

## Can we apply lessons learned from Ebola experience in West Africa for COVID-19 in lower income countries?

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**Abstract:** The COVID-19 affects vulnerable groups disproportionately in a society where inequities are long-standing issue. Weak health system, especially the shortage and maldistribution of capable health workforce will be the main challenge in lower income countries to fight against the COVID-19. Applying the lesson learned and success from the Ebola outbreak in West Africa is important. International collaboration with already well functioned local mechanisms, such as the Network of Managers of Health Workforce in Francophone Africa is the key to provide prompt support. This approach contributes not only to the short-term COVID-19 control but also long-term strengthening of the sustainable and resilient health system in the lower income countries.

**Keywords:** public health emergency, international collaboration, health system, health workforce, Francophone Africa

As of April 10, more than 1.6 million COVID-19 cases and 100,000 deaths have been globally reported. Although the virus infects everyone equally in theory, the data from New York City clearly shows the disproportion of fatality rates among race/ethnicity (Figure1) (1). Mayor and Governor in New York link this result to the long-standing healthcare disparities in the society due to poverty and other factors consist of the social determinants of health.

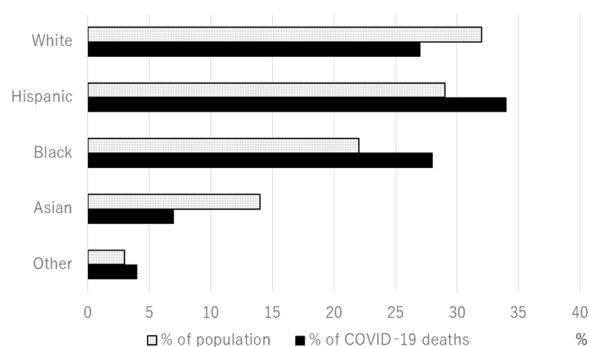
COVID-19 cases have also grown in lower income countries where social inequities are long-standing issue. Many populations are poor without social security and lack access to quality of health care services. Those who live in overcrowded condition with inadequate ventilation, limited access to clean water and sanitation, undernutrition, tuberculosis, HIV, or uncontrolled non-communicable disease are particularly vulnerable. More than 7 million forcibly displaced populations living in high density camps or similar settings shouldn't be forgotten, too. Innovative COVID-19 control measures should be implemented in those environments, such as the targeted shielding approach to protect high-risk individuals in the isolated green zone in a community (2). As each country is learning by trying, results should be documented and shared globally to identify better approaches.

The fundamental challenge to fight against COVID-19 in lower income countries is the weak health system, such as incomplete data collection and analysis, inadequate laboratory and health care infrastructure, and limited health workforce to deal with all these

activities. The review of the Ebola outbreak in West Africa revealed that the health workforce had the most important effect on the Ebola control but also most affected among the six WHO health system building blocks (3). More than 8% of doctors, nurses and midwives died of Ebola in Liberia, 7% in Sierra Leone, and 1.5% in Guinea. This left the long-lasting negative health impact on the population (4).

Under the shortage and maldistribution of capable health workforce, any disease program does not function properly. The mobilization of limited health workforce to Ebola control caused disruption of routine health services provision in West Africa. During the Ebola outbreak, the number of deliveries with skilled health attendants dropped by 37% and fully immunized children fell by 26% in Sierra Leone. In Guinea, family planning services declined by 75%. A total of 24,900 additional maternal, infant and under-five deaths, and 10,900 additional malaria deaths per year were estimated in three Ebola affected countries (4).

Despite the outbreak in the neighboring countries, Senegal and Cote d'Ivoire successfully quelled Ebola. The Network of Managers of Health Workforce in Francophone Africa, currently consisted of the administrators in the Ministry of Health (MoH) in 13 Francophone African countries, played a critical role in this success (5). The network is a peer learning and information sharing platform utilizing a comprehensive framework for health workforce, so-called "house-model" (6). At the very early period of the Ebola outbreak, the network declared a strong commitment to



**Figure 1. Population percentage and COVID-19 fatalities by race/ethnicity in New York City.** Source: Department of Health, New York State. (accessed April 10, 2020)

protect health workforce in member countries. Smooth communication, coordination, and peer learning spirits in the member countries enabled effective interventions during the outbreak. MoH in Senegal quickly identified health personnel working in the border regions for effective logistical support and training to protect from Ebola. This swift action was possible thanks to the well-functioning health workforce database, which had been carefully developed by the MoH based on the lesson learned from the member countries of the network. MoH in Cote d'Ivoire quickly developed standard operational procedures for Ebola and started training for identified health workforce and local authorities with strong support from MoH in DRC through the network (7).

To fight against COVID-19, World Bank, WHO, Global Fund, and many other international collaboration agencies are mobilizing budget to provide financial, material and technical support for lower income countries (8,9). As in the case of Ebola, this influx could cause significant shifts of national health resources, including health workforce, from routine activities to COVID-19 control. The successful experience of the network during the Ebola outbreak shows that the utilization of the already existed and well functioned local mechanism is the key for prompt, effective, and efficient support to COVID-19 control without victimizing the routine health programs. Such local mechanism can identify the fundamental needs in the country, and propose a cost-effective plan to the partner agencies. This process is also a good opportunity for the local mechanism to strengthen their own capacity. Thus, this approach can contribute not only to the short-term COVID-19 control but also long-term strengthening of the sustainable and resilient health system in the country, which can prevent the loss of life due to another pandemic in the future.

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