

A NEW NATIONAL EMERGENCY OPERATION CENTRE FOR SOUTH AFRICA AT THE NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

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The unprecedented 2013-2015 Ebola virus outbreak in Guinea, Liberia and Sierra Leone highlighted the need for an Emergency Operations Centre (EOC) to coordinate the response, as normal management resources were easily overwhelmed by the complex emergency that arose in these countries. It was recognised that although most of the public health world works through slow consensus building, the response to public health emergencies requires the rapid mobilisation of resources and that a clear “command and control” structure is critical to mounting a successful response. This prompted the development of an EOC for the South African National Department of Health, hosted at the National Institute for Communicable Diseases (NICD). The Memorandum of Agreement for the establishment of the EOC was signed by the Director General on the 15th January 2015.

The new public health EOC at NICD will serve as a central command and control centre for coordinating an effective response by collating, organising and deploying the necessary resources to manage any major infectious disease incident, outbreak or related event which has been declared a "Public Health Emergency" by the Director-General of the National Department of Health. This is particularly important for outbreaks where careful identification and follow-up of contacts and the early identification of new cases are critical to breaking the chains of transmission. In such cases, large epidemiological data sets need careful analysis and resources may need to be deployed across countries and borders.



Emergency Operations Centre (EOC) at the National Institute for Communicable Diseases

South Africa also has responsibilities under the revised International Health Regulations (IHR)¹ adopted by the World Health Assembly in May 2005 to identify and respond to public health threats with potential for rapid international spread. It is a signatory to these regulations and is obliged to fulfil all of the 13 core capacities of the IHR. Core capacity number 4 details the requirements to build in-country capacity for preparedness and response.

A number of countries have set up and successfully operated EOCs, mostly within their national public health institutes. These include UK (in Public Health England), the USA (at the Centres for Disease Control & Prevention, Atlanta), a virtual EOC in Mexico and in Nigeria (for the response to polio and more recently activated for Ebola). The CDC Atlanta EOC was set up in 2001 and brings together scientists from across CDC to analyze, validate, and efficiently exchange information during a public health emergency and to maintain contact with emergency response partners. When activated for a response, the EOC can accommodate up to 230 personnel per 8-hour shift to handle situations ranging from local interests to worldwide incidents. The EOC coordinates the deployment of CDC staff and the procurement and management of all equipment and supplies that CDC responders may need during their deployment. In addition, the EOC has the ability to rapidly transport life-supporting medications, samples and specimens, and personnel anywhere in the world around the clock within two hours of notification for domestic missions and six hours for international missions. Since its inception in September 2001, the EOC has responded to more than 50 public health threats, including hurricanes, food borne disease outbreaks, the 2009 H1N1 influenza pandemic and the Haiti cholera outbreak. In addition to emergencies, the EOC may also be activated for planned events (e.g., presidential inaugurations and Olympics taking place in the U.S.) to monitor for incidents that may affect the public's health.

Nigeria's rapid response to the introduction of Ebola benefited from having an established EOC that was set up to respond to the polio outbreak in the country towards the eradication of polio. As the EBV outbreak escalated in Liberia, Guinea and Sierra Leone, there was significant anxiety over the consequences of the introduction of the virus to Lagos, with its estimated population of 15 million, living in densely populated neighborhoods. Ebola virus (EBV) was eventually introduced to Nigeria through an acutely ill Liberian, who presented at a private hospital in Lagos. Nigerian authorities moved quickly to establish a coordinated response using EOC structures previously developed for its polio response and drew from its experience in setting up strict command and control structures to manage the response. Among its activities, the team coordinated the follow-up of thousands of contacts, developed a staffing plan that executed a social mobilization strategy, which reached more than 26,000 households of people living around the contacts of Ebola patients, and ensured that resources required for the clinical management of cases were available. A number of partners such as the WHO, CDC, UNICEF and MSF were part of the EOC structure, however all reporting and communication was done through the incident manager appointed by the Ministry of Health for this purpose.

Part of NICD's current responsibility is to support the National Department of Health in responding to outbreaks. This responsibility is carried out by providing advice to districts and provinces where outbreaks occur and providing specific expertise in intervention epidemiology and specialist microbiology. Sometimes it is necessary to send people with specific expertise to support the response to outbreaks on site. NICD has also led the response to many large outbreaks in the past including the Lujovirus, the large cholera outbreak and the Rift Valley Fever outbreak which all started in 2008 and a large measles outbreak that started in 2009. When its expertise has been requested, NICD has also supported outbreaks outside of South Africa such as

during the Marburg virus outbreak in Angola and the EBV outbreak in Sierra Leone. The location of the new EOC within the NICD will make it possible for a core set of staff located in one institution to be trained and drilled on the processes required to respond to a national public health emergency. This does not however mean that all the expertise required for a response will be staff of NICD, but it will serve as a collation mechanism for pulling in further human resources as required for a specific response.

Some national public health emergencies could start as emergencies from the first day, i.e. a single case of Ebola virus disease would immediately be declared an emergency. However, it could also be that such situations start more insidiously as a small outbreak, e.g. a new strain of an existing virus with higher than normal morbidity or mortality, and when the health consequences threaten to outstrip the resources available to control it, it is declared a national public health emergency by the Director General of the Department of Health.

During a declared Public Health Emergency, the specific functions of the EOC will include the following (among others):

- Perform a command, control, communication and coordination role, provide strategic management oversight, gather data on a daily basis and provide Provinces and the National Health Operations Centre (NATHOC), NDoH, with strategic information to manage the incident;
- Maintain surveillance, verification and confirmation of relevant infectious diseases in South Africa, the African continent and internationally;
- Organise for the appropriate samples to be collected, transported to the laboratory and for the

appropriate diagnostic tests to be carried out;

- Provide a communications portal including health information and promotion materials, travel advice and a public call centre;
- Organise and manage the monitoring of contacts with a known or suspected case of the relevant disease;

At NICD, an identified facility for the new EOC has been fitted out. The IT architecture for interoperability functionality with other information management systems is being developed. A guide to activation levels is also being developed to support decision making. The EOC will be scalable with an ability to expand or contract depending on the size and importance of the public health emergency at hand.

An activated EOC will ensure improved coordination, communication and collaboration across sectors and between sub-national, national and international levels of authority and response during a public health emergency. However, during the inactive state, the EOC also has an important role to play in maintaining communication and collaboration through the surveillance of high risk pathogens. As such, and in fulfilment of the core capacity requirements for surveillance in accordance with the IHR and the World Organisation for Animal Health (OIE) standards, the EOC will function as a hub for the national surveillance of Notifiable Medical Conditions (NMC) working closely with the NMC surveillance team.

The new EOC will serve to improve the preparedness of South Africa to manage the increasingly complex threats from infectious diseases in a complex world where the speed of travel and communication has increased rapidly, and with it the need for a well coordinated, yet timely response.

Reference

1. International Health Regulations (2005) Second edition. World Health Organization. <http://www.who.int/ihr/9789241596664/en/>