Chapter 6

West Saharan Response to Ebola Virus Disease Epidemic

Chapter Outline

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A small village</td>
<td>75</td>
</tr>
<tr>
<td>The radio’s last broadcast</td>
<td>76</td>
</tr>
<tr>
<td>During the deadly march we find heroes</td>
<td>77</td>
</tr>
<tr>
<td>No country will be Ebola virus-free</td>
<td>80</td>
</tr>
<tr>
<td>Burn their mattresses, burn their things!</td>
<td>82</td>
</tr>
<tr>
<td>Burn them at the stake!</td>
<td>83</td>
</tr>
<tr>
<td>The United States and Europe standby</td>
<td>85</td>
</tr>
<tr>
<td>Too late, too little to be effective</td>
<td>87</td>
</tr>
<tr>
<td>Our doors are open; come take our sick</td>
<td>90</td>
</tr>
<tr>
<td>References</td>
<td>91</td>
</tr>
</tbody>
</table>

A SMALL VILLAGE

Rolling hills, green pastures, and cozy huts dot the landscape. Farmers tend to their crops and shepherds herd their sheep. Lush green forests are not far from this quaint and peaceful town. Triangularly shaped with rounded edges, some would say that this town is actually an oasis of human civilization in the midst of the dense forests that surround it from almost all directions. It is a picturesque landscape that brings to mind the pastures of a small and thriving European village from the early times. This village, though, is not a European tourist destination where people from bustling metropolises from all over the world come to marvel at a country life they fancy in some distant daydreams. Getting to the destination is no easy task. This is the once relatively unknown town of Meliandou in the southeastern part of the West African nation of Guinea (Figure 6.1).

As picturesque as it may seem, this very town would transform, over the course of a few weeks to a few months at the end of 2013 and the beginning of 2014, into a town that resembles the fictitious and horrific abandoned town depicted in the movie *The Hills Have Eyes*. Some of its inhabitants would be shunned by outsiders and fellow inhabitants, not because they are mutants attacking normal people, but because they are at the epicenter of the worst Ebola virus disease epidemic to date, and because these villagers would appear to the rest of the world as violent attackers of health-care workers. Accentuating its infamy is the fact that here the borders of Guinea, Liberia, and Sierra Leone come together[^1] making Meliandou the prime location for the spread of the wildfire-like epidemic (Figure 6.2).

[^1]: https://dx.doi.org/10.1016/B978-0-12-804230-4.00006-6
A burning question in many people’s minds has been, “How did it all begin?” The unfortunate truth is that, to date, no one knows how the devastating epidemic really came to life. Meticulous research published in the New England Journal of Medicine has revealed, what medical science refers to as, “patient zero” or the first person who contracted the virus. Yet there are no clues as to how he acquired the infection.

THE RADIO’S LAST BROADCAST

It was an ordinary day, like any other, on December 2, 2013. Emile Ouamouno, a 2-year-old boy, could probably be found enjoyably listening to a portable radio—bright red in color, which his father would later longingly describe as a favorite past time of the 2-year-old. Not far from Emile, we would likely see his older sister, Philomène, dancing around and playing with a ball—intriguing Emile to join her in her games. For Etienne, the father of Emile and Philomène, this was to become the beginning of the most devastating of his days. That day,
Emile developed a fever, black stools, vomiting, and bleeding.1 In a matter of 4 days, on December 6, 2013, a 2-year-old Emile passed away.

To the distress of Etienne, a week later, on December 13, 2013, the mother of the two children passed away after showing signs of bleeding.2 Two weeks and two days later, Philomène, the 3-year-old sister, passed away after having developed fever, vomiting, and diarrhea 4 days earlier. In a matter of weeks, Meliandou was devoid of the laughter of Emile and Philomène playing outside with their ball or the bright-red portable radio that Emile had taken a liking to. Closely following the death of Philomène, on January 1, 2014, Emile’s grandmother also died after having experienced the same symptoms.2

Instead of celebrating the beginning of a new year and talking about resolutions and happily anticipating the year ahead, the people of Meliandou gathered to mourn the loss of another life in Etienne’s family. At this point, no one knew what was ravaging the town and decimating so many members of the same family. Perhaps, the world would shrug it off as a minor illness whose effects had been accentuated by the prevalent poverty and lack of health-care accessibility and awareness.

From there, on January 29, 2014, a nurse who had been at the funeral of Emile’s grandmother began having fever, diarrhea, and vomiting, and, on February 2, 2014, she also passed away.2 A midwife at the village, began having a fever on January 25, 2014. She was hospitalized in the Guéckédou Prefecture and died there on February 2, 2014.2 Before succumbing to the fatal disease, this midwife would pass on the virus to the people of her village, Dandou Pombo—also in the Guéckédou Prefecture, and to the health-care worker treating her, resulting in six deaths.4 At the funeral of Emile’s grandmother, there were two other people who contracted the illness and spread it to Dawa, another village in the Guéckédou Prefecture. Then, once the floodgates of the disease opened, there was no way to contain the ravaging waves of death that followed.

DURING THE DEADLY MARCH WE FIND HEROES

Doctors in Guinea began searching for the cause. Doctors Without Borders (Médecins Sans Frontières) were already in the country dealing with a malaria outbreak. They realized that this disease outbreak was out of the ordinary and contacted an expert in Geneva. The expert suspected something sinister such as the Marburg virus or the Ebola virus.1 Guinea’s Ministry of Health did not stand idly by. Samples were sent to Institut Pasteur (Pasteur Institute) in France. The result: the causative agent was indeed Ebola virus as confirmed by polymerase

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1 It is important to note that while the article published in the New England Journal of Medicine gives this timeline, the World Health Organization (WHO)’s Global Alert and Response (GAR) Web site begins the timeline on December 26, 2013 (http://www.who.int/csr/disease/ebola/ebola-6-months/guinea/en/).
chain reaction tests on six of seven samples. To add to the fear, this was the Zaire strain, which is the most lethal strain of Ebola virus.

On March 23, 2014, the Ministry of Health of Guinea notified the World Health Organization (WHO) of an outbreak of Ebola virus disease. The outbreak was considered the largest outbreak of Ebola virus disease by June 18, 2014. On August 8, the WHO declared the epidemic to be a “public health emergency of international concern.” The epidemic was declared on August 8, 2014. By September 14, there had been an estimated 4507 probable and confirmed cases and 2296 deaths. This outbreak has been larger than all the previous outbreaks combined, which has also caused the spread of the disease to neighboring countries, namely Liberia, Nigeria, Senegal, Sierra Leone, and Mali. The spread may be attributed to the geographical location of the Guéckédou Prefecture, as it is located close to the border of Sierra Leone and Liberia with easy access through borders to both countries.

The most problematic cases of the disease came from Liberia. This was not because of any difference in the strain but because of the manner in which the patients were discovered as patients of Ebola virus disease. One was the late Thomas Eric Duncan who presented symptoms in Texas—the first case to be diagnosed in the United States. The second problematic Liberian case actually became the first case in Nigeria and thus, what medical science calls, the index case of Nigeria. His name has been written in infamy: Patrick Sawyer. A dual citizen of the United States and Liberia, Sawyer had flown into Nigeria, “already sick” and “he should never have been allowed on the plane,” according to an online BBC article. An ambulance had brought him from the airport as he had collapsed on the tarmac after “getting sick and vomiting on a flight from Liberia.” Sawyer was a “Senior Diplomat from Liberia,” according to meticulous medical records written at First Consultant Hospital in Nigeria, and published in an online allAfrica article. Sawyer had left Liberia to attend a meeting of the Economic Community of West African States (ECOWAS) in the coastal town of Calabar, Nigeria.

Health-care workers in Nigeria had never experienced a case of Ebola virus disease and, consequently, the disease was not first on the list of possible diagnoses. Instead, Sawyer was thought to have malaria, a common ailment in Africa. It was at this critical stage of the disease process in Nigeria, when a national “everyday hero” was born by many accounts. Dr Ameyo Adadevoh saw Sawyer during her rounds the day following his admission. She noted that while laboratory tests confirmed malaria, the patient was not responding to treatment and instead began developing hemorrhagic (bleeding) symptoms. Dr Adadevoh immediately questioned him about exposure to the Ebola virus disease. According to The Guardian, Sawyer “denied contact with an Ebola patient.”

At this point in the story, we can find conflicting reports of whether Sawyer was aware of the fact that it was the Ebola virus disease that had caused the demise of his sister, who he had been taking care of in Liberia before arriving at First Consultant Hospital in Nigeria. According to the New Republic online magazine, Sawyer was cognizant of the fact that his sister had the Ebola virus disease.
However, an online CNN Health article paints a different picture: “Sawyer had been caring for his Ebola-stricken sister in Liberia … though at the time he didn’t know she had Ebola.” Interestingly, the account given in The Guardian lets the reader read between the lines, “the Liberian had denied contact with an Ebola patient, even though his sister had died of the virus barely two weeks before his arrival in Nigeria.” If the majority opinion could be used to answer this question, we might be left with no choice but to agree with the African online publication, Vanguard, “Like Sawyer, Duncan also tried to conceal the fact that he might have been infected with the disease from medical authorities who sought information on this from him.”

Such discrepancies, however, should not detract us from highlighting the heroism of Dr Adadevoh and the difficult disease process that Sawyer was suffering. Perhaps his disease had advanced to the stage of confusion and irritability and he could not hold himself back from acting irrationally. According to Jonathan Cohn, “at one point, Sawyer ripped out his intravenous lines as he tried to get away, forcing Adadevoh and her staff to restrain him physically in order to keep him in place.” The struggles of Dr Adadevoh were not to end there. She had ordered a test for the Ebola virus disease and it had returned positive. Sawyer was not willing to accept the diagnosis and refused quarantine. Dr Adadevoh remained steadfast and succeeded in keeping him under her care. She went on to contact the local health authorities and prepared for the long road ahead. In fact, some accounts describe how the Liberian government officials got involved and began pressuring Dr Adadevoh to discharge Sawyer. “The Liberian ambassador started calling Dr Adadevoh, putting pressure on her and the institution” reported an online BBC article. Dr Adadevoh refused.

In the end, her determination and her clinical acumen made all the difference in containing the spread of the Ebola virus disease in Nigeria. Unfortunately, Sawyer did not survive and died on July 25, 2014, 5 days after he had been admitted to First Consultant. The damage had been done. Dr Adadevoh and the other health-care professionals who had helped Sawyer were now in danger as they had attended to Sawyer before they knew that he had contracted the Ebola virus disease. An online BBC news article reported that “Dr Adadevoh and eleven of her colleagues caught the virus.” All the cases of Ebola virus disease in Nigeria can be traced back to Sawyer and this tremendously helped in containing the spread of the disease. In an online article on the New Republic Web site, Jonathan Cohn, after complaining of not being able to rely on the US journalists, sums up the disease-controlling effects of isolating Sawyer.

The decision to isolate Sawyer likely prevented him from spreading the disease to many more people in Lagos, a city of 18 million people with large slums. An outbreak in that environment is the scenario public health officials fear most. Tracing known contacts and isolating them—the time-tested strategy that Nigerian and U.S. officials later used to contain the disease—would have been much more difficult, maybe even impossible, in such a dense and disorganized place.
Of the 20 cases in Nigeria, there were 8 fatalities. On August 19, Dr Adadevoh succumbed to her illness and became one of the eight. She left behind a legacy of hard work, dedication, and determination in the fight against the Ebola virus disease. Other factors that aided Nigeria in achieving an adequate response to the epidemic were the prior establishment of disease control organizations such as the Nigerian Center for Disease control (NCDC) and the Disease Surveillance and Response Program of 1998, and previous experience in managing Lassa fever, another viral infection that leads to bleeding.\textsuperscript{16}

In the midst of tracing “patient zero” and the “index case,” we lose track of the fact that these patients are people as well. At times, the media can inadvertently demonize them. We can only surmise what was going through Sawyer’s mind—after all, he was a diplomat and we would expect him to have some understanding of the serious nature of the disease. Some reports claimed that he was searching for a “cure from one of the so-called miracle pastors” in Nigeria.\textsuperscript{9} Given the mysterious nature of the disease, the loss of his sister to the disease, and the knowledge that there is no cure, one can imagine how even a well-educated person could decide on the most seemingly inappropriate course of action. The online \textit{CNN Health} article was one of the few, which tried to humanize him. Sawyer was one stop away from “heading home to Minnesota to celebrate his daughters’ birthdays.” The 40-year-old was survived by 3 young daughters, aged 1, 4, and 5 years.\textsuperscript{14}

\textbf{NO COUNTRY WILL BE EBOLA VIRUS-FREE}

The sixth West African country to confirm a case of Ebola virus disease was Mali.\textsuperscript{17} Similar to Nigeria and Liberia, the index case was not a patient indigenous to Mali; like Guinea, the first infected person in Mali was a 2-year-old child, Fanta Condé.\textsuperscript{18} Fanta and her family lived in Beyla, Guinea, and an incredible story surrounds her arrival to Mali. While in Guinea, a large number of her family began dying of unknown causes. The first of these was her father, who was a health-care worker at a private clinic and a Red Cross volunteer.\textsuperscript{19} Fanta’s father had been in contact with a farmer who had visited the clinic with his two daughters, all of whom died of undiagnosed causes. When Fanta’s father fell ill, the residents of Beyla shunned him and attributed his sickness to witchcraft.\textsuperscript{19} As a result, he left Beyla and returned to his native village, where, on October 3, 2014, he died. Back in Beyla, the paternal grandfather of Fanta lost his wife to an unknown disease. On October 9, 2014, two of his other sons became ill and were referred to an Ebola transit center set up by Doctors Without Borders (\textit{Médecins Sans Frontières}) in Macenta. Blood samples taken from these two tested positive for Ebola virus infections. Unfortunately, both brothers died, and one on the way to the hospital.\textsuperscript{19}

On October 17, 2014, the paternal grandfather’s blood samples tested positive for the Ebola virus infection after he visited a hospital for treatment of rheumatoid arthritis. On October 20, 2014, he died at the Ebola virus disease treatment center in Guéckédou. Following the earlier deaths, a relative living in Kayes, Mali, decided to visit Beyla, Guinea, to offer her condolences. This was a maternal grandmother
of Fanta, the index case of Mali. On October 19, the grandmother decided to travel back to Mali and took the 2-year-old child along with her. Fanta was exhibiting what the WHO site refers to as hemorrhagic symptoms but no vomiting or diarrhea. To make matters worse, the child and grandmother traveled some 1200 km (approximately 746 miles) through Mali on public transport. Once in Kayes, the grandmother and Fanta sought care from two traditional healers. It was the second healer, who referred them to a retired nurse, and it was the nurse who suspected the Ebola virus disease as the cause of the child’s 40 °C fever.

Fanta was admitted to the hospital in Kayes, and on October 23, she was diagnosed with Ebola virus disease. Despite being placed in isolation and receiving care, this 2-year-old died on October 24, 2014, and became the index case of Mali. However, the epidemic was better controlled in Mali as Malian health officials, the WHO, US Centers for Disease Control and Prevention (CDC), Doctors Without Borders (Médecins Sans Frontières), the International Federation of Red Cross and Red Crescent Societies, and a number of other organizations worked diligently to trace the contacts of Fanta. A total of 108 contacts were identified: 33 were health-care workers. As of November 2014, 25 of the 108 were followed for 21 days and were released from the surveillance system.

Unfortunately, right when Mali was getting ready to declare that it was free of the Ebola virus disease outbreak, a second outbreak occurred and it was seen as “larger and more threatening.” The second outbreak was discovered when a nurse at the Pasteur Clinic, not associated with the Institut Pasteur, fell ill. On November 10, 2014, doctors ordered an Ebola virus detection test on the nurse and discovered that she had contracted the Ebola virus disease. Her contact was traced back to a religious leader from Kourémalé, a town straddling the Guinea–Mali border. This man had fallen ill on October 17, 2014, and had traveled to Mali for better treatment. It was at the Pasteur Clinic that he was found to have kidney failure and the nurse came into contact with him. Sadly, the private clinic failed to diagnose Ebola virus disease as the underlying cause of his kidney failure and thus, the Ebola virus was granted access to the nation of Mali once again.

Situations like these led people to consider various steps to prevent the import and spread of disease. Closing the border of Mali was one such consideration. However, long traditions of hospitality and welcoming strangers (called diatiguiya and pronounced JAH-tih-GEE), along with the repercussions of the arbitrary French colonial division of nations, made closing of borders an option not worth the time or effort. Other efforts to stem the spread of the disease are ongoing. At the forefront of the effort in Mali, as in the other West African countries, has been Doctors Without Borders (Médecins Sans Frontières). In coordination with Mali’s national disease center, CNAM, Doctors Without Borders (Médecins Sans Frontières) has been training local health-care workers in the management of Ebola virus disease patients. It also oversees implementation of ambulance services to transport patients and organizes safe burials.

As time progressed, many more people in Liberia, Sierra Leone, and Sengal contracted the Ebola virus disease and succumbed to its effects. Just in the week
of September 14, 2014, Sierra Leone had 210 cases, Liberia had 400 cases, and Guinea had 90 cases of Ebola virus disease. There was also a greater disturbing rise in cases in Liberia over the course of the epidemic as compared to Guinea and Sierra Leone. As of February 9, 2015, Liberia had the highest number of reported cases (8864) despite the fact that in August 2014 the Liberian Ministry of Health and Social Work (MOHSW) had enlisted the help of a number of international organizations including the CDC and the WHO. There are various possible explanations for the rise of cases in Liberia: the nation’s health-care workers were already frustrated and had gone on strike, the level of preparedness for any major disease outbreak was dismal, and initially the government and people were in denial. In addition, there are many areas that are hard to access and thus led to unreported and undiagnosed cases. These villages were prone to more outbreaks as a result of “travelers from affected areas (such as Monrovia) returning to their rural homes” and infecting other people, all of whom would remain undetected until suffering fatal consequences. Geleyansiesu is a prime example of one such village; it is only accessible by “canoe and several hours walking.” The progression of the Ebola virus disease was rapid in most of the regions. According to the WHO, as of February 15, 2015, there were “a total of 23,253 confirmed, probable, and suspected cases of Ebola (virus disease) and 9380 Ebola (virus disease)-related deaths from the three West African countries (Guinea, Liberia, and Sierra Leone) where (the) Ebola virus (disease) transmission has been widespread and intense.” At the onset of the epidemic, Meliandou alone had become the site of 14 graves. At the epicenter of it all, one can only imagine the pain that Etienne had to endure after the death of his son, wife, daughter, and, then his children’s grandmother and the potential stigma that might have been created around him.

**BURN THEIR MATTRESSES, BURN THEIR THINGS!**

While we, on the outside, were able to read about the reaction of the local people to outsiders (the foreign health-care workers or educators visiting them), there was little, if any information, on how the people of Meliandou, and the other towns in the Guéckédou Prefecture where the Ebola virus disease first spread, were reacting to the virus and to the infected people within their own towns. One online *CNN Health* article reports that “Residents, out of fear, also burned… mattresses and other possessions,” of the people who had died of Ebola, and that they rejected “the infected children and the other infected family members.” This was in stark contrast to their strong tribal cultures and customs, where extended family was known to take in orphans. In fact, according to Fassou Isidor Lama, a Child Protection Officer of UNICEF, as a result of the virus, one could see “people flee their villages, and abandon their families and their children.” Fear, suspicion, death, and misery had become rampant in Meliandou and the other towns of the Guéckédou Prefecture. Even local health-care employees were frightened and the hospital director of a treatment center in Guéckédou had to “persuade his employees to come to work.”
In Liberia, Ebola virus-infected people could be seen lying in the streets; sometimes bodies of people who had died of Ebola virus disease could be seen abandoned in the streets. This fear was only to grow and transfer, paradoxically, against outside health-care workers and educators working to stop the epidemic (Figures 6.3 and 6.4).

**BURN THEM AT THE STAKE!**

An unwritten and unspoken axiom is that if someone comes to help you out of a hole, you do not turn around and hurl stones at them. However, just like the peculiar and unpredictable nature of this Ebola virus disease epidemic, this axiom was turned on its head in West African Sahara, where the epidemic was wreaking havoc. Contrary to the image presented in the media, the villagers’ reactions were not based on a barbaric fear of health-care workers or the dislike for unknown outsiders. Their reactions were born out of anger and frustration. If there is no cure, why were their sick being taken off to a distant location?

For some villagers, then, these health-care workers were responsible for the disease and they were the ones spreading it. In the village of Kolo Bengou, Guinea, the *New York Times* reported of a 17-year-old Faya Iroundouno leading the campaign of a group of youth against aid groups. “We don’t want any
“Wherever those people have passed, the communities have been hit by illness.” \(^{24}\) At the sight of a Westerner, these villagers would become anxious and would run away, seeing them as the cause of the disease. “Ebola, Ebola!” they would say while running away. \(^{24}\) In Wabengou, another village in Guinea, the villagers blocked the road to outsiders with a tree. The chief, Marcel Dambadounou, explained, “We don’t accept their presence at all. They are the transporters of the virus in these communities” \(^{24}\) (Figures 6.5 and 6.6). The most terrifying reaction was that of the villagers in Womey, Guinea, in September 2014. A delegation of eight officials and local journalists were sent to the village to warn of the dangers of the Ebola virus disease. They were all killed by a mob and their dismembered bodies were dumped in a septic tank. \(^{25}\) However, this was not the default reaction of every village.

For a large number of villagers, it did not make sense for their sick to be taken away to a distant hospital. These villagers had seen how most patients, who were taken to the hospitals, would end up dying anyway. A nurse working at the Doctors Without Borders (\textit{Médecins Sans Frontières}) treatment center in Guéckédou succinctly described this sentiment, “Here, if the people come
in, they don’t leave alive.” A village elder complained about this irony as well, which further explained the apprehension villagers had in sending their sick family members away, “We refused them, because of what was being said; people said that if you send 20 away, 19 would die.”

In the major cities, the reaction was slightly different. Many people were angry and a number of them did not want to believe that the Ebola virus disease was real (Figure 6.7). In Liberia, people were skeptical of the so-called “Ebola treatment centers” (Figure 6.8). One center in the capital of Monrovia was attacked by a mob and led to the escape of a number of Ebola virus-infected patients. The mob could be heard angrily saying, “there’s no Ebola.”

THE UNITED STATES AND EUROPE STANDBY

Eventually, in some corners of society, the initial sentiment of distrust morphed into an overall skepticism with the response of the United States and the rest of the world. Vanguard, an online Nigerian newspaper, published an article titled, “Ebola Virus Disease and America’s Funny Hypocrisy.” In this article, author Rotimi Faan complained about the fact that before the arrival of Ebola virus disease to the United States by way of Thomas Eric Duncan, “for the first three months after the outbreak of the disease, the matter was more or less regarded as the local problem
of the affected African countries. Even in Nigeria not many paid any attention to Ebola virus disease until Sawyer berthed in the country in the third week of June and several medical personnel quickly came down with the disease.”

Adding to the frustration was the fact that a new drug, ZMapp, had become available in the United States and was being used to treat Ebola virus disease patients there. “It was successfully used for the American,” Faan wrote, “but thereafter America would not permit its use elsewhere for different reasons, the major (one) being that it was yet to pass the stage of clinical trial.” The same article further stated, “At a time the rest of the world, specifically Africa, reeled with fear of possible annihilation America hoarded its ZMapp and other vaccines that could have alleviated the suffering of thousands of people. They thought nothing of the fact many were dying and many more could die” (Figure 6.9).

According to one cartoonist based in Lisbon, André Carrilho, “People in the African continent are more regarded as an abstract statistic than a patient in the U.S. or Europe.” In order to drive the message home, Carrilho, drew a cartoon showing how one white person gets more attention than the large number of black people infected with the Ebola virus (Figure 6.10).

![Figure 6.9](image-url) A sick Africa is calling for help, but the world is asleep. When Africa mentions the epidemic reaching the West, the world wakes up.

![Figure 6.10](image-url) “One Powerful Illustration Shows Exactly What’s Wrong with How the West Talks about Ebola” an article in World Mic published this cartoon, by André Carrilho, online.
Adding to this skepticism was the fact that the international community brazenly divided the task of aiding the West African countries based on historical colonial divisions. The United States was responsible for helping Liberia, a nation that was founded in 1822 by freed American slaves; Britain was responsible for its former colony, Sierra Leone; and France was responsible for its former colony, Guinea.29

**TOO LATE, TOO LITTLE TO BE EFFECTIVE**

At the same time, the West African countries began realizing the dimensions of the problem. Different measures were put in place to control the spread of Ebola virus disease. Many education campaigns sprouted up in Guinea, Liberia, Sierra Leone, and Nigeria. In addition, steps were taken by the governments to reign in the epidemic. Across various city and village streets, posters and signs were put up warning against Ebola virus disease and informing people of the necessary precautions one should take (Figures 6.11 and 6.12). In some cases, famous personalities spoke about the epidemic and helped mitigate the “fear of the unknown.” Some of these measures were met with the worst resistance. Others paved the way for a better response.
The Liberian government, in August 2014, began enforcing a mandated quarantine in the West Point neighborhood of the capital city of Monrovia. This step was taken in the hopes of keeping travel to a minimum and allowing health-care workers to move around freely and investigate Ebola virus disease cases and trace contacts. However, like the other problematic aspects of the Liberian epidemic, this was no easy task. People were infuriated as those who relied on travel to other neighborhoods for their livelihoods could no longer work. The *New York Times* article, “Clashes Erupt as Liberia Sets an Ebola Quarantine,” quoted a resident complaining, “There is nowhere to go for our daily bread.” One resident aptly asked, “You fight Ebola with arms?” Unfortunately, the anger was not limited to furious statements. When some of the angry residents began hurling rocks and trying to storm the barbed wire barricades, soldiers responded with live ammunition rounds. Expectedly, there were injuries. Luckily, there were no reported deaths (Figure 6.13).

On the other hand, some slow but steady measures by the Liberian MOHSW in conjunction with the CDC, WHO, and other organizations did lead to a gradual improvement in diagnosing and reporting of the Ebola virus disease. MOHSW “developed a national task force and technical expert committee to oversee the management of the Ebola-related activities.” The CDC further strengthened the response efforts by instituting principles of the incident management system (IMS) that is in place in the United States for, among other things, managing responses to public health emergencies. The IMS consists of defined roles for command, operations, logistics, planning, and finance/administrative functions, and additionally includes the scientific/public health response role. A national strategy, Rapid Isolation and Treatment of Ebola (RITE), was instituted in October, which consisted of the formation of local health teams responsible for the investigation, follow-up, and isolation of Ebola virus disease outbreaks in remote villages. This strategy resulted in some improvement of the disease burden on the nation of Liberia. In the six outbreaks before the start of RITE,
the median time from an outbreak to an alert reaching the local health team was 40 days.\textsuperscript{20} For the six outbreaks after the institution of RITE, the median time from an outbreak to an alert reaching the local health team was 25 days.\textsuperscript{20}

In Guinea, a famous French soccer player, Lilian Thuram, was visiting the country on a book tour. In an interview with \textit{Jeune Afrique}, he was asked why he was visiting the country when most foreign visitors were avoiding all travel. His response was simple, “On entend effectivement beaucoup de choses dans la presse, mais on sait aussi que cette dernière n’est pas toujours réaliste. Souvenez-vous du traitement médiatique de la crise des banlieues en 2005 par les télévisions américaines… On avait l’impression que la France était en pleine guerre civile! Dans le cas de la Guinée, il faut donc relativiser les choses. Certes, il y a des gens malades, mais ceux-ci sont traités dans les hôpitaux et les modes de transmission de la maladie sont très spécifiques.” Roughly translated, Thuram said, “One hears a lot of things in the media but one knows, also, that is not always the reality. You know about the media treatment of the crisis in the suburbs in 2005 by the American television… One had the impression that France was at civil war! The same is the case in Guinea, it is necessary to put things into perspective. Certainly, there are sick people, but they are being treated at hospitals and the modes of transmission of the disease are very specific.”\textsuperscript{32}

Although Nigeria had a low rate of Ebola virus disease cases, there was a strong campaign to educate people about the dangers of the Ebola virus infection and the modes of transmission. One such campaign was in the form of an eight-page info comic called “Ebola Man” (\figurename{} 6.14).

As is the case with all events that become news-worthy, the pop-culture industry also jumped on the campaign bandwagon. Various singers and actors from a number of West African countries began writing and performing songs about the Ebola virus disease and how it spreads. “Be reassured, the doctor will help you if you have Ebola” is a line in the French-language song, “Africa Stop Ebola.”\textsuperscript{33} A well-known artist in the region, Peter Cole, put his other projects on hold to release a song titled “Ebola is Real.” “Don’t Deny it; Don’t Defy It; It’s a danger for your community,” he sings in the hopes of encouraging people
to bravely come to terms with the reality of the disease. Cole’s song came at an optimal time, as Senegal had just reported their first case in August 2014. Cole was also looking into doing a video of the single, “I hope to find footage of Ebola management and have it in a video together with the song.”

We might never know whether these campaigns alone succeeded in convincing people of the existence of the Ebola virus disease. We might also never know if it was solely these campaigns that convinced some villages to open their doors.

**OUR DOORS ARE OPEN; COME TAKE OUR SICK**

There most certainly was a noticeable correlation between the increased campaigns and village chiefs opening their doors to health-care workers. In Dan dano, Guinea, that is exactly what happened. A November 2014 *New York Times* article reported on the arrival of a Red Cross team and the interaction with the villagers. “‘Bring out your sick!’ the chief shouted angrily at the crowd, shaking his fist and warning of illness and death for the whole village if it did not obey. ‘Don’t hide them!’ he yelled. ‘If you don’t expose them, you will suffer!’”

This was a big relief, as Dandano is located in the district of Macenta, which, as of November 2014, was the worst-hit region in Guinea. One can only imagine how much courage it must have taken for village elders to open their doors to a perceived—albeit incorrectly—enemy and transmitter of the deadly disease. Even more courageous was their willingness to publically accept that their initial reaction was flawed: “We were wrong. But we didn’t understand the cause of this sickness.”

In some parts of West Africa, the openness of the villagers may be attributed to some success stories of patients in treatment centers. In the city of Bo, Sierra Leone, Doctors Without Borders (*Médecins Sans Frontières*) reported of the successful management of three Ebola virus disease patients, who they referred to as “three miracles.”

One of the patients, given the pseudonym Hassan, was in grave condition and was described as “almost dead.” He was in a state of confusion, lethargy, and disorientation, and he had “constant diarrhea.”

The nurses dedicated half an hour at a time to feed him and give him water. As a result, one day he was talking again and told his doctor that he would start walking tomorrow. Sure enough, the next day he began walking again.

His friend, given the pseudonym Mohamed, was also admitted to the treatment center at Bo, Sierra Leone. One night, he became angry and confused and began threatening other patients. Monica Arend-Trujillo, the doctor chronicling the recovery of these patients described the fear that is associated with this state, “It’s usually a very bad sign when people develop mental problems.” That night, an antipsychotic drug had to be administered to calm Mohamed down.

When he woke up, he was calm again and recovered well enough to start playing cards with Hassan and other recovering patients. In a few days, both Hassan and Mohamed were discharged, free of the Ebola virus disease.
Admitted with Hassan was his 10-month-old niece and her Ebola virus-infected mother. The niece was being breastfed and had arrived with her mother and other Ebola virus-infected patients in an ambulance. Despite this, the child survived; she was placed in a separate cubicle and when she developed fever she was given antibiotics. Fortunately, her Ebola virus detection test returned negative and she was cleared for discharge.\(^{35}\)

In addition to the work of Doctors Without Borders/Médecins Sans Frontières, the West African nations received assistance from the CDC, and the United States Agency for International Development (USAID). USAID activated a Disaster Assistance Response Team (DART) with members in Monrovia, Liberia and Conakry, Guinea.\(^{36}\) The public health and medical response positions on the DART were staffed by the CDC.\(^{36}\) In Monrovia, the United States began building a 25-bed critical care hospital with capabilities to manage Ebola virus disease patients. This hospital was to be staffed with US-licensed medical professionals.\(^{36}\) A CDC study showed that in Liberia, the CDC’s work in creating an IMS and sending out health workers to remote and inaccessible areas greatly improved the situation, although the effect was noted after the Ebola virus disease had already caused much damage.\(^{20}\)

The most unique response of outside nations was the deployment of troops. The United States deployed 2400 troops to Liberia to build treatment centers, establish mobile blood laboratories, and transport Ebola virus treatment supplies around Liberia.\(^{29}\) This had led people to ask if the United States would consider sending troops to other affected nations such as Sierra Leone. Britain deployed close to 800 soldiers in Sierra Leone and according to British officials they were building new treatment centers and training medics.

Despite these positive signs, the epidemic continues to ravage West Africa and people have become weary of the effectiveness of these measures. Those who have contracted the disease still have no “magic,” “cure-all” drug and their family members do not know what to expect. In the midst of this, we are sure to see continued confusion and a myriad of repercussions, including economic and political consequences.

REFERENCES


