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**Ebola**

*Overview:*

Ebola disease is caused by a collective group of viruses, known as *orthoebolaviruses*, that was first discovered in 1976 in Africa. That year, there were two outbreaks occurring in what is now South Sudan and the Democratic Republic of the Congo. The virus got its name from the Ebola River located near where the outbreak occurred in the Congo (Sreenivas). There are four major *orthoebolaviruses* that can cause Ebola in humans: Ebola virus, Sudan virus, Tai Forest virus, and Bundibugyo virus (World Health Organization, [WHO], 2023). There are two main categories of symptoms of Ebola disease: “dry” symptoms, which occur in the early stages of infection, and “wet” symptoms which follow the dry symptoms. The dry symptoms can include headaches, various aches and pains, fever, and tiredness. Meanwhile, wet symptoms usually affect an individual’s bodily fluids and can cause diarrhea, vomiting, and internal bleeding (Center for Disease Control and Prevention, [CDC], 2024). The symptoms can take anywhere from two to twenty-one days to appear after infection begins, and the disease cannot be spread until they present themselves. Even after recovery from the Ebola disease, it can take over two years for lingering symptoms to completely disappear. If left untreated, Ebola can eventually lead to death.

Ebola is widely believed to originate in fruit bats which then spread it to other animals. Humans can then contract Ebola if they come into direct contact with the bodily fluids of one of these animals and the virus enters the human’s body through his broken skin or mucous membrane, which often occurs when a human encounters a dead or ill animal in the wild. Humans then spread it amongst themselves through their own bodily fluids, such as blood, sweat, saliva, vomit, breast milk, and urine (CDC, 2024). Additionally, Ebola can be spread through sexual contact, such as through vaginal, oral, or anal sex, due to semen being capable of carrying the Ebola viruses.

Because of the nature of Ebola’s transmission, a few groups exist that are particularly susceptible to the virus. Healthcare workers or personal caretakers of Ebola patients are at a very high risk for contracting the disease. This is a result of the constant contact these individuals have with the patients, where they have a high likelihood of touching fluids such as sweat, vomit, and blood which can all carry the *orthoebolaviruses.* Additionally, those involved in the burial of a dead person who had Ebola often contract the disease themselves. This is particularly common in West African communities where burials involve a “love touch” of the corpse’s face by relatives of the deceased after washing their hands in a common bowl (Manguvo and Mafuvadze). This close contact with the dead body’s face can lead to transmission of Ebola to the relatives or others who participate in this burial practice and other similar ones. Infants of pregnant women are also in a high-risk group due to breast milk being a potential carrier of the Ebola viruses.

Unfortunately, there is no complete cure or preventative measure for Ebola. Vaccines to fight against the virus are being worked on, but only one vaccine has been completed and approved by the FDA, known as Ervebo. This vaccine only protects against a single strain of Ebola that is the cause of the most serious cases of the virus, particularly the ones found in Guinea and the Congo (WHO, 2023). First responders, healthcare workers, and others who may be at risk of contracting this particular strain of Ebola are highly encouraged to take the vaccine. There are various measures that can work to prevent catching Ebola in the first place, such as frequent and thorough hand washing, not touching the dead bodies of Ebola victims, and avoiding the bodily fluids of those who have contracted the virus (Garibaldi). This last step requires a significant degree of attention, as various household objects or personal items of Ebola patients can often carry their infected bodily fluids.

If an individual does contract Ebola, some treatments do exist. There are two main drugs that have been approved for the treatment of Ebola: Inmazeb and Ebanga (Sreenivas). Both of these drugs are administered intravenously and work by mimicking the body’s natural antibodies to fight the virus. Another experimental treatment that may assist in the treatment of Ebola is the use of convalescent serum. This process involves the transfusion of parts of the blood of a recovering patient to a sick patient to help fight Ebola (Garibaldi). Other more basic therapies may be used to combat the virus, such as supplemental oxygen, standard blood transfusions, medicines to reduce the pain of the symptoms, or fluid drips for hydration.

*Societal Implications:*

Because there has never been an outbreak of Ebola outside of Africa, the consequences of the disease are significantly different than if it was prevalent elsewhere in the world. Most of the African countries where Ebola outbreaks have been detected are under-developed, so public health infrastructure in these nations oftentimes do not have the necessary capabilities to handle outbreaks. Many hospitals and medical facilities in West Africa lack the proper equipment and supplies to protect the staff from infection (Buseh, et al.). This can often increase the spread of the disease, worsening the medical conditions and increasing the number of cases and deaths from Ebola.

Additionally, many of the people in the areas where outbreaks have occurred are unable or unwilling to access proper sanitation and clean water. For example, in Sierra Leone it is not uncommon for people to present uncleaned meat to passersby to attempt to make a sale to the potential customer (The Guardian, 2024). This is not only unhygienic from a general perspective but is especially dangerous if an Ebola outbreak has occurred in the area. Given that Ebola is spread primarily through the transmission of human or animal bodily fluids, issues like these are a major problem when it comes to attempting to prevent the spread of the disease.

As mentioned previously, cultural traditions related to burial practices play a major role in spreading Ebola, given that these practices are so firmly rooted in the countries where they exist, such as Guinea, Liberia, Sierra Leone, and the Democratic Republic of the Congo. In Guinea alone, it’s estimated that around 60% of all cases of Ebola are caused by these traditional burial practices (WHO, 2023). Because of how important these traditions are to the people in these communities, many public health officials from foreign countries (particularly from the West) have difficulties preventing the transmission of Ebola in these areas. Trying to dissuade the locals from participating in these practices during an Ebola outbreak is often seen as a disregard of their culture entirely, leading to distrust of the work that these medical professionals are doing in order to mitigate the disease’s spread (Manguvo and Mafuvadze).

Another factor that has impacted the treatment of Ebola in recent years has been the armed conflicts that have been occurring in Central and West Africa. For example, a major outbreak of Ebola occurred in the Democratic Republic of the Congo from 2018 to 2020. In total this outbreak caused about 3500 cases, including 2300 deaths by Ebola (CDC, 2020). However, due to a current conflict in the DRC, people in the country have been put at higher risk for contracting Ebola. In fact, people in conflict zones in the DRC had a roughly 1.88-times increased risk for contracting Ebola, with a similar increased risk of 1.98 for people in conflict zones in Guinea during their Ebola outbreaks (Charnley, et al.) There are a variety of reasons for this, but most of them stem from damaged infrastructure and a lack of access to the transportation and healthcare that many Ebola patients or potential patients need to get proper treatment and disease prevention assistance.

In conclusion, there are a variety of factors that influence the spread of Ebola and its resulting impact on the communities it occurs in. Issues like the relative lack of development in many African nations and the consequential lack of proper sanitation and hygiene contribute to an increased spread of the disease when outbreaks initially occur and can even lead to outbreaks themselves. Additionally, the rooting of traditional burial practices in many African communities not only compound the spread of Ebola, but are incredibly difficult for medical professionals, especially non-natives, to overcome, given these practices’ importance to the locals being affected. Lastly, the existence of political and military conflicts in various regions of Africa lead to people being unable to receive proper treatment, and thus only increase the problems faced by their populations. All of these issues lead to Ebola being a very menacing and persistent threat, even if only in Africa.

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*References*

1. Buseh, Aaron G, et al. “The Ebola Epidemic in West Africa: Challenges, Opportunities, and Policy Priority Areas.” PubMed Central, U.S. National Library of Medicine, 2015, pmc.ncbi.nlm.nih.gov/articles/PMC7111626/.
2. Center for Disease Control and Prevention. “Ebola Disease Basics.” *Centers for Disease Control and Prevention*, www.cdc.gov/ebola/about/index.html. Accessed 26 Mar. 2025.
3. Center for Disease Control and Prevention. “Outbreak History.” *Centers for Disease Control and Prevention*, 3 July 2020, www.cdc.gov/ebola/outbreaks/index.html. Accessed 6 Apr. 2025.
4. Charnley, Gina E C, et al. “Evaluating the Risk of Conflict on Recent Ebola Outbreaks in Guinea and the Democratic Republic of the Congo.” BMC Public Health, U.S. National Library of Medicine, 20 Mar. 2024, pmc.ncbi.nlm.nih.gov/articles/PMC10953285/.
5. Garibaldi, Brian. “Ebola.” *Johns Hopkins Medicine*, www.hopkinsmedicine.org/health/conditions-and-diseases/ebola. Accessed 26 Mar. 2025.
6. Malik, Sumira, et al. “Ebola Virus Disease Vaccines: Development, Current Perspectives & Challenges.” *MDPI*, Multidisciplinary Digital Publishing Institute, 26 Jan. 2023, www.mdpi.com/2076-393X/11/2/268.
7. Manguvo, Angellar, and Benford Mafuvadze. “The Impact of Traditional and Religious Practices on the Spread of Ebola in West Africa: Time for a Strategic Shift.” The Pan African Medical Journal, U.S. National Library of Medicine, 10 Oct. 2015, pmc.ncbi.nlm.nih.gov/articles/PMC4709130/.
8. Sreenivas, Shishira. “Ebola Virus Disease.” *WebMD*, WebMD, 15 Oct. 2024, www.webmd.com/a-to-z-guides/ebola-fever-virus-infection.
9. The Guardian. “Ten Years Ago Ebola Tore through Sierra Leone. Can a Vaccine Drive Stop History Repeating Itself?” *The Guardian*, Guardian News and Media, 27 Nov. 2024, www.theguardian.com/global-development/2024/nov/27/ten-years-ago-ebola-sierra-leone-2014-vaccine-drive-stop-history-repeating-itself.
10. World Health Organization. “Ebola Virus Disease.” *World Health Organization*, www.who.int/news-room/fact-sheets/detail/ebola-virus-disease. Accessed 26 Mar. 2025.