



African Risk Capacity
The Outbreaks & Epidemics product in the context
of Covid-19

25th March 2020

Introduction: African Risk Capacity's Outbreaks & Epidemics Programme: Coronavirus

This paper seeks to advise stakeholders and partners of the O&E programme about the linkages between this African Risk Capacity (ARC) programme and Coronavirus. Presented as a Q&A, it covers how the work done within the O&E programme can lead to better understanding of the risks of a Coronavirus outbreak within a country. It also sheds light on how to quantify the impact of an outbreak, plan, prepare and cost the respective response.

Question: What is the ARC O&E product, and would it cover Coronaviruses?

Answer:

ARC's O&E programme was born in the wake of the devastating 2014 West African Ebola crisis. The lessons learned from the Ebola outbreak revealed that in addition to weaknesses in health systems, slow and unpredictable funding was a major contributing factor to the inability of affected countries to rapidly respond to the initial outbreak. In its capacity as a specialised agency of the African Union (AU), ARC is planning to launch the ARC Outbreaks and Epidemics parametric product in 2020 as part of the AU's overall response to outbreaks and epidemics.

The O&E programme comprises of significant in-country capacity building work on preparedness and contingency planning for outbreaks and a risk transfer parametric product that aims to cover early response costs of an outbreak. The product will provide payouts to the affected country, given an outbreak of a specific pre-agreed magnitude. The Insurance product focuses on four diseases of epidemic potential: Ebola Virus Disease, Marburg virus Disease, Lassa fever, and Meningococcal meningitis.

Question: What is the Coronavirus (COVID-19), and how does it behave?

Answer:

Coronaviruses are a family of viruses that include common cold, SARS and MERS¹. The most recent COVID-19 outbreak involves a new strain that had not been identified in humans. COVID-19 Symptoms can begin as a mild dry cough or mild fever that last for a week before stronger symptoms such as difficulty in breathing can occur. Some patients can develop Pneumonia or Acute Respiratory Disease. The disease has an incubation period of 14 to 24 days. All this means that infected individuals may be transmitting the virus before realising they are infected, and many cases can go on unreported for a while. To date there is a fatality rate of 1-4% globally.

The virus spreads mostly through respiratory droplets and contact with infected persons. It is transmitted through sneezing, coughing and spitting, and from contact with contaminated surfaces. The virus has also been found in stool and blood, hence a potential for other modes of transmission does exist². To prevent catching and spreading the disease the World Health Organization (WHO) has issued advice which includes washing hands regularly, disposing of tissues used to sneeze in or sneezing in the crook of one's elbow, and avoiding large gatherings and travel where possible. To date there is a small number of health facilities

¹ <https://www.who.int/health-topics/Ccoronavirus>

² Gu, Jinyang, Bing Han, and Jian Wang. "COVID-19: Gastrointestinal manifestations and potential fecal-oral transmission." *Gastroenterology* (2020).

globally that are ready to deal with Coronavirus hence often health authorities are advising people to self-isolate to begin with. Testing for the virus is possible but testing capabilities in most countries are in need of expansion and efforts are ongoing to ensure this is possible.³

There are many myths around COVID-19, therefore it is important to ensure that advice is sought from authoritative sources such as WHO. To dispel some of the myths being shared, there is currently no known treatment for COVID-19, however there is aggressive on-going research to find a cure. The available treatment currently consists of respiratory support and doing whatever is possible to ensure the patient's own immune system is capable of dealing with the disease. Hotter temperatures are expected to reduce transmission however does not mean that any exposed individual is less at risk of catching the disease⁴.

As at 23rd March 2020 the WHO reports that 36 of the 54 African Union Member States have reported cases with a total case load of 739 of which 167 have recovered and 20 dead (CFR 2.7%), the most affected countries being Egypt, South Africa, Algeria, Morocco and Burkina Faso⁵.

Additional information can be found at <https://www.afro.who.int/health-topics/coronavirus-covid-19> and <http://africacdc.org>

Question: Will a country benefit from involvement in ARC O&E for their Coronavirus preparedness and response?

Answer: O&E Linkages: Preparedness & Contingency Planning

Involvement in ARC O&E capacity building programme provides beneficial outcomes to participating countries. For example, work done by ARC O&E starts with an assessment of the country's ability to respond to an outbreak. The programme covers diseases that allow for a diverse range of response needs due to the varying characteristics of those diseases. This means that work on contingency planning in country for the O&E covered pathogens can have enormous applications and value when responding to COVID-19.

Ebola and Marburg are characterized as fast spreading with high case mortality rates, where reporting of the first case is time critical. Contact tracing of infected individuals to follow the chain of transmission is extremely important in ensuring the outbreak is contained as is the case with Coronavirus. Effective contact tracing requires that information is reported in a timely and accurate manner. This is usually covered in the surveillance response capabilities that the O&E programme would help to build within a country. It is perceived that the ability to respond to extreme diseases like Ebola facilitates the response to many other diseases, such as Coronavirus infections.

It is important that responding to an outbreak is done at a subnational level. The O&E program's in-country work includes data collection and reporting at subnational level. This is primarily to ensure that the financing can be disbursed through the O&E risk transfer product

³ Gu, Jinyang, Bing Han, and Jian Wang. "COVID-19: Gastrointestinal manifestations and potential fecal-oral transmission." *Gastroenterology* (2020).

⁴ Xu, Z., Shi, L., Wang, Y., Zhang, J., Huang, L., Zhang, C., ... & Tai, Y. (2020). Pathological findings of COVID-19 associated with acute respiratory distress syndrome. *The Lancet Respiratory Medicine*.

⁵ <https://www.afro.who.int/health-topics/coronavirus-covid-19>

as well as improve the country's risk management and disaster response. Equally mounting an outbreak response can only be effective if done at district or sub-regional level, this allows for effective logistical and health response. Preparations for ensuring health facilities are ready can also be replicated from a logistical point of view. The equipment needed may vary but planning isolation facilities and beds needed can follow the similar procedures recommended by for O&E covered diseases. The isolation protocols and infection prevention and control requirements for Ebola will apply to COVID-19.

Information needs to be disseminated to the public in a regular manner and advise on how to behave to avoid infection. Rural communities would require that outbreak response teams are engaging at chiefdom or district level to ensure inhabitants understand the risks involved. Scenario testing is very important in terms of preparedness. Different scenarios of outbreak size and impact must be considered. This allows for costing and understanding response needs. The Contingency planning work done by ARC O&E includes scenario testing and costing of components of the outbreak response.

Question: What specific components of O&E will be most beneficial Pilot Countries response to Coronavirus?

Answer:

1. O&E Linkages: Modelled Impact

Disease spread modelling within the O&E programme allows for understanding the spark and spread probabilities of a given disease in a country. The modelling takes into account the disease profile and transmissibility, the preparedness level of the country, and the population movement. This can help in scenario testing and understanding how population dynamics and preparedness can impact infections, hospitalisations and deaths levels. The O&E model also looks at the impact of interventions such as treatments or vaccines in reducing the number of infected individuals. Stochastic modelling of disease spread can be very helpful in understanding the potential impact of an outbreak and allows for near real time modelling of a disease trajectory over time. Modeling for Coronavirus does exist and can be used in planning responses.

2. O&E Linkages: Response Costing

Given that Ebola is considered the most complex of responses within the O&E programme, the categories required for response are outlined below. These are expected to be costed through the O&E Response cost model on the basis of the number of infections. This same framework could be adapted for other diseases like COVID-19. Many items within the costing methodology would not need to be changed but would require expert review.

Costing of the outbreak would vary depending on the number of infections. This means that modelling and scenario testing would allow for a tranced approach to response cost modelling. The O&E financial product allows for payouts at different infection levels to fund response cost needs. These would have been pre-costed before coverage is provided to ensure that the product is tailored to each country's needs.

Response Pillars Used for Ebola, Marburg and Lassa Fever

Response Pillar	Description
I. COORDINATION	Making sure all elements outbreak response are synchronised
II. SURVEILLANCE	Knowing where the virus is - identifying the sick and the at risk
III. INFECTION PREVENTION AND CONTROL	Preventing virus transmission in clinical settings
IV. RISK COMMUNICATION AND COMMUNITY ENGAGEMENT	Informing the public of risks and government actions/influencing public behaviour
IV. LABORATORY	Testing blood and other samples
V. CASE MANAGEMENT	Treating positive and suspected positive patients
VI. SAFE BURIAL	Dead body management to prevent infections from corpses
VII. VACCINATION	Deployment for high risk populations, e.g clinical workers
PSYCHOSOCIAL NUTRITIONAL SUPPORT	Providing counselling, food and community education for infected or affected populations
LOGISTICS	Moving people and supplies across the response
SECURITY	Costs associated with quarantining at risk populations and controlling civil unrest

Question: Does the Economic Impact of Coronavirus Differ from the O&E covered Pathogens?

Answer:

The fundamental difference between diseases covered within O&E (Ebola, Marburg, Meningitis and Lassa Fever) and Coronavirus is that of economic impact. There are two aspects to this which must be taking into consideration; the direct cost of responding to the event and the subsequent economic cost. Whilst all these reduce trade and suppress production, supply demand and economic growth, the rapid spread of Coronaviruses causes more economic impact as is being currently witnessed around the world. However, in all these circumstances, a robust response strategy must be in place, one that will facilitate the immediacy of effective and efficient response from the peripheral to national levels.

The spread of COVID-19 has caused a severe unprecedented impact on the global economy. This level of economic effect was not observed during the 2014 West African Ebola outbreak or during the 2018 DRC Ebola outbreak. There are more parallels to draw here with the 2003 SARs outbreak (Severe Acute Respiratory Syndrome), also a flu pandemic, which had a profound effect on GDP levels in Asia. The projected global recession resulting from the Coronavirus outbreak will have a knock-on effect on African economies and further reduce food security in the region. The United Nations Economic Commission for Africa (UNECA) estimates that Africa's economic growth may slow down to 1.8% this year (from 3.2%)⁶ due to this crisis.

Conclusions

The Africa Risk Capacity is undertaking an urgent exercise to model the potential impact of Covid-19 on Africa to inform and guide member states. This modelling will look into the likely short-term and medium-term effects of this pandemic on the continent as a whole and on key economies, and how to mitigate these shocks. This work will inform considerations to include Coronaviruses in the ARC O&E portfolio of diseases.

⁶ <https://docs.google.com/document/d/1So1QwiqFRLUoLW7DJ0gElpbg8D507BtRUd3EnmBx9BY/mobilebasic>