limitations are that the models use epidemiological parameters from Indian and Chinese experience and are not yet adjusted for country-specific demographics or prevalent co-morbidities, also that the epi curves are modelled as if all countries started their epidemics on the same date, though this will be revised in the next version. The results show that

continued reduction of transmission can delay and reduce peaks in infection overall and in severe illness.

– *The Center for Disease Dynamics, Economics & Policy, Washington DC, Delhi, Nairobi*

Estimating cases, R and doubling time for 16 Member States.

- This work tracks and projects new confirmed cases, direction of change in daily cases, and changes in the effective reproduction number (R) and doubling time. It uses real case data and takes into account potential biases due to delays in case reporting, though it uses international parameters to do so. The results indicate the status of the epidemic about 2 weeks prior, due to the time taken for an infection to be confirmed and reported, with a projection to the present date. Local epidemic intelligence should be used to interpret trends as changes in testing effort or case detection can affect the parameters, eg, expanding testing capacity can result in a higher R because the model sees more cases as evidence of more transmission rather than better testing. Countries are included only when at least 60 cases have been reported in a single day. Estimates are reported at national level but are likely to vary substantially across the territory.

  — *Centre for the Mathematical Modelling of Infectious Diseases, London School of Hygiene and Tropical Medicine*

Evidence on shielding, self-isolation & physical distancing in 3 different age structures.

- This study compares combinations of non-pharmaceutical interventions on the epidemic evolution in three African countries with different age distributions. The countries examined are Nigeria, Mauritius and Niger, which have respectively the oldest, median and youngest average age. It found response strategies incorporating self-isolation of symptomatic individuals, moderate physical distancing and high uptake of shielding reduced predicted peak bed demand by 44-54% and mortality by 60-75% and is the first modelled evidence on shielding. The model suggest lockdowns can delay epidemics by about 3 months.

  — *Centre for the Mathematical Modelling of Infectious Diseases, London School of Hygiene and Tropical Medicine*

Interactive COVID-19 data visualisations by country

- Our World in Data is an open source, free access website which provides graphs and visualisations of multiple COVID-19 epidemiological and operational parameters, updated daily and customisable by country or groups of countries to facilitate comparisons. The data source is the European Centre for Disease Prevention and Control aggregated global data collection, updated twice daily.

  — *Oxford Martin Programme on Global Development, University of Oxford; The Global Change Data Lab.*

Other models

- A mathematical modelling study suggest interventions started earlier in the epidemic delay the epidemic curve and interventions started later flatten the epidemic curve. The models suggest that social distancing can provide crucial time to increase healthcare capacity but must occur in conjunction with testing and contact tracing of all suspected cases to mitigate virus transmission.

- A mathematic modelling study tracking the outbreaks of COVID-19 in the US suggests that in New York, the number of cases will fall below 1000 around May 10, below 100 around June 7 and below 10 by the end of June, and total estimated cases will reach

about 320,000 by the end of June. The study suggests that Michigan will have a total estimated case will reach about 45,000 by the end of June, and California will total estimated cases will reach about 47,000 by the end of June. The modelling approach and the resulting numbers presented here are dependent on the accuracy of source data which were not verified.

E. 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:** Kenya,
  - **National lockdown:** Botswana, Liberia, Mali.
  - **State of emergency:** DRC, Egypt, Mozambique.
- While, some Member States allow **partial reopening of the economy and allow extra hour of movement** including Gabon, Mauritania, Rwanda,
- Member States have also been providing relief payment and/or food to ease the livelihood challenges of the citizens during the nationwide lockdown e.g. Gambia, Malawi, South Africa.
- Algeria has extended the containment measures until May 14 to curb the spread of the new coronavirus, after authorizing the reopening of some businesses during the Ramadan period.
- Burkina Faso will deploy 15,000 volunteers in the fight against the coronavirus pandemic.
- Malawi's High Court has ordered the extension of an earlier order barring the government from imposing a 21-day lockdown to contain the spread of coronavirus.
- Nigeria has mapped out four international airports and nine others considered as corridor routes for COVID-19, for decontamination. The country has also granted free subscription to e-learning to students through some selected sites in partnership with some major networks.
- Rwanda's judicial authorities have released a second batch of 1,673 detainees from different police stations cells countrywide to decongest detention centres amid COVID-19.
- Member States get financial support from The World Bank, IMF and Other developed countries ;- Botswana ($4.7M), Ethiopia ($411 M), Mozambique ($309M), Nigeria (€5.5M) and $3.4B, Togo($8.1M), Tunisia ($20M),
- The medical supplies donated by the Jack Ma Foundation for Member States have arrived Ethiopian capital Addis Ababa; it includes 4.6 million face masks, 500,000 swabs and test kits, 300 ventilators, 200,000 clothing sets, 200,000 face shields, 2,000 thermal guns, 100 body temperature scanners and 500,000 pairs of gloves.
- An opinion piece by the Director of the Africa Centres for Disease Control and Prevention (Africa CDC), highlighted the new launched Partnership to Accelerate COVID-19 Testing (PACT). A strategy to increase testing for COVID-19 is fourfold, through pooled procurement and distribution; engagement of private sector; seamless sample shipment; leveraging on existing platforms such as HIV and TB and; supporting local production of test kits.

Rest of World

- The US state of New York has begun antibody tests for front-line healthcare workers. The screening programme will be to investigate whether doctors and nurses working with infected patients have been contracting COVID-19 without showing any symptoms.
- The following countries have started easing of lockdown e.g. Belgium, Greece, Hong Kong, India, and Portugal.
- France to lift lockdown only after cases drop below 3,000 per day, currently the tentative date is 11 May.
- Spain aims to phase out lockdown by end of June.
- While other countries decide to extend lockdown, closing of schools and/or curfew e.g. Czech, Lebanon, Pakistan, Poland, Russia, Sri Lanka, Turkey.
- The following countries have continued to impose travel restrictions.;
  - ✓ Azerbaijan will keep its borders closed until 31 May.
  - ✓ Indonesia will temporarily ban domestic and international air and sea trave.l
  - ✓ Japan is adding 14 more countries - including Russia and Saudi Arabia - to an entry ban.
  - ✓ Pakistan has extended a ban on all international flights into and out of the country until 15 May.
- Australia has launched coronavirus tracing app and ramp up testing with 10 million more kits.

F. 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.

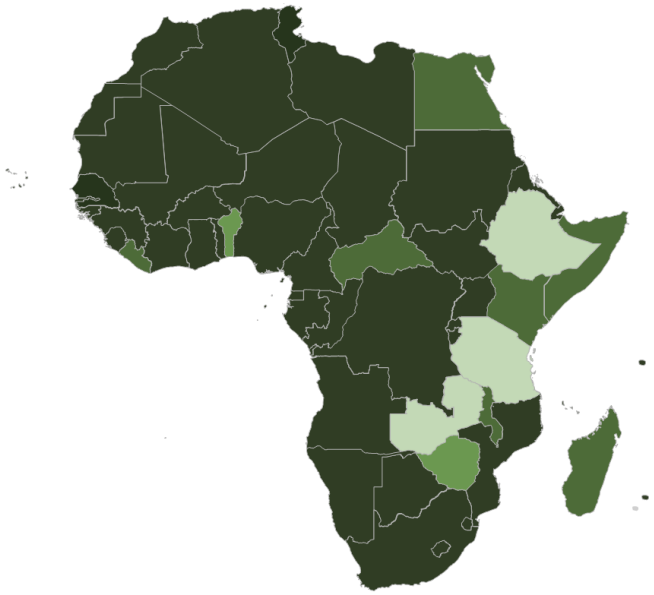
43 Full border closures[1]

7 International air traffic closures

2 Travel restrictions to and from specific countries

3 Entry/ Exit restrictions[2]

Most Member States have imposed **mandatory quarantine** for all travelers or travelers arriving from high risk areas

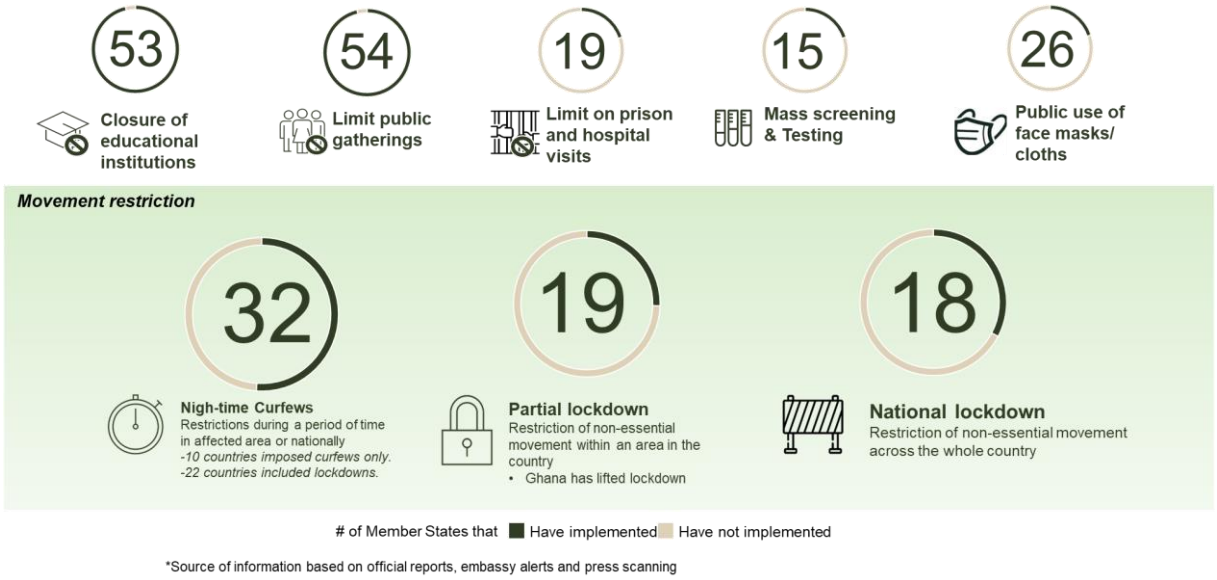


1 Some countries still allow cargo, freight and emergency transport into and out of the country; Some MSs will still allow citizens and residents to enter but all borders are essentially closed
2 Banning entry or exit of citizens or suspending visa issuance to specific countries

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

G. 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 03 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.

H. Clinical Trials for COVID-19

- On 26th April, WHO announced the WHO Working Group – Solidarity core protocol for therapeutics. WHO released a COVID 19 Landscape of experimental treatments based on the outputs of the COVID-NMA project. The COVID-NMA project is led by international team of researchers from Cochrane, the Université de Paris and others and provides a live mapping of all ongoing research on Covid-19 updated every week, including reports and synthesis from the randomised trials data every 3 days.

- In Africa, there has been at least 25 registered clinical trials.

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
	Efficacay 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

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
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	Local standard of care alone OR Local standard of care plus one of: 1. Remdesivir 2. Chloroquine or hydroxychloroquine	WHO	III	10,000	01 March 2020

	COVID-19 infection in hospitalized patients	3. Lopinavir + ritonavir 4. Lopinavir + ritonavir plus interferon-beta				
South Africa, Zambia and 11 other countries outside Africa	CROWN CORONA :CROWN CORONATION: Chloroquine RepurpOsing to healthWorkers for Novel CORONAvirus mitigaTION	*Drug:* Low-dose chloroquine/hydroxychloroquine *Drug:* Mid dose chloroquine or hydroxychloroquine *Drug:* High does chloroquine or hydroxychloroquine *Drug:* Placebo	Washington University School of Medicine Bill and Melinda Gates Foundation	III	55,000	April 2020
Tunisia	Assessment of the Efficacy and Safety of (HCQ) as a Prophylaxis for 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	*Drug:* Tocilizumab Injection *Drug:* Deferoxamine	Abderrahmane Mami Hospital Eshmoun Clinical Research Centre	III	260	04 May 2020

	Compared to DefeROxamine, Associated With Standards Treatments in COVID-19 (+) Patients Hospitalized In Intensive Care in Tunisia		Datametrix			