



Forum: Sustainable Development Goals 3

Issue: Measures to combat the resurgence of the Ebola virus

Student Officer: Aisha Nisar Rana

Position: Head Chair

Introduction

Ebola Virus Disease (EVD) is a fatal disease with intermittent outbreaks that happen essentially on the African continent. Ebola virus commonly affects individuals and nonhuman primates, (for example, monkeys, gorillas, and chimpanzees). The Ebola virus was first uncovered in 1976, close to the Ebola River in what is presently the Democratic Republic of Congo. From that point forward, the infection has been contaminating individuals now and again, prompting outbreaks in several African nations and also other parts of the world. Researchers don't have a definite answer to where the Ebola infection originates from. However, taking into account comparative infections, they assume that the infection is animal-borne, with bats or nonhuman primates being the most probable source. Infected animals conveying the infection can transmit it to other animals, similar to chimps, monkeys, duikers and people.

The infection spreads to individuals at first through direct contact with the blood, body fluids and tissues of animals or other humans. Then, it spreads to others through direct contact with body fluids of an individual who is infected with or has passed away because of the virus. This can happen when an individual contacts these tainted body liquids (or objects that are polluted with them), and the infection gets in through broken skin or mucous membranes in the eyes, nose, or mouth. Individuals can also get the infection through sexual contact with somebody who is infected with EVD.

Fatality rates have varied from 25% to 90% in different cases. The survival rate was 64.7% in patients who had survived 8 days or greater after symptom onset and 86.1% in patients who had survived 12 days or greater after symptom onset, according to a study conducted by the U.S National Library of Medicine. Furthermore, even after recovery from EVD, which is quite difficult, the infection can remain in certain body liquids similar to semen. Ebola survivors could also experience side effects such as tiredness, muscle and stomach aches, and vision problems after their recovery. The survivors were still kept under quarantine and strict monitoring for a certain amount of time since the possibility remained that the virus may start to attack the body again and risk the well-being of others. The epidemic lasted from March 2014 to June 2016. Majority of the infected individuals were in Guinea, Sierra Leone, and Liberia. Cases were also reported in Nigeria, Mali, Europe, and the U.S. Approximately 28,616 people were suspected or confirmed to be infected, of which 11,310 people lost their lives.



Definition of Key Terms

Outbreak

It is an unexpected and sudden increase in the cases of a particular disease in a specific time and place.

Epidemic

The temporary but rapid spread of a disease or infection to a massive amount of people in a particular series of locations.

Animal-borne

These illnesses are brought about by microbes, viruses, parasites and organisms that are carried by insects and animals.

Fatality rate

The quantity or percentage of individuals infected by a particular disease who are killed as a result of it.

Symptom onset

The first indication of the presence of symptoms or signs of a disease in an infected individual.

Community spread

The spread of an infectious disease in a geographic region where there is no information on how an individual contracted the illness. No known relation can be formed with other infected individuals.

Epidemiology

A branch of medicine which mainly focuses on general well-being, including the occurrence, distribution, investigation and control of diseases.

PPE

Personal Protective Equipment is specialized equipment and clothing which is made to be utilized as a shield against contagious infections including exposure to airborne particles or through physical contact.



Background Information

History and life of the virus

Ebola was first found in the Ebola River situated in West Africa. Theories about the virus living in local African hosts has been an intriguing issue for researchers. The suspected reservoirs of the infection include bats, insects, rodents and primates that can be found in the tropical woodlands of Africa and Asia. The infection flourishes in local hosts. Luckily, any infected animal can't infect a human after it is thoroughly cooked, but it can when it is uncooked. If the virus doesn't have a host, it simply cannot survive.

Which is why, just like other viruses, Ebola's objective is to enter a host and then replicate. Ebola has one significant distinction from other viruses, which is that the reservoir species is not exactly known as of yet. What researchers do think about the infection is its impacts and the way the infection works once it has attacked the host. The infection consists of seven proteins that cooperate to devour the host cell as it starts making endless duplicates of itself. The seven proteins that make up the infection, viciously attack the body of the cell and the basic proteins of the host's body. Ebola replicates at a fast rate and the contaminated cells quickly become loaded with blocks of virus components.

Symptoms

The duration from Ebola contraction to symptom onset is 2-21 days, although 8-10 days is quite common. Signs and symptoms include:

- lack of appetite
- headache
- joint and muscle aches
- weakness
- stomach pain, vomiting, and diarrhea
- fever

Some patients can also experience:

- rashes
- difficulty swallowing
- hiccups
- cough
- sore throat
- chest pain and difficulty breathing
- red eyes
- internal and external bleeding



Medications, vaccines, and antibodies

In the past 2018-2019 Ebola outbreak in DRC, the first-ever multi-drug randomized control trial was conducted to assess the adequacy and security of medications utilized in the treatment of Ebola patients under a moral system created in consultation with specialists in the field and in the DRC. In 2015, an experimental EVD vaccine demonstrated exceptionally defensive against EVD in a major trial in Guinea. The antibody, called rVSV-ZEBOV, was studied and worked on in a trial which included 11 841 individuals. Among the 5837 individuals who were vaccinated, no Ebola cases were recorded 10 days or more after the vaccine. However, there were 23 cases recorded after 10 days or more among the individuals who didn't receive the vaccine.

Prevention

When it comes to halting or eradicating the spread of a disease or calamity, certain measures should always be put in place. For centuries, humanity has been combatting plagues and several diseases like the Black Plague, Influenza, various communicable cancers, cholera, and most recently, COVID-19. Thankfully, humanity was also able to fight these diseases and eventually slowed their spread. This was done by setting rules and regulations that must always be adhered to. History proves that if these rules aren't obeyed as if they were set in stone, entire nations can collapse and be wiped out. This is why certain rules and methods of protection have been fabricated to fight the Ebola virus; three levels of interventions that can and ought to be applied when treating Ebola or preventing its spread are the following:

Primary intervention

Primary interventions should be utilized to lessen or forestall the odds that an infection or injury can influence an individual. The essential measures that should be applied to evade or lessen the odds of contracting the infection is avoiding zones of known outbreaks. For example, while consuming food, avoiding meat that is suspected to carry the infection. When treating patients, aseptic techniques should be adopted and good hygiene should be practiced. In order to prevent Ebola from spreading any further, communities should be instructed about the disease including signs and side effects and the manner in which it is transmitted. Another approach to forestall getting Ebola, is the utilization of contamination control measures. A cure for Ebola doesn't exist at the moment, so there are immunizations one can receive to prevent getting the infection. In the chance that an individual becomes infected, he/she should be isolated from the others. In the event that a patient passes away, it is recommended to not attend the funeral or be involved with the burial if it requires one to handle the corpse up close.

Secondary intervention



Secondary prevention incorporates practices and precautionary measures which must be utilized, for example, early detection screening and immediate response to keep the virus contained. It's impossible to distinguish the disease at an early stage. It might take as long as 22 days to encounter side effects of the infection. The immediate response to the infection is to separate the patient and begin to strengthen the immune system.

Tertiary intervention

The objective in tertiary prevention is to prevent physical deterioration of the patient's body and improving the patient's quality of life where possible. Tertiary intervention measures don't exist at the moment as there is no known cure for Ebola virus. The only method of survival is if the patient's immune system is sufficiently able to fight the disease. The objective of the healthcare provider is to care for the body and help strengthen the immune system of the patient so it can fight the virus.

Current status

The most recent Ebola outbreak emerged in early June in the Equateur Province of the DRC (Democratic Republic of Congo) and had spread to 17 health zones, bringing the overall number of affected zones to 12. Up until September 2020, there have been 113 cases and 48 deaths. This is Equateur Province's second Ebola outbreak and overall the 11th in the DRC. The outbreak originally surfaced in the city of Mbandaka, home to more than 1,000,000 individuals, and eventually spread to 11 health zones. Overseeing response logistics in Equateur is troublesome as networks in communities are extremely dispersed. Many communities are in profoundly forested territories and contacting them requires travelling significant distances.

The circumstances were additionally convoluted by a healthcare workers' strike that influenced key reaction activities by delaying them for almost a month. Privately based Ebola researchers and doctors had been proclaiming against low compensations along with no-payments, since the beginning of the outbreak. The local government was and is currently being supported by the UN to provide healthcare workers with fair compensations and proper PPE to pursue their satisfaction and safety, even though the situation has seemed to calm down as of yet.

Major Countries and Organizations Involved

WHO

WHO helped forestall Ebola outbreaks by surveilling EVD infections and supporting nations in danger to create national action plans. When an outbreak would be discovered, WHO would react by preparing vaccines, establishing laboratory services, infection control, case management, disease detection, case tracking, and also, provide aid to ensure safe yet dignified burial processes.



UNICEF

UNICEF (United Nations International Children's Emergency Fund) has helped nations like the DRC by uniting social and political influencers, community pioneers and leading individuals to permit Ebola response groups to work inside communities. UNICEF has additionally implemented prevention practices by guaranteeing water disinfection, and ensuring that hygiene administrations are accessible in medical centers, offices, and schools. UNICEF and its accomplices also looked after individuals who were in contact with infected individuals, by assisting with their healthcare prosperity, and working on methods of early detection in patients.

The DRC

The DRC is the country with the highest record of recurring outbreaks. It tackled 11 outbreaks in a span of just over 40 years. In the recent EVD outbreak, starting at 1 September 2020, 110 cases (of which 104 were confirmed and six likely) including 47 deaths have been accounted for in 11 health zones. This outbreak continued to expand and more cases would be reported every week, even though the DRC was receiving aid from the WHO. However, the eventually government executed an active response and the situation is now somewhat under control.

Timeline of Events

Date	Description of Event
Beginning of 1976	First Ebola case was discovered in the DRC near the Ebola river.
June-Nov 1976	Sudan's first EVD outbreak.
Oct 2001-Dec 2007	The DRC battled 7 EVD outbreaks in various regions.
23rd March 2014	WHO declares Ebola to be a "public health emergency of international concern."
In 2015	First ever vaccine developed which proved to be effective in delaying the replication of EVD in a host.
Dec 2013-Jan 2016	EVD outbreaks in Sierra Leone, Guinea, Nigeria, Mali, the US, Senegal, Spain, the UK, and Italy.
Aug 2014-Sep 2020	Another 4 EVD outbreaks occur in the DRC.



Relevant UN Treaties and Events

- Peace and Security in Africa, 18 Sep 2014 (**UNSC resolution S/RES/2177**)
- Measures to contain and combat the recent Ebola outbreak in West Africa, 19 Sep 2014 (**UNSC resolution A/RES/69/1**)
- Global Health and Foreign Policy, 11 Dec 2014 (**UNGA resolution 69/132**)
- High-level design for a new WHO health emergencies programme, 25 Jan 2015 (**WHA resolution EBSS3.R1**)

Previous Attempts to solve the Issue

The UN established UNMEER (UN Mission for Ebola Emergency Response) on 19 September 2014, its mission was scaling up the reaction on the ground, community mobilisation and social engagement, safe yet dignified burials, case finding and management, and lab and contact tracing. It came to a close on 31 July 2015 after accomplishing its main objectives.

UNICEF (United Nations International Children's Emergency Fund) has put in efforts to solve the issue by helping countries like the DRC by executing counteraction rehearsals by ensuring water sanitization, and guaranteeing that cleanliness administrations look over public hotspots. UNICEF also executed strategies such as establishing early detection methods and provided efficient PPE to healthcare workers in struggling nations.

Possible Solutions

Addressing barriers

Even if Ebola treatments or vaccines are progressing and the WHO is constantly trying to make them more commonly available in hospitals, there are various factors which may obstruct a person's access to these resources. Prejudice based on gender, race, sexual orientation, and social status, is not uncommon, and due to discrimination, minorities in LEDCs are often less likely to receive the appropriate treatment and/or tests for Ebola, which reduces their chances of recovering from EVD. Acknowledging these barriers and finding methods of erasing them is crucial in addressing the issue as a whole.

Accessibility

The current prevention and detection methods for Ebola are costly which makes them inaccessible. A great amount of EVD infected patients lose their lives every year because of this. By making medications, tests and vaccines more readily available and less costly, which is feasible through many methods, it is reasonable to predict that with more people on a treatment plan, maintaining their



health, the survival rate of EVD infected patients will increase and the number of deaths every year will go down.

Education and Awareness

Even though Ebola has been around for a long time now, there are still several communities across the globe, especially in LEDCs, who do not know how fatal Ebola is and what preventative measures should be taken against it. Through the introduction of Ebola education - whether that be within school curriculums, or through external organisations - it is highly likely that the rate of EVD infection decreases because people will be aware of the preventative measures can be taken to protect oneself and others from EVD, and misconceptions about it can be eradicated. Furthermore, awareness on the issue also means that people will understand the importance of supporting charities, NGOs, and other organisations working towards EVD eradication and treatment, whether it be through fundraising, petitions, donations, or other methods.

Guiding Questions

1. How is your delegation affected by this issue?
2. What has your delegation done to resolve this issue?
3. What are the basic steps to disease prevention?
4. What are your delegation's government policies regarding this issue?
5. Is your delegation's economy strong enough to provide aid to other struggling nations?
6. What can be done to assist those already infected with EVD?
7. How can accessibility be improved?

Bibliography

- *Survival Rates of the Ebola Virus: A Study*. Feb. 2015, www.ncbi.nlm.nih.gov/pmc/articles/PMC4434807/.
- *Ebola: Two Years and 11,300 Deaths Later*. 27 May 2020, www.isglobal.org/en/ebola
- *Disease Outbreaks*. World Health Organization, 21 May 2020, www.who.int/emergencies/diseases/en/.
- *NHS Choices: The Ebola Virus*. NHS, www.nhs.uk/conditions/ebola/.
- *Ebola: An Overview*. Occupational Safety and Health Administration, www.osha.gov/ebola/.
- *Communicable Diseases: Definition, Symptoms, Prevention*. MediLexicon International, www.medicalnewstoday.com/articles/communicable-diseases.



- *Ebola Virus Prevention*. Mayo Foundation for Medical Education and Research, 22 Aug. 2020, www.mayoclinic.org/diseases-conditions/ebola-virus/symptoms-causes/syc-20356258.
- *WHO Warns against Potential Ebola Spread in DRC and beyond*. United Nations, <https://news.un.org/en/story/2020/09/1072152>.
- *Ebola and UNICEF*. UNICEF, 23 July 2020, www.unicef.org/emergencies/ebola
- *Ebola Virus Disease*. World Health Organization, www.who.int/news-room/fact-sheets/detail/ebola-virus-disease
- *World Health Organization and United Nations Documents*. Cambridge University Press, 20 Jan. 2017, www.cambridge.org/core/journals/international-legal-materials/article/world-health-organization-and-united-nations-documents-on-the-ebola-outbreak-in-west-africa/E3C27D20F081DAEED64A5BB17B71B2CA.
- *UN Mission for Ebola Emergency Response (UNMEER)*. United Nations, ebolaresponse.un.org/un-mission-ebola-emergency-response-unmeer.

Appendix or Appendices

- I. www.nhs.uk/conditions/ebola/. (NHS choices: The Ebola Virus)

This website is useful as it provides a complete overview of the Ebola Virus, including further details about symptoms and prevention.

- II. www.medicalnewstoday.com/articles/communicable-diseases. (MediLexicon International)

Useful because it provides an in-depth explanation of communicable diseases and what can be done to halt their spread and reduce their damage.

- III. www.who.int/news-room/fact-sheets/detail/ebola-virus-disease. (the WHO on Ebola virus)

Useful as it presents key facts about the Ebola virus and measures to curb transmission rates.