

Editorial

Responding to the Ebola virus disease in West Africa: Lessons for India

The first cases of the current Ebola virus disease (EVD) outbreak, were seen in Guinea in December 2013 and confirmed three months later as Ebola by World Health Organization (WHO) in March 2014¹. Since then, the virus has been spreading in an unprecedented manner not only to two neighbouring countries in West Africa namely Liberia and Sierre Leone but also to countries outside of West Africa including Europe and United States, causing widespread fear and hysteria.

On August 8, 2014, the WHO declared the Ebola outbreak in West Africa a Public Health Emergency of International Concern (PHEIC) under the International Health Regulations (IHR, 2005)². This was based on the recommendation of the Emergency Committee which deliberated on the issue during August 6-7, 2014. According to the Emergency Committee, the Ebola outbreak in West Africa constituted an 'extraordinary event' and a public health risk to other States; the possible consequences of further international spread are particularly serious in view of the virulence of the virus, the intensive community and health facility transmission patterns, and the weak health systems in the currently affected and most-at-risk populations.

Evolving situation

Even today, the situation remains highly dynamic as the virus continues to spread. According to the WHO, as on November 14, 2014, there were 14,413 reported Ebola cases in eight countries, with 5177 deaths³. More than 95 per cent of cases and deaths have occurred in three West African countries of Guinea, Liberia and Sierre Leone. Nigeria and Senegal have been declared free from Ebola on 16th and 20th October 2014, respectively. More recently, cases have been reported from Mali, with four cases and three deaths⁴. In Democratic Republic of Congo, a different strain of

Ebola virus, not connected with the current West Africa outbreak, has been active⁵.

The countries affected by the outbreak can be categorized broadly into two categories: those with widespread and intense transmission (such as Guinea, Liberia and Sierre Leone) and those that have had initial case(s) or with localized or limited transmission. The latter include Mali, Nigeria, Senegal, Spain and United States. Most cases outside of West Africa have been travel related.

The ultimate impact of the outbreak, nationally or internationally, often depends on two factors – transmissibility of the virus and its virulence. Transmissibility is measured by calculating the basic reproductive number or the number of new cases likely to result from an infected case. The estimated basic reproductive number in West Africa outbreak was 1.51 (95% CI: 1.50-1.52)⁶. The virulence of a pathogen is measured by case fatality rate (CFR) which is the proportion of cases who die of the disease. CFR of around 50 per cent during the current outbreak is highest among various emerging pathogens.

The currently circulating Ebola virus in West Africa with high transmissibility and virulence is, therefore, considered an unprecedented public health crisis which has enormous social, cultural, economic and developmental dimensions. It is also a security problem as many uniformed personnel have become sick and died of Ebola.

Lessons from West Africa and elsewhere

The first lesson is that an outbreak in one country is a threat to all countries. With no vaccine or treatment available and the speed with which the virus was spreading was a cause for much concern. It soon became clear that the national as well as the international

response to the growing outbreak was neither adequate, nor fast enough and that the outbreak was going out of control. And an alarm was sounded by Medecins Sans Frontieres (MSF) or Doctors without Borders on June 21, 2014 calling for a massive deployment of resources to deal with the catastrophe which was already unfolding in Africa⁷. As of November 14, 2014, Ebola had already spread in an unprecedented manner to eight countries - five in Africa as well as to Spain and the United States⁸.

Second, that it is possible to contain the virus early if the response is swift and based on evidence. Nigeria and Senegal were able to arrest the outbreak by applying interventions based on sound epidemiological principles including 100 per cent contact tracing and physical monitoring of identified contacts for 21 days, construction of isolation wards and treatment facilities, deployment of trained staff, provision of vehicles and mobile phones for real time reporting purposes⁹. Given the fact that many Indians travel to and from West African countries having intense Ebola transmission, emergency response is required to prevent local transmission in the event of importation of the virus. Interventions need to be targeted at two levels: (i) in health care settings to ensure isolation of suspected cases, contact tracing and keeping contacts under surveillance, strict adherence to infection control practices, *etc.*; and (ii) among the general population with regard to education of and awareness creation among the community especially those visiting the Ebola affected countries and precautions they should take to protect themselves and others.

The emergency response requires (i) having adequate health personnel and hospital beds to manage cases; (ii) augmenting surveillance and laboratory capacity for early detection and diagnosis of cases; (iii) mobilizing rapid response teams for conducting contact tracing and making sure that all contacts are tracked and kept under surveillance for 21 days; (iv) ensuring enough supplies of personal protection equipment (PPE) and the health workers trained in its proper use; and (v) having designated hospitals in each city with state of the art facilities to manage cases and health care workers thoroughly trained in all aspects of Ebola management, prevention and control.

The third is the need for investing in a sustainable public health infrastructure or health systems. In

fact, the Ebola epidemic is presently raging in those countries where health system in general and infection control in particular, is inadequate. It is a challenge also to developed countries with good health system, thereby necessitating the revision of their guidelines¹⁰. Clearly, EVD is a challenge of enormous proportions but it is also an opportunity to ramp up public health infrastructure in the country especially in terms of health information and monitoring system, human resource, logistics and supply management, and public health leadership and accountability. In the most affected countries, the populations at the frontline of the response to EVD and often at the receiving end, have been the health care workers caring for patients with suspected or confirmed disease; in West Africa, as many as 564 health care workers have so far been infected with virus and about half have died¹¹.

Fourth, the panic and hysteria associated with Ebola or any other emerging infections can often lead to a clamour for measures which can be counterproductive and can undermine public health response. Risk communication and social mobilization can help greatly in spreading messages regarding disease transmission and what people can do to prevent getting infected. In fact, Ebola is hard to catch as it does not spread by droplet infection such as through coughing like influenza. It is only through contact with body fluids that spread occurs. Media has a great role to play in mitigating fear and generating and disseminating correct messages.

The Government of India has taken the threat of EVD seriously and has heightened surveillance and tracking mechanisms at national and State levels for early detection of cases. International airports have been put on high alert and passengers are being asked about travel to affected countries, with facilities made available for quarantine and isolation of suspected cases. Capacity building of health care workers is underway and various guidelines have been developed¹².

While urgent steps are being taken by India and other countries to enhance their preparedness and response capacities, the focus must be on containment of outbreak at the source, *i.e.* the three affected West African countries. All assistance must be provided to these countries to stop Ebola transmission. The governments of these West African countries have called for enhanced cross-border collaboration, strengthened

surveillance, infection control and communication interventions.

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