



Ebola: The Looming Threat



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Submission: July 16, 2017; **Published:** August 17, 2017

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Opinion

Ebola virus is one of the most lethal infectious threats to mankind [1]. The family Filoviridae consists of two genera, Ebola virus and Marburg virus. Ebola virus has five species *Zaire*, *Sudan*, *Tai Forest*, *Reston* and *Bundibugy* [2].

These infections cause severe hemorrhagic fevers in humans and non-human primates and produce mortality rates of up to 90%. Ebola virus is classified in the NIAID Bio-defense Research Agenda for CDC as a Category a Agent (USDHHS-NIH) and is a biosafety level 4 (BSL4) pathogen. There are four species of the Ebola virus, and there is currently no vaccine or antiviral therapy against Ebola virus infections for human [1].

Viruses of the Ebola virus genus cause sporadic epidemics of severe and systemic febrile disease that are fueled by human-to-human transmission [3,4]. Ebola disease spreads only by direct contact with the blood or other body fluids of a person who has developed symptoms of the disease [4,5]. Body fluids that may contain Ebola viruses include saliva, mucus, vomit, feces, sweat, tears, breast milk, urine and semen. The WHO states that only people who are very sick are able to spread Ebola disease in saliva, and whole virus has not been reported to be transmitted through sweat. Most people spread the virus through blood, feces and vomit [3,6].

The world experienced the largest and most widespread Ebola virus outbreak in West Africa, 2014. The current outbreak which began in Guinea in December, 2013, and came to notice in March, 2014, has already affected five African countries. On 8th August, 2014 WHO declared the West Africa Ebola virus outbreak as a «Public Health Emergency of International concern» (PHEIC). Ebola virus (formerly Zaire ebola virus), was found to be the causative strain of the present outbreak, for the first time, in West Africa [2].

Viruses are great tools to study and understand human cell biology, since viruses will often encode their proteins to hijack human cell pathways. Failure to recognize the role of basic science in studying EBOV and other viruses may endanger the

future enterprise and training of researchers interested in these pathogens [7].

The EBOV replication cycle had been shown to finalize with the exit from the human cell plasma membrane, the outer membrane being so important for human cell shape and stability. The virus steals its lipid coat from the human cell it infected, World Health Organization and developing countries such as Zaire to support further research into the epidemiology and natural history of the virus, which may help prevent future deadly epidemics [8].

As of September 2014, the average risk of death among those infected is 50 percent [3,9]. In December 2016, Ebola virus disease was found to be 70–100% prevented by rVSV-ZEBOV vaccine, making it the first proven vaccine against the disease [10].

Conclusion

Research about viruses looming large on mankind like Ebola, Zika, Swine Flu etc. is the need of the hour. International Health and Funding agencies should direct their attention on the viruses.

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