Responding to the COVID-19 pandemic in Ghana

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On 12 January 2020, the World Health Organization (WHO) confirmed that a novel coronavirus was the cause of a respiratory illness in a cluster of people in Wuhan City, Hubei Province, China. The disease was christened COVID-19 and the pathogen (an RNA virus) identified as SARS-Coronavirus-2 (SARS-CoV-2).[1,2]

The virus is primarily spread through contact with small droplets produced from coughing, sneezing, or talking by an infected person. While a substantial proportion of infected individuals may remain asymptomatic, the most common symptoms in clinical cases include, fever, cough, acute respiratory distress, fatigue, and failure to resolve over 3 to 5 days of antibiotic treatment. Complications may include pneumonia and acute respiratory distress syndrome.[3]

Over five million confirmed cases of COVID-19 has been recorded globally with more than 300,000 deaths as at 25th May 2020. The United States of America has recorded the highest number of cases with more than 1.5 million and over 100,000 deaths.[4] In Africa, more than 90,0000 cases have been reported with about 3,000 deaths. South Africa has recorded the highest number of cases with 23,615 cases and 481 deaths. Ghana confirmed its first cases of COVID-19 on 12th March 2020 and had as at 25 May 2020 recorded over 7,000 cases with 34 deaths.[5]

Prior to the confirmation of the outbreak in Ghana, a readiness assessment was conducted, and a response strategy developed led by the National Disease Surveillance Department of Ghana Health Service. In addition, the country conducted orientation at the Kotoka International Airport (KIA) and other Ports of Entry for effective screening and handling of suspected cases as well as contact tracing training for Alumni and Residents of the Ghana Field Epidemiology and Laboratory Training Program (Ghana FELTP and staff of the Ghana Health Service (GHS). The GHS and all other Ministry of Health (MoH) agencies had heightened routine surveillance in all health facilities. Government of Ghana on 11 March, committed $100 million to enhance Ghana's coronavirus preparedness and response plan. The Ministries of Health, Information and media instituted aggressive mass education and campaigns to create the necessary awareness in Ghana.

The first two cases of COVID-19 was reported on 12 March 2020. The cases were all imported but the disease quickly spread through the community and within a week of the first cases, the country confirmed cases in individuals with no links to foreign travel. The majority of cases were in the two most populated cities of Accra and Kumasi.

Immediate measures instituted to detect, contain and prevent the spread of the disease included a ban on all public gatherings, closure of schools, churches, mosques and other places of worship on March 16th; ban on entry for travelers coming from a country with more than 200 confirmed COVID-19 cases within the previous 14 days on March 17th, a mandatory quarantine of all travelers that arrived in the country 48hrs prior to the closure of the country's borders on March 22nd; a partial lockdown of Accra including Kasoa in the Central region and Kumasi on March 30th. The restrictions on Accra and Kumasi were lifted on April 20th and the use of face masks was made mandatory on April 26th. These measures were underpinned with education on the disease and its transmission as well as preventive measures such as personal hygiene, including the washing of hands with soap under running water or alcohol-based hand sanitizers and wearing of face masks.

During the period of the lockdown, an enhanced surveillance in the form of active case search and contact tracing strategies were activated to early detect, isolate and treat all confirmed cases. The Ghana Health Service with support from the Ghana FELTP mapped out all existing cases, conducted a risk assessment, and sampled members of households within 1–2 km radius of cluster of cases based on the setting. The enhanced surveillance and contact tracing strategy helped the country to identify a significant number of cases, of whom about 93% were asymptomatic. Approximately 63% (4519/7,117) of total confirmed cases in Ghana have been detected through this approach.

Although the lockdown was lifted after three weeks, post lockdown measures were enforced to control the spread of the infection. These included personal hygiene measures, mandatory wearing of masks, ban on social gathering, social distancing, increasing the number of testing sites and humanitarian support for the people of Ghana. This has become the new normal as we continue with enhanced surveillance and other response activities. Testing for COVID–19 in Ghana was initially done by Noguchi Memorial Institute for Medical Research (NMIMR), University of Ghana and Kumasi Center for Collaborative research (KCCR) of the Kwame Nkrumah University of Science and Technology. To improve the laboratory turnaround time for confirming suspected cases, the testing sites have been increased to include the National Public Health Refer-

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ence Laboratory (NPHRL), National Veterinary Service Department (VSD) Laboratory and Center for Scientific and Industrial Research (CSIR) Laboratory in Accra; Public Health Reference Laboratory, Tamale, the Tamale Teaching Hospital Laboratory, Navrongo Health Research Center in the northern part of the country, the University of Health and Allied Sciences (UHAS) laboratory in the Volta Region. Private laboratories have also joined in the testing for COVID–19

To address the challenge of providing data in real time, the Ghana FELTP in collaboration with the Department of Geography at the University of Ghana, quickly developed an interim real time data collection and reporting tool using "ArcGIS" (Environmental Systems Research Institute (ESRI). (2014). ArcGIS online, Redlands, CA) and "Survey 123" (Environmental Systems Research Institute (ESRI) (2020). Survey 123. Redlands, CA) as the Ghana Health Service rolled out the "SORMAS" (Helmholtz Centre for Infection Research. (2019). Surveillance Outbreak Response Management & Analysis System. Braunschweig, Germany) application as a national electronic real time platform for surveillance and outbreak response.

Ghana has observed a decline in the number of confirmed cases from 25th April 2020 although enhanced surveillance is still ongoing[6]. This may be evidence that the strategies that were put in place have contributed to the control and spread of the virus in Ghana. These gains, however, need to be sustained and built on in our response efforts to end the COVID–19 pandemic in Ghana. There is the need to institute a more measured approach based on epidemiological and clinical studies to determine the profile of the disproportionately high asymptomatic patients and genome studies on the viral strains of those who succumbed to the disease, asymptomatic patients and prognostic conditions. These studies will help the country to outline the risk profile of those who may withstand the virus infection as well as help in targeting resources to high-risk individuals. Secondly, clear social distancing and personal hygiene measures should be enforced in the workplace with well-defined batch system working groups that are separated from each other. Finally, clear guidelines should be provided to protect those with co-morbidities, as it is becoming clearer that prevention and adequate control of NCDs will play a major role in the overall COVID-19 response.

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