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Florence Shu-Acquaye

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The Ebola Virus Prevention and Human Rights Implications

Florence Shu-Acquaye

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ABSTRACT

The Ebola virus and its now infamous 2014 West African outbreak have constituted the deadliest and most terrifying epidemic of recent memory. Not only does the epidemic now carry an already ghastly backdrop in the public mind when discussions around it begin, but, like the AIDS epidemic, cultural practices have contributed to the entrenchment of Ebola in Africa, compounded by weak human rights laws and stigmatization, all of these factors having contributed to the multi-faceted and complex nature of addressing the problem of eliminating this disease in Africa. This article examines the African countries that have been plagued by the recent outbreak, as well as the U.S. response to Ebola when brought to its shores. It also considers the human rights implications that are invariably intertwined with the prevention of Ebola, as well as the various ethical aspects that have surrounded the response. The article further examines the possible extent to which sub-Saharan African states may be able to leverage the flexibility of the so called Agreement on Trade Related Aspects of Intellectual Property Rights (“TRIPS”) to provide access to Ebola medical advances for their citizens. Lastly, this article will look at the Siracusa Principles, which outlines the circumstances within which restriction of human rights are justified, and will analyze the conduct of international responders, including the African Union, the CDC, WHO, and others.

AUTHOR NOTE

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I. INTRODUCTION

The Ebola virus is one of several viruses that cause hemorrhagic fever.¹ Ebola was found in 1976 in the Democratic Republic of Congo, a country known as Zaire at the time of Ebola's discovery.² The initial Ebola outbreak was in a village near the Ebola River.³ It is after this river that the disease is named.⁴ There are five viral strains that have been identified.⁵ According to the Center for Disease Control and Prevention, there are four known strains that cause disease in humans: the Ebola virus (Zaire ebolavirus); the Sudan virus (Sudan ebolavirus); the Taï Forest virus (Taï Forest ebolavirus, formerly Côte d'Ivoire ebolavirus); and the Bundibugyo virus (Bundibugyo ebolavirus).⁶ The Ebola Zaire virus is the deadliest of the five viral strains, having not only the highest mortality rate, but also the distinction of causing the most outbreaks.⁷ The fifth strain, the Reston virus (Reston ebolavirus), has not caused death in humans, but has been found to affect nonhuman primates and pigs.⁸ The World Health

¹ See CTRS. FOR DISEASE CONTROL AND PREVENTION, *Signs and Symptoms: Ebola Hemorrhagic Fever 1* (2014), <http://www.cdc.gov/vhf/ebola/symptoms/> [<https://perma.cc/ZD6W-EWBT>]. Ebola symptoms can appear anywhere within a range of two to twenty-one days after exposure; but on average, they appear within a range of eight to ten days after exposure to the virus. *Id.*

² See Michaeleen Doucleff, *Ebola in the Skies? How The Virus Made it to West Africa*, NATIONAL PUBLIC RADIO (Aug. 19, 2014, 5:14 PM), <http://www.npr.org/sections/goatsandsoda/2014/08/19/341468027/ebola-in-the-skies-how-the-virus-made-it-to-west-africa> [<https://perma.cc/U4VL-AHMS>]. In the summer of 1976, a young Zairian doctor named Ngoy Mushola traveled to a rural village in the Democratic Republic of the Congo. He learned that people were dying of a strange disease near the shores of the Ebola River. *Id.*

³ *Id.*

⁴ See Charles Patrick Davis, *Ebola Hemorrhagic Fever (Ebola Virus Disease)*, MEDICINET (May 13, 2015), http://www.medicinenet.com/ebola_hemorrhagic_fever_ebola_hf/page2 [<https://perma.cc/2ZPF-T6KQ>].

⁵ *About Ebola Virus Disease*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Feb. 18, 2016), <http://www.cdc.gov/vhf/ebola/about.html> [<https://perma.cc/HP7Z-BDWU>].

⁶ *Id.*

⁷ Doucleff, *supra* note 2.

⁸ This strain infects primates, pigs, and humans, but it causes few if any symptoms and no deaths in humans. Davis, *supra* note 4.

Organization has determined that the virus responsible for the now infamous 2014 West African Outbreak belongs to the Zaire strain.⁹

“Infectious diseases remain an important and often global health care challenge and in a globalized and highly mobile and interconnected world diseases like . . . Ebola . . . are likely to be spread more quickly than in the past.”¹⁰ Unlike many other viruses, the Ebola virus spreads through the transfer of bodily fluids, and, as a result, Ebola spreads through “human-to-human transmission by direct contact”.¹¹ That means that “blood, secretions, organs or other body fluids containing the virus must come into contact with broken skin or the mucous membranes of a healthy individual in order for the virus to be transmitted.”¹² Ebola’s hemorrhagic fever often has complications, including organ failure, severe bleeding, jaundice, delirium, shock, seizures, coma, and death.¹³ It is one of the worst infectious humanitarian crises of recent times.¹⁴ “On August 8, 2014, the WHO formally declared the Ebola epidemic an ‘international public health emergency of international concern.’”¹⁵ As of September 2014, there were about 5,232 reported cases with 2,630 deaths across most regions of Guinea, Liberia, and Sierra Leone.¹⁶ As of July 5, 2015, there have been a total of 27,573 reported, confirmed, probable, and suspected cases of Ebola Virus Disease in the countries of Guinea, Liberia, and Sierra Leone, with 11,246 reported deaths.¹⁷ Likewise, during the week

⁹ Alina Bradford, *Ebola: Causes, Symptoms & Treatment*, LIVESCIENCE (Mar. 28, 2016, 4:52 PM), <http://www.livescience.com/48311-ebola-causes-symptoms-treatment.html> [<https://perma.cc/3QFW-FQZ8>].

¹⁰ Stefan Kirchner, *Ebola, Human Rights and Health Discrimination*, JURIST (Oct. 20, 2014), <http://jurist.org/academic/2014/10/stefan-kirchner-health-rights.php> [<https://perma.cc/J5C9-4PL6>].

¹¹ Bradford, *supra* note 9.

¹² *Id.*

¹³ Mayo Clinic Staff, *Ebola Virus and Marburg Virus: Complications*, MAYO CLINIC (Aug. 06, 2014), <http://www.mayoclinic.org/diseases-conditions/ebola-virus/basics/complications/con-20031241> [<https://perma.cc/N4FA-6WKQ>].

¹⁴ Audrey Ceschia, *The Institut Pasteur Network: A Crucial Partner Against Ebola*, 384 LANCET 1239, 1239 (2014).

¹⁵ Jon. S. Abramson, *Ethical Considerations for use of Vaccines in the current West African Ebola Outbreak*, 1 J. OF SCI. & MED. 1 (2014).

¹⁶ *Id.*

¹⁷ *Ebola Situation Report*, WORLD HEALTH ORG. (July 8, 2015), <http://apps.who.int/ebola/current-situation/ebola-situation-report-8-july-2015> [<https://perma.cc/CUZ2-ZD73>] [hereinafter WHO, *Ebola Situation Report July*

leading to July 5, 2015, a total of 18 new confirmed cases were reported in Guinea, 3 in Liberia, and 9 in Sierra Leone.¹⁸ Each of these countries has had decades of violence and instability, including ruthless armed conflicts in Liberia and Sierra Leone, and an authoritarian regime in Guinea and, as a result, the present heads of state and the governments of these countries lead nations with shattered infrastructures, with weak or virtually no rule of law, with governance issues, with abusive security forces, and with high poverty and unemployment rates.¹⁹ It is with this backdrop, that the presence of the deadly disease Ebola becomes an even greater challenge when attempting to address its spread. The Ebola crisis is like the AIDS epidemic in the sense that cultural practices have contributed to the entrenchment of the disease in Africa, compounded by weak human rights laws and the stigmatization associated with HIV/AIDS—all of which have contributed to the multi-faceted and complex nature of addressing this disease in Africa.²⁰

Human rights implications are invariably intertwined with the prevention of HIV/AIDS and Ebola. Hence, looking at issues of human rights and quarantines, the protection of healthcare workers, gender discrimination in view of Ebola, the right to information, the conduct of state security forces, and the role of the international community would aid in highlighting many lessons and strategies for dealing with potential Ebola outbreaks.²¹ Because of the severity of the outbreak, there are suggestions that the use of unlicensed products be allowed to curtail it, such as through offering therapies and vaccines with unknown efficacy and possible adverse effects as treatment or

8, 2015]. This total includes reported deaths among probable and suspected cases, although outcomes for many cases are unknown. *Id.*

¹⁸ *Id.* “The new cases are the first in Liberia since the country was declared free of the disease on May 9. . . . The new cases raise questions about whether Liberia was actually Ebola free during May and June, or if there was a ‘shadow epidemic’ of cases that went undetected by officials.” Rachael Rettner, *Ebola Returns to Liberia: Where Did It Come From, and Could It Spread?*, LIVESCIENCE (July 2, 2015, 2:38 PM), <http://www.livescience.com/51433-ebola-liberia-return.html> [<https://perma.cc/2VW5-9BNY>].

¹⁹ HUMAN RIGHTS WATCH, *West Africa: Respect Rights in Ebola Response 2-3* (Sep. 15, 2014), <https://www.hrw.org/news/2014/09/15/west-africa-respect-rights-ebola-response> [<https://perma.cc/NS5C-HSHS>].

²⁰ Alan Whiteside & Nicholas Zebryk, *Ebola and AIDS in Africa*, CAN. J. AFR. STUD. 409, 413-416, 414 (2015).

²¹ HUMAN RIGHTS WATCH, *supra* note 19, at 1.

prevention.²² This article will look into the ethical considerations of doing so. Is safety being compromised? What about the manner and process for conducting such clinical trials? Would any such vaccines reach the more affluent West first before the African countries can have access to them? How could equitable distribution be done in a way that the poorer and much more affected African countries can get a fair deal, especially so in regards to costs?²³ I will examine the possible extent to which sub-Saharan African states may be able to leverage the flexibility of the so called Agreement on Trade Related Aspects of Intellectual Property Rights (“TRIPS”) to provide access to Ebola medical advances for their citizens, as is the case with HIV/AIDS.

This article examines the African countries that have been plagued by the recent outbreak of Ebola in 2014: Guinea, Sierra Leone, Liberia, Nigeria, Mali, and Senegal. Most of its focus is on the three countries with the greatest Ebola infection rates: Guinea, Sierra Leone, and Liberia. This article will also explore how the United States dealt with Ebola when brought to its shores from Sierra Leone. This article will also explore how the United States dealt with Ebola when brought to its shores from Sierra Leone. The goal will be to pinpoint the factors that propagate the diseases, and to examine human rights issues in relation to patients and health workers against the backdrop of their efforts to protect and prevent the spread of this disease. Hence, this article will weigh circumstances within which human rights protections are justified against the legitimate and objective interests of the public.

In Part III.A, this article will look at the Siracusa principle, which outlines the circumstances within which restriction of human rights are justified, especially in light of the above stated human rights issues.

²² *Ethical Considerations for Use of Unregistered Interventions for Ebola Virus Disease (EVD)*, WORLD HEALTH ORG. (Aug. 12, 2014) <http://www.who.int/mediacentre/news/statements/2014/ebola-ethical-review-summary/en/> [<https://perma.cc/U6ST-7NVL>].

²³ “Trazavirin, an Ebola vaccine that was created by the Ural Biopharmaceutical Technology Center, was approved for emergency use by Russian Health Ministry. The [European Union] has pledged EUR 24.4 million euros for research to develop a vaccine against Ebola. WHO estimates several hundred thousand vaccines could be produced by the end of 2014, and several more by the end of 2015.” *USA, Mali, Nigeria, Senegal, China – Ebola Updates*, DG ALERTS (Oct. 24, 2014) <http://dgalerts.docguide.com/ebola> [<https://perma.cc/94ME-QZXJ>].

Furthermore, it will analyze the response of the international community in an attempt to gauge what lessons have been learned, with an eye on the role of traditional actors such as the African Union, WHO, the CDC, and UNESCO's role in bioethics, as well as the international community's and its embrace of the wider health and humanitarian communities. For example, some doctors have advocated for blood transfusion to curb the spread of Ebola, but those efforts have widely been regarded as an academic rather than a realistic proposal given the magnitude of the epidemic.²⁴

A. Origin and Transmission

1. The Apparent Origin of Ebola

As stated in Part I, Ebola first appeared in 1976 in simultaneous outbreaks in Sudan and the Republic of Zaire (now the Democratic Republic of the Congo).²⁵ However, the real question is how the virus got to Guinea, a place where the people never had this disease.

In 2005, researchers looking for the source of Ebola tested more than a thousand small animals in Gabon and the Republic of Congo.²⁶ Researchers tested 679 bats, 222 birds and 129 terrestrial vertebrates.²⁷ "The only animal found to be an Ebola virus carrier was the bat, or rather, to be more specific, three species of bat: the hammer-headed bat, the Franquet's epauletted fruit bat, and the little collard fruit bat."²⁸ The second of these three fruit bat species is found in Guinea, where the 2014 Ebola Outbreak originated.²⁹ If indeed it is that bats are the

²⁴ See Bradford, *supra* note 9. The survivors of Ebola are so few and the mortality is so high that the probability of mustering enough survivors to make a difference in the high mortality was very low. *Id.* Likewise, the nutritional status of the few survivors will not inspire anyone to make blood donors out of them, let alone procure enough blood as recommended by WHO. *Id.*

²⁵ *Id.* During the 1976 outbreak, 280 people became infected through close contact with one another and through the use of contaminated syringes and needles in clinics and hospitals. *Id.* Out of those 280 people, only 20 percent of the patients survived. *Id.* The virus infected 284 people in Sudan. *Id.* Out of these, 151, or 53 percent of all infected patients died. *Id.*

²⁶ Rachael Rettner, *Where did Ebola Come From?*, LIVESCIENCE (Sept. 22, 2014), <http://www.livescience.com/47946-where-did-ebola-come-from.html> [<https://perma.cc/2T33-SC39>].

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

source of this virus, then how did the virus transfer to the human species?

People may become infected from bats eaten as meat or prepared as an ingredient in soups, which are a delicacy in Guinea.³⁰ Such a means of infection is the likely reason why after the outbreak in March 2014 the consumption of such bats was banned.³¹ But this does not adequately answer the question as to how the Ebola Zaire strain got to Guinea, or West Africa, in the first place. Did Ebola Zaire jump over the Gulf of Guinea from Central Africa, from Gabon and the Democratic Republic of Congo?³² To say that the virus could have traveled through an infected person seems implausible, as anyone with Ebola's contagious symptoms is very unlikely to make it through the 12 hour-drive over the rough terrain.³³ Disease specialists are wondering if the bats migrated to West Africa, or if bats in the region had always harbored this virus but had never previously communicated it to humans.³⁴ "By looking at the virus' genetic materials, researchers have found that same Ebola virus has been carried from bats in Central Africa to bats in West Africa over the last 10 years."³⁵

A recent research study team focused on Méliandou, Guinea, the index village where the human outbreak began.³⁶ The team gathered testimony from survivors and collected samples, including blood and

³⁰ *Id.*

³¹ *Id.* However, cooking the bat would likely kill the virus, so it is the butchering of bats and the handling of raw bat meat that is riskier. *Id.*

³² See Carolyn Crist, *Searching for Causes of the Ebola Outbreak, and for a Way to Stop the Next One*, WIRED (Aug. 18, 2014), <http://www.wired.com/2014/ebola-outbreak-causes> [https://perma.cc/BJY8-AB6F].

³³ *Id.*

³⁴ *Id.*

³⁵ See Rettner, *supra* note 24.

³⁶ David Quammen, *Insect-Eating Bat May Be Origin of Ebola Outbreak, New Study Suggests*, NAT'L GEOGRAPHIC (Dec. 30, 2014), <http://news.nationalgeographic.com/news/2014/12/141230-ebola-virus-origin-insect-bats-meliandou-reservoir-host/> [https://perma.cc/WH57-JFPG]. Shortly after the outbreak, Fabian Leendertz of the Robert Koch Institute in Berlin assembled a multidisciplinary team which included ecologists and veterinarians, as well as an anthropologist, in order to interview local people, and traveled to the affected area, near the borders of Liberia and Ivory Coast. *Id.*

tissue from captured bats.³⁷ These efforts yielded a new hypothesis: “Maybe the reservoir host was a bat, yes—but a very different sort of bat, in a different ecological relationship to humans.”³⁸ The researchers noted that while fruit bats are numerous in southeastern Guinea, they don’t nestle in large masses near Méliandou.³⁹ However, “the village did harbor a sizable number of small, insectivorous bats, which roosted under the roofs of houses and . . . hollow trees.”⁴⁰ The local people called these bats “lolibelo.”⁴¹ Lolibelo were being frequently hunted, killed and eaten by children as an additional food source.⁴²

The researchers discovered next “a large hollow tree, which had recently been set afire, producing as it burned what someone recalled as a ‘rain of bats.’”⁴³ “[The researchers] collected soil samples at the base of that tree, which eventually yielded traces of DNA assignable to *Mops condylurus*, more commonly called the Angolan free-tailed bat.”⁴⁴

That species was found to match the first-hand descriptions of lolibelo, continuing to short up the theory.⁴⁵ Interestingly enough, “the big hollow tree had reportedly been a favorite play spot for the small children of the village, including [a] now deceased little boy, despite—or perhaps because of—the fact that it was full of little bats.”⁴⁶ Although scientists do not know for certain, the top theory today is that the virus spread through the bats, especially given the fact that scientists have found Ebola antibodies in bat species widespread throughout Africa.⁴⁷ The virus is said to infect and replicate inside bats without killing the animals.⁴⁸ It is a now readily accept conclusion that

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ Doucleff, *supra* note 2.

⁴⁸ *See id.*

bats can easily spread Ebola.⁴⁹ Bats move around for several, if not thousands of miles and, as noted by the research team focused on Méliandou: “Bats don’t need a passport to cross borders.”⁵⁰

2. Transmission and Treatment

A WHO Ebola Situation Assessment for Oct. 6, 2014, states that the virus is most commonly transmitted through blood, feces, and vomit.⁵¹ “Breast milk, urine, and semen have also been found to transmit the Ebola virus, and it is believed that it may even be transmitted through tears and saliva.”⁵² Ebola is not transmitted through air, meaning that a person cannot contract the virus from breathing the same air as an infected individual.⁵³ “However, if an infected individual directly sneezes on a person and the mucus from that sneeze comes into contact with an open cut or the eyes, nose or mouth of someone else, there is a chance of transmission.”⁵⁴

According to the CDC, “standard treatment for Ebola hemorrhagic fever is still limited to supportive therapy.”⁵⁵ Supportive therapy is “balancing the patient’s fluid and electrolytes, maintaining their oxygen status and blood pressure, and treating such patients for any complicating infections.”⁵⁶ Any patient possibly suffering from “Ebola hemorrhagic fever should be isolated, and caregivers should wear protective garments” when handling such a patient.⁵⁷ There are no licensed medications for the treatment of Ebola per se; instead, doctors are currently utilizing two time-tested options for Ebola treatment: 1) supportive care, and 2) blood transfusions for Ebola survivors.⁵⁸

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *What We Know About Transmission of the Ebola Virus Among Humans*, WORLD HEALTH ORG. (Oct. 6, 2014), <http://www.who.int/mediacentre/news/ebola/06-october-2014/en/> [<https://perma.cc/Z3G4-2V3N>].

⁵² Bradford, *supra* note 9.

⁵³ *See id.*

⁵⁴ *Id.* WHO has not documented cases of this actually happening. *Id.*

⁵⁵ Davis, *supra* note 4.

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *See* Dennis Thompson, *For Ebola, No New Drugs Riding to the Rescue—for Now*, HEALTHDAY NEWS (Oct. 15, 2014), <https://consumer.healthday.com/senior-citizen-information-31/misc-death-and->

II. EXAMINING THE COUNTRIES PLAGUED BY EBOLA IN 2014

A. Guinea

In the small village of Méliandou, Guinea, is where the first case of Ebola began in 2014, with an 18-month-old boy by the name of Emile Ouamouno.⁵⁹ He died from Ebola-like symptoms in Méliandou on December 2013.⁶⁰ His death was not attributed to Ebola until March 21, 2014.⁶¹ By mid-January of 2014, several members of the boy's immediate family had developed similar symptoms and then died soon after.⁶² Several "midwives, traditional healers, and staff at a hospital in the city of Gueckedou who treated them" met the same untimely end.⁶³ In the subsequent weeks, "members of the boy's extended family, many who attended funerals or took care of other ill relatives also fell sick and died."⁶⁴ By that time the virus had "spread to four sub-districts via additional transmission chains"⁶⁵ From this "pattern of unprotected exposure", the people of Guinea began to suffer more loss of life, more funerals, and further tragic spread of the disease.⁶⁶

By July 2015, there were 30 confirmed cases of the Ebola virus reported in the week leading to the 12th of that month, with 18 cases in Guinea.⁶⁷ While progress is being made, only a zero infection rate would be an ideal outcome.⁶⁸

dying-news-172/for-ebola-no-new-drugs-riding-to-the-rescue-for-now-692722.html [https://perma.cc/7XMR-N44B].

⁵⁹ See *Origins of 2014 Ebola Epidemic of 2014*, WORLD HEALTH ORG. (Jan. 2015), <http://www.who.int/csr/disease/ebola/one-year-report/virus-origin/en/> [https://perma.cc/E3SQ-BSX6].

⁶⁰ *Id.*

⁶¹ See *id.* The boy developed an illness characterized by fever, black stools, and vomiting on December 26, 2013, and he died two days later. *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Ebola Situation Report – 15 July 2015*, WORLD HEALTH ORG. (July 15, 2015), <http://apps.who.int/ebola/current-situation/ebola-situation-report-15-july-2015> [https://perma.cc/S87W-2P6V].

⁶⁸ See generally *Ebola Virus in Guinea—Update*, WORLD HEALTH ORG., EMERGENCY PREPAREDNESS RESPONSE, (Mar. 30, 2014),

B. Sierra Leone

In Sierra Leone, the Ebola outbreak “began slowly and silently, gradually building up to a burst of cases in late May and early June [2014].”⁶⁹ By the end of the year, “[c]ases had then increased [again]. . . with November seeing the most dramatic jump.”⁷⁰

Subsequent investigations by the WHO concluded that “[Sierra Leone’s] first case was a woman who was a guest at the home of the index case in Meliandou, Guinea.”⁷¹ After the host family became symptomatic, “she travelled back to her home in Sierra Leone and died shortly after her return in early January 2014.”⁷² On April 1, Sierra Leone “stepped up vigilance for imported cases” when “two members of the same family who had died from the Ebola virus disease in Guinea were repatriated to Sierra Leone for burial.”⁷³

“The burst of new cases [of Ebola] seen in early June [of 2014] were traced to the [May 10th] funeral of a respected traditional healer held in Sokoma, a remote village in Kailahun district, near the border with Guinea.”⁷⁴ This traditional healer apparently “became infected while treating Ebola patients who crossed the border from Guinea, seeking her healing powers.”⁷⁵

From this single funeral, “[l]ocal epidemiologists eventually traced 365 Ebola-related deaths. . . which also seeded cases reported in Liberia.”⁷⁶ Towards mid-June, “a state of emergency was declared in Kailahun, calling for the closing of schools, cinemas, and places of night-time gatherings and the screening of vehicles at checkpoints along the borders with Guinea and Liberia.”⁷⁷ “On June 24th,

<http://www.who.int/csr/don/archive/disease/ebola/en/> [<https://perma.cc/G4PV-FG6T>].

⁶⁹ *Ebola in Sierra Leone*, WORLD HEALTH ORG. (January 2015), <http://www.who.int/csr/disease/ebola/one-year-report/sierra-leone/en/> [<https://perma.cc/FNJ3-MFAA>].

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.* This particular funeral sparked a chain reaction of more cases, more deaths, more funerals, and more cases in multiple transmission chains. *Id.*

⁷⁷ *Id.*

[Médicines Sans Frontières] opened an Ebola treatment center in Kailahun”, but it apparently came a little late, “[a]s an emergency coordinator with the charity noted, ‘We came too late when villages already had dozens of cases. We don’t know where all chains of transmission are taking place.’”⁷⁸ By mid-July, things were so bad that “teams trained by WHO buried more than 50 bodies over a 12-day period.”⁷⁹ “The death of Dr. Khan, who was regarded as a national hero, and surrounding publicity removed many public doubts about whether Ebola was ‘real’, and also introduced many questions about the safety of the area’s treatment facilities.”⁸⁰ After these repeated tragedies, “most foreign medical staff, included [sic] those deployed by WHO, suspended operations in Kailahun.”⁸¹ However, “[c]onfidence was gradually restored and operations resumed in early September.”⁸²

In Kenema, Sierra Leone, “health care workers at the government-run hospital went on strike over unpaid salaries and poor and dangerous working conditions” further proof that the country’s capacity for dealing with the crisis were being stretched too thinly.⁸³ “As the number of patients, doctors, and nurses dying at the Kenema government hospital continued to escalate, [rumors] grew that something other than a disease was responsible for such deaths.”⁸⁴ In turn, as patients fled or avoided the hospital, more such deaths occurred; resulting in the undermining of the effectiveness of treatment in isolation as a disease control measure.⁸⁵

Despite witnessing this slew of death, “[r]esidents of villages near Kenema witnessed how quickly the virus could sweep through

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.* Confidence in the safety of medical staff was further eroded in the last week of August, when a WHO-deployed epidemiologist working in Kailahun became infected. *Id.* This was followed a few days later by three staff at a hotel in which foreign medical teams were staying, where they too became infected. *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.* Nurses and burial teams complained that they had not been paid for several weeks, had insufficient personal protective equipment, and were forced to use a single broken stretcher to transport bodies as well as patients. *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

crowded households, but saw few alternatives to home care.”⁸⁶ The results were horrifying; “[the] [s]pread within households, where five or six children might share the same mattress” was “ruthlessly swift.”⁸⁷

The WHO field coordinator in Kenema, by opening dialogues with local leaders, learned that “what people wanted was a place where uninfected members of a household could go to ‘self-isolate’.”⁸⁸ The idea that arose from this realization was the adoption of tents to offer “sufficient space for one to keep a safe distance from others.”⁸⁹ It was the WHO office in Freetown that provided the first tent, with the International Federation of Red Cross and Red Crescent Societies supplying others soon after.⁹⁰ UNICEF donated sleeping mats, bed nets, and even cooking equipment.⁹¹

However, “[t]he real surge in cases began in September as the virus gained foothold in Freetown. Teams were soon struggling to bury as many as 30 bodies per day.”⁹² Once the situation had become desperately dire, “South Africa deployed a mobile laboratory to Freetown and work began to construct Ebola treatment centers”.⁹³ By the end of September, “the situation had begun to stabilize in Kailahun and Kenema,” but in the “Freetown, Port Loko, Bombali, and Tonkolili districts. . . there was a sharp and alarming spike in a situation described by WHO as ‘continuing to deteriorate’.”⁹⁴ “The biggest challenges in the densely populated capital were limited treatment and diagnostic facilities, and the difficulty of undertaking contact tracing.”⁹⁵

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.* They wanted a low-risk environment to stay in while waiting for the results of diagnostic tests. *Id.* They had observed the repercussions of being infected as people were blocked and quarantined in crowded households. *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.* In parts of Freetown, as many as three families occupied the same household in shifts, increasing even further the risks of disease spread within these families. *Id.*

WHO described, as of October, that the situation virus transmission in Freetown and the western districts as ‘rampant’, with more than 400 new suspected cases being reported each week.”⁹⁶ “On October 21, the World Food Programme . . . supported by funding from the World Bank to airlift[ed] 20 ambulances and 10 mortuary pickup trucks to Freetown to support the government’s efforts to shorten the response times.”⁹⁷ There were also an “additional 44 vehicles [sent] a few weeks later by sea.”⁹⁸

By December, Sierra Leone’s situation had worsened; the nation “surpassed Liberia as the country reporting the largest cumulative number of cases.”⁹⁹ The total of “new cases reported that week, at nearly 400, was three times as many as in Guinea and Liberia combined.”¹⁰⁰ “Though cases in Kailahun and Kenema had declined to only one or two each month, the country was still reporting new cases from 10 of its 14 districts.”¹⁰¹

By the end of December, there were over 9000 cases, despite the nation’s relatively small population of 6.2 million.¹⁰² Sierra Leone’s officials “noted that denial, traditional burials, and fear were still driving [the] spread of the disease in Freetown and adjacent districts, where transmission remained intense.”¹⁰³

By July 2015, there were 30 confirmed cases of Ebola virus disease (“EVD”) reported in the week to July 5th: 18 in Guinea, 3 in Liberia, and 9 in Sierra Leone, so, there should still be concern for the somewhat relative rise in Guinea and Sierra Leone.¹⁰⁴

C. Liberia

It was announced that Liberia was free of Ebola transmission on May 9, 2015, after experiencing no new cases for 42 consecutive

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Ebola Situation Report – 15 July 2015, supra note 67.*

days.¹⁰⁵ Following this, the country subsequently began a 3-month period of increased surveillance, collecting approximately 30 blood samples and oral swabs each day from potential cases to test for EVD.¹⁰⁶ On June 29, 2015, a confirmed case of Ebola virus surfaced in Margibi County, Liberia—the first new case that was confirmed in the country since March 2015.¹⁰⁷ It was a 17-year-old male who became ill on June 21, and died on June 28; tests on his body revealed a positive result for a strain of the virus that had been previously circulating in Liberia, which suggested that the virus was not imported from Sierra Leone or Guinea.¹⁰⁸ To this date, a CDC field team continues to work with the Liberian Ministry of Health and other partners to determine the source, recognize the chain of transmission, and avoid further spread.¹⁰⁹

Thirty confirmed cases of EVD were reported in the week of July 5th: 13 in Guinea, 3 in Liberia, and 14 in Sierra Leone.¹¹⁰ For that specific week, Liberia was doing relatively better than the other two countries.

D. Nigeria

The Ebola virus entered Lagos, Nigeria on July 20, 2014 through an infected Liberian air traveler who died 5 days later.¹¹¹ At the airport he was noticeably very ill, lying on the floor of the departure gate while waiting to board the flight.¹¹² He vomited during the flight, when he arrived, and finally in a car that delivered him to a private

¹⁰⁵ WHO, *Ebola Situation Report 8 July 2015*, *supra* note 17.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *CDC Key Messages – Ebola Virus Disease, West Africa*, CTRS. FOR DISEASE CONTROL AND PREVENTION (July 15, 2015), <http://content.govdelivery.com/accounts/uscdc/bulletins/10f9339> [<https://perma.cc/P99K-LKCB>].

¹⁰⁹ *Id.*

¹¹⁰ *Ebola Situation Report – 15 July 2015*, *supra* note 67 at 1.

¹¹¹ Press Release, World Health Org., Nigeria is Now Free of Ebola Virus Transmission (Oct. 20, 2014) (available at: <http://www.who.int/mediacentre/news/ebola/20-october-2014/en/index1.html>) [<https://perma.cc/2UCK-S27P>].

¹¹² *Id.*

hospital.¹¹³ As could be expected, tragedy soon followed; the protocol officer who escorted him later died from Ebola.¹¹⁴

While being triaged at the hospital, the patient had told the staff that he had malaria, and denied contact with any Ebola patient.¹¹⁵ The staff later learned that his sister's body had carried a confirmed case of Ebola and she had died from the disease in Liberia.¹¹⁶ The traveler had visited his sister while she was in the hospital and attended her funeral.¹¹⁷ Because malaria is not transmitted from person to person, no staff at the hospital was on alert for Ebola or took even protective precautions against the disease.¹¹⁸ Over the next few days, nine doctors and nurses became infected, and four of these nine died.¹¹⁹

Nigeria is Africa's most populous country, and the number of people living in Lagos alone is about 21 million, almost as large as the populations of Guinea, Liberia, and Sierra Leone combined.¹²⁰ Because thousands of people move in and out of Lagos every day, with frequent gridlocks of traffic, the carrying out, or "contact tracing," under such conditions is unimaginable.¹²¹ This was the main concern raised shortly after the first case was confirmed and announced.¹²² The United States Consul General in Nigeria, Jeffrey Hawkins, said at the time: "The last thing anyone in the world wants to hear is the 2 words, 'Ebola' and 'Lagos' in the same sentence."¹²³ These words conjured images of an "apocalyptic urban outbreak."¹²⁴ Luckily, this was not the case, as the Nigerian government in conjunction with WHO, the CDC, and other similar bodies reached a 100% tracing of known contacts in Lagos, and a 99.8% tracing at the

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

second outbreak site in Port Harcourt.¹²⁵ Reportedly, the Nigerian Federal and State governments are said to have provided ample financial and material resources, coupled with well-trained and experienced national staff, to handle the outbreak.¹²⁶ It is worth noting that earlier in the year, WHO confirmed that Nigeria had eradicated guinea-worm disease, another spectacular success story, as well as made significant progress towards interrupting polio transmission.¹²⁷

E. Mali

Mali's Ministry of Health notified WHO on October 23, 2014, of a laboratory-confirmed case of infection with EVD.¹²⁸ This was the first discovered EVD case in Mali.¹²⁹

The case involved a 2-year-old female who developed symptoms on October 19, 2014 while in Beuila, Guinea, and then travelled by road to Mali.¹³⁰ On October 20, 2014, she was admitted to a healthcare facility in Kayes, Mali.¹³¹ The next day, she was referred to the Fousseyni Daou Hospital in Kayes.¹³² On October 22, 2014 samples for EVD were taken and analyzed at the Center for TB and AIDS Research in Mali.¹³³ The results came back positive for EVD.¹³⁴ The test results were confirmed at confirmed at the Centers for Disease Control and Prevention ("CDC") in Atlanta and at the Institute Pasteur

¹²⁵ *Id.* Unlike the situation in Guinea, Liberia, and Sierra Leone, all identified contacts were physically monitored on a daily basis for 21 days. *Id.* The few contacts who attempted to escape the monitoring system were all diligently tracked, using special intervention teams, and returned to medical observation in order to complete the requisite monitoring period of 21 days. *Id.*

¹²⁶ *Id.* Great epidemiological detective work would eventually link every single one of the country's 19 confirmed cases back to direct or indirect contact with that July 20 air traveler from Liberia. *Id.*

¹²⁷ *Id.*

¹²⁸ Press Release, World Health Org., Ebola Virus Disease – Mali (Oct. 31, 2014), <http://www.who.int/csr/don/31-october-2014-ebola/en/> [<https://perma.cc/Z2YB-YNFU>].

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

de Dakar Senegal.¹³⁵ The patient died on October 24, 2014.¹³⁶ Eighty-five contacts were identified and subsequently monitored.¹³⁷

F. Senegal

On August 30, 2014, Senegal's Ministry of Public Health and Social Affairs informed WHO about a case of EVD announced in that country on the 29th of that month.¹³⁸ This involved a 21-year-old male native of Guinea who came to Dakar by road on August 20th, and stayed with relatives at a home in the borders of the city.¹³⁹ On August 23rd, he sought medical care for symptoms that included fever, diarrhea, and vomiting.¹⁴⁰ He received treatment for malaria, but did not improve and left the facility.¹⁴¹ After leaving the facility, he continued to reside with his relatives; but on August 26th, he was referred to a specialized facility for infectious diseases still showing similar symptoms and was hospitalized.¹⁴² WHO treated this first case in Senegal as a top priority emergency case.¹⁴³

Key operational personnel were consequently dispatched to Dakar to help confine the disease and stop its spread.¹⁴⁴

G. The United States

Three cases of the outbreak in the United States occurred within the timeline indicated below.

On September 30, 2014, the CDC confirmed the first laboratory-confirmed case of Ebola diagnosed in the United States in a man who had traveled to Dallas, Texas from Liberia.¹⁴⁵ This man, Mr. Duncan,

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ Press Release, World Health Org., Ebola Virus Disease Update – Senegal (Aug. 30, 2014), http://who.int/csr/don/2014_08_30Ebola/en/ [https://perma.cc/X7CV-GRVM].

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Cases of Ebola Diagnosed in the United States*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Dec. 16 2014),

did not show symptoms when he left Liberia, but subsequently developed symptoms about four days after arriving in the United States.¹⁴⁶ Mr. Duncan then sought medical care at Texas Presbyterian Hospital of Dallas, but did so only after developing signs consistent with Ebola.¹⁴⁷ Because of his travel history and symptoms, the CDC recommended testing him for Ebola.¹⁴⁸ The medical facility then isolated the patient, and sent his specimen for testing at the CDC and also at a Texas laboratory.¹⁴⁹ The patient passed away on October 8, 2014.¹⁵⁰

Then, on October 15, 2014, a healthcare worker who provided care for Mr. Duncan tested positive for Ebola at Texas Presbyterian Hospital.¹⁵¹ This healthcare worker was transferred to Emory Hospital in Atlanta, Georgia.¹⁵² Because the healthcare worker had traveled by air from Dallas to Cleveland on October 10, and from Cleveland to Dallas on October 13, the CDC followed up to ensure that all passengers and crew members on both flights were contacted by public health professionals to answer questions, and to arrange follow-ups as necessary.¹⁵³ Fortunately, the patient recovered and was discharged on October 28th.¹⁵⁴ By November 3rd all passengers on either flight completed the twenty-one day monitoring period.¹⁵⁵

On October 23, 2014, the New York City Department of Health and Mental Hygiene reported a case of Ebola in a medical aid worker who had served with Doctors without Borders in Guinea and returned to New York City.¹⁵⁶ The CDC confirmed the diagnosis on October

<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/united-states-imported-case.html> [<https://perma.cc/QFB8-YY68>].

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* Local public health officials identified all close contacts of the index patient for daily monitoring for 21 days after exposure. *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

24th.¹⁵⁷ Fortunately, the patient recovered and was discharged from Bellevue Hospital Center on November 11, 2014.¹⁵⁸

Once the first laboratory-confirmed Ebola case was reported in the United States, one could immediately see the difference between the United States (the West) and Africa in coping with this outbreak. As aptly stated by CDC Director Dr. Tom Frieden: “Ebola can be scary. But there’s all the difference in the world between the U.S. and parts of Africa where Ebola is spreading. The United States has a strong health care system and public health professionals who will make sure this case does not threaten our communities.”¹⁵⁹

III. HUMAN RIGHTS OF PATIENTS AND WORKERS VERSUS PROTECTING SPREAD OF DISEASE

A. Siracusa Principle

The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant for Civil and Political Rights (“ICCPR”) was developed in Siracusa, Italy, in 1984.¹⁶⁰ A historical background indicating the rationale at the time behind the Siracusa principles should be insightful.

In the 1970s, there was an international “epidemic” of state emergencies that resulted in political unrest in countries like Argentina, Brazil, Chile, Egypt, India, Ireland, Malaysia, and

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ Press Release, Ctrs. for Disease Control and Prevention, CDC and Texas Health Department Confirm First Ebola Case Diagnosed in the U.S. (Sept. 30, 2014) <http://www.cdc.gov/media/releases/2014/s930-ebola-confirmed-case.html> [<https://perma.cc/6KDU-7WZK>].

¹⁶⁰ U.N. Commission on Human Rights, *The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights*, U.N. Doc. E/CN.4/1985/4 (Sept. 28, 1984), <http://www.refworld.org/docid/4672bc122.html> [<https://perma.cc/NJG7-PQ6P>]. This international conference was held in Siracusa, Italy from April 30 to May 4, 1984. *Id.* The gathering was sponsored by the International Commission of Jurists, the International Association of Penal Law, the American Association for the International Commission of Jurists, the Urban Morgan Institute of Human Rights, and the International Institute of Higher Studies in Criminal Sciences. *Id.*

Pakistan.¹⁶¹ These state emergencies occurred against the backdrop of the Cold War, where those who did not agree with the national government of their countries were often labelled as dissidents, agents of an international enemy, and/or as threats to national security.¹⁶² The national security doctrine, which, within the definition of security includes the ability of a state to defend against external and internal aggression and rebellion, came about as a result of such practices.¹⁶³

As such, the Siracusa Principles were conscripted in response to concerns about the violation of individual human rights that could occur when a state acts to protect the public good, but however, limits the rights of individuals.¹⁶⁴ While it is important to respect and preserve the ‘rule of law’ under such circumstances, while also protecting the human rights of others, there are interpretive difficulties as to the protection of human rights during state emergencies. Firstly, there is the understanding of many governments that in times of crises, they are free from any form of control and therefore could have recourse to any means deemed necessary to deal with such crises.¹⁶⁵ Secondly, some governments do not think that international humanitarian covenants are applicable in cases where the conflict is completely internal, and consequently there is no officially declared war under such circumstances.¹⁶⁶

The Siracusa Principles can be interpreted as trying to ensure careful consideration in balancing the rights of the individual against the state’s interest in ensuring the well-being of the larger population.¹⁶⁷ The International Covenant for Civil and Political Rights permits states to derogate from certain human rights

¹⁶¹ Sara Abiola, *The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant for Civil and Political Rights (ICCPR): History and Interpretation in Public Health Context*, HEALTH RIGHTS, 3 (2011), <http://health-rights.org/index.php/cop/item/memo-the-siracusa-principles-on-the-limitation-and-derogation-provisions-in-the-international-covenant-for-civil-and-political-rights-iccpr-history-and-interpretation-in-public-health-context> [<https://perma.cc/873V-3N44>].

¹⁶² *Id.* at 3.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 3-4.

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at 7.

obligations, but however, while subject to certain conditions. Art. 4 of the ICCPR provides that:

“In times of public emergency which threatens the life of the nation and the existence of which is officially proclaimed, the state parties to the present Covenant may take measures derogating from their obligations under the present Covenant to the extent strictly required by the exigencies of the situation provided that such measure are not inconsistent with their other obligations under international law and do not involve discrimination solely on the ground of race, color, sex, language, religion or social origin.”¹⁶⁸

Most human rights treaties envisage a system of derogations that allows state parties to vary their obligations temporarily under the treaty in extraordinary circumstances that are in times of public emergency threatening the life of the nation.¹⁶⁹ Therefore, the derogation regime aims at striking a balance between the protection of individual human rights and the protection of national needs in times of crises, and does so by placing reasonable limits on emergency powers.¹⁷⁰ The Siracusa Principles on the limitations and derogation provisions of the ICCPR provide guidelines for the rationalization of limitations of ICCPR rights. So, whenever a limitation is required in terms of the Covenant, it has to be necessary.¹⁷¹ This term implies that the limitation:

¹⁶⁸ International Covenant on Civil and Political Rights art. 4, Dec. 16, 1966, 999 U.N.T.S. 171, 174.

¹⁶⁹ Tahmina Karimova, *Derogation from Human Rights Treaties in Situations of Emergency*, Derogation from Human Rights Treaties in SituProject, http://www.geneva-academy.ch/RULAC/derogation_from_human_rights_treaties_in_situations_of_emergency.php [https://perma.cc/76N6-6HH7] (last visited September 15, 2016). Different states may be subject to different emergency derogation regimes, and depending on the state’s adherence to the particular treaty derogation rights may vary from treaty to treaty. Convention for the Protection of Human Rights and Fundamental Freedoms art. 15, Nov. 4, 1950, 213 U.N.T.S. 221; American Convention of Human Rights art. 27, Nov. 21, 1969, 1144 U.N.T.S. 143.

¹⁷⁰ Karimova, *supra* note 169.

¹⁷¹ *Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights*, AMERICAN ASS’N FOR THE INT’L COMM’N OF JURISTS, 6 (1985), <http://icj.wpengine.netdna-cdn.com/wp->

*. . . be based on one of the grounds justifying limitations recognized by the relevant article of the Covenant; Responds to a pressing public or social need; Pursues a legitimate aim; Is proportionate to that aim and any assessment as to the necessity of a limitation should be made on objective considerations.*¹⁷²

In the context of limitations in light of public health, the Siracusa Principles necessitate that any measures that limit individual human rights be: 1) provided for and carried out in accordance with law, 2) directed toward a legitimate objective of general interest, 3) strictly necessary in a democratic society to achieve the objective, 4) be least intrusive and restrictive to achieve the objective, 5) be based on scientific evidence, 6) be neither arbitrary nor discriminatory in application and of limited duration, 7) be respectful of human dignity, and 8) be subject to review.¹⁷³ Consequently, public health may be invoked as grounds for limiting certain rights in order to let a state take measures to deal with a serious threat to the health of its population as a whole, or the individual members of its population.¹⁷⁴ Such measures must be specifically aimed at preventing disease or injury, or providing care for the sick or injured.¹⁷⁵ In so doing, due regard must be given to the World Health Organization's International Health Regulations ("IHR").¹⁷⁶

content/uploads/1984/07/Siracusa-principles-ICCPR-legal-submission-1985-eng.pdf [https://perma.cc/6CSY-Y3XY] .

¹⁷² *Id.* Furthermore, the Siracusa Principles state the following regarding the limitations: In applying a limitation, a state shall use no more restrictive means than are required for the achievement of the purpose of the limitation . . . [t]he burden of justifying a limitation upon a right guaranteed under the Covenant lies with the state . . . [t]he requirement expressed in Article 12 of the Covenant that any restrictions be consistent with other rights recognized in the Covenant is implicit in limitations to the other rights recognized in the Covenant. . . . [t]he limitation clauses of the Covenant shall not be interpreted to restrict the exercise of any human rights protected to a greater extent by other international obligations binding upon the state. *Id.*

¹⁷³ Abiola, *supra* note 161, at 7.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

In order to activate the derogation clause, there must be the existence of a situation that amounts to a public emergency.¹⁷⁷ According to the Human Rights Commission (HRC): [n]ot every disturbance or catastrophe qualifies as a public emergency which threatens the life of the nation.¹⁷⁸ The European Court of Human Rights (ECtHR) qualified the time of public emergency as: “an exceptional situation of crisis or emergency which afflicts the whole population and constitutes a threat to the organized life of the community of which the community is composed.”¹⁷⁹

Public health cases can exemplify the application of the Siracusa Principles,¹⁸⁰ primarily in the realm of infectious disease control, such as was the case with the multidrug resistant TB, the pandemic influenza, SARS, and HIV/AIDS, and now with Ebola, situations that will press states to derogate. Were the Siracusa Principles appropriately applied in the case of Ebola outbreak?

B. Human Rights and Quarantine of Ebola Patients

Freedom of movement is a human right that should only be limited in extreme circumstances.¹⁸¹ The compulsory quarantine of a patient suspected of having an infectious disease should only be a measure of last resort, and should actually be undertaken only after voluntary measures to isolate the patient have failed.¹⁸²

Meddling with the freedom of movement when instituting quarantine or isolation for a communicable disease such as Ebola, MDR-TB, and XDR-TB may be necessary for the public good, and

¹⁷⁷ Karimova, *supra* note 169, at 1.

¹⁷⁸ *See id.* at 3. Absent a specific definition of “public emergency” in the ICCPR and the European Commission on Human Rights (“ECHR”), interpretations of the meaning and scope of the phrase were provided by the Human Rights Commission (HRC) and jurisprudence of the ECHR. *Id.*

¹⁷⁹ *Id.* *See also* Lawless v. Ireland (No. 3), 1 Eur. Ct. H.R. (1961).

¹⁸⁰ *See generally* Karimova, *supra* note 169. It is no stretch of the imagination, especially in light of the most recent outbreak of Ebola, to see that any epidemic sufficiently pervasive can press the boundaries and either fall short of or exceed the line of “public emergency”, and therefore see that these are situations that demand further analysis for their human rights implications.

¹⁸¹ *See WHO Guidance On Human Rights and Involuntary Detention For xdr-tb Control*, WORLD HEALTH ORG. (Jan. 24, 2007), http://www.who.int/tb/features_archive/involuntary_treatment/en/ [<https://perma.cc/BN2P-HT4X>].

¹⁸² *Id.*

likewise, considered legitimate under international human rights law.¹⁸³

However, the key factor in determining if necessary protections exist when rights are restricted is that each one of the five criteria of the Siracusa Principles point (6) must be met, albeit in a limited fashion and subject to review and appeal.¹⁸⁴ The Siracusa Principles require that:

*[1)] The restriction [be] provided for and carried out in accordance with the law; . . . [2)] The restriction [be] in the interest of a legitimate objective of general interest; . . . [3)] The restriction [be] strictly necessary in a democratic society to achieve the objective; . . . [4) That t]here [be] no less intrusive and restrictive means available to reach the same objective; . . . [and 5) That t]he restriction [be] based on scientific evidence and not drafted or imposed arbitrarily i.e. in an unreasonable or otherwise discriminatory manner.*¹⁸⁵

The main question becomes: Were the above principles observed during the quarantines that took place throughout the Ebola outbreak of 2014?

Even though different circumstances may exist in relation to quarantines between the three West African countries that have been worst hit by the virus (Liberia, Guinea and Sierra Leone),¹⁸⁶ all three countries imposed quarantines at various points in time in an effort to control the further spread of the disease.¹⁸⁷ In Guinea, for example,

¹⁸³ *Id.*

¹⁸⁴ See *Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights*, *supra* note 168.

¹⁸⁵ *Id.*

¹⁸⁶ See HUMAN RIGHTS WATCH, *supra* note 19. In his July 30 broadcast to the nation, and then on August 7, Sierra Leone's President Koroma announced a state of emergency and a number of measures to respond to the crisis under section 29(5) of the 1991 constitution. *Id.* These measures, which were to be taken for 60 to 90 days, included quarantines in all epicenters of the disease enforced by the police; and the protection of health workers and centers by the police and the military. *Id.* The president also called on local leaders and chiefs to establish by-laws that would complement other efforts to deal with the disease. *Id.*

¹⁸⁷ See Fiona Lander, *Human Rights and Ebola: The Issue of Quarantine*, TRANSNATIONAL GLOBAL HEALTH (Nov. 5, 2014), http://blogs.plos.org/globalhealth/2014/11/ebola_and_human_rights/ [<https://perma.cc/6KVS-5AM3>].

President Condé declared on state television a national public health emergency.¹⁸⁸ The measures that the president announced included the institution of a quarantine enforced by health workers and security forces of anyone suspected of having the disease until test results were obtained.¹⁸⁹ The president further stated that “[a]nyone who blocks or incites someone to block in any way the detection, isolation treatment, or examination of a sick person, of a suspect case or contact will be considered a menace to public health and will be brought before the law.”¹⁹⁰

In Sierra Leone, the government imposed a quarantine for three days (from September 19 to September 21, 2014), requiring: “everybody. . . to stay indoors as 7,000 teams of health and community workers went door to door to root out hidden Ebola patients.”¹⁹¹ This was essential, especially given that people were apparently keeping loved ones at home.¹⁹² As a government spokesman stated: “It’s clear that we have pockets of resistance, in terms of denial.”¹⁹³ Although such methods of disease control may have been applauded by some as the best possible way to target hidden patients, international health organizations have generally been against such forced measures in fighting the epidemic.¹⁹⁴ They argue that these methods add a punitive element to disease control, and increase hardships for the communities hardest hit by the virus, as well as undermine the needed trust and cooperation that is necessary.¹⁹⁵ Doctors Without Borders had been working within the region and warned that lockdown could exacerbate the problem: “It has been our experience that lockdowns and quarantines do not help control Ebola, as they end up driving people underground and jeopardizing the trust between people and health

¹⁸⁸ HUMAN RIGHTS WATCH, *supra* note 19. On August 13, 2014, the President declared as such under the public health code law 97 of June 19, 1997. *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ *Id.*

¹⁹¹ Adam Nossiter, *Sierra Leone to Impose 3-Day Ebola Quarantine*, N.Y. TIMES, Sept. 6, 2014, at A12, http://www.nytimes.com/2014/09/07/world/africa/sierra-leone-to-impose-widespread-ebola-quarantine.html?_r=0 [<https://perma.cc/UGW8-FFZT>].

¹⁹² *See id.*

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

providers.”¹⁹⁶ On the other hand, a United Nations official supported the idea of traveling house-to-house.¹⁹⁷ Roeland Monash, a UNICEF Representative agreed stating the fight will be won by traveling house-to-house to stop transmission, rather than at an Ebola clinic.¹⁹⁸

By the same vein, the decision by several states in the United States, including Florida, Illinois, New Jersey, and New York, to impose a mandatory quarantine on healthcare workers, who happened to be mostly volunteers returning from the three countries in West Africa, was met with some resistance.¹⁹⁹ The quarantine caused an unnecessary hardship on people, for example with returning nurse Ms. Kaci Hickox, Ms. Hickox had been caring for Ebola patients in association with Doctors Without Borders in Sierra Leone.²⁰⁰ The quarantine order often sends the wrong message instead of the important information about the transmission of the virus, namely that it is transmitted by someone who is symptomatic and can only be transmitted through direct contact with bodily fluids such as blood.²⁰¹

Ms. Hickox, after arriving at Newark Liberty Airport in New Jersey, and after a seven-hour wait at the hospital, was put in an isolation tent inside University Hospital in Newark that was poorly heated and with no running shower or toilet.²⁰²

Twice, Ms. Hickox tested negative for Ebola, including under a test at the Centers for Disease Control and Prevention in Atlanta.²⁰³ Hickox, who told CNN that her “basic human rights have been

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

¹⁹⁹ See Vesna Jaksic, *States Should Not Issue Blanket Quarantine Orders for Medical Workers Returning from Ebola-Stricken Countries*, *Physicians for Human Rights*, PHYSICIANS FOR HUMAN RIGHTS (Oct. 2014), http://physiciansforhumanrights.org/library/statements/states_should_not_issue_ebola_quarantines.html?referrer=https://www.google.com/#sthash.zyFxQpRt.dpuf [<https://perma.cc/K8A7-CKHY>].

²⁰⁰ *Ebola Nurse Claims Forced Quarantine Violates Her Human Rights*, CNN WIRE (Oct. 26, 2014), <http://kdvr.com/2014/10/26/ebola-nurse-claims-forced-quarantine-violates-her-human-rights/> [<https://perma.cc/CAC9-5LWY>] [hereinafter CNN WIRE]. *Id.*

²⁰¹ See Jaksic, *supra* note 199.

²⁰² CNN WIRE, *supra* note 200.

²⁰³ *Id.*

violated,” was released two days after testing negative for Ebola.²⁰⁴ The coercive mandatory quarantine of Kaci Hickox was criticized as “heavy-handed and draconian.”²⁰⁵ On the other hand, the Governor of New Jersey, Chris Christie, said on Fox News that he had “no second thoughts” about New Jersey’s mandatory quarantine for health care workers.²⁰⁶ He continued: “I believe that folks who want to take that step and are willing to volunteer also understand that it’s in their interest and the public health interest to have a 21-day period thereafter if they’ve been directly exposed to people with the virus.”²⁰⁷ The Governor also stated he did not believe that a voluntary system of quarantine could be reliable.. According to him, “[quarantine] is the government’s job.”²⁰⁸ Ms. Hickox retorted by stating that mandatory quarantine is “not a sound public health decision,” and that she believes that public health officials and not politicians should be making policies pertaining to Ebola and public safety.²⁰⁹

Is it legal for the US government to quarantine individuals, or groups of people?²¹⁰ Although the West African epidemic demands stringent measures to prevent the further spread of the virus

²⁰⁴ Tim Mak, *Are Mandatory Ebola Quarantines Legal?*, THE DAILY BEAST (Oct. 28, 2014),

<http://www.thedailybeast.com/articles/2014/10/28/are-mandatory-ebola-quarantines-legal.html> [<https://perma.cc/6WUP-Z6SM>].

²⁰⁵ *Id.*

²⁰⁶ CNN WIRE, *supra* note 200.

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ Mak, *supra* note 204. New quarantine regulations were proposed in 2005, amid fears of the pandemic flu and bioterrorism. *Id.* Under those rules, the airlines were required to keep records that would allow health officials to keep track of passengers. *Id.* The concept of a “provisional quarantine” would have permitted the federal government to detain individuals for up to three days, with no method for appeal, if the Centers for Disease Control and Prevention believed that a person was infected with certain illnesses. *Id.* This didn’t work, as people were so uncomfortable about the answers to questions posed that they decided not to answer them at all. *Id.* The rules were withdrawn in 2010 by the Obama administration after civil-liberties organizations protested, and airlines complained about compliance costs. *Id.* The federal government tends to be responsible for quarantining individuals traveling from outside the United States, or even between states; by contrast, state and local governments apparently have control over individuals who are traveling only locally. *Id.*

which may and should include imposition of quarantine protocols that comply with international law, it is trite to say that the quarantine protocols for returning health workers introduced in New Jersey, and amongst other States, were not justifiable under international law, and more importantly, that they were not sustained by scientific evidence.²¹¹ Consequently, the adoption of “overly-broad quarantines and other abusive measures can undermine efforts to contain the Ebola epidemic.”²¹² A better and preferable approach would be to “ensure that people have access to health information and care.”²¹³ Only if and when such limits are unquestionably necessary and based upon protections delineated under international human rights law should restrictions on liberty or movement be imposed upon civilians.²¹⁴

C. Gender Discrimination and Ebola

Although different epidemics affect populations in different ways, “the gender disparities documented in countries affected by West Africa’s Ebola outbreak are actually the norm during disasters across the globe.”²¹⁵ By August 2014, approximately 55–60% of all Ebola fatalities in Guinea, Liberia, and Sierra Leone were women.²¹⁶ According to one Liberian minister at an Ebola task force meeting, health teams had reported that as much as 75% of Ebola victims were women.²¹⁷ Globally, “women and children are 14 times more likely to die in a disaster than are men.”²¹⁸ Looking at HIV/AIDS as another example of an infectious disease, one can see that women in Africa are

²¹¹ See Lander, *supra* note 187.

²¹² See HUMAN RIGHTS WATCH, *supra* note 19, at 4.

²¹³ *Id.*

²¹⁴ *Id.*

²¹⁵ *Why More Women Than Men Are Dying From Ebola*, PUBLIC HEALTH WATCH (Aug. 30, 2014), <https://publichealthwatch.wordpress.com/2014/08/30/why-more-women-than-men-are-dying-from-ebola/> [<https://perma.cc/X4DS-9LBB>].

²¹⁶ Caelainn Hogan, *Ebola Striking Women More Frequently than Men*, WASH. POST (Aug. 14, 2014), https://www.washingtonpost.com/national/health-science/2014/08/14/3e08d0c8-2312-11e4-8593-da634b334390_story.html?utm_term=.21d46a8bbb48 [<https://perma.cc/5J3V-WSJN>].

²¹⁷ *Id.*

²¹⁸ See PUBLIC HEALTH WATCH, *supra* note 212.

also disproportionately affected in relation to men.²¹⁹ Sub-Saharan Africa has the most serious HIV and AIDS epidemic in the entire globe.²²⁰ In 2013, roughly 25 million HIV infected persons, or 70% of the world's infected, were living in the region.²²¹ In Sub-Saharan Africa, like in many parts of the world, the HIV epidemic disproportionately affects women due to social and economic inequalities present.²²² However, Ebola differs significantly from HIV in that the risk in transmitting Ebola is “present in day to-day interaction”, while HIV is more difficult to transmit.²²³ In fear of an increased possibility of infection posed by Ebola, there were calls for limitations on international travel from the countries impacted by the outbreak, namely for denying infected person's entry into countries where they could receive high quality medical treatment.²²⁴ This is likely the reason why during the outbreak, Senegal closed its borders with Guinea, and President Ellen Sirleaf closed most of Liberia's borders, both nations attempting to contain this contagious virus.²²⁵

The traditional gender roles played by women in West Africa makes them more vulnerable to Ebola infection.²²⁶ For example, the women are generally the caregivers of the family and therefore tend to the sick, and in the lethal cases of Ebola, would logically be the ones to perform funeral rites like washing bodies and preparing them for burial.²²⁷ Likewise, as caregivers and providers, they would engage in

²¹⁹ See *HIV and AIDS in Sub-Saharan Africa*, AVERT, <http://www.avert.org/hiv-aids-sub-saharan-africa.htm#sthash.5q9ZNPu0.dpuf> (last updated Apr. 25, 2016) [<https://perma.cc/BZ5X-A3TC>].

²²⁰ *Id.*

²²¹ *Id.*

²²² *Id.*

²²³ Kirchner, *supra* note 10.

²²⁴ Jacque Wilson, *Borders Closing Over Ebola Fears*, CNN (Aug. 22, 2014), <http://www.cnn.com/2014/08/22/health/ebola-outbreak/> [<https://perma.cc/GNT9-Z6ND>].

²²⁵ *Id.* Guinea and Sierra Leone did the same. Kenya, South Africa and others in the region also limited travel to and from the areas. *Id.*

²²⁶ Anjali Manivannan, *Gender Inequalities in Access to Information about Ebola as Gender-Based Violence*, HARV. HUM. RTS. J. ONLINE 1 (June 22, 2015), http://harvardhrj.com/wp-content/uploads/2015/06/Manivannan_Final-pdf1.pdf [<https://perma.cc/YL3G-KM7H>].

²²⁷ *See id.*

activities and occupations such as carrying out cross-border trading, health work, and serving as traditional birth attendants.²²⁸

Unfortunately, these realities place women at a greater risk of coming into contact with EVD.²²⁹ Likewise, because “information remains a powerful weapon”, sociocultural intensive barriers to “women’s access to appropriate health information” have worsened the susceptibility of women to Ebola.²³⁰ Discrepancies in the ability of men and women to access information stems largely from gender inequalities in literacy and secondary education.²³¹ “[The] inadequate provision of gender-sensitive information continues to pose threats to ending the proliferation of disease.”²³² As exemplified by the many years of HIV/AIDS epidemic, the gender gap in the rate of infection between men and woman is invariably reflected by the difference in access to health information, and arguably widens the gender gap even more.²³³ Other factors that contribute to women’s vulnerability include “rigid gender role expectations, gendered poverty, and the influence of ‘boy preference’” on the allotment of education, nutrition, and other vital resources.²³⁴ Women more often than not face social and cultural exclusions that “inhibit their ability to respond effectively in crises.”²³⁵ While one can’t predict or prevent all future epidemics, one can certainly change the way women are affected by them, and hopefully limit the level of uncalled-for suffering involved.²³⁶ Some good policy guidelines and recommendations to take into consideration by governments and relief agencies relating to the role of gender during a crisis like Ebola include:

[1)] Including women in strategizing when assessing the scope of problems and designing responses. . . [2)]

²²⁸ *Id.*

²²⁹ See HUMAN RIGHTS WATCH, *supra* note 19.

²³⁰ Manivannan *supra* note 226, at 1.

²³¹ *Id.* at 3.

²³² *Id.*

²³³ *Id.*

²³⁴ PUBLICHEALTH WATCH, *supra* note 215. See Mannivan, *supra* note 226, at 3.

²³⁵ PUBLICHEALTH WATCH, *supra* note 215. For example, “[i]f a man is sick, the woman can easily bathe him, but the man cannot do so [for the woman].” *Id.* (“Traditionally, women will take care of the men as compared to them taking care of the women.”).

²³⁶ *Id.*

*Ensuring equal distribution of care, facilities, aid and other resources. . . [3]) Raising the overall status of girls and women so that they are well-fed, educated and can work. . . [5]) Investing in programs that challenge social attitudes leading to boy preferences and gross imbalances in care and work.*²³⁷

D. The Rights to Information

In an effort to control and safeguard their reputation, the governments of Guinea, Liberia, and Sierra Leone were said to have been curtailing freedom of expression especially with regards to the Press, thereby regulating the Ebola crisis information outbreak in a manner that protected the government.²³⁸ Given that journalists are often key disseminators of public health education information, such government restrictions tend to compromise people's access to timely, accurate information about Ebola, which in turn leads to ignorance and consequently to fear about the disease.²³⁹ Yet, the right to health as codified in the International Covenant on Economic, Social and Cultural Rights (ICESCR) depends on access to health information, which is an important determinant of health.²⁴⁰ In fact, under the ICESCR, state parties are required to take steps essential for "[t]he prevention, treatment and control of epidemic, endemic, occupational and other diseases."²⁴¹ This at the very minimum requires states to

²³⁷ Soroya Chemaly, *Ebola Isn't Unique: Women are Significantly More Likely to Die in Disasters*, HUFFINGTON POST (Oct. 21, 2014, 1:29 PM), http://www.huffingtonpost.com/soraya-chemaly/women-and-disaster-relief_b_5697868.html [<https://perma.cc/ABR6-YEV4>]; see Lin Chew & Kavita N. Ramdas, *Caught in the Storm: The Impact of Natural Disasters on Women*, THE GLOBAL FUND FOR WOMEN (2005), <https://www.globalfundforwomen.org/wp-content/uploads/2006/11/disaster-report.pdf> [<https://perma.cc/6D85-SZ5U>].

²³⁸ See Manivannan, *supra* note 226, at 1.

²³⁹ *Id.*

²⁴⁰ Committee on Economic, Social and Cultural Rights, CESCR General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12), ¶¶ 2-4, U.N. Doc. E/C.12/2000/4 (2000), at <http://www.ohchr.org/Documents/Issues/Women/WRGS/Health/GC14.pdf> [<https://perma.cc/RU9B-ZCZD>], [hereinafter CESCR General Comment No. 14]; *id.* at ¶11.

²⁴¹ *Id.* at ¶ 16.

provide access to vital information on preventing and controlling the main health problems in the community.²⁴²

Nongovernmental organizations, local newspapers, and community radio, have and will continue to play a key role in public health education.²⁴³ In Liberia, the Civil Society Organization's Ebola Response Task Force produced clear messages about how the virus is transmitted and about how to prevent the disease, in local languages, while also "using the voices of traditional and religious leaders that have aired on 44 community-based radio stations."²⁴⁴ The plans of the Task Force to establish a "situation room" for monitoring the Liberian government's response to the Ebola crisis, including accountability in the use of resources by the National Task Force and the access to health facilities, was commendable.²⁴⁵ In Sierra Leone's Kailahun district, one of the epicenters of the outbreak near the border with Liberia and Guinea, a local community radio station, Radio MOA, in conjunction with other community-based organizations, formed their own Ebola Response Task Force and "organized a campaign to combat the rumors that were undermining the medical response."²⁴⁶ They transmitted interviews with health experts, officials, and Ebola survivors on the airwaves, reaching tens of thousands of resident in all three countries.²⁴⁷

UNESCO has been quite instrumental in disseminating information to fight Ebola through the media.²⁴⁸ Following the United Nation's unanimous adoption of the General Assembly's resolution 69/1 on September 19, 2014, and the adoption of the Security Council's resolution 2177 in 2014, to stop the Ebola outbreak,

²⁴² *Id.* ¶ 44.

²⁴³ HUMAN RIGHTS WATCH, *supra* note 19, at 6; *see* Manivannan, *supra* note 226, at 1; *id.* at 6-7.

²⁴⁴ HUMAN RIGHTS WATCH, *supra* note 19, at 6.

²⁴⁵ *Id.*

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ *See* Irina Bokova, *Foreword* to UNITED NATIONS EDUC. SCIENTIFIC AND CULTURAL ORG., UNESCO'S RESPONSE TO EBOLA, (Dec. 2014), <http://unesdoc.unesco.org/images/0023/002311/231158e.pdf> [<https://perma.cc/HHY8-XFXX>].

UNESCO launched a media project in Liberia and Sierra Leone.²⁴⁹ “The provision of clear and reliable information is essential for a better understanding of the disease at the community level and as a bulwark for more effective prevention.”²⁵⁰ Thus, by communicating risk factors, methods of prevention, and approaches for safe intervention to the people, the UNESCO project has sought to reinforce the governments of Sierra Leone and Liberia in their respective fights to prevent the spread of the disease.²⁵¹ Strengthening prevention in order to suspend the further spread of the disease starts with “clear, accessible, and reliable information provided to people in all districts and counties,” said the Director-General, Irina Bokova.²⁵² “Stopping Ebola requires effective action by individual women and men, at the community level, and this project will help us reach and support them.”²⁵³ International advocacy is therefore vital in transforming negative media accounts about Ebola into objective and realistic ones that reflect malleability and are balanced with role-model stories.²⁵⁴

IV. THE RESPONSE OF THE INTERNATIONAL COMMUNITY

The criticisms levied against the international community for being lukewarm towards the Ebola outbreak in Africa are not unfounded.²⁵⁵

Given the lack of investment in the health care systems of the three hardest hit countries in West Africa [Liberia, Sierra Leone and Guinea] investment that requires domestic political will and resources from the international community – the spread of Ebola was

²⁴⁹ *Fighting Ebola through Media*, UNESCO (October, 7, 2014), http://www.unesco.org/new/en/media-services/single-view/news/fighting_ebola_through_media/ [<https://perma.cc/6XUB-VEXF>].

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² *Id.*

²⁵³ *Id.*

²⁵⁴ UNITED NATIONS EDUC. SCIENTIFIC AND CULTURAL ORG., UNESCO’S RESPONSE TO EBOLA, (Dec. 2014), <http://unesdoc.unesco.org/images/0023/002311/231158e.pdf> [<https://perma.cc/HHY8-XFXX>] [hereinafter *UNESCO’S RESPONSE TO EBOLA*].

²⁵⁵ See Widney Brown, *Ebola: Dying of Poverty for Lack of a Functioning Health Care System*, PHYSICIANS FOR HUMAN RIGHTS (Oct. 21, 2014), <http://physiciansforhumanrights.org/blog/ebola-dying-of-poverty-for-lack-of-a-functioning-health-care-system.html> [<https://perma.cc/L3QL-MMJT>].

inevitable. Major missteps by the World Health Organization (WHO) and the delayed and frankly indifferent response of wealthier countries have exacerbated the situation. It is worth repeating: people in Liberia, Sierra Leone, and Guinea are dying of poverty.²⁵⁶

Gaffes by organizations like WHO, and the slow and indifferent responses from First World countries, initially made the situation worse.²⁵⁷ Former United Nations Secretary General Kofi Anan echoed this sentiment aptly when he described himself as “bitterly disappointed” in an international response that “lacked luster at best” and was “counter-productive at worse.”²⁵⁸

It seemed that rather than selecting and treating those with the disease in order to avert further transmission, “developed countries seemed to have been more concerned with preventing Ebola from spreading outside of West Africa.”²⁵⁹ This sent the message that the new normal in epidemic response is for “developed countries [just to] do their best to keep their walls up and outsiders at bay.”²⁶⁰

Because the international response to the Ebola crisis in West Africa has been slow and uneven, it inevitably left the local people, local governments, and on site NGOs to do most of the practical (and most dangerous), hands-on work.²⁶¹ Doctors Without Borders, also known as Médecins Sans Frontières (MSF), called for states with “biological-disaster response capacity to urgently dispatch human and material resources to West Africa,” and, after about three months, the international community had in fact gave at least some form of assistance to the three worst hit countries in the region, although it was

²⁵⁶ *Id.*

²⁵⁷ *Id.*

²⁵⁸ *Id.*

²⁵⁹ *Id.* Most governments were only taking “action commensurate with the extent of the crisis when Ebola cases were identified in the Western world.” *Id.* That is why a country like Cuba, despite having suffered crippling effects from the decades-old economic sanctions by the United States, has nonetheless been applauded as a “leader in responding to the crisis” for their quick, comprehensive response. *Id.*

²⁶⁰ *Id.*

²⁶¹ *Ebola: International Response Slow and Uneven*, DOCTORS WITHOUT BORDERS (Dec. 2, 2014), <http://www.doctorswithoutborders.org/article/ebola-international-response-slow-and-uneven> [<https://perma.cc/P6RC-BVKE>] [hereinafter *Response Slow and Uneven*].

still limited to very particular sorts of assistance.²⁶² The wealthy foreign governments focused mainly on financing or building Ebola case management structures, which, while nonetheless vital, left the staffing of the facilities to national authorities, local health care staff, and NGOs that lacked the required expertise.²⁶³ As would be expected, this was not sufficiently helpful, especially at such a precarious time and under the circumstances surrounding such a threat of disease, a threat to lives without regard for borders: “How is it that the international community has left the response to Ebola—now a transnational threat—to doctors, nurses and charity workers?”²⁶⁴ The cry was loud and clear when Doctors without Borders in Liberia cried out that they had exhausted their available pool of experienced medical staff and could not scale up their response any further: “We desperately need WHO, countries, and other aid agencies to deploy staff to the field. We are Doctors Without Borders but not without limits.”²⁶⁵ There was a “lack of adequate facilities for isolating and diagnosing patients where they were needed most.”²⁶⁶ This was especially so given that wherever there were new cases, an all-out response had to be put into motion, while simultaneously expecting local people, governments, and NGOs to be flexible in their approach, adding to the already mounting pressures on health care workers to have to carry out utility calculations of who needs the most, where, and when, with people’s lives hanging in the balance.²⁶⁷

Taking a closer look at some activities of the international community through the framework of WHO, the African Union, and the CDC should help shed some light regarding what they did or are currently doing to curtail the spread of Ebola and put affected African countries and the rest of the international community in a better position than they were in 2014.

²⁶² *Id.*

²⁶³ *Id.*

²⁶⁴ *Id.*

²⁶⁵ *Response to West Africa Ebola Epidemic Remains Dangerously Inadequate*, DOCTORS WITHOUT BORDERS (Aug. 15, 2014), <http://www.doctorswithoutborders.org/news-stories/field-news/response-west-africa-ebola-epidemic-remains-dangerously-inadequate> [https://perma.cc/936K-QDSC] [hereinafter *Response to West Africa Inadequate*].

²⁶⁶ *Response Slow and Uneven*, *supra* note 261.

²⁶⁷ *Id.*

A. WHO

WHO has been criticized for its initial handling of the Ebola outbreak. Therefore, taking a look at how WHO handled the outbreak would be helpful in understanding whether indeed it was effective or flawed in its response to a major epidemic under the circumstances they faced with the resources at their disposal.

WHO graded the initial Ebola outbreak in Guinea and Liberia as a Level 2 event according to its Emergency Response Framework (“ERF”).²⁶⁸ The Level 2 designation directs the WHO “to provide moderate support to the affected countries.”²⁶⁹ However, this level was increased to a Level 3 event on July 24, 2014, the Director-General of WHO realizing that the increasing severity of the outbreak in Guinea and Liberia required a more expansive response, and also based on the fact that the outbreak had seemingly spread to another nation: Nigeria.²⁷⁰ By initiating the Level 3 event designation, WHO’s response had to direct additional, substantial resources to the affected countries.²⁷¹

With the intensity of the outbreak, WHO, together with affected countries, launched the Ebola Virus Disease Response Plan for the period running from July to December 2014.²⁷² In an effort to rapidly prevent further spread of EVD in West Africa, WHO convened a special ministerial meeting on the outbreak.²⁷³ The meeting, which was held on July 2–3, 2014 in Accra, Ghana, brought together Ministers of Health and senior health officials from 11 African nations;²⁷⁴ it also brought together stakeholders in the affected regions, including Ebola survivors, representatives of airlines and mining

²⁶⁸ WORLD HEALTH ORG., EBOLA VIRUS DISEASE OUTBREAK RESPONSE PLAN IN WEST AFRICA 3 (Dec. 2014), *available at* <http://www.who.int/csr/disease/ebola/evd-outbreak-response-plan-west-africa-2014.pdf?ua=1> [<https://perma.cc/DNL3-ML98>].

²⁶⁹ *Id.*

²⁷⁰ *Id.*

²⁷¹ *Id.*

²⁷² *Id.* WHO had issued funding appeals and received a total USD 7,006,230 between March and April of 2014, which were exhausted before the end of the year, exceeding the initial appeal requests made for USD 4,800,00. *Id.*

²⁷³ *Id.* at 4.

²⁷⁴ *Id.* The nations present included: Côte d’Ivoire, Democratic Republic of the Congo, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Senegal, Sierra Leone, and Uganda. *Id.*

companies, and donor communities, groups that could serve as critical response partners in the months to come.²⁷⁵ The Accra meeting secured a consensus of opinion amongst the participants that the WHO would “lead and coordinate the international response to the outbreak.”²⁷⁶ The objective of the meeting had been to secure an even greater consensus as to “the optimal way to interrupt the ongoing [Ebola] transmission [rates] in West Africa” and therefore minimize “the human, social, and economic impact of the current outbreak,” and in turn, to learn how to deal with any future outbreaks.²⁷⁷ This was arguably achieved, the outcome of this meeting being the Strategy for Accelerated Response to the Ebola Outbreak in West Africa, which declared the two important strategies that would be pursued: 1. “Stop transmission of Ebola virus disease in the affected countries through [the] scaling up [of] effective, evidence-based outbreak control measures. . . . [and; 2.] Prevent the spread of EVD to the neighboring at-risk countries through strengthening [of] epidemic preparedness and response measures.”²⁷⁸

The strategic plan involved establishing the Sub regional Operations Coordinating Centre (“SEOCC”), which is now located in Conakry, Guinea.²⁷⁹ The center is the main operations center for West Africa, and served as a coordinating platform during the crisis, bringing together WHO and its partners to “consolidate, harmonize, and streamline the technical support to affected countries.”²⁸⁰ WHO

²⁷⁵ *Id.*

²⁷⁶ *Id.* at 3.

²⁷⁷ *Id.*

²⁷⁸ *Id.* Based on the epidemiological profile of the Ebola virus outbreak, the strategy was built on the following three major pillars and associated activities: (1) Immediate outbreak response interventions, including: assessment; reduction of the spread of disease and effective measures to interrupt transmission of Ebola virus disease. . . (2) Enhancing coordination and collaboration, including: (a) Building on local, regional and national coordination. . . (b) Whole of society response (incl. potential legislative action, involvement of the military, as appropriate; public order maintenance;). . . (c) Proactive preparedness promotion in neighboring countries – including through social mobilization and training. . . (3) Scaling-up of human and financial resources mobilization, including: . . . (a) Communication and public engagement (e.g. sharing responsibility for preparedness and response; communication for the general public; sharing of data and information)... (b) Linking health and social care responses. *Id.*

²⁷⁹ *Id.* at 6.

²⁸⁰ *Id.*

and the Regional Office for Africa continue to “coordinate international and regional deployments and activities, respectively,” and provide additional capacity to the SEOCC.²⁸¹

Perhaps unsurprisingly, considering many regional governments had declared the epidemic “national health emergenc[ies], each affected countries established a “National Task Force for Ebola Outbreak Response”.²⁸² The three most affected countries have also organized a series of discussions to empower their respective National Task Forces to further develop response plans.²⁸³ The Governments of Guinea, Liberia, and Sierra Leone implemented their respective national strategic plans for a quicker, and hopefully more effective response.²⁸⁴ The application of these operational plans over time have brought concrete improvements, and the scale up of effective outbreak containment measures is working, as recent statistics have shown that the Ebola outbreak has subsided.²⁸⁵

Despite success, however, the future challenges facing the task forces and other WHO-based initiatives cannot be ignored. Major challenges contributing to the on-going outbreak include: 1) Inadequate understanding within communities of the Ebola virus disease, especially given this is the country’s first experience with Ebola; 2) lack of experience among healthcare workers and limited capacities for a rapid response; 3) high exposure to Ebola virus in the communities through household care and customary burial procedures, and the resulting high level of community deaths leading to panic and anxiety; 4) denial, distrust, and rejection of proposed public health interventions arising from misapprehension of the cause of the new disease; 5) fear of the disease by forefront health workers leading to either suboptimal care for patients or substandard implementation of protective measures; 6) close community ties and movement within and across borders has led to difficulties in the tracing and the following up of contacts for the three countries; and, 7) the scale and

²⁸¹ *Id.*

²⁸² *Id.* at 8.

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *See id.*; George Dvorsky, *Approaching Zero: How West Africa is Crushing the Ebola Epidemic*, GIZMODO (Oct. 26, 2015, 11:00 PM), <http://gizmodo.com/approaching-zero-how-west-africa-is-crushing-the-ebola-1738267946> [<https://perma.cc/4FW5-BV3V>].

the geographical extent of the outbreak in Sierra Leone, and Guinea, require significant and robust response capacities and structures.²⁸⁶

B. The African Union

Some have criticized or even accused, the African leaders for failing to do enough to address the Ebola health crisis.²⁸⁷ “Ebola has exposed the extreme weaknesses of our institutions as governments; countries which are affected were found totally unprepared,” said Graca Machel, Nelson Mandela’s widow.²⁸⁸ Similarly, the AU has been criticized for “waiting 10 months before holding an emergency summit on the outbreak.”²⁸⁹ However, according to the African Union, Africa’s efforts to tackle the Ebola crisis has been largely undermined or unnoticed in spite of the fact that Africans have taken the lead in providing forefront staff, and have shown themselves “better placed to fight infectious diseases in their continent than outsiders.”²⁹⁰ Dr. Olawale Maiyegun, the director of social affairs at the AU commission, said that despite the fact that Africans have shown both the willingness and ability to deal with Ebola, “the focus has been on the work of international agencies and those with the greatest media clout,” overshadowing the work of Africans.²⁹¹ He continued by pointing out that, “[u]nfortunately, Africans do not have the international voice of CNN, BBC and France 24, [and as a result,]

²⁸⁶ See *Accepted Proposal to Award a Grant of USD 1,000,000 to Fight Ebola in Guinea*, AFRICAN DEVELOPMENT BANK GROUP (Aug. 18, 2014), http://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/GUINEA_-_SRF_emergency_assistance_for_Ebola_-_APPROVED__2_.pdf [https://perma.cc/CA5J-3LGN]. See also *Accepted Proposal to Award a Grant of USD 1,000,000 to Fight Ebola in Sierra Leone*, AFRICAN DEVELOPMENT BANK GROUP (Aug. 18, 2014), http://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/GUINEA_-_SRF_emergency_assistance_for_Ebola_-_APPROVED__2_.pdf [https://perma.cc/TB2J-33T8].

²⁸⁷ Sam Jones, *Ebola: Media ‘Overlooked Africa’s Role in Combating Crisis,’* THE GUARDIAN (Apr. 7, 2015), <https://www.theguardian.com/global-development/2015/apr/07/ebola-media-overlooked-africas-role-combating-crisis-african-union> [https://perma.cc/Y2KQ-NPK4].

²⁸⁸ *Id.*

²⁸⁹ *Id.*

²⁹⁰ *Id.*

²⁹¹ *Id.*

much of their work is overlooked in the western media.”²⁹² According to the African Union, “[t]he success of African health workers – including the heroic health workers of Liberia, Sierra Leone and Guinea – shows one thing: African health workers are better placed to fight infectious diseases in their continent than outsiders.”²⁹³ So, what has the African Union done to assist in dealing with the Ebola outbreak and prevention?

In its very first statement on the Ebola outbreak, the African Union expressed its “deep concern at the situation, and its full solidarity and support to the countries affected by this epidemic.”²⁹⁴ In April 2014, the AU began its response to the crisis; the first “African Ministers of Health Meeting”, was jointly convened by the African Union Commission (AUC) and the WHO in Luanda, Angola.²⁹⁵ The AU made a strong statement and appeal to its member states with experience in handling EVD to assist with the disease.²⁹⁶ The response was positive, given that some AU member states sent experts to the affected countries.²⁹⁷ Then, at its meeting in Addis Ababa, Ethiopia on August 19, 2014, the AU also adopted several decisions on the Ebola outbreak in West Africa, and approved the “immediate deployment of an African Union-led Military and Civilian Humanitarian Mission, encompassing nurses, medical doctors, and other medical and paramedical personnel.”²⁹⁸ It also included military personnel, which is required “for the effectiveness and protection of the Mission.”²⁹⁹ Following this decision was the formation of the ASEOWA team, a Strategic Task Force comprised of representatives from various AU departments, UN agencies, and partners.³⁰⁰ The ASEOWA Concept of

²⁹² *Id.*

²⁹³ *Id.*

²⁹⁴ Wilson, *supra* note 224.

²⁹⁵ AFRICAN UNION, African Union: Support to Ebola Outbreak in West Africa, (Jan. 26, 2015), http://pages.au.int/sites/default/files/FACT%20SHEET_as%20of%2026%20Jan%202015.pdf [https://perma.cc/YC5P-X7KM].

²⁹⁶ *Id.*

²⁹⁷ *Id.*

²⁹⁸ *See* Wilson, *supra* note 224.

²⁹⁹ *Id.*

³⁰⁰ *See* AFRICAN UNION, *supra* note 295. Within the ASEOWA task force are specialist agencies that are supporting the AU with expertise, information

Operations (CONOPs) envisioned “having up to 1000 health workers in the field, on a rotational basis over the next six-month period,” namely from December 2014–May 2015; success would be measured solely upon whether the affected countries were subsequently confirmed Ebola free.³⁰¹

An agreement to help create an African Center comparable to the Centers for Disease Control and Prevention was signed on Monday, April 13, 2015, between the United States and the African Union, embodying the United States’ commitment to promoting public health across Africa and global health security.³⁰² According to the news release, “[t]he African CDC is scheduled to launch sometime this year with the creation of an African Surveillance and Response Unit.”³⁰³ The plan is for the unit to “include an emergency operations center that can coordinate and staff future health emergency responses on the continent.”³⁰⁴ “Under the agreement, the U.S. CDC will provide the technical expertise for the new African unit, and advise on the future development of the institution.”³⁰⁵

The AUC’s decision to quicken the establishment of the CDC in Africa, has prompted: (1) “a rapid assessment of all CDC-type existing centers in Africa;” (2) the organizing of “a meeting of the Multinational Task Force that was established in June 2014, at the insistence of the African Ministers of Health;” a task force which deliberated “the type of CDC to be established, its areas of focus, and the relevant partnerships to support its functions;” (3) the creation of “a comprehensive but concise roadmap for the establishment and functioning of the African CDC by mid-2015;” and (4) the inclusion of “legal, structural, and financial implications of the establishment and

updates and additional resources. These partners include: UN agencies, the US Mission to the African Union, the US Center for Disease Control, the European Union, the African Humanitarian Action, and various Embassies who attend meetings from time to time. *Id.*

³⁰¹ *Id.*

³⁰² See Robert Preidt, *Healthday News, U.S. Agrees to Help Launch ‘African CDC’*, HEALTH DAY, April 13, 2015, <http://consumer.healthday.com/public-health-information-30/centers-for-disease-control-news-120/u-s-agrees-to-help-launch-african-cdc-698358.html> [<https://perma.cc/SLU6-A6J3>].

³⁰³ *Id.*

³⁰⁴ *Id.*

³⁰⁵ *Id.*

take off of the center, to be submitted to the January 2015 AU Assembly[.]”³⁰⁶

So, although not perfect or even the utmost, much has been done and is still being done by the AU to deal with this deadly disease. Indeed, the AU and the Economic Community of West African States have responded relatively well to the crisis, with the AU deploying more than 835 African health workers to Liberia, Sierra Leone, and Guinea at the peak of the epidemic.³⁰⁷ There is truth in the following statement: “The people of the affected countries should be given credit for doing a good job,” despite their weak health infrastructures and institutions.³⁰⁸

C. The CDC

The one-year anniversary of the CDC’s participation and response to the Ebola outbreak was on July 9, 2015.³⁰⁹ As soon as the CDC became aware of the outbreak, it dispatched a team of experts to Guinea.³¹⁰ Although the number of outbreaks continues to subside, the CDC continues to monitor and maintain experts in the most affected regions.³¹¹ Between 2014 and 2015, the CDC dispatched more than a thousand employees to Guinea, Liberia, and Sierra Leone.³¹² Many of these workers have made the trip more than once.³¹³ Others, still “[t]housands more, have also worked on the Ebola response from the CDC’s headquarters in Atlanta, Georgia, as well as from other areas in the United States, and from other countries around the world.”³¹⁴ The CDC has, however, not responded alone, and in some cases has collaborated with partners, such as: “the ministries of health in West Africa, the World Health Organization, the CDC Foundation, or with

³⁰⁶ See AFRICAN UNION, *supra* note 295.

³⁰⁷ *Id.*

³⁰⁸ See Jones, *supra* note 288 (quoting Dr. Olawale Maiyegun).

³⁰⁹ *The Road to Zero, CDC’S Response to the West Africa Ebola Epidemic*, CTRS. FOR DISEASE CONTROL AND PREVENTION (2015), <http://www.cdc.gov/about/pdf/ebola/ebola-photobook-070915.pdf> [<https://perma.cc/TZX5-TEUS>] [hereinafter CDC, *Road to Zero*].

³¹⁰ See *id.* at 1.

³¹¹ See *id.*

³¹² *Id.*

³¹³ *Id.*

³¹⁴ *Id.*

other agencies of the U.S. government; for example, with the U.S. Agency for International Development (USAID), Doctors Without Borders (MSF), and other non-for-profit organizations.”³¹⁵

In May of 2015, “more than a year after the outbreak began, the World Health Organization declared the end of the Ebola outbreak in Liberia,” and yet just a month later, another case of Ebola was reported.”³¹⁶ However, “cases continue to be reported in Guinea and Sierra Leone” to this day.³¹⁷

The CDC’s work is not at an end. It “continues to work in West Africa with the goal of stopping new cases in affected countries and keeping them from spreading.”³¹⁸ How is the CDC in collaboration with its other partners in effectively doing so? Briefly highlighting some of the ways in which they cooperate with such partners will help pinpoint to strategies that may be used in the case of a future outbreak.

1. Protecting the Borders by Screening

As shown by the way it permeated the various nations of West Africa, Ebola has “proven how easily infectious diseases can cross borders, land, rivers, and even oceans,” infecting far beyond wherever they first strike.³¹⁹ The three most highly impacted West African countries generally have porous borders and a highly mobile population that enabled “the rapid spread of Ebola from its origin in Guinea.”³²⁰ In West Africa, border control measures are very much relaxed; “getting to another country could be as simple as taking a boat trip across a river.”³²¹ This makes it easy for a disease such as Ebola to spread across countries, consequently complicating contact tracing. Therefore, the CDC works with airlines, airports, ministries of health, and other partners to “provide technical assistance for conducting exit screenings and travel restrictions in countries with Ebola.”³²²

³¹⁵ *Id.*

³¹⁶ *Id.*

³¹⁷ *See id.*

³¹⁸ *Id.*

³¹⁹ *See* G.K. Ratnaprabha & S. Gagan, *Commentary On: Ebola Haemorrhagic Fever in Sudan, 1976*, 4 *Annals of Community Health* 14, 16, (2016).

³²⁰ CDC, *Road to Zero*, *supra* note 310, at 29.

³²¹ *Id.*

³²² *Id.* at 29. Exit screening helps to identify travelers who may have symptoms of Ebola, or who may have been exposed to Ebola, and thus prevent them from leaving a country until it is confirmed they are not sick. *Id.*

In the United States, the CDC required air travelers entering the country who have been in Guinea, Liberia, or Sierra Leone to undergo entry screening.³²³ As with exit screening, “entry screening helps to prevent the further spread of Ebola . . . by identifying travelers who may be sick with Ebola or may have had exposure to Ebola and by ensuring. . . travelers are directed to appropriate medical care.”³²⁴

2. Mobilizing Laboratories

The CDC attempts to set up labs close to treatment centers.³²⁵ Ebola treatment centers are no exception, and are usually run by MSF.³²⁶ Staff at treatment centers are formed into contact tracing teams that work to find individuals who have been exposed to patients with Ebola.³²⁷ Should those people develop Ebola symptoms during a twenty-one day monitoring period, they are brought back to the treatment centers where “healthcare workers wearing personal protective gear carefully take a blood sample and send it to the lab.”³²⁸

³²³ *Id.*

³²⁴ *See id.* However, as of June 17, 2015, entry screening changed for travelers coming to the United States from Guinea, Liberia, and Sierra Leone. *Id.* at 34. These travelers will continue to enter through one of five U.S. airports: New York JFK International Airport, Washington-Dulles International Airport, Newark International Airport, Chicago O’Hare International Airport, and Atlanta Hartsfield-Jackson International Airport. *Id.* Because the Ebola outbreak in Liberia is now virtually over, CDC no longer recommends active monitoring for those travelers arriving in the United States from Liberia. CDC, Questions and Answers: 2014 Ebola Outbreak, Ctrs. for Disease Control, (Feb. 18, 2016), <https://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/qa.html> [<https://perma.cc/4RXF-JUR8>]. Notwithstanding entry travelers will still have their temperatures taken and be asked questions about travel history and possible exposures to Ebola, as well as provide their contact information so that the health department at their destination can connect with them, if needed. *See* CDC, *Road to Zero*, *supra* note 309, at 34. Travelers still undergo exit screening before departing from Liberia. *Id.* Entry screening and monitoring is not changed for travelers entering the United States from Guinea or Sierra Leone – this includes travelers from Liberia who have also traveled to either Guinea or Sierra Leone within the past 21 days. *Id.*

³²⁵ *Mobilizing Laboratories*, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/about/ebola/mobilizing-laboratories.html> (last visited Dec. 28, 2016) [<https://perma.cc/46NM-F5E7>].

³²⁶ *Id.*

³²⁷ *Id.*

³²⁸ *Id.*

This is important, given that “early and accurate testing is critical” to preventing unnecessary spread.³²⁹ This CDC intervention is clear evidence that “an effective lab infrastructure . . . is essential for countries to rapidly detect and contain [EVD]”.³³⁰

3. Strengthening Health Care to Prevent Infections

Effective infection control can be achieved only with an empowered healthcare system, which will in turn, “protect communities and the healthcare workers who serve them.”³³¹ Prior to this most recent outbreak of Ebola, “infection control in health facilities in Guinea, Liberia, and Sierra Leone was often minimal at best,” and “[t]he fragile healthcare systems added to a rapid spread of the virus, and made it difficult to contain the epidemic.”³³² In addition, “community behaviors needed to change to prevent people from getting Ebola when” taking care of the sick, and “while participating in traditional burials.”³³³

On-the-ground training and health care education aimed at reducing the spread of the disease was provided.³³⁴ Microplanning sessions with a focus “on the early detection and safe isolation of patients, safe burials, and infection control in health care settings” were hosted by the CDC in Liberia.³³⁵ As a result of such experiences, “when the first case of Ebola was diagnosed in the United States, the

³²⁹ *See id.* Should the sample test negative, “the patient is referred to a non-Ebola clinic for diagnosis and treatment as well as for follow-up testing.” *Id.* “If the sample tests positive, then the patient is isolated in a treatment center.” *Id.* Because patients who survive Ebola must eventually leave the treatment center, that happens only when their bodies have cleared the virus and the lab test comes back negative. *Id.*

³³⁰ *Id.* “When lab responders arrived in Liberia and Sierra Leone . . . they quickly set up mobile labs in both countries.” *Id.* CDC runs a lab in Bo, Sierra Leone, and has jointly run another lab in Liberia with the National Institutes of Health, and currently supports labs in Liberia along with the U.S. Department of Defense. *Id.*

³³¹ *See Strengthening Health Care and Preventing Infections*, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/about/ebola/strengthening-health-care.html> (last visited Dec. 28, 2016) [<https://perma.cc/T6LB-FRF5>].

³³² *Id.*

³³³ *Id.*

³³⁴ *Id.*

³³⁵ *Id.*

CDC worked to tighten infection control procedures.”³³⁶ With the insights garnered from these innovative sessions and the direct experience of handling the EVD epidemic in Africa, the CDC has been able to “improve the preparation of healthcare workers and hospitals around” the United States as well.³³⁷

4. Burying the Dead

Another plight that comes with an Ebola outbreak is the need to bury the dead.³³⁸ However, “this cannot be done casually because corpses are one of the most infectious things. . . .”³³⁹ “If you come into contact with the dead body of an Ebola victim, you are very likely to get Ebola yourself.”³⁴⁰ Training others to bury dead is a necessity, therefore, to prevent infections to themselves and others.³⁴¹ In pursuit of this end, “people are trained how to put on protective suites, masks, goggles, and gloves; how to collect bodies; how to wrap the corpses; and how to bury them.”³⁴² It was very difficult for responders “to convince families that taking their loved ones to be buried was the right thing to do,” because so often “washing and burying the dead is an important [cultural practice].”³⁴³ As one CDC responder said, ““Burial teams told me over and over how they had to sit and talk to families for hours before the family would let them take the corpse away for safe burial. . . just to make a family understand why it was helping the whole community to allow their loved one to be buried without the usual ritual.””³⁴⁴ Needless to say, proper burial procedures would help in preventing the spread of Ebola.

5. Contact Tracing

Contact tracing is a vital component in preventing the spread of Ebola in an outbreak.³⁴⁵ Person-to-person transmission can lead to a

³³⁶ *Id.*

³³⁷ *Id.*

³³⁸ *Id.*

³³⁹ *Id.*

³⁴⁰ *Id.*

³⁴¹ *Id.*

³⁴² *Id.*

³⁴³ *Id.*

³⁴⁴ *Id.*

³⁴⁵ Olushayo Oluseun Olu et al., *Contract Tracing During an Outbreak of Ebola*, 4 FRONTIERS IN PUB. HEALTH 1, 1 (2016).

large number of cases.”³⁴⁶ Experience shows “that rapid case finding, paired with proper infection control, is critical in order to stop the spread of Ebola.”³⁴⁷ The “CDC and [its] partners are using contact tracing to identify new Ebola cases quickly, which increases patients’ chances of survival,” and helps to “isolate patients as soon as they show symptoms, which prevents the spread [of EVD] to others.”³⁴⁸ Failing to find a contact is an unacceptable standard for tracing teams, because even one oversight “can mean that Ebola will continue to spread, because sick people need care from others.”³⁴⁹ Contact tracing works, and [it has] been used in each of the previous twenty Ebola outbreaks over the past forty years to successfully control Ebola.”³⁵⁰ During the 2014 Ebola outbreak, successful uses of contract tracing from Mali, Nigeria, and Senegal have demonstrated how effective the practice was and could be in used in the future for containing outbreaks.³⁵¹

D. UNESCO, Bioethics, and Ebola

The United Nations Educational, Scientific and Cultural Organization (UNESCO) “has a key role to play in the global response” to outbreaks that endanger public health.³⁵² UNESCO is “able to call upon expertise in a number of different fields (such as in culture, education, communication and the sciences), as well as rely on its close working relationship with ministries, civil society, other United Nations agencies, multi-laterals, and other development partners including the private sector,” which places UNESCO “in an

³⁴⁶ *Transmission*, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/vhf/ebola/transmission/> (last visited Dec. 28, 2016) [<https://perma.cc/QG35-CBFA>].

³⁴⁷ *Tracing Contacts*, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/about/ebola/tracing-contacts.html> [<https://perma.cc/Z272-AQNS>].

³⁴⁸ *Id.*

³⁴⁹ *Id.*

³⁵⁰ *Id.*

³⁵¹ *Id.*

³⁵² *UNESCO’S REPOSE TO EBOLA*, *supra* note 254, at 5. UNESCO’s mission statement states: “As a specialized agency of the United Nations, UNESCO – pursuant to its Constitution – contributes to the building of peace, the eradication of poverty, and sustainable development and intercultural dialogue through education, the sciences, culture, communication and information.” *Id.* at 14.

ideal position to provide support to member states engaged in the Ebola response.”³⁵³

Given UNESCO’s “unique role in bioethics within the international community” and the severity of the 2014 Ebola outbreaks, the International Bioethics Committee (IBC), in conjunction with the Intergovernmental Bioethics Committee (IGBC), adopted a joint statement in September 2014 seeking to strengthen principles within the Universal Declaration on Bioethics and Human Rights.³⁵⁴ The statement likewise aimed to “strengthen international support in ending the Ebola virus epidemic.”³⁵⁵ The joint Committees also called on states “to define and implement strategies to fight the epidemic, that involve local populations and [that] take into consideration the particular context within the affected countries, including their ethical, social, and cultural dimensions.”³⁵⁶ States were urged to “reinforce the capacities of their health systems so that they may face the epidemic financially, and materially,” by utilizing their resources and thereby obtain the ability to prevent the spread of Ebola now and in the future.³⁵⁷ UNESCO’s Response to Ebola involves thirteen mission critical actions and five Strategic Objectives (“STEPPS”):

1. STOP the outbreak . . . Identify and Trace people with Ebola. . .
2. TREAT the infected . . . Care for Persons with Ebola and Infection Control Medical Care for Responders. . .
3. ENSURE essential services Provision of Food Security and Nutrition Access to Basic . . . including non-Ebola Health . . . Services Cash Incentives for Workers Recovery and Economy. . .

³⁵³ *Id.* at 5.

³⁵⁴ *Sharing of Benefits, Human Genetics and the Ebola Virus Epidemic Debated by UNESCO’s Committees on Bioethics*, UNESCO (July 7, 2014), http://www.unesco.org/new/en/education/resources/online-materials/single-view/news/sharing_of_benefits_human_genetics_and_the_ebola_virus_epid/, [<https://perma.cc/7Z42-9H95>] [*UNESCO, Sharing of Benefits*].

³⁵⁵ *Id.*

³⁵⁶ *UNESCO’S RESPONSE TO EBOLA*, *supra* note 254, at 16.

³⁵⁷ *Id.*

4. PRESERVE stability Reliable Supplies of Materials and Equipment Transport and Fuel Social Mobilization and Community Engagement Messaging . . . [and]
5. PREVENT outbreaks in countries currently unaffected.³⁵⁸

V. LESSONS LEARNED AND PREEMPTIONS FOR THE FUTURE

Ebola has transformed the way the international community thinks about epidemiologic diseases. What will the global future look like, particularly for the World Health Organization? As mentioned above, “[t]here were 30 confirmed cases of [EVD] reported in the week [prior] to July 5, 2015: 18 in Guinea, 3 in Liberia, and 9 in Sierra Leone.”³⁵⁹ Although that was the “highest weekly total since mid-May [2015], improvements to case investigation and contact tracing, together with enhanced incentives to encourage case reporting, and compliance with quarantine measures” had already led responders even then to better understand how the virus spread.³⁶⁰

The 2014 Ebola outbreak was a “complex emergency [that] galvanized a large number of stakeholders into action;” therefore, a proper system of coordination is required, and the effectiveness of the response will be hampered by “duplication, delays, and gaps in effort.”³⁶¹ A number of different structures have already been put into place to inhibit the possibility of a future widespread outbreak, for example: “[1] the Emergency Operations Centre in Sierra Leone, [2] the Incident Management System in Liberia;” (3) the willingness of governmental decision makers to meet regularly with stakeholders, such as, other governmental officials, the UN, foreign governments, and the African Union.³⁶²

The UN certainly has not been idle:

From the UN and other stakeholders side, in addition to UNMEER, a number of different coordination mechanisms have been initiated to increase the effectiveness of the response, such as the weekly

³⁵⁸ *Id.* at 14.

³⁵⁹ See WHO, *Ebola Situation Report 8 July, 2015*, *supra* note 17.

³⁶⁰ *Id.*

³⁶¹ UNESCO’S RESPONSE TO EBOLA, *supra* note 254, at 11.

³⁶² See *id.*

*International Interagency Ebola Communication Coordination Call chaired by [the CDC], which includes a number of different stakeholders...*³⁶³

Lessons have been learned in Nigeria, a developing country that successfully prevented a wider spread of the epidemic by containing it. The story has a very clear message, as noted by Dr. Margaret Chan, the WHO Director-General:

*If a country like Nigeria, hampered by serious security problems, can do this—that is, make significant progress towards interrupting polio transmission, eradicate guinea-worm disease and contain Ebola, all at the same time—any country in the world experiencing an imported case can hold onward transmission to just a handful of cases.*³⁶⁴

Given analyses of previous Ebola outbreaks in central and eastern Africa,³⁶⁵ which “indicated the role of gender-related factors as key determinants of exposure and infection,” stakeholders should now know to place special consideration on women and on the effects of “mainstreamed gender” on their campaigns.³⁶⁶ The serious consequences of such past oversights as to the role of gender resulted in the “estimated gender asymmetries in Ebola infections and fatalities.”³⁶⁷ Speaking on a reflection panel highlighting ways to improve future responses in regards to gender considerations, the Executive Director of U.N. Women emphasized the importance of appealing and providing information to women, and “noted that such measures could have reduced the number of deaths.”³⁶⁸

³⁶³ *Id.*

³⁶⁴ See *Nigeria is Now Free of Ebola Virus Transmission*, *supra* note 111.

³⁶⁵ See Sophie Arie, *Ebola: An Opportunity for a Clinical Trial?*, *BMJ* (Aug. 6, 2014), <http://www.bmj.com/content/349/bmj.g4997> [<https://perma.cc/7UXJ-YFMB>]. From 1976 to 2012, twenty-four outbreaks of Ebola have been reported “five in Uganda, six in [Democratic Republic of] Congo, four in Congo-Brazzaville, three in Sudan, four in Gabon, one in Ivory Coast, and one in South Africa. The largest was in Uganda in 2000 when 425 people died.” *Id.*

³⁶⁶ See Manivannan, *supra* note 226, at 3.

³⁶⁷ *Id.*

³⁶⁸ *Id.*

As discussed above, quarantines can also be an appropriate weapon in the public health response arsenal, but must be employed cautiously; such drastic measures should only be used when they can accommodate to the standards established in the Siracusa Principles.³⁶⁹ “When assessing the use of quarantines in the case of Ebola exposure, less drastic measures that could be equally effective should be considered first;” for example, since the first symptom of Ebola is fever, twice-daily temperature checks would be sufficient for monitoring a possible carrier “for symptoms so that he or she can be immediately and safely transported to a hospital with an isolation unit where Ebola can be treated.”³⁷⁰

The launch of the African CDC, along with the creation of an African Surveillance and Response Unit, is a great step in the right direction; “[t]his unit will include an emergency operations center that can coordinate and staff future health emergency responses on the continent.”³⁷¹ The African CDC “will help African countries effectively monitor public health, respond to public health emergencies, address complex health challenges, and build needed capacity,” Dr. Nkosazana Dlamini Zuma, chair of the African Union Commission, said in a CDC news release.³⁷² In case of a future widespread outbreak in Africa, this would almost certainly reduce and prevent deaths from Ebola due to the lack of institutional infrastructure. This will be even more likely given the fact that under the agreement, the CDC “will provide technical expertise for the African CDC Surveillance and Response Unit, as well as advise African CDC leadership” on future development of the institution; it will also “support fellowships for ten African epidemiologists to help staff the African CDC Coordinating Center” in Addis Ababa, Ethiopia, and five regional collaborating centers in other areas of the continent.³⁷³ As noted by Dr. Tom Kenyon, director of the CDC’s

³⁶⁹ See Abiola, *supra* note 161 at 5.

³⁷⁰ *Id.*

³⁷¹ Preidt, *supra* note 302.

³⁷² Press Release, Ctrs. for Disease Control and Prevention, African Union and U.S. CDC Partner to Launch African CDC (Apr. 13, 2015), www.cdc.gov/media/releases/2015/p0413-african-union.html [<https://perma.cc/8J7T-X7XE>].

³⁷³ *Id.* The epidemiologists will be responsible for disease surveillance, investigations, analysis, and for reporting trends and potential problems. *Id.*

Center for Global Health, “This is a landmark event in African ownership of improving health across the continent.”³⁷⁴

Although “health workers have an ethical obligation to care for their patients, even if doing so involves some degree of risk” to their health, the affected country’s government has a responsibility to ensure that these health workers, and all others involved in the response, have the requisite training in infection control and proper use of protective equipment.³⁷⁵ Likewise, national governments have the onus upon them to “ensure that health care professionals and others involved in the response are promptly paid, and that social protection programs are in place for the families of government workers who [may] die or become ill as a result of their work in addressing the crisis.”³⁷⁶ Lessons should be learned and employed from domestic and international workers who raised concerns about a lack of training and appropriate personal protective gear and other related matters.³⁷⁷

UNESCO will support the development of national plans and actions to arrange countries bordering widespread transmission sites to speedily scale up communication, social mobilization, and community engagement as described in the previous sections of this article. The ultimate aims are to improve community preparedness and response measures through communication and social mobilization, and to ensure that such communications ease social mobilization and community engagement, which is especially important for supporting behavior changes on traditional issues such as traditional burials, using Ebola Treatment Units, etc.

Findings from Doctors without Borders, dealing with the Ebola epidemic in West Africa, indicate that fear is a limiting factor in trying to control EVD. In an interview, the international president for Doctors without Borders, Dr. Joanne Liu, said that “caring for patients is only one of the three ‘pillars’ of for controlling the Ebola outbreak.”³⁷⁸ The other two equally vital factors (or “pillars” as Liu, described) are tracing possible Ebola cases and educating community members.³⁷⁹

³⁷⁴ *Id.*

³⁷⁵ See Human Rights Watch, *supra* note 19.

³⁷⁶ *Id.*

³⁷⁷ *Id.*

³⁷⁸ *What We Need to Contain Ebola*, NATIONAL PUBLIC RADIO (Aug. 19, 2014), <http://www.npr.org/sections/goatsandsoda/2014/08/19/341639702/more-ngos-need-to-be-in-the-field-to-contain-ebola-outbreak> [https://perma.cc/H277-YMBG].

³⁷⁹ *Id.*

However, she further noted that the main problem was fear amongst both staff, volunteers, and especially community members, and even though “[f]ear is normal when you don’t understand what is going on. . . . [e]verybody has to overcome their own fear before coming to the field [to help].”³⁸⁰ Consequently, to eliminate that fear, Doctors Without Borders needs go beyond funding, to seeking more volunteers who will engage with the community. Therefore, Dr. Liu concludes, there is a need for people who can engage the community and civic leaders to tell them about the public health challenge presented by a disease like Ebola, and “[to] mobilize the population and make them understand what is [really] going on.”³⁸¹

Consequently, tackling the fear factor is a lesson that can be used to prepare against potential future outbreaks.³⁸² This means that dealing with the fears must involve not only the impacted community but also the volunteers who are there to work in those communities during an outbreak. It was thought that NGO volunteers during the outbreak, possibly because of fear, were not as quick to offer their services as they were in prior crises.³⁸³ Dr. Liu alluded to this fact by saying that it has not been easy getting help from the international community: “NGOs that I used to see in some other crises, like after the Haiti earthquake or even in [Central African Republic] or South Sudan, are not present right now in Western Africa.”³⁸⁴ Yet, without the involvement of other volunteer organizations, it is impossible to contain the Ebola epidemic, which leads to everyone else suffering, aside from the Ebola patients.³⁸⁵ Other patients seeking treatment for

³⁸⁰ *Id.*

³⁸¹ *Id.*

³⁸² See Human Rights Watch, *supra* note 19. Fear of Ebola has led to attacks on health workers. For example, an angry crowd attacked an Ebola treatment center in Macenta, Guinea accusing the Doctors Without Borders, who run the center, of bringing Ebola to the city. *Id.* In the same vein, people in N’Zérékoré, Guinea’s second largest city, rioted and protested the spraying of a market with disinfectant they believed was infected with the Ebola virus, causing injuries to over 50 people. *Id.*

³⁸³ See David Gauthier Villars & Jeanne Whalen, *Ebola Crisis Stretches Doctors Without Borders’ Means*, WALL ST. J. (Nov. 28, 2014, 7:01 PM), <http://www.wsj.com/articles/ebola-crisis-stretches-doctors-without-borders-means-1417219277> [<https://perma.cc/5KGR-AYLR>].

³⁸⁴ *What We Need to Contain Ebola*, *supra* note 378.

³⁸⁵ *Id.*

non-Ebola related health service conditions related to malaria or maternity matters, for example, may have to deal with the ripple effect of a general lack of volunteers on the ground; Dr. Liu spoke about the challenges faced in welcoming six pregnant women who were ready to give birth to their babies, yet lost them, because they were walking around the city trying to find a place to deliver them, and that “by the time they got to our centers, the babies were not alive anymore.”³⁸⁶

Henceforth, “[a]ll of UNESCO’s Programme Sectors and certain specialized central services will be mobilized to contribute to the Ebola response, both through sector-specific, and multi-sectoral strategies, as well as in line with its Medium-Term Strategy and the 2014-2017 results framework.”³⁸⁷ The Division for Gender Equality, the Bureau of Strategic Planning, as well as other departments and teams, will provide support.³⁸⁸

I believe the international community and its partners are better prepared for an Ebola outbreak today than they were during the outbreak of 2014. It should also be noted that there was no available vaccine for Ebola during the 2014 crisis leading to the rush for the search for an Ebola vaccine, both during and after the outbreak, the subject of the next section.

VI. THE RACE FOR DRUGS AND VACCINES

With numerous Ebola-related deaths during the Ebola epidemic in 2014, there is a race to the top to get an effective vaccine tested and approved, and to have them out there for those who need them.³⁸⁹ This is just another “arrow” desperately needed in the “quiver” of the Ebola arsenal.³⁹⁰ Ebola vaccine trials are being fast-tracked as a drug maker’s race to develop a vaccine.³⁹¹ In the U.S., this race may have been

³⁸⁶ *Id.*

³⁸⁷ UNESCO’S RESPONSE TO EBOLA, *supra* note 254, at 15.

³⁸⁸ *Id.* “The Division for Gender Equality, the Africa Department, and the Director-General’s crisis transition and response team will all provide backstopping and monitoring support for all initiatives.” *Id.* “The Bureau of Strategic Planning will also provide support related to field coordination and cooperation with donors.” *Id.*

³⁸⁹ Brandon Brown, *Using the Ebola Outbreak as an Opportunity to Educate on Vaccine Utility*, 11 J. OF BIOETHICAL INQUIRY, 415, 415 (Nov. 17, 2014).

³⁹⁰ *See id.*

³⁹¹ *See Big Pharma Bets on Bucks to be Made on Ebola Vaccine*, NBC NEWS, (Oct. 27, 2014), <http://www.nbcnews.com/storyline/ebola-virus-outbreak/big-pharma-bets-bucks-be-made-ebola-vaccine-n234576> [<https://perma.cc/57U9-CLQ3>].

further encouraged by the US Department of Health and Human Services in its announcement on December 9, 2014, centered on the issuance of a new declaration that it would provide liability protection for activities related to Ebola virus vaccines.³⁹²

Experts believe that wealthier nations such as the United States will readily invest in mass quantities of a safe vaccine, and then stash quantities of it for the future.³⁹³ In fact, the US government has invested more than any other country in researching neglected tropical diseases since the 9/11 terrorist attacks, which augmented fears about possible bioterror attacks.³⁹⁴ The risks associated with finding a vaccine should not outweigh the benefits, and, after conducting such a moral risk/benefit analysis, the WHO ethics panel has approved the further testing of an Ebola vaccine.³⁹⁵ Johnson and Johnson is one of the companies that has accelerated its development of an Ebola vaccine, and has already begun clinical trials in 2015, rather than in 2016 as previously planned.³⁹⁶

A. Conduct of Clinical Trials

Two experimental Ebola vaccines are now available to willing volunteers in Liberia as part of the next phase of clinical trials.³⁹⁷ A Liberia-U.S. clinical research partnership backed by the National Institute of Allergy and Infectious Diseases (NIAID), part of the

³⁹² Alexander Gaffney, *US Government Immunizes Future Manufacturer of Ebola Vaccines from Legal Liability*, REGULATORY AFFAIRS PROF'L S SOCIETY (Dec. 9, 2014), <http://www.raps.org/Regulatory-Focus/News/2014/12/09/20947/US-Government-Immunizes-Future-Manufacturers-of-Ebola-Vaccines-from-Legal-Liability> [<https://perma.cc/SJ3W-2C9A>].

³⁹³ NBC NEWS, *supra* note 391.

³⁹⁴ Arie, *supra* note 365.

³⁹⁵ *Ethical Considerations for Use of Unregistered Interventions for Ebola*, WORLD HEALTH ORG. (Aug. 12, 2014), <http://www.who.int/mediacentre/news/statements/2014/ebola-ethical-review-summary/en/> [<https://perma.cc/SFL5-MJUE>].

³⁹⁶ Erin McCarthy, *Johnson & Johnson to Quicken Development on Ebola Virus Vaccine*, WALL ST. J. (Sept. 4, 2014), <http://www.wsj.com/articles/johnson-johnson-to-quicken-development-of-ebola-vaccine-1409803263> [<https://perma.cc/99P3-6P9C>].

³⁹⁷ *Ebola Vaccine Trial Opens in Liberia*, NAT'L INST. OF HEALTH (Feb. 2, 2015), <https://www.nih.gov/news-events/news-releases/ebola-vaccine-trial-opens-liberia> [<https://perma.cc/F73P-HP9Y>].

National Institutes of Health (NIH), leads the clinical trial.³⁹⁸ The Partnership for Research on Ebola Vaccines in Liberia, also known as PREVAIL, “is designed to enroll approximately twenty-seven thousand healthy men and women aged 18 years and older,” mainly seeking its pool of volunteers from groups “at particular risk of Ebola infection, including health care workers, communities with ongoing transmission, contact tracers and members of burial teams.”³⁹⁹ The NIAID’s Director Anthony S. Fauci, M.D., reiterated the importance of trial safety in developing vaccines by stating that:

*It is imperative that any potential countermeasures, including vaccines, be tested in a manner that conforms to the highest ethical and safety standards in clinical trials designed to provide a clear answer to the question of whether a candidate vaccine is safe and can prevent infection. This trial is designed to provide such answers.*⁴⁰⁰

This is also why the WHO and international aid agencies, despite being eager to offer both vaccines, as well as other, therapeutic treatments, to the affected population, insist that “for ethical and practical reasons the drugs must first be tested on humans first.”⁴⁰¹ That is why the United States allows the application of the two animal rule in an emergency under US Federal and Drug Administration (“FDA”) regulations, as follows: “as long as a drug has shown efficacy in two different animals and has proven not to have serious side effects

³⁹⁸ *Id.* The NIH is the United States’ medical research agency, (which includes 27 Institutes and Centers) and is a component of the U.S. Department of Health and Human Services. *Id.* It is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. *Id.*

³⁹⁹ *Id.* The three co-leaders of the vaccine trial are Stephen B. Kennedy, M.D., MPH, secretary-general of the Liberia College of Physicians and Surgeons; Fatorma Baloy, Ph.D., director, Liberian Institute for Biomedical Research; and H. Clifford Lane, M.D., NIAID’s deputy director for clinical research and special projects. *Id.* The pharmaceutical company GlaxoSmithKline supplies the cAd3-EBOZ vaccine, while Merck and NewLink Genetics, Inc. supply the VSV-ZEBOV vaccine. *Id.*

⁴⁰⁰ *Id.*

⁴⁰¹ Arie, *supra* note 365. A number of studies for possible treatments and vaccines carried out on primates and mice showed promise. *Id.*

in healthy humans, it can be made available on compassionate grounds.”⁴⁰²

In a partnership, the CDC, the Sierra Leone College of Medicine and the Allied Health Sciences, and the Sierra Leone Ministry of Health and Sanitation took volunteers for the “Sierra Leone Trial to Introduce a Vaccine against Ebola” (STRIVE).⁴⁰³ Like PREVAIL, this study will assess the safety and efficacy of the rVSV-ZEBOV Ebola vaccine candidate among 6000 healthcare and similarly situated frontline workers.⁴⁰⁴

However, because it will take time to be certain how much protection, if any, the rVSV-ZEBOV vaccine may provide, and in the meantime health workers and other frontline volunteers who have received the vaccines are advised to “continue to take full preventive actions and procedures to protect themselves from Ebola.”⁴⁰⁵

Recently, however, there has been tremendously positive news reported. In Guinea, more 11,841 people have received the vaccine known as rVSV-ZEBOV in a study that targeted people from societies with cases of Ebola.⁴⁰⁶ Apparently, none of those who have received the vaccine immediately has thus far contracted the virus.⁴⁰⁷ None of those vaccinated immediately were infected, as compared with 23 in the unvaccinated group.⁴⁰⁸ This means that the efficacy is 100%, and to add to this is the fact that the vaccine is proven to be well tolerated,

⁴⁰² *Id.*

⁴⁰³ *Ebola Vaccine Trial Begins in Sierra Leone*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Apr. 14, 2015), <http://www.cdc.gov/media/releases/2015/p0414-ebola-vaccine.html> [<https://perma.cc/C7LA-SVEE>]. Participants were assigned randomly to one of two timeframes for vaccination: (1) right away or (2) about six months later. *Id.* All study participants will receive the vaccine and be followed closely for six months. *Id.* By comparing rates of Ebola virus disease in those who are vaccinated to those who have not yet received the vaccine, the study evaluated if and how well the vaccine worked. *Id.*

⁴⁰⁴ *Id.*

⁴⁰⁵ *Id.*

⁴⁰⁶ *Final Trial Results Confirm Ebola Vaccine Provides High Protection*, WORLD HEALTH ORG. (Dec. 23, 2016), <http://www.who.int/mediacentre/news/releases/2016/ebola-vaccine-results/en/> [<https://perma.cc/CA8D-LGM9>].

⁴⁰⁷ *Id.*

⁴⁰⁸ *Id.*

with few side effects.⁴⁰⁹ Given this success, and with a continued effort in gathering data on safety and efficacy, one could quickly expect results in the vaccine being licensed and rolled out as a public health measure.⁴¹⁰ It is amazing that rVSV-ZEBOV was developed five years ago in Canada, but was left on the shelf; safety trials in humans started during Autumn 2014, and trials in Guinea did not begin until March 2015, a year after the outbreak was recognized.⁴¹¹

Consequently, it has been suggested that an urgently needed global vaccine development fund with contributions from governments, foundations, and industries be established in preparation for potential outbreaks.⁴¹²

B. The Drug Companies Versus Africa: Who Benefits?

There may be even more delays in the manufacturing of vaccines for EVD in Africa. Manufacturing drugs is, after all, a business for the drug companies, and so their profit margins are taken into consideration, and really should be. However, in an atmosphere where thousands were dying and there was a desperate need to alleviate the spread of deaths from Ebola, asking the question of whether the enormous time and cost for manufacturing sufficient volumes of the new drug for human use was arguably an improper question. An important consideration until the recent 2014 outbreak was the idea that this sort of investment simply did not make economic sense for either drug companies or government investment, because the disease apparently affected only a relatively small number of people in developing countries.⁴¹³ Would this have been different if this

⁴⁰⁹ *Id.* Side effects included headaches and fatigue, with three experiencing more severe reactions from which they recovered completely. *Id.*

⁴¹⁰ Jeremy Farrar, *The Ebola Vaccine We Dared to Dream of is Here*, THE GUARDIAN (Aug. 3, 2015), <https://www.theguardian.com/commentisfree/2015/aug/03/ebola-vaccine-trials-diseases> [<https://perma.cc/QB5U-QP2U>]; Sarah Boseley, *Ebola Vaccine Trial Proves 100% Successful in Guinea*, THE GUARDIAN (July 13, 2015), <http://www.theguardian.com/world/2015/jul/31/ebola-vaccine-trial-proves-100-successful-in-guinea> [<https://perma.cc/UR3T-S7AH>].

⁴¹¹ Farrar, *supra* note 410.

⁴¹² Stanley A. Plotkin, et al., *Establishing A Global Vaccine-Development Fund*, 373 N. ENGL. J. MED. 297-300 (July, 23 2015), <http://www.nejm.org/doi/full/10.1056/NEJMp1506820#t=article> [<https://perma.cc/RZJ9-Y77B>].

⁴¹³ *See* Arie, *supra* note 365.

epidemic started in a developed world? I do not think so. This is likely an added reason why parts of the African population mistrust the West and “its” volunteer doctors and staff; at a time when there is fear and growing panic, along with schools closed in affected areas, government workers sent on compulsory leave, and people fleeing infected areas, the idea of Western doctors injecting African people with experimental drugs could be disastrous if it became prevalent notion amongst locals.⁴¹⁴ This perception is likely why conducting clinical trials in Africa could sometimes prove difficult; it is an issue of mistrust. As one Ebola expert said: “Whereas Westerners might immediately consent to trying an experimental drug faced with a 56% chance of death. . . in Africa, there is a deep-seated mistrust around drug trials conducted by foreign [organizations].”⁴¹⁵ However, in light of some of the recent successful trials and vaccines tested on people in Africa mentioned above, particularly in the three hardest hit countries by EVD, the gap of mistrust may have been greatly narrowed, rendering the issue of whether the vaccines are really meant to help or benefit Africans as opposed to the drug companies moot.

C. Leveraging TRIPS for the Benefit of Africans?

“One third of the world’s population—over two billion people—do not have regular access to the essential medicines that they need.”⁴¹⁶ This lack of access is even more prevalent within low and medium income nations, “where new or adapted medicines and vaccines to treat some of the world’s deadliest diseases like Ebola and HIV are unavailable or unaffordable.”⁴¹⁷

“Insufficient innovation and a lack of access to affordable medicines are major barriers to achieving a right to healthcare” in developing countries, in particular in countries like Sierra Leone, Liberia, and Guinea.⁴¹⁸ Once the Ebola vaccine is manufactured, tested, and ready to be used, there remain questions about its affordability and availability in the very countries and governments

⁴¹⁴ *See id.*

⁴¹⁵ *See id.*

⁴¹⁶ *Trading Away Access to Medicines- Revisited*, HAI EUROPE & OXFAM 1, 2 (Sept. 29, 2014), <http://haieurope.org/wp-content/uploads/2014/09/Trading-Away-Access-to-Medicines-Revisited.pdf> [<https://perma.cc/J9BH-8QFA>].

⁴¹⁷ *Id.*

⁴¹⁸ *Id.* at 1.

that may have prompted its manufacture in the first place.⁴¹⁹ Trade policies should not be used to “reward research with monopolies,” but rather, should support “innovative models that create new, affordable medicines.”⁴²⁰

The globalized patent system under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is the “dominant incentive framework for the development of new medicines.”⁴²¹ In 1995, when the World Trade Organization (WTO) was formed, the TRIPS Agreement introduced “minimum standards for protecting and enforcing intellectual property rights.”⁴²² Under article 27.1 of the TRIPS Agreement, WTO Members are required to make patents “available for any inventions, whether products or processes, in all fields of technology [including] patents for pharmaceutical processes and products,” like vaccines.⁴²³ The required “minimum term of protection that a country must make available” under the agreement is 20 years from the date of filing; however, at the Uruguay Round, countries were accorded the discretion to determine the duration of patents, and as a result, some countries did not grant patent protection for pharmaceutical products, while others excluded pharmaceutical processes.⁴²⁴ Despite this, in 1994 when TRIPS was introduced, it further reduced the “discretionary powers of WTO Members” to tailor other important aspects of their intellectual property rules.⁴²⁵

Despite the TRIPS Agreement serving as a new beginning of sorts for obligations “regarding the protection and enforcement of intellectual property,” WTO members still had flexibilities and safeguards, including the liberty to “determine the grounds for issuing

⁴¹⁹ *See id.* at 2.

⁴²⁰ *Id.* at 1.

⁴²¹ *Id.* at 3.

⁴²² *Using TRIPS Flexibility to Improve Access to HIV Treatments*, UNAIDS 1, 2 (2006), http://www.unaids.org/sites/default/files/media_asset/JC2049_PolicyBrief_TRIP_S_en_1.pdf [<https://perma.cc/S8KZ-K9PY>] [hereinafter UNAIDS, *Using TRIPS Flexibility*].

⁴²³ *Id.*

⁴²⁴ *Id.*

⁴²⁵ *Id.*

compulsory licenses.”⁴²⁶ Using compulsory licenses is one of the flexibilities existing in the TRIPS agreement that has been reaffirmed by the 2001 Doha Declaration on TRIPS and Public Health, which confirmed that countries are free to determine the grounds for granting compulsory licenses.⁴²⁷ Compulsory licenses may be issued on various grounds of general interest, such as for the public health.⁴²⁸ In other words, the TRIPS agreement allows a government under certain circumstances to issue a compulsory license, which is an authorization to use the patent of a rights holder, which would allow the authorized user the ability produce and market a cheaper generic medicine without the right holder’s express authorization.⁴²⁹ In exchange, the authorized generic firm must pay a license fee to the patent holder.⁴³⁰

What may happen with the manufacture of an Ebola vaccine or drug for African countries? Can the pharmaceutical company simply price out potentially impacted African nations or refuse to sell to them? Apparently, not quite, because the WTO General Council allows WTO members to grant compulsory licenses for the production and export of generic medicines to both “developing countries” and “least developed countries” with insufficient or no manufacturing capacity in the pharmaceutical arena.⁴³¹ This is referred to as the “Paragraph 6 Solution,” and was formalized as an amendment to the

⁴²⁶ *Id.* at 3. “Compulsory licenses. . . are mechanisms used by public authority to authorize use of a patent-protected invention by the government or third parties without the consent of the patent-holder.” *Id.*

⁴²⁷ *Compulsory Licensing of Pharmaceuticals and TRIPS*, WORLD TRADE ORGANIZATION (Sept. 2006), http://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm [<https://perma.cc/UFT7-A87P>] (last visited December 28, 2016).

⁴²⁸ *See Integrating Public Health Concerns into Patent Legislation in Developing Countries*, WORLD HEALTH ORG., <http://apps.who.int/medicinedocs/en/d/Jh2963e/14.1.html> (last visited on December 28, 2016) [<https://perma.cc/EUL2-BV6S>].

⁴²⁹ *See UNAIDS, Using TRIPS Flexibility*, *supra* note 422, at 3.

⁴³⁰ *Compulsory Licensing of Pharmaceuticals*, *supra* note 427.

⁴³¹ *See Kommerskollegium, The WTO Decision on Compulsory Licensing*, NAT’L BOARD OF TRADE 1, 15 (2008), <http://www.kommers.se/Documents/dokumentarkiv/publikationer/2008/rapporter/report-the-wto-decision-on-compulsory-licensing.pdf> [<https://perma.cc/4VTV-926N>].

TRIPS agreement in 2005.⁴³² Therefore, Liberia, Guinea, and Sierra Leone or any other developing country for that matter, may be able to invoke or leverage this provision to acquire drugs, and presumably vaccines manufactured by drug companies.⁴³³

VII. CONCLUSION

This article has highlighted how the Ebola epidemic has been one of the most challenging global public health emergencies in recent times. “The size and scope of the epidemic demonstrates a need for stronger, sustainable disease detection and prevention capacity worldwide.”⁴³⁴ As the outbreak became more dire, cases began to appear in Nigeria, Mali, Senegal, and even the United States.⁴³⁵ In total, “nine countries have reported cases of Ebola” and “more than 27,000 people have [been either] suspected. . . or confirmed to be carriers of the Ebola virus, with more than thousands confirmed dead.”⁴³⁶ Needless to say, but no reporting is perfect, and these numbers are likely to have been worse.⁴³⁷

Although any Ebola outbreak would likely result in some degree of death regardless of what precautions are taken, there are steps that can be taken to curtail the spread of the virus once its presence has been identified. During the outbreak in 2014, isolating individuals who are infected was the method used to protect uninfected people, but as has been documented, the isolation technique is not the most effective in curtailing the spread.⁴³⁸ A lack of clear procedures and responsibilities,

⁴³² See UNAIDS, *Using TRIPS Flexibility*, *supra* note 422, at 2. TRIPS affirms that the WTO rules on IP should not prevent countries from taking measures to protect public health. *Id.* Such measures are known as “TRIPS flexibilities.” *See id.* at 3. Medicines for HIV illustrate the numerous problems with strict IP protection, the positive role of generic competition in decreasing prices, and the importance of allowing developing countries to use TRIPS flexibilities to enhance competition. *See id.* at 6-7.

⁴³³ *See generally id.* at 3.

⁴³⁴ CDC, *The Road to Zero*, *supra* note 310, at 1.

⁴³⁵ *Id.*

⁴³⁶ *Id.*

⁴³⁷ *Id.*

⁴³⁸ Charles Patrick Davis, *Ebola Vaccine: Is it Safe?*, MEDICINET, (2014) http://www.medicinenet.com/ebola_vaccine_is_it_safe/views.htm [<https://perma.cc/5ALU-A7SC>].

and the inadequate separation of Ebola patients from everyone else, staff shortages, lack of protective gear and other factors, contributed to the failure to adequately contain the spread of EVD.⁴³⁹ Therefore, a vigorous response of the health care system, acting in conjunction with strong public health policies and practices that are grounded in human rights principles, is crucial in averting further infections.⁴⁴⁰ In responding, the effective identification and treatment of people with the virus should be paramount, as well as contact charting and monitoring of people who may have been exposed to it. Making use of easy and available information campaigns, introducing strong protections for health care workers, and implementing measures to ensure that all people can have access to health care without discrimination are important. Should such an outbreak occur in countries that do not have adequate resources to effectively carry out such an effective response, as was the case in Guinea, Sierra Leone, Liberia, and other nations, the international community should provide assistance and expertise, and should do so in a prompt and timely manner.

The clinical trials and manufacture of new Ebola vaccines is an added and welcomed dimension to the fight both against the spread of EVD and any other potential contagious outbreaks, especially while utilizing TRIPS to actively support governments that make use of the legal safeguards and flexibilities provided to protect and promote the public health. Hence, any such drug companies should provide medical products that are suitable, affordable, and accessible

As a whole, and based on the discussions in this paper, I believe African countries, as well as the Western countries, are far better prepared for any potential Ebola outbreak today than they were in 2014. Although one hopes for no future outbreaks, the lessons learned should undoubtedly shape future responses to any Ebola outbreak.

⁴³⁹ Maggie Fox, *High Risk: 100-Fold Ebola Rate for Health Workers in Sierra Leone*, NBC NEWS (Dec. 9, 2014), <http://www.nbcnews.com/storyline/ebola-virus-outbreak/high-risk-100-fold-ebola-rate-health-workers-sierra-leone-n265011> [<https://perma.cc/S6PS-2NLS>].

⁴⁴⁰ See *Strengthening Health Care and Preventing Infections*, *supra* note 331.