

# SELECTED SIGNIFICANT GLOBAL EPIDEMICS: CROSS BORDER SURVEILLANCE IMPERATIVE

## Editorial

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As the world becomes increasingly interconnected, there are many benefits as there are drawbacks relating to disease spread, prevention and control. Diseases, Infectious Organisms and Agents know no borders more so, in this increasingly interconnected world. Transmission of diseases from one country to another and beyond is evident; Bubonic plague in the 14th century, Cholera pandemics in the 19th century, Severe Acute Respiratory Syndrome (SARS) in the 1990s, Influenza H1N1v in 2009 to 2010, HIV/AIDS still on going and most recently the devastating Ebola outbreak in west Africa are some examples.

### **Cholera**

As far back as 1817, the first cholera pandemic which started from its original reservoir in the Ganges delta in India, South-East Asia, spread across the world. More epidemics of cholera have occurred since killing millions of people globally. According to WHO, the 7th and current pandemic began in Indonesia in 1961 spreading rapidly to other countries in Asia, Europe, Africa and finally in 1991 to Americas which had been free of cholera for more than one century [1] We are still groping with cholera which has now become endemic in many countries; WHO in 2016 reported 132 121 cholera cases and 2420 deaths worldwide. Outbreaks continue to affect several countries. Currently in the WHO East and Southern

Africa Region, 9 of 21 counties including Angola, Kenya, Malawi, Mozambique, Rwanda, Somalia, Tanzania, Zambia and Zimbabwe have reported over 5,796 cholera / acute watery diarrhoea cases and 74 deaths since the beginning of 2018. Of these 9 counties, 7 (Kenya, Tanzania, Angola, Malawi, Mozambique, Zimbabwe and Zambia) have active transmission of cholera. Zambia between 6th October and 27th February 2018 has recorded a cumulative 4371 cases with 89 deaths nationwide [2]. Although Zambia is recording a downward trend and the situation seems under control, it is surrounded by 5 of the countries, Tanzania, Angola, Malawi, Mozambique, Zimbabwe reporting active transmission [3]. With the porous borders, trade, access to medical facilities and families across borders, risk of further outbreaks in the border areas is a possibility.

### **Bubonic plague**

Although available information to date indicates that the risk of international spread of plague appears very low [4], history indicates that the largest recorded pandemic is the Bubonic plague commonly referred to as the "Black Death" that wiped up-to 200million people within a number of European countries between 1347 and 1352 [5]. Reports from WHO on plague between 1989 and 2003 show an increased incidence of human plague observed, especially in Africa,

with at least three geographical areas experiencing outbreaks of human plague after silent periods of about 30-50 years: India - 1994, 2002, Indonesia – 1997 and Algeria – 2003. Between 2002 and 2003 6 countries Congo, Madagascar, Malawi, Mozambique, Uganda and the United Republic of Tanzania have reported outbreaks of plague. [6]. Recent outbreaks varying degrees of plague are recorded, with 3248 cases reported worldwide, including 584 deaths from 2010 to 2015. Zambia, which recorded plague for the first time in 1917 has had subsequent outbreaks including one in Namwala District, Southern Province in 1997 that led to 264 cases and 30 deaths, another in Nyimba District, Eastern Province resulting in 21 cases and 3 deaths are among the recorded evidence of plague in Zambia [7].

### **Influenza H1N1v**

In April 2009 an outbreak of H1N1 Influenza A virus infection was detected in Mexico and by June 2009 a widespread community transmission affecting at least two continent was noted triggering WHO to raise a pandemic alert, phase 6, the highest alert level. [8]. The pandemic which was declared to be over in August 2010 had affected an estimated 200 million people with 18,500 deaths reported globally; 21 countries in Africa were affected by the pandemic, with Zambia confirming 41 cases and 1 related death between July 2009 and July 2010 [9]. This

could be an underestimation owing to different reporting structures and systems [10].

### **Ebola**

Most recently Africa experienced the worst spread and devastating outbreak of Ebola in history, affecting mainly Guinea, Sierra Leone and Liberia between 2013 and 2016. The outbreak which started in December 2013 in Guinea spread to mainly Sierra Leone and Liberia and at a lower rate to other countries including Nigeria and Mali. Isolated cases were recorded in Senegal, the United Kingdom and Sardinia [11]. The World Health Organization (WHO) and respective governments reported a total of 28,616 suspected cases and 11,310 deaths (39.5%) by 8 May 2016[12]. The end of outbreak was declared on 9th June 2016, 42 days after the last case tested negative in Monrovia [13].

### **The Way Forward – Cross-border surveillance**

It has been determined by organisations such as the East, Central & Southern Africa Health Community and the world Health organisation that Factors contributing to cross- border problems in health include migration, inadequate and inefficient health delivery, and lack of coordination in the implementation of control strategies. Migration of population vis-à-vis cross-border movement has been determined as a major social determinant of health associated with the disease transmission. [14, 15].

With evidence of transmission of diseases through borders, it is imperative that countries form or strengthen cross-border relations, develop clear strategies and

comprehensive frameworks followed by implementation of measures that will help control transmission of diseases across borders and preventing spread of outbreaks and epidemics. Cross-border initiatives will create a platform for enhanced surveillance, information sharing and collaborative response utilizing joint resources. Countries are encouraged to develop or enhance existing cross-border initiatives.

In the modern times AIDS which was first discovered in 1981 in the United States is now a global pandemic with over 34 million people living with HIV or AIDS [2]. [2]. need to further coordinate our efforts and understanding of the disease burden on each side of the border to eliminate the disease in both nations During the 19th century, cholera spread across the world from its original reservoir in the Ganges delta in India. Six subsequent pandemics killed millions of people across all continents. The current (seventh) pandemic started in South Asia in 1961, and reached Africa in 1971 and the Americas in 1991. Cholera is now endemic in many countries. WHO. Cholera. URL: <http://www.who.int/mediacentre/factsheets/fs107/en/> The 1st pandemic, or global epidemic, started in 1817 from its endemic area in South-East Asia and subsequently spread to other parts of the world. The 1st and subsequent pandemics inflicted a heavy toll, spreading all over the world before receding.

In 1961, the 7th cholera pandemic wave began in Indonesia and spread rapidly to other countries in Asia, Europe, Africa and finally in 1991 to Latin America, which

had been free of cholera for more than one century. The disease spread rapidly in Latin America, causing nearly 400 000 reported cases and over 4000 deaths in 16 countries of the Americas that year. WHO. Global epidemics and impact of cholera. URL: <http://www.who.int/topics/cholera/impact/en/>

SARS was responsible for 775 deaths worldwide, a paltry number at first glance but far more significant after factoring in the 9.6% fatality rate. Harrison Han. A review on Global epidemics. URL: <http://dujs.dartmouth.edu/2013/05/a-review-of-global-epidemics/#.WpazdWpubIV>

At the onset of the 20th century, polio began to surface in Europe and the United States, proving to be an epidemic that paralyzed thousands of adults and children globalization facilitates the spread of new diseases in developing nations by travelers between countries. Due to increased trade and travel, many diseases like HIV/ ADIS, Swine Flu, Bird Flu and many plant diseases, are facilitated across borders, from developed nations to the developing ones. In addition, globalization helped doctors and scientists to contribute to discover many diseases, which spread by human, animals and birds, and it helped them to create appropriate medicines to fight these deadly diseases. Fairouz Hamdi. The Impact of Globalization in the Developing Countries. URL: <https://www.linkedin.com/pulse/impact-globalization-developing-countries-fairouz-hamdi> As the communication between the countries becomes open sharing of information became easier due to globalization.

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