Ebola and Disease Control
House Committee on Energy and Commerce

Introduction

In March of 2014, the largest ever outbreak of Ebola occurred in West Africa. Ebola virus disease, formerly known as Ebola hemorrhagic fever, has a known mortality rate of about 50%. This epidemic, a widespread occurrence of the infectious disease in a particular community, has raised severe concern regarding the preparedness of the international community for such outbreaks. The countries most affected by the outbreak were Liberia, Sierra Leone, and Guinea. Transmission was widespread following the outbreak, but most countries have since established effect control measures. The World Health Organization (WHO) declared Liberia Ebola-free in September 2015, Sierra Leone in November, and Guinea in December.

The Center for Disease Control and Prevention (CDC) says Ebola has an estimated 21 day incubation period before the following symptoms begin to appear: fever, severe headache, muscle pain, weakness, fatigue, diarrhea, vomiting, abdominal pain, and unexpected bleeding or bruising. Until symptoms display themselves, Ebola is not contagious. When it is, it can only be transmitted through direct contact with the bodily fluids of an infected person or the sharing of needles with an infected person.

Federal agencies such as the CDC and the National Institutes of Health (NIH), along with the WHO are responsible for taking measures to properly respond to the outbreak. Such measures include mandatory airport screenings for persons traveling back from an infected country, quarantine for people who have recently been in contact with infected persons, and research to find medical treatment. These strict guidelines have led to a controversy surrounding the rights of people to reject quarantine when they show no symptoms. As for the effect Ebola has had, budget cuts over the past five years have been blamed for the preparation to this pandemic.

As the House committee on Energy and Commerce it is your responsibility to pass legislation to address the issues that Ebola poses as well as the controversies surrounding its policies. First, the dangers of future pandemics need to be assessed and appropriate funding should be given to institutions such as the CDC to mitigate this. Also, decisions must be made in regards to the extent to which the United States should intervene, as well as through what methods this can most effectively be done. Possible forms of aid include sending monetary aid, providing medical supplies, and sending health workers. If health workers are being sent, should they be forced to undergo quarantine without consent for the sake of public safety? Finally, the US troops stationed in West Africa could expose themselves to Ebola or any other harmful viruses, so measures should be established to take precaution.

History of the Problem

The Ebola virus first appeared in 1976, simultaneously in both Sudan and Zaire in the Democratic Republic of the Congo, as two different types. The Zaire virus was the subtype of Ebola first recognized by the international community, as it had a death rate of 88%, affecting 318 people and killing 280. Meanwhile, about half of the 284 cases reported by South Sudan (Sudan at the time) resulted in deaths. Both of the aforementioned outbreaks were due to the improper sterilization of needles and syringes and personal contact in hospitals and clinics. One patient in England was

accidentally infected in a laboratory but survived. In 1979, there was a recurrent outbreak in the same location as the first South Sudan outbreak. This outbreak was much smaller than the previous one and only saw 34 people infected, but it had a higher death rate of 65%.

In 1989, a new strain of Ebola was discovered in Virginia in crab-eating macaques imported from the Phillipines. This subtype, named Reston after the location of the laboratory, is unique from the other four types because it only affects primates although it can cause an asymptomatic infection. More of the infected macaques were exported from the Philipines to research facilities in the Texas, Virginia, and Italy in the following years. A 1994 autopsy of a wild chimpanzee in Cote d'Ivoire caused one scientist to become ill with the Tai Forest strain of the disease.

From 1995 to 1996, several and cases of the Zaire virus occurred in Gabon, South Africa, and Russia, as well as a large 315 person outbreak in DRC in 1995. Another large 425 person outbreak of the Sudan virus people killed 224 in the Gulu, Masindi, and Mbarara districts of Uganda. Prior to the 2014 outbreaks, this was the largest outbreak of the virus and according to the CDC, was due to three main reasons: "attending funerals of Ebola hemorrhagic fever case-patients, having contact with case-patients in one's family, and providing medical care to Ebola case-patients without using adequate personal protective measures."

Between 2001 and 2003, three outbreaks of the Zaire virus occurred in the Republic of the Congo that began on its border with Gabon. In that period, 300 cases were reported and the death toll was 253. During a 2004 measles outbreak in South Sudan, 17 cases of Ebola were also reported, with seven dead. In 2007, a rather large outbreak of the Zaire virus once again occurred in the DRC which affected 264 and killed 187. In December of 2007, a new strain of the virus was discovered in and named after the Bundibugyo district in the western half of Uganda. This new Bundibugyo strain had 149 cases, 37 of which resulted in deaths. Meat from non-domesticated tropical species of mammals, reptiles, birds, and amphibians was the reported source of the Bundibugyo strain, which appeared once more in a 2012 outbreak that affected 37 people. Overall however, this strain had a much lower mortality rate of about 32% in comparison to other strains which typically have a mortality rate of 50% or greater.

In March of 2014, the largest ever outbreak of Ebola occurred in West Africa, specifically in the countries of Guinea, Sierra Leone, and Liberia. As of December 30, 2015, there has been an estimated total of 28,637 cases in the outbreak, with only 15,249 confirmed by laboratories. Meanwhile 11,315 deaths have been reported by the WHO. Liberia was declared Ebola-free by the WHO in September of 2015, Sierra Leone in November, and Guinea most recently on December 29. The countries gained Ebola-free status after 42 days since the last Ebola patient tested laboratory negative twice, and then they immediately enter a 90-day period of high surveillance. Liberia had issues with additional cases being reported even after it was declared Ebola-free.

Ebola's cultural effect was far from minor. Liberia's traditional finger-snap greeting, as well as other simple greetings including hugs and handshakes, ceased to continue because people feared transmission. In a culture where death has significant traditional value, people who perished from Ebola were taken away by health workers in hazmat suits rather than being buried traditionally. During the height of the outbreak, Christmas celebrations in Sierra Leone even halted. Perhaps the most severe casualty of the Ebola outbreak is the estimated 4.5 million children in the region who have been denied education for safety purposes in response to the outbreak. The Global Business Coalition for Education (GBCE) released a report in December of 2014 with statistics regarding the severity of this. Projections say that 50% of children who are out of school for a year will not return to school, meaning a possible increase in high-risk situations such as pregnancies and early

marriages. While out of school, children will likely be forced to enter the workforce to help provide for their families. GBCE co-founder Aliko Dangote says, "I believe it is imperative that the business community takes a leadership role in the prioritization of education during humanitarian crises… Providing emergency education to children and their teachers and then responsibly reopening safe schools would help promote hope and keep pathways for rebuilding opportunity open for children, youth and their families."

Although transmission of the disease has almost completely halted, the control of this epidemic would not have been possible without health workers, over 100 of whom perished while treating patients with Ebola. Many people living in the affected countries still deny Ebola because of deep-rooted distrust in their government and the government's health services.

Recent Developments on the Issue

As Guinea was gaining its Ebola-free status, the United States also made modifications to its enhanced entry screening and monitoring for travelers from Guinea. Before leaving the country, they must undergo standard exit screening as usual and upon entering the US, they are required to answer questions about their individual travel history and any possible exposures to Ebola they have had as well as to provide contact information so that the health department can communicate with them.Travelers from Guinea also receive a CARE (Check and Report Ebola) Kit that includes information about Ebola, a thermometer, and state and local health department contact information. As the incubation period for Ebola is 21 days, the travelers are advised to watch their health for that period after leaving Guinea in case they develop symptoms. The same recommendations are made for travelers from Sierra Leone, Liberia, and any other bordering West African countries.

The WHO's President Dr. Bruce Aylward congratulated Guinea on their accomplishment and said that "the coming months will be absolutely critical", meaning the WHO will still be maintaining close surveillance in the West African region to ensure countries are completely prepared to respond to any outbreaks. However, the question of whether or not doctors and health workers should remain stationed in West Africa past the 90-day period has not yet been resolved. Keeping workers standing by would require funding and some of the mandatory quarantine regulations have deterred people from volunteering. In an interview with CBS, Dr. Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases said, "The idea of a blanket quarantine for people who come back could possibly have a negative consequence of essentially disincentivizing people from wanting to go there. The best way to protect Americans is to stop the epidemic in Africa, and we need those healthcare workers to do that. So to put them in a position where when they come back that no matter what they're automatically under quarantine can actually have unintended consequences and that's the reason we're concerned about that."

In terms of legislation, a total of 26 pieces have been introduced to Congress. Thus far, only two have been passed into law. The first was a bill sponsored by Democrat Representative Donna Christensen which passed in 2014 known as the Consolidated and Further Continuing Appropriations Act of 2015. It "provides appropriations for Food and Drug Administration (FDA) activities related to the response to the Ebola virus and the development of necessary medical countermeasures and vaccines. Designates the funding provided as an emergency requirement pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985" and addresses appropriations for Ebola Response and Preparedness. The other was the Adding Ebola to the FDA Priority Review Voucher Program Act sponsored by Democrat Senator Tom Harkin. Obama called

for an increase on spending for the CDC, and the House Appropriation bill on June 16 gave $7 billion dollars to the the CDC, a 7.2% increase from last year.

In 2014, the United States launched Operation United Assistance to combat the Ebola epidemic in West Africa. As a military mission, 2,800 troops were deployed and succeeded in constructing 10 50-bed Ebola Treatment Units (ETUs) as well as one 25-bed hospital for local healthcare workers called the Monrovia Medical Unit. In February of 2015, President Barack Obama announced that all but 100 of the deployed troops would be returning home.

In terms of scientific developments, a group of scientists at the Washington University School of Medicine (WUSM) in St. Louis devised a new metagenomics shotgun sequencing approach that supposedly has the capacity to detect any virus that infects people or animals, including Ebola.

Conclusion

Overall, most of the anxiety and concerns surrounding Ebola have been mitigated as the three countries affected have now all been cleared of the virus. However, the lack of preparedness by the international community was heavily criticized which raises questions as to how the United States should be handling this. Some Americans also criticized the government for not doing its supposed duty, protecting and addressing the needs of its own citizens. First, the dangers of future pandemics need to be assessed and appropriate funding should be given to institutions such as the CDC. The effect of children being out of school should also be addressed. Decisions must also be made in regards to how the United States will intervene during future crises so that action is prompt, as well as through what methods this can most effectively be done. Possible forms of aid include sending monetary aid, providing medical supplies, and sending health workers.

Democratic View

Thus far, the only laws that have been passed regarding Ebola have been sponsored by Democrats. President Barack Obama called for an increase on spending for the CDC, and the House Appropriation bill on June 16 gave $7 billion dollars to the the CDC, a 7.2% increase from last year, so Democrats are certainly in favor of increasing funding for the CDC and preparedness is a top priority.

Republican View

Senator Marco Rubio introduced legislation in November as well, called the Keeping America Safe from Ebola Act of 2014, which would have imposed travel restrictions on individuals travelling from a country deemed to have "widespread transmission of Ebola" by the CDC, with the exception of aid workers and military.

Questions to Consider

1. Should we appropriate additional funds to the CDC for research even if there doesn't seem to be imminent danger?
2. In future crises such as the Ebola outbreak, how much should the United States be intervening?
3. Should we deploy troops and risk bringing the virus over to the States?

4. If we do send health workers, should they stay on standby even after immediate risk is gone and continue to use US funds?
5. As for the health workers that volunteered to do on-site work, should a quarantine be mandatory for the safety of the public or does it infringe on individual rights?
6. How should Congress mandate the use of CDC funds? Should they go toward finding cures for existing diseases and viruses or should they go toward research about possible dangers so we can be more prepared?
7. How might an entire generation of students lacking six months to a year of education impact the United States in the long run?
8. Should we assist them? If so, how?
9. How might we use the newly developed sequencing approach that can detect viruses for domestic benefits? International?
10. Finally, should the United States invest in scientific research for the medical field or is it not a big concern?

Sources for Additional Research

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- http://www.who.int/csr/disease/ebola/en/
- https://www.congress.gov/ to view existing legislation
- http://www.wtsp.com/story/news/politics/2014/11/20/sen-marco-rubio-introduces-ebola-travel-ban-legislation/70008756/
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