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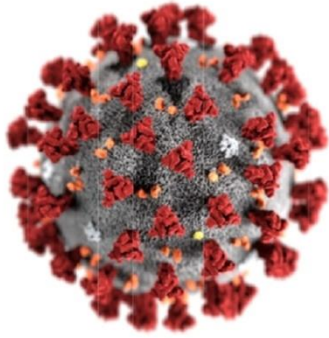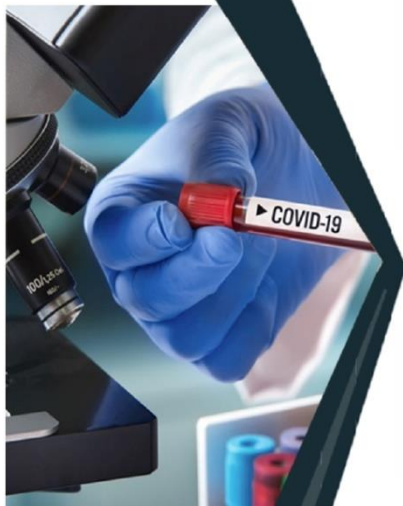SCIENTIFIC TECHNICAL RESEARCH COMMISSION

COVID-19

ASRIC Response and Intervention

Afro Centered Non-Pharmacuetical Interventions for COVID-19

AFRO-CENTERED NON-PHARMACEUTICAL INTERVENTIONS FOR COVID-19

by

ASRIC Advisory Board on STI
Strategic Intervention for COVID-19

2020

This study was commissioned by the African Scientific, Research and Innovation council (ASRIC) and it reflects the views and opinions expressed therein, which are not necessary those of the AU and its Commission. This study was developed with the aim to improve and strengthen science, technology and innovation intervention to COVID-19 at the national, regional and continental levels through building and upgrading Afro-Centered Non-Pharmaceutical Interventions to COVID-19 with the aim to assist Member States and Regional Economic Communities (REC) to adopt /domesticate such interventions.

PREFACE

As the numbers of new infections from COVID-19 in Africa have risen, African Union Member States have adopted practices like social distancing, hand washing, respiratory hygiene, wearing of face masks, travel restrictions (boarder closures), closure of schools, closure of businesses, banning of mass gatherings, isolation and lockdown to stem the spread of the pandemic. Most of these measures have been embraced from actions of China and Western countries and have been applied to Africa without regards to the complex and diverse socio economic and cultural background of African communities. The majority of Africa's population survives on daily subsistence earning which make it difficult people to adhere to movement restrictions. Also, many live in close proximities to each other and this complicates social distancing interventions. There is need for a rethink of the approaches for Africa for alternative acceptable strategies which are supported and beneficial to local communities. Governments in Africa are beginning to relax the lockdowns as they strive to create a balance between economic prospects and health of the population however, caution should be exercised so that the decisions to relax lockdown are be based on data.

This publication is developed by the African Scientific Research and Innovation Council (ASRIC) Advisory Board on STI Strategic Intervention for COVID-19 as part of its response to the COVID-19 pandemic through Afro-Centered Non-Pharmaceutical Interventions. It presents the recommendation of the ASRIC Advisory Board on Afrocentric non-pharmaceutical interventions for COVID-19 that need to be considered by AU Member States and it is a guide to assist Member States and Regional Economic Communities (REC) to adopt the interventions in the fight against COVID-19.

ASRIC and its Board of Advisors recommend AU Member States to domesticate the Afrocentric non-pharmaceutical interventions in national intervention plans. This document will be updated as more information is available from research about COVID-19 at different stages of the pandemic.

ACKNOWLEDGEMENT

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I. Introduction:

The COVID-19 pandemic has taken a toll on the world and has sent shock waves globally with a greater impact on the governments and populace. It is evidently clear that the global spread of COVID-19 and its impacts is felt, particularly in America, Italy, Spain, and some other countries in Europe. The infection rate has been generally quite low in Africa, a fact that could be attributed in part to the low testing capacity of most African nations, or to other factors yet to be determined.

The case zero was reported in Africa in accordance with WHO on 25th February 2020, as of 12th of Jun 2020 the total reported cases are **216,780 (**ACDC-2020).
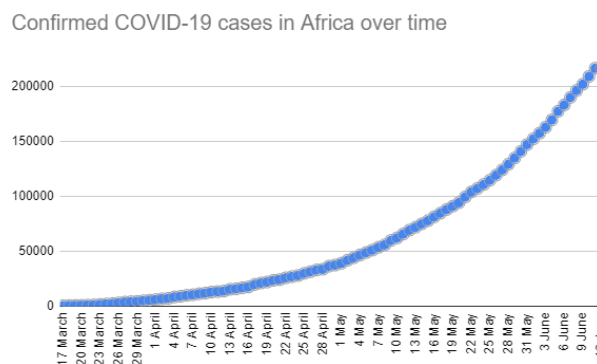
Figure, 1: Shows the confirmed Covid-19 cases in Africa over time
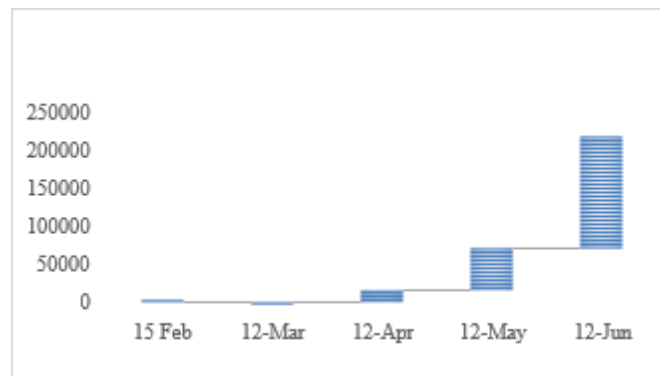
Figure, 2: Increase in Reported COVID-19 cases in Africa per month
(According to data are collected from the ACDC)

On the 14th of April 2020 the ASRIC Advisory Board on STI Intervention for COVID-19 had its inaugural meeting and consequently several meetings took place to advice ASRIC on how best ASRIC can respond to the COVID-19 pandemic utilizing STI while building on existing African resources. As of that the board developed the ASRIC STI Strategic intervention for Covid-19 "Actions and Intervention".

This intervention has three pillars and each of the pillar is composed of several sub-pillars (actions).   The three pillars are: Enabling Environment; Research and Development; and Publicity and Outreach, see table 1.

STI Intervention to Covid-19						
Enabling environment	Development of policy briefs/guidelines on investment in health care & health research systems.	Research & Development	Afro-centric non pharmaceutical interventions for outbreak.	Publicity and outreach	Identification of stakeholders	
	Development of guideline on IP protection in joint research and collaboration during outbreaks.		COVID-19 pandemic modeling.			
	Development of guidelines on research translation.		Development and/or validation of rapid testing kit.			
	Development of AU guidelines on outbreak hazard and STI intervention.		Mapping out and inventory of the pandemic.		Publicity campaigns that are tailored to stakeholders	
	Health professional training/ capacity building.		Inter-Africa STI cooperation.			
			Clinical trials.			
			Impact on the covid-19 on Africa's health system.			

Table 1: STI intervention for COVID-19

Among these sub-pillars is Afro-centric non pharmaceutical interventions for outbreak, where this publication is focusing on. For the purpose of this study the following were taking into consideration:
  a. *An understanding of COVID-19 behavior that includes transmission and spread patterns*
  b. *The limitation to non-accessibility of Africa's population to safe water*
  c. *Demographic population in rural areas and the case is worse in Internally Displaced Person's (IDP) and Refugee camps*
  d. *Majority of African workforce are earning on daily basis (daily wage)*
  e. *Socio-cultural background and perceptions of diverse African communities*

II. Development of Afro- centered non pharmaceutical interventions.

The specific Non-Pharmaceutical Interventions (NPI) are a group of public health measures aimed at reducing contact rates in the population and thereby reducing transmission of the virus derived from the African environment. Generally, there are two fundamental strategies:

  1- **Mitigation,** which focuses on slowing but not necessarily stopping epidemic spread – reducing peak healthcare demand while protecting those most at risk of severe disease from infection. In other words, Mitigation aims at the use of NPIs to interrupt transmission and to reduce the health impact of an epidemic, in this scenario, population immunity builds up through the epidemic, leading to an eventual rapid decline in case numbers and transmission dropping to low levels.

  2- **Suppression**, which aims to reverse epidemic growth, reducing case numbers to low levels and maintaining that situation indefinitely. Suppression aims to reduce the reproduction number (the average number of secondary cases each case generates), and hence to reduce case numbers to low levels. The main challenge of this approach is that NPIs (and drugs, if available) need to be maintained – at least intermittently - for as long as the virus is circulating in the human population, or until a vaccine becomes available.

Non-Pharmaceutical Interventions (NPIs) in the context of this document *are actions, apart from vaccinations, treatment, and/or use of organic substances that are taken to slow the spread of an epidemic*. For COVID-19 these include, social distancing, hand washing, respiratory hygiene, wearing of face masks, travel restrictions (boarder closures),closure of schools, closure of businesses, banning of mass gatherings, isolation and lockdown.

It is imperative that AU Member States ensure that non pharmaceutical interventions (self-isolation when the people are sick, social distancing, hand washing, hygiene improvements, working from home and closing schools) are adapted to the socio-cultural background of diverse African communities that sometime may exist in the same country.

Studies have shown that implementation of NPIs does limit transmission of COVID-19. Lai et al (2020) found that early detection and isolation prevented more COVID-19 infections than travel restriction and contact reduction but agreed that combined NPIs achieved more. Ferguson et al (2020) found that when each NPI is implemented in isolation, effectiveness is limited but when all are combined there is a reduction in contact rate and therefore transmission. Hartley and Perencewich (2020) analyzed historical observational data and concluded that non pharmaceutical interventions when implemented together, immediately after detection of a new pathogen, can reduce transmission. In many Africa Countries, compliance with some of the NPIs have been poor mainly because risk communication and community engagement were not properly implemented in a participatory manner from the onset. Had these been done, there would not have been so much misinformation and non compliance with preventive measures. Experiences have shown that communities willingly take ownership of a problem when they participate in defining it and determining the solution to it.

If consulted, communities would suggest ways of implementing the NPIs which in themselves are very difficult to enforce largely because of diverse socio-cultural peculiarities of African communities and limited access to basic facilities, utilities and services. There is also a high rate of unemployment as well as dependence on daily earnings make it uncomfortable for people to adhere to movement restrictions. It is also difficult to observe social distancing in Africa because many live in close proximities to each other and have many mandatory cultural events that involve large gatherings.

The following recommendations contain adaptations that should make compliance easier in African communities:

Non-pharmaceutical interventions		Recommendations for African communities
Social Distancing	Social distancing is maintaining a physical distance of six feet or two arm's length between people. This reduces the frequency of people gathering in groups and coming into close contact with each other. For COVID-19, social distancing reduces the probability of uninfected persons coming in contact with infected	• It is absolutely necessary to engage the communities from the onset, through traditional leaders, opinion leaders, religious leaders, traders, market authorities, transporters, local government and other group leaders in the communities in order to educate them on COVID-19 • Participatory approaches should be adopted in the engagement and communities should be allowed to

	persons, thereby limiting transmission. In African communities, social distancing is very difficult to observe particularly in crowded homes, markets, motor parks, churches, mosques, cultural activities, ceremonies and meetings.	discuss freely and make suggestions on the application of the preventive measures in their setting. Social distancing should then be further discussed and strategies for adapting it to the traditional setting agreed upon. A demand for total compliance with social distancing should not be made but emphasis should be on combining it with hand washing, wearing of face masks and respiratory hygiene.
Hand washing	Coverage by water supply and sanitation is not adequate in most African Communities. While the developed countries are moving towards 100%, coverage by safe water is 97% in North Africa and only 60% in Sub Saharan Africa. Washing of hands is possible only when water is available and households will not waste water washing their hands when they do not have enough water for domestic use.	• Request water providing agencies to upscale provision of water and sanitation facilities in all communities. This intervention will also reduce prevalence of water related diseases. • Support local innovations around non-contact hand washing. • Encourage use of safe local soap available in the communities. • Encourage placement of hand washing facilities in public places such as markets, worship centers, town halls, village square and ensure continuous maintenance and functionality.
Temperature Testing	Temperature screening of customers, employees, contractors and visitors to prevent the entry of people with elevated temperatures to any gathering places. Temperature testing must be conducted daily prior to entry to public/work places, markets, motor parks, churches, mosques, cultural activities, ceremonies and meetings.	• It is imperative to observe Social distancing requirements which must be strictly observed by the screening personnel, while face masks wearing to be enforced during the screening and beyond. • Screening personal should be trained on the usage of the Tele-thermographic devices such as Infrared Thermometer • It is advised also that the populace to check their own body temperature daily before going out of their residence • Temperature testing to be encouraged in all public/work places.

Use of face mask	Face masks or nose masks are coverings worn to protect the face from droplets from sneezes, coughs of infected persons. Various types of masks N95respirator masks …filter away 95% of small particles in the air Surgical masks...Shield against larger particles in the air Cloth masks Washable masks that trap particles.	• Enlighten the community on the need to use face mask especially in places where it will be difficult to observe social distancing. • Inform the community that there are different types of masks and allow them to develop a positive description of *mask* in their local language. If need be, allow the community to give the mask a local name. • Provide information on the proper use of masks as improperly used or stored masks can contribute to the spread of the virus. • Encourage local production of face masks with fabric that is locally available within each community. • Ensure quality control of the face masks i.e. the right type that will prevent transmission of the virus. • Advice the community on the way to disinfection of reusable masks. • Distribute free face masks to as many as possible particularly, front line health workers, low income groups, unemployed, internally displaced persons (IDPs), persons with disability and other vulnerable groups. Government at all levels, The Private Sector and Non- Governmental Organizations should provide free masks.
Respiratory hygiene and **cleaning of surfaces**	Respiratory hygiene or cough etiquette involves covering coughs with the elbow and coughing into tissue which is later flushed or burnt. This prevents transmission of respiratory infections including COVID-19 Cleaning of surfaces first with water and soap, then with either bleach or disinfectant product containing about 70% alcohol kills CVID 19 virus	Sensitize communities on how to sneeze and cough in a hygienic manner i.e. coughing into the elbow and coughing into tissue. Encourage enforcement by community. Encourage cleaning of surfaces (door knobs and tables) with available and effective agents some of which could be locally available options e.g. native soap, ashes and alcohol. Encourage communities to regularly carry out communal cleaning and disposal of the environment to remove contaminated waste materials.
Keep telling the story	Public memory regarding public matters and policies is short	Public and private news agencies/ papers to be equipped with adequate and updated

and update it	lived, so continues and full/relevant information (tell it as it is) should be repeated to the public every now and then to avoid public ignorance.	information; National campaigns to be conducted regularly to refresh the public memory Community/religious leaders to be encouraged to remind the public and to give them basic information on the pandemic.
Personal Protective Equipment (PPE)	Personal Protective Equipment consist of gown masks and gloves, head cover, rubber boots, goggles and head cover worn by health workers for protection against highly infectious pathogens.	Make it mandatory for PPEs to be provided for all health workers Protection beyond PPEs should be guaranteed Safe transportation to and from work Safe meals Hygiene enhancing facilities at workplaces and along the route to work
Closing Schools and businesses	Closure of schools at all levels is a very effective strategy for protecting a significant proportion of the population. However, this comes with the problem of keeping the pupils and students occupied at home. In rural areas, this problem will not be very intense because there are many creative entrepreneurial activities to keep children busy.	• Encourage home teaching • Provide free data for on line learning • Conduct radio teaching • Convert school feeding to food drops at home or subsidies to be given in kind to the families of the pupils. • Encourage subsistence farming around homes.
Banning of mass gatherings	This is difficult to achieve fully in Africa with so many traditional ceremonies some of which are mandatory. It is also difficult to shut down markets, churches, mosques and motor parks.	• Involve the communities in discussions from the onset so they understand that it is for their own good that these gatherings are banned. Involve all sectors of the communities, market leaders, motor park leaders, religious leaders and traditional leaders. • Allow the communities to handle compliance and sanctions. • Limit the use of enforcement agencies in rural communities. They may overstep their bounds.

Travel restrictions	Closure of airports is easy to implement but closure of land borders is difficult to enforce because African countries have many access routes along boarders that are not manned by immigration and law enforcement agents.	• Give the local Governments/ District Governments as well as the traditional leaders the task of policing the land borders. • Create exceptions for movement of essential goods that can be monitored.
Isolation	In Africa the problem for most countries is acceptance of isolation which is strange to many and is seen as the beginning of stigmatization. There is also shortage of isolation centers. The present COVID-19 pandemic offers an opportunity to estimate and prepare facilities that can quickly be converted to isolation centers for future outbreaks	• Educate the communities on the need to isolate infected persons so they do not infect others. • Involve communities in identifying isolation centers. Communities may even donate facilities for use as isolation centers. If this happens there will be less resistance to confinement in such facilities.

III. Development of alternative strategy to lockdown, acceptable, supported and beneficial to local communities

The outbreak response measures and interventions should be African Centred/led and grounded in local knowledge, including cultural, religious, social and anthropogenic factors. While so far Africa is not hard hit by COVID-19, It is potentially conducive for rapid spread and it is already suffering due to challenges resulting from strict lockdown measures.

Lockdown is the most difficult NPI to implement because there is a shutdown of parts of the economy. It involves working from home. The wealthy can afford to stock up on food, water, toiletries, medicines and other essential items. For daily paid workers a lockdown means loss of daily income and hardship because they cannot afford to stock up on essential commodities and so will quickly run out of supplies. ACDC (2020) survey shows that more than two third will run out of food and half would run out of money in less than one week. There is therefore the risk of unrest related to desperate need of food, water and medicines. Godfrey Maringira (2020) observed that most often noncompliance is a result of need since most of those who don't comply are either unemployed or daily paid workers. Security agents designated to enforce compliance often overstep their bounds leading to protests. He advises that *measures developed in China and the West cannot be easily transferred and applied to Africa and calls for a rethink of the approaches for Africa.*

Some countries (e.g. China) locked down early and totally while others (e.g. Italy, India) locked down when there was a surge in cases. Singapore took advantage of lead time, to get ready and place restrictions of movement during which time identifying, isolating and

quarantining cases as well as contact tracing were intensified. In Africa, there have been various versions of lockdown from closure of boarders (international and national) and restriction of movement in key urban areas in some countriesto mere curfew in many. Rwanda was the first to lockdown on March 21 followed by Nigeria on March 27. Since then more countries have instituted either total or partial lockdown.

Recently many African countries have begun to relax lockdowns because the effect on the economy. However, WHO Regional Director for Africa has cautioned that decision to relax lockdown should be based on data, balancing between enabling economies and stopping the spread of the virus.

For African countries, an option would be total lockdown which would be necessary if COVID-19 response is late and there is a surge in infection. This can work only if it is possible to provide palliatives essential services, throughout the period of the lockdown, to all citizens that require them.

An alternative to total lockdown (being proposed) is **partial lockdown as soon as the first case is reported**. The partial lockdown should be for at least, a period of one month during which surveillance, case finding, testing, contact tracing, isolation and treatment are intensified. Limited movement within cities should be allowed but elderly people advised to stay at home. Each country should design its own response suitable for its own needs maintaining uniformity within the country. As Alex de Waal and Paul Richards (2020) insist, communities must be in the forefront as no restrictions can be successful without the consent of the people. In what follow partial lockdown recommendation and actions:

Time	Recommendation (Action)	Action by
Week 1. Week 2.	- Set up an inter-disciplinary and Inter-sectoral National Response Team as well as similar teams at all levels - The National Response Teams should prepare a strategic plan that would guide activities henceforth - Sub national teams should prepare strategic plans domesticating portions of the strategic plan as applicable **CLOSE INTERNATIONAL BOARDERS** **CLOSE INTRA COUNTRY BOARDERS** **BAN INTERNATIONAL AND NATIONAL FLIGHTS** **CLOSE SCHOOLS** **IMPOSE DUSK TO DAWN CURFEW** **ENFORCE HAND WASHING, WEARING OF FACE MASKS AND SOCIAL DISTANCING all with the Afrocentric adaptations earlier indicated** - The response teams should quickly consult representatives of all segments of the society and community leaders to educate them on the virus, mode of transmission, symptoms and preventive measures as well as the need for the restrictions	- National and Sub National Governments - Development partners - Medical/Health officers - Other professionals - Immigration - Customs - Aviation authorities - Law Enforcement agencies - School Administrators - Community leaders - Health workers

	about to be put in place	
	• Communities should be widely engaged, through their traditional structures, for sensitization and education on the cause, symptoms of COVID-19. They should be allowed to discuss the preventive measures and make suggestions. When communities have accurate information on COVID-19, rumors will be dispelled and there will be better compliance with safety measures. Communities will be willing to take on the responsibility of staying safe from COVID-19 and will be willing to report suspected cases of the disease.	
	• While engaging the communities, it is important to identify and address the challenges that may cause people not to comply and deal with them. For hand washing, for example, identify water supply needs of the communities and prompt water providing agencies to quickly provide water where necessary.	
	• Prepare fully equipped testing centers in all states/regions.	
	• Prepare fully equipped isolation centers with specified capacity and equipment in all states/regions.	
	• Decongest Internally Displaced person's camp and prisons. **In the long run**	
	• Revitalize the entire Primary Health Care System so there is an effective surveillance network for case finding, contact tracing and reporting in the communities during which health workers will be trained appropriately on all skills required to give care in an epidemic/pandemic. Conduct regular refresher courses so there will be no rush to train numerous health care workers in the middle of an outbreak. Health workers at all levels particularly Primary Health Care Health workers at the community level should be trained on prevention, case finding and referral	
Week 3 Week 4 Week 5 Week 6	• **CONTINUE RESTRICTIONS IMPOSED DURING WEEKS 1 AND 2** • **CLOSE OFFICES AND NON-ESSENTIAL BUSINESSES** • **CLOSE WORSHIP CENTERS** • **REGULATE MARKETS** ✓ **Provide palliatives for all that need them for the duration of the lockdown.** Palliatives should include free food, free healthcare, free electricity, water, tax relaxation, loan payback relaxation should be provided. Representatives of various segments of the society and traditional leaders should take charge of ensuring that all that need	• Government at National and Sub National Levels • Development partners • Medical/Health officers • Other professionals • Private Sector • Community Leaders • Religious Leaders • Market leaders • Road Transport leaders • Voluntary organizations • Health workers

	the palliatives particularly special populations get them. ✓ Enforce other NPIs i.e. social distancing; wearing of face mask, hand washing with soap. ✓ Intensify surveillance and conduct a search for suspected cases in all communities using Community Health Workers, Front Line Health Workers, teachers and other community-based organizations. Provide phone numbers (help lines) for reporting through the Primary Health Care channel. ✓ Isolate asymptomatic cases separately from symptomatic cases.	
	WHEN THE FOLLOWING WORLD HEALTH ORGANIZATION (WHO) CONDITIONS HAVE BEEN MET, COMMENCE RELAXATION OF RESTRICTIONS IN PHASES OF ONE MONTH INTERVAL (OR AS INFORMED BY DATA) BUT WITHSTRICT COMPLIANCE GUIDELINES ON HAND WASHING, WEARING OF FACE MASKS, AND SOCIAL DISTANCING. • *Confirm that transmission of the virus has been controlled* • *Ensure that health systems are capable of detecting, testing, isolating and treating every case of COVID-19, as well as tracing every contact* • *Make sure that outbreak risks are minimized, especially in such settings as health facilities and nursing homes* • *Put in place preventive measures in workplaces, schools and other essential places* • *Manage importation risks* • *Fully educate, engage and empower communities to adjust to the new norm of everyday life* **Phase 1.** ✓ **Open offices and businesses** ✓ **Open worship centers and markets** **Phase 2.** ✓ **Open intra country land borders** ✓ **Open international borders with mandatory quarantine entrants for 14 days before entry** **Phase 3.** ✓ **Relax curfew** ✓ **Open schools**	• National and Sub National Governments
After lifting of restrictions, continue to enforce hand washing, respiratory hygiene, wearing of face masks. Also continue to enforce social distancing in worship centers, schools, meetings and other gatherings.		

IV. Other technological-based interventions:

Most of the AU Member States implementing lockdown sooner or later will unlock their nations and will move from full lockdown to no lockdown or partially lockdown "no way to force people at home; with no food and no source of livelihood". In other words, with markets openformal and non-formal economy will be rushed to overcome the losses that resulted from the lockdown. This also will result in no social distancing, more interaction between the public, more movement and ultimately more COVID-19 ignorant agents, more infection, steeping of the curve and more pressure on the health system and consequently more deaths recorded.

There is a need for modification and improvement in the way governments in and outside Africa respond to the pandemic by introducing a new model that can be defined as **prevent and control; test; isolate and treat.** This model is to be introduced to have balance between economic challenges caused by the pandemic and the health of the populace. There are several technologies that exist or need to be in place soon as such technological innovations are value addition to the non-pharmaceutical interventions.

Non-pharmaceutical interventions		Recommendations for African communities
Public Disinfectant tools	Public Disinfectant tools includes but not limited to: • non-contact hand washing systems, • Disinfectant chamber and tunnels	• Governments and national NGOs to avail working designs that structured on local materials • Governments and national NGOs to develop structure manuals and videos to assist local technician/labors to assemble and construct these equipment • Governments and local governments along with NGOs to avail grants to expedite the development of these equipment • The local community to ensure the placement of such equipment at markets, worship centers, town halls, village square, among others.
Water purification tools	• Identify/catalogue water treatment methods using indigenous technology and avail drawings and working designs. • Develop/avail methodologies of producing home soaps from household and local materials	• Governments and national NGOs to avail working designs that structured on local materials • Government to insure the availability of the needed ecological biomaterial and to advise the community on how to grow and harvest. • Publicity material and manuals to be grafted recognizing the knowledge and skill of the targeted community
Mobile Apps	Mobile Apps ranging from CDC message to WhatsApp group of health practitioners for	• Technology hub in the level of Member States along with research institutions to develop the Apps or to

	consultation and sharing knowledge and updates • Digital tracking/ contact tracing • Remote Patient Monitoring • Remote health consultation • PPE Stoke/ inventory reports and systems • Among others	transfer it from the existing one and consider its domestication and local content; • Government to avail needed financial and legislative support.
AI applications	AI application that addressing: • Prevention and control; • Diagnosis and testing • Isolation and treatment	• Technology hub in the level of Member States along with research institutions to develop the Apps or to transfer it from the existing one and consider its domestication and local content; • Government to avail needed financial and legislative support.

V. Conclusion

This document presents the recommendation of the ASRIC Advisory Board on Afrocentric non-pharmaceutical interventions for COVID-19 that need to be considered by AU Member States. ASRIC and its Board of Advisors recommend AU Member States to domesticate the Afrocentric non-pharmaceutical interventions in national intervention plans. Finally, at different stage of the pandemic and as more information is available from research about COVID-19 the document will be improved accordingly.

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