

## How EVD (Ebola Virus Disease) Spread and How People Respond : Socio political Analysis of the Epidemic in Sierra Leone and Liberia

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## **How EVD (Ebola Virus Disease) Spread and How People Respond: Socio-political Analysis of the Epidemic in Sierra Leone and Liberia**

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This article deals with how Ebola Virus Disease (EVD) had spread in Sierra Leone and Liberia, and how people responded. The endemic of EVD had spread in West Africa from 2014 to 2015, especially in the above-mentioned two countries and Guinea. In this epidemic, total cases exceed 28,000, within which approximately 11,300 patients had died. This paper aims to provide information for further understanding on what had been reported by media including people's disbelief and violence under the epidemic, and examining daily lives and societies of Sierra Leone and Liberia under the epidemic. I wrote this article because I lost opportunity to conduct fieldwork in the both countries. I, as a researcher on armed conflicts in Sierra Leone and in Liberia, had conducted several fieldworks in both countries since 2008. However, the EVD epidemic have hindered me to conduct fieldwork since 2014. In conclusion, I emphasize that people responded to EVD by themselves. As EVD spread rapidly, people did not believe in the existence of EVD at first. However, people later perceived that "the Ebola is real." Then, they took measures against EVD by their own. Within the process, they picked up 'correct information,' and rejected 'wrong' information (I mean 'correct' and 'wrong' being the basis of whether the information is appropriate for preventing further expansion of EVD or not).

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## 1. Introduction

Ebola Virus Disease (EVD) hit West African countries mainly in Guinea, Sierra Leone and Liberia from 2014 to 2015. 2016 is the period for waiting the complete eradication. Despite several Ebola-free declarations were published by the World Health Organization (WHO) by the earlier part of 2016, new patients emerged several times for unknown reasons.<sup>1)</sup> However, since WHO declared Ebola-free in Liberia on 9 June, 2016, no new cases have been discovered.<sup>2)</sup> The epidemic is considered over. In this epidemic, the total cases in Guinea, Sierra Leone and Liberia exceeded 28,000, in which approximately 11,300 patients died.

I wrote this article because I lost the opportunity to conduct fieldwork in the both countries. As a researcher of armed conflicts in Sierra Leone and in Liberia, I have conducted fieldwork in Guinea and Sierra Leone since 2008. However, the EVD epidemic hindered me from conducting fieldwork since 2014. At the time of the symposium (25-27 September 2015), the epidemic was still running rampant. I had no choice but to have a presentation based on outside observations, by using media broadcasting, press releases from international organizations and NGOs, and voices of my acquaintances with whom I communicated by telephone. This article is published more than one year after the symposium. Some parts of my presentation are already out of date. This note consists of sections of my presentation that are still relevant and elaborates the analysis further.

This research note deals with how the EVD spread in Sierra Leone and Liberia, and how people responded. Especially, this paper aims at (1) further understanding on issues which had been broadcasted by media such as people's disbelief, and (2) examining daily lives of the two countries under the epidemic.

This note consists of three parts. First, I draw the overview of the basic knowledge on the EVD and the situation of the epidemic in West Africa. Second, I introduce how the EVD spread across the countries: from Guinea to Liberia and to Sierra Leone. Third, I examine how people responded. I especially deal with how people began to believe in the existence of the EVD, and began to take measures voluntarily.

## **2. Basic Information**

### **2.1 What is EVD?**

The EVD is a viral infectious disease with a high fatality rate. Depending on the virus strain, the fatality rate of the Ebola virus ranges from 30 to 90% (Baize et al. 2014). Transmission is via blood and body fluid. Aerial infection is unlikely. The incubation period is 2 to 21 days. The onset of the disease is characterized by sudden fever, weakness, muscle pain, and headache. Then, this stage is followed by sore throat, vomiting, diarrhea, rash, abdominal and thorax pain. The final stage shows bleeding under the skin and body openings including mouth, nose, and other places. Due to symptoms in the final stage, EVD is often called ‘Ebola hemorrhagic fever’ (‘hemorrhage,’ nominalized form of hemorrhagic, which means a copious discharge of blood from the blood vessels). Neither vaccines for prevention nor antivirals for treatment are available. Supportive care is the only available treatment while waiting the patients to recover by themselves. It is difficult to diagnose EVD in the early stages, because early signs and symptoms (high fever, diarrhea, and muscle pain) are also associated with other tropical diseases (Hewlett and Hewlett 2008: 4).<sup>3)</sup>

The natural reservoir host of Ebola viruses remains unknown, but the most probable hosts of natural Ebola virus are fruit bats of the Pteropodidae family (HEART 2014). The virus is brought to human society via infection from wild animals. Transmission is not necessarily from fruit bats. The virus might circulate among other natural mammals. For example, a sharp decline of the population of gorillas were reported in the area which was hit by the EVD (Ravilious 2006).

The EVD has been known to the world since it was found in the Democratic Republic of Congo in 1976. Since then, more than 20 epidemics have been observed. Most of them were concentrated in central Africa. Sporadic emergences in remote areas demonstrate that EVD comes from wild animals. Majority of the epidemics broke out in the Democratic Republic of Congo or in Uganda. Due to the accumulated experiences, the responses by these governments are quick, while Guinea, Sierra Leone and Liberia had no experience of EVD. It is said that the lack of know-how is one of reasons that allows the epidemic to expand (cf. CDC 2016).

## 2.2 The Epidemics in 2014 and 2015

The epidemics in 2014 and 2015, which began in Guinea, spread mainly to Liberia and Sierra Leone. Except for the three highly affected countries, a small number of cases appeared in Nigeria, Senegal and Mali; but they succeeded containments in the early stages. The index case of the epidemic is a two-year-old boy who lived in a village called Meliandou in Guinea, and died in early December of 2013. Through him, EVD spread to the three countries.

Table 1 shows the total number of cases and deaths in the three countries (as of 28 February 2016). This table shows that more than 28,000 people had been infected and more than 11,300 had been killed.

**Table 1** Total cases and the deaths of the three countries. (Data up to 28 February 2016)

Country	Total Cases (Suspected, Probable, and Confirmed)	Total Death
Guinea	3804	2536
Sierra Leone	14124	3956
Liberia	10675	4809
Total	28603	11301

(Source: WHO 2016)

This outbreak is the largest expansion of the EVD in recorded history. The largest epidemic before this epidemic was the one in Uganda in 2000 and 2001, in which 425 cases were reported, and 224 were fatal. The epidemic in 2014-2015 was unprecedented because the EVD expanded in urban areas as well as beyond national borders.

The epidemic in West Africa caused social unrest and confusion. Social unrest was not unusual in the past epidemics either (cf. Piot 2012). However, due to the large scale of this particular epidemic, social unrest was also on an unusually large scale. Riots broke out in urban cities. Relatives of patients tried to take their family members back from hospitals. It was also reported that patients escaped from hospitals by themselves. In rural settings, relief agencies were prohibited to enter villages because they were accused of accelerating the expansion of the EVD. Thus, social confusion was seen widely in urban and rural settings.

## 2.3 Social and Geographic Background of Sierra Leone and Liberia

To understand the social aspect of the epidemic, it is necessary to understand how people live in the region. I summarize important differences into three points.

First, people in Sierra Leone and Liberia generally do not have the knowledge and attitude that is presumed by public awareness activities in developed countries.

To clarify the attitude, I compare the situation of those two countries with Japan (where the symposium is held).

In Japan, people are familiar with beliefs that (1) a disease has an epidemiologic cause, (2) the cause of the disease can be scientifically explained, (3) proper treatments are based on scientific explanation. For example, people often have awareness of communicable diseases through the Internet, TV, signboards in medical clinics, or community magazines. Through these media outlets, people have rough idea on what viruses are. As for me (a Japanese person), I see a poster which raises awareness of norovirus every day which is hung on a wall of a bathroom near my office. The awareness includes explanations on what noroviruses are, what causes the infection, how to prevent the infection, and how the infected should be treated at home and in a clinic. The poster presumes that readers at least, have a vague idea of what a virus is (at least in the sense that small creatures damage your health, and if you touch the creatures you might be infected with the disease; and, you should not touch the creatures to prevent the infection). As this case stands, people in Japan often see scientific and medical explanations (even though the explanations are simplified).

On the other hand, people of Sierra Leone and Liberia have limited chances to see such awareness posters. In rural areas, even opportunities to see written words are limited. The adult literacy rate is 60% and 45% in estimation in Sierra Leone and Liberia respectively. The perception of what a virus is, is also limited; this is probably because they have limited access to information on viruses and diseases which I showed. Thus, people in Sierra Leone and Liberia are not accustomed to belief systems which are presumed by awareness posters.

Another difference is in attitudes toward death. On one hand, Japanese people, for whom medical service is easily accessible, usually want to know the cause of death. In the present day, medical sciences identify most fatal diseases (even though mechanisms of some such diseases remain incompletely understood). For Japanese, every death should have reasons, and these reasons should be revealed.

On the other hand, people in Sierra Leone and Liberia do not necessarily try to understand causes of deaths. This could be due to lack of medical facilities, or inaccessibility to medical facilities. Rural people have difficulty accessing medical facilities for geographical and financial reasons. My experience in Liberia is one of examples. When I visited Liberia for the first time in two years, I heard from George, a friend of mine, that, Mohammed, one of our friends passed away. I unintentionally responded “Why?”, but George could not answer. After a moment of being puzzled, George explained how Mohammed died: “He had suddenly complained acute stomachache. People carried him to Monrovia [the capital]. But nothing could be done.” George responded to my question by explaining how Mohammed died, instead of telling me why. The cause of death was left unknown.

They make few efforts to figure out causes of deaths. To clarify the cause of a death is also difficult due to lack of medical facilities. Thus, medical knowledge and attitudes toward medical science are different between Japan and the two West African countries.

Second, population distribution is low, which is one of factors for inaccessibility of medical facilities. In Sierra Leone, villages are dotted in desolate “bush.” The vegetation of majority of “bush” is “farming ‘oil-palm’ bush,” which is the land where once forested, but had been largely cleared for farming, then, trees re-grew after crops were harvested. Villages scatter with intervals of 1.5-5km. Normally 70 to 250 live in one village. In rural area of Sierra Leone, subsistence economy is prevalent still. As networks of car-passable road are limited, many people live outside of car-access. Many villages are only accessible on foot through “bush paths” (or pedestrian trails) (Gwynne-Jones et al. 1978: 61).

Notions of “towns” and “cities” are also different. According to *New Geography of Sierra Leone*, “town” for Sierra Leonean people is a settlement of more than 1,000 people (Gwynne-Jones et al. 1978: 131). “City” refers a settlement where approximately more than 10,000 people lives. 7 Cities and 67 towns are in Sierra Leone (Kurian 1992).

Figure 1 shows the relation among villages, towns, and cities. A city is a center of a region, which is connected to neighboring towns by car-passable road. Some villages locate on car-passable road, but majority of villages are not accessible by car. Bush paths are only way to access to these villages. Motorbikes are sometimes used to access these remote villages.

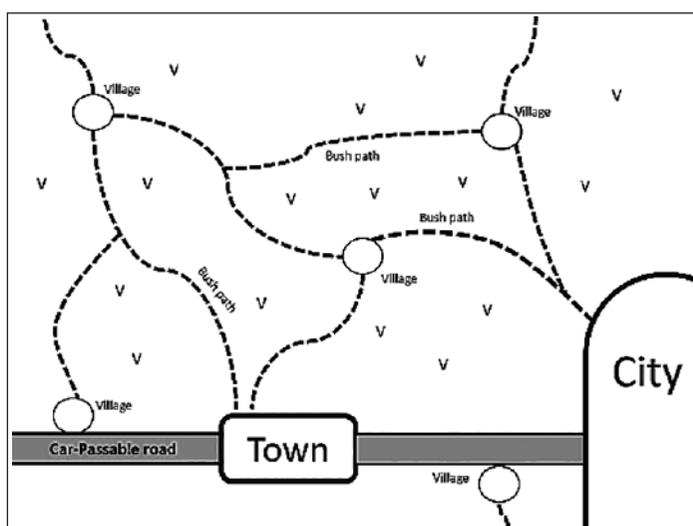


Figure 1 Relation among cities, towns and villages

When a person get sick seriously in a village, a village leader mobilize young people for bringing the patient to car-passable road. They carry the patient to car-passable road, and pick up a commercial vehicle, then, bring the patient to a nearby hospital, which locates in a town or a city. Due to the difficulty of accessing hospitals, some die without being taken to a hospital. Financial reason also hinders people accessing hospitals (HEART 2014). The situation is the same in Liberia.

Third, news sources are limited in Sierra Leone and Liberia. In both Sierra Leone and in Liberia, radios are popular both in urban and rural settings. As English is widely understood in both societies,<sup>4)</sup> broadcasting service of British Broadcasting Corporation (BBC) is widely listened, which is considered as a most reliable news source. Most of other channels are dominated by community-radio stations, which mainly deal with issues in communities and broadcast announcements from local and central governments. At the time of the epidemic, sensitization campaigns are also on the air wave. However, no other news sources are available in rural area. Newspapers are only available in the capitals. They are not sold in local cities, not to mention in rural areas. Thus, in rural areas of the two countries, radio is the only source of news aside from rumors and gossips.

Rumors and gossips are significance source of information. As the notion of “*radio trottoir*” (bush telegraph) says, people rely on informal communication for accessing important information. According to Ellis, people in Africa gleaned important political news not from official news media, but from conversations with friends and acquaintances. It means that rumors and gossips are important source for news (Ellis 1989). People know that rumors and gossips are controversial and sometimes mistrusted, but still have significance. This practice might work against proper understandings of EVD and the epidemic, because it is difficult to discern which information are appropriate and others are not. For example, riot in Kenema was sparked by a former nurse who had told a crowd at a nearby fish market that “Ebola was unreal and a gimmick aimed at carrying out cannibalistic rituals” (Fofana 2014).

As I show above, the conditions of peoples’ daily lives are very different from Japanese societies. Without understanding them, the social aspect of the EVD epidemic is hardly understandable.

### **3. How EVD Spread Across Countries?**

This section scrutinizes how EVD spread among the three countries.

#### **3.1 Initial Spread in Guinea: from a Village to Border Towns**

Medical scientists revealed how EVD spread in initial stage (Baize et al. 2014).

The origin of the outbreak in West Africa can be traced back to one village near the border of tri-countries. The index case is a 2-year-old boy, who died in the early December 2014, in a village called Meliandou. Meliandou is in Guéckédo district of Guinea, which is close to the border of Sierra Leone and Liberia. Then, EVD spread to Guéckédou, which is the capital town of Guéckédo District, and to another border town, Macenta. Map 1 show that the two towns are gateways of Sierra Leone and of Liberia respectively. Car-passable roads extend to Sierra Leone and Liberia from respective towns.

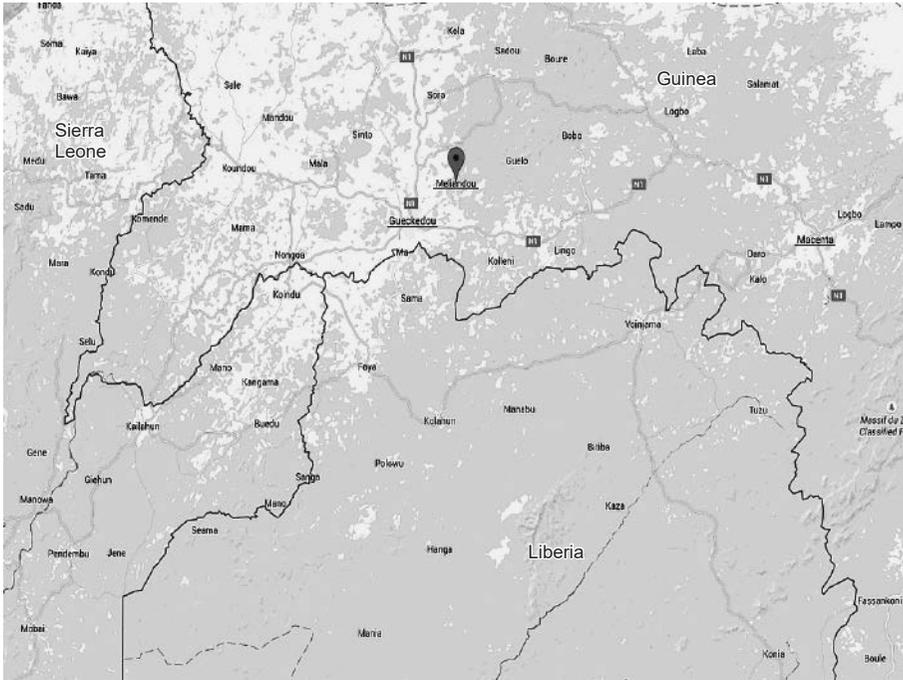
Wall Street Journal summarizes the spread from Meliandou to Guéckédou and Macenta (Figure 2) (Kaeser et al. 2014). According to the figure, the first patient appeared in the beginning of December in Meliandou. Since then, EVD stayed in the village until 3<sup>rd</sup>, January (until EVD go out of the village via infection of a grandmother of the patient zero in Figure 2). It means that the infection was confined to Meliandou almost for a month (Line 1). Then, it takes almost one and half months to reach to Guéckédou town (Line 2). Until that time, EVD was spread to limited villages in Guéckédo district. However, once EVD reached to Guéckédou town, it spread to other towns within three weeks (A midwife in figure 2 brought EVD Guéckédou town) (cf. Baize et al. 2014, Figure 2) (Line 3). Spread from Guéckédou town to Macenta was via one health worker who was infected in Guéckédou, and then hospitalized in Macenta. Then, a doctor in Macenta was infected. His funeral was held in another town, Kissidougou, which is another town in Guinea.

The pattern of the spread shown in Figure 2 tells two local aspect of the spread. First, EDV stays in specific villages more than one month. This is because it is difficult for villagers to access to hospitals in towns. Second, once the epidemic reached a town, EVD rapidly spread to other towns. The rapid spread from towns to towns would be due to public transportations.

First alert was published from hospitals of Guéckédou and Macenta in March 10. At that time, EVD spread to the three towns. According to Baize *et al.* (2014);

On March 10, 2014, hospitals and public health services in Guéckédou and Macenta alerted the Ministry of Health of Guinea and – 2 days later – Médecins Sans Frontières in Guinea about clusters of a mysterious disease characterized by fever, severe diarrhea, vomiting and an apparent high fatality rate (Médecins Sans Frontières had been working on a malaria project in Guéckédou...). In Guéckédou, eight patients were hospitalized; three of them died, and additional deaths were reported among the families of the patients. (Baize et al. 2014)

This was the first report on the unknown epidemic. After this report, Ministry of Health of Guinea sent samples to the Institut Pasteur in Paris. Then, EVD was confirmed. Ministry of Health of Guinea reported the WHO on an epidemic of



Map 1 Meliandou and its surrounding area (Source: Google Map)

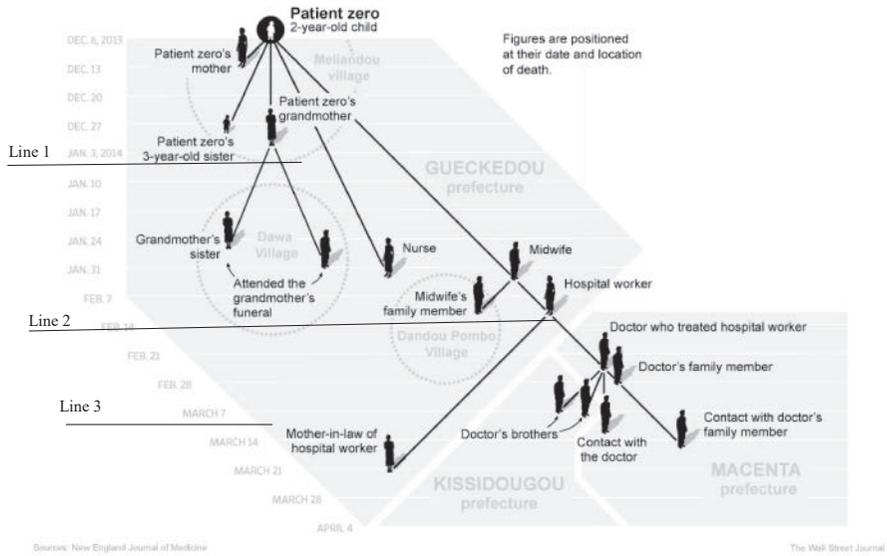


Figure 2 The Path to Transmission in Guinea (Source: Kaeser et al. 2014)

Ebola. Then, the WHO published the official notification on Ebola on its website on 23 March.

### 3.2 Cross-border Expansion

After EVD spread to the border towns, it crossed the borders to Sierra Leone and to Liberia. Public buses run between Macenta and a Liberian town, Voinjama, in two hours. As for Sierra Leone, shared taxis are available from Guéckédou to the border. If you cross Moa river by a ferry, you can reach the land of Sierra Leone (Ham et al.2009: 429, 767). Because of such proximity, people can easily cross the borders.<sup>5)</sup>

The spread of EVD beyond the Guinean border was presumable, but the spread was slow. Figure 3 shows new cases in each week in the three countries. In Liberia, a first infected patient was found at a border town at the beginning of March, but EVD did not spread within a few month. It is the beginning of June that the number of new cases begins to grow. In Sierra Leone first patient was found in third week of May. Within two months (from Mach 10 by that time EVD spread to border towns to the beginning of May), the spread of EVD was not visible. Some estimated that the epidemic of EVD headed toward the end.<sup>6)</sup>

### 3.3 Spread in Liberia

It was retrospectively found that the first case in Liberia emerged in the beginning of March, but that only a few patients were found during the subsequent two

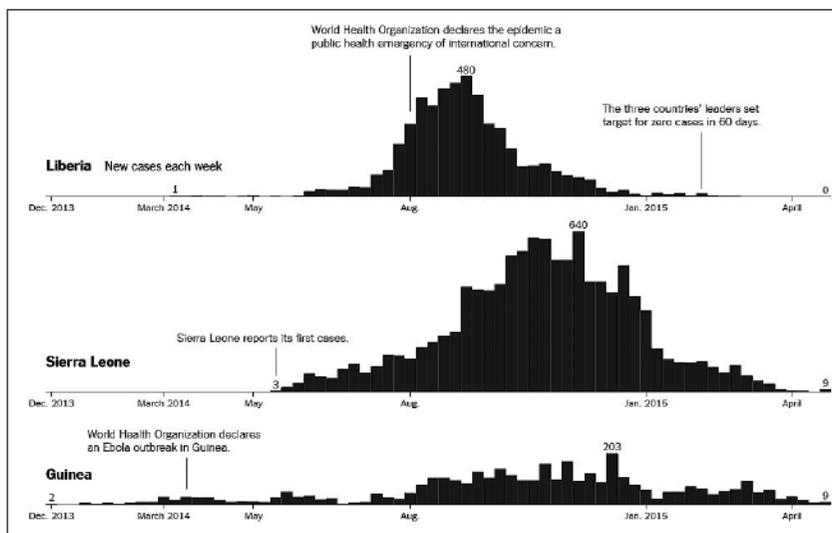


Figure 3 New Cases each Week. (Source: Lai 2015)

months. By the end of March, two were confirmed to be EVD. By 23 April, 6 had died. Then, by 17 June, 16 patients had died (it means that additional 10 patients died from 23 April to 17 June). These patients were in the border region of Liberia with Guinea. It tells that the expansion was relatively slow (compared with the spread afterwards).

Rapid expansion was observed after the first patient was found in the capital Monrovia in the mid-June. Monrovia experienced large-scale expansion. On 6 August, President Sirleaf declared a three-month state of emergency. At the same time, emergency regulations were announced including closing of markets, curfews, and restrictions on the movement of patients and their contacts.

In August, international media reported more on Liberia than Sierra Leone, because EVD was spread in the capital and the panic was more visible in international media. For families of the deceased, burial by themselves were prohibited for safety reasons and for the sake of scrutiny, but safe-burial teams were over-capacitated. Bodies were left on streets waiting for collection. The situation worsened that even the burial teams of Ministry of Health and Social Welfare “dumped at least 45 bodies” of deceased patients in wetlands (Kwanue 2014). In early August, the government decided that the bodies of EVD patients should be cremated (Normally, Liberian people bury the diseased to soil). The facility for cremation was originally for Indians, which was managed by Honorary Consul General of India (Mulbah 2014).

In mid-August, a patient was found in West point, which is the closest slum from the downtown of Monrovia. West point was forced to be quarantined. The forced quarantine of the slum by the government resulted into riots and panics, in which one boy was shot dead.<sup>7)</sup> Panic further escalated from August to October. The rapid expansion of EVD overwhelmed the capacity of existing hospitals, and of attempt to establish new clinics being assisted by international aids. Patients were forced to go back home because of over-capacity.

From November, EVD turned to decline in Liberia. WHO situation report of 5<sup>th</sup> November noted that “[t]here appears to be some evidence of a decline at the national level in Liberia, although new case numbers remain high in parts of the country” (WHO 2014). The epidemic retreated quickly as Figure 3 shows. For example, the ELWA-3 Ebola treatment center in Monrovia was swamped with patients when it opened in August 2014, within which 120 beds are equipped. The treatment center was dismantled on 28<sup>th</sup> January, 2015. Only two patients left by the end of January (AFP 2014). In the first week of March 2015, the WHO announced that Liberia had released its last Ebola patient after going a week without any new cases being reported (BBC 2015). Thus, the epidemics rapidly came to an end (Few cases emerged afterward, but they did not expand).

## **4. Spread in Sierra Leone**

In Sierra Leone, EVD expanded and went down more slowly compared with Liberia. The article by Richards *et al.* (2015) illustrates how EVD spread by using a case of a town called Fogbo. This article provides the representing example on how EVD spread in Sierra Leone. To provide further understanding, I explain chieftaincy (local administration system) in Sierra Leone first.

### **4.1 Chieftaincy in Sierra Leone**

Chieftaincy is an administrative unit in Sierra Leone. Sierra Leone was divided into four regions, namely Northern Province, Eastern Province, Southern Province and Western Region (Map 2). Western Region is the former crown colony, while the other three provinces is formerly a protectorate of British Empire. These three provinces are divided into 149 chiefdoms.

The leaders of chiefdoms are paramount chiefs. They are administrative leaders as well as traditional leaders. In precolonial era, Sierra Leone was divided into small kingdoms. The chieftaincy was created in 1896 when Britain annexed surrounding area of crown colony of Sierra Leone as a protectorate. At that time, the colonial government absorb kings into the administration system. The small kingdoms were reorganized as administrative units called 'chiefdom'. Local kings were appointed as paramount chiefs which are heads of chiefdoms. They were given exclusive right to rule by the colonial government in their respective chiefdom. This system of colonial rule was left as administrative units in the independent Sierra Leone. Under the chieftaincy system, chiefs are elected for life by a Tribal Authority made up of local notables. Only individuals from a few designated "ruling families" in a chieftaincy are eligible to be paramount chiefs. Nowadays, 149 chiefdoms are located in Sierra Leone (Reed and Robinson 2013: 2).

Within a chiefdom, an administration is divided into three levels. First is paramount chief who is in charge of the whole chiefdom. Second is town chiefs and section chiefs. Town chiefs are placed on major towns in a chiefdom. Section chiefs are leaders of sections which are sub-units of a chiefdom. Third are headmen who are leaders of a village and communities in which normally 75-250 residents live.

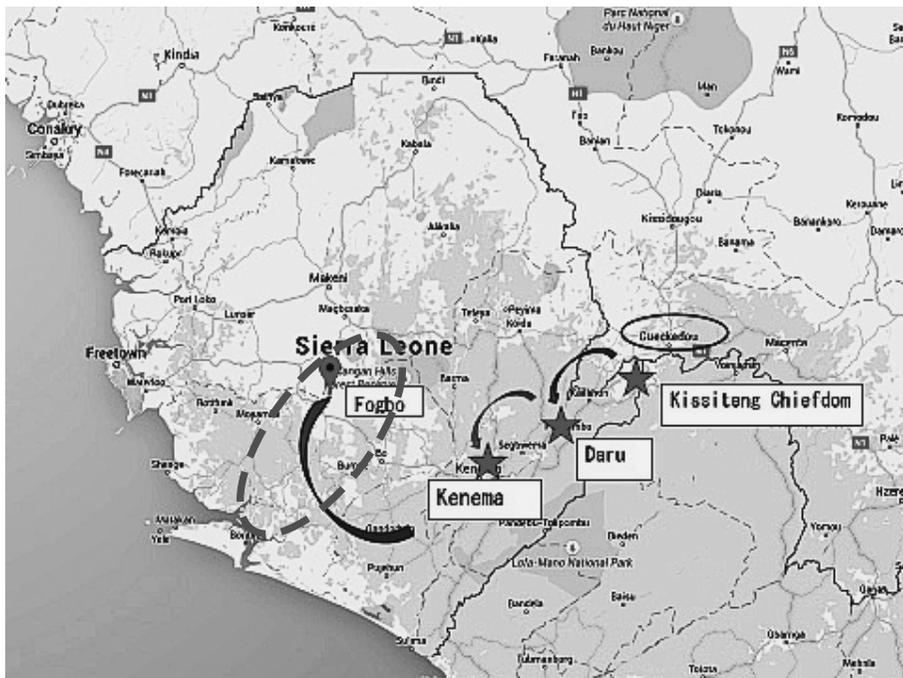
Normally a capital of a chiefdom is town-size. The process of EVD transmission to and within Fogbo tells the social behaviors and roles of respective levels of local leaders.

### **4.2 The Case of Fogbo**

Fogbo locates at Kori Chiefdom in Moyamba District. The population is 500. Only



Map 2 Area and Provinces of Sierra Leone



Map 3 Spread from EVD from Guéckédou to Fogbo (Source: Made by the author by using Google Map)

accessible on foot (via bush path). This town locates in the center of Sierra Leone, far from the border region (Map 3). At first, EVD spread to towns in border region (encircled by dotted line), then, EVD jumped from the border region to Fogbo.

I describe the process in detail. EVD transmitted from Kissiteng Chiegefdom to Daru when a wife of the paramount chief of Jawei chiefdom (where Daru locates)

visited her sick sister, who was the wife of the paramount chief of Kissiteng chiefdom. This chiefdom has a border with Guinea. On the border, Koindu market locates, to which people of Guinea also visit. EVD had reached Daru when the wife went back to Daru. EVD spread in Daru. Then, EVD was brought to Kenema from Daru by a boy who had infected in Daru. This boy went to Kenema for visiting his father. At that time, Kenema was already involved in the epidemic. The father suspected his son might have EVD. The father took him to a hospital, being tested positive and died. This father was also infected, but did not want to be hospitalized. He traveled back to his home town, Fogbo, evading curfew imposed on Kenema city (Richards et al.2015).

Then, EVD spread within Fogbo. He was cared for by his sister. Those who lived in Fogbo did not know what Ebola is yet. (People use the term “Ebola” rather than EVD. Hereafter, I use Ebola and EVD interchangeably). The story continues as follows;

*A few days later [she] also became sick. The Community Health Officer was again informed and he took a blood sample, but [she] died before the result available. The villagers conclude, without waiting for the result, that it was Ebola. ....The town chief called the health officials to come and take charge of the body, but they were unable to attend, and later instructed the people to bury the dead..., but not to wash the corpse.... Prominent women in the community insisted [that the deceased have to receive a fitting burial because she was well-respected. T]hey washed and buried the body. Corpse washing is an important part of local rituals for the deceased...Since then women and one man have died.... By early September it was reported that somebody in the village was dying every day...there was nobody to bury the corpses. The Fogbo people waited for the burial team to come. (Richards et al.2015).*

Then, the story follows that the funeral of the sister caused Ebola to spread to neighboring villages. Ebola reached to a neighboring town called Moyamba Junction. This town was hit by panic, when several patients were found in the town. A lot of people escaped from the town because they were afraid of being quarantined (Richards et al.2015).

### **4.3 The Case of Kenema**

I introduce one more case, which is on a city, Kenema. Kenema was involved in Ebola relatively earlier. In the above-mentioned story, Kenema was already involved in Ebola. In Kenema, first patient was found in 24th May, and it developed into an explosive outbreak by the middle of June. Kenema Government Hospital received the patients because they equipped with isolation wards for Lassa fever. They diverted the ones for EVD. However, the hospital was soon over-capacitated. Nurses were quickly infected, and 12 of them died. A WHO report

reveals how EVD reached Kenema (WHO n.d.);

*The vicinity around Kenema was home to a well-known and widely-respected traditional healer. Her famous healing powers were also known across the border in Guinea. As the outbreak in Guinea continued to swell, desperate patients sought her care. Predictably, the healer became infected with the Ebola virus and died. Mourners came by the hundreds, also from other nearby towns, to honour her memory by participating in the traditional funeral and burial ceremony. Quick investigations by local health authorities suggested that participation in that funeral could be linked to as many as 365 Ebola deaths.... By mid-June, an explosive outbreak was clearly under way in Kenema, and the government hospital could no longer cope. (WHO n.d.)*

This story tells that a city gathered patients from surrounding rural areas. Kenema became a center of the epidemic because the infected were carried to Kenema from surrounding areas.

#### **4.4 Findings**

Several findings can be drawn from the two cases. First, towns work as hubs for concentration and spread. On one hand, as the case of Kenema shows, patients in rural area were to be carried to Kenema. Kenema collect patients, as the city is most accessible for people in border region. Those who sought medical treatments converged into Kenema. On the other hand, as the spread from Daru to Kenema in the story of Fogbo shows, spread from towns to towns/cities is easy. This is due to public transportation. Cities also spread EVD to rural areas as shown in the story of Fogbo that a father in Kenema went back to his home for being taken care of his family.

Second, members of ruling families often tend to contribute to long-distance spread. Paramount chiefs are wealthier class in rural area. They have extensive network of kinships. Historically, families of paramount chiefs consolidate their power by intermarriages. This practice continues up to today (Richards et al. 2015). Therefore, families of paramount chiefs tend to have wider human networks. Because they visited each other, they contributed the long-distance expansion. It should be noted that not only ruling families, but ordinary people also move between villages or between towns and villages along with marriage ties and for education.

Third, participating funerals and accessing markets are other reasons for people to move. The case of Kenema shows that the funeral of a traditional healer contributes to the spread. As for spreading to Fogbo, the funeral in Fogbo makes EVD spread to neighboring villages.

Fourth, people can learn from direct experiences. In the case of Fogbo, health officers already circulated the information on EVD and on measures against EVD,

but people did not take seriously (as shown in the story that they held a fitting funeral despite of warning from health officials). However, once they experienced EVD at first hand, people sought advice and assistance. It tells that people can believe EVD from direct experiences, not from sensitizations.

## **5. How People Responded**

### **5.1 Disbelief**

In the initial stage of the epidemic, people responded by disbelief. Health and Education Advice and Resource Team (HEART) reported that:

Rumours spread that Ebola was an excuse for medical teams to harvest organs or that it was caused by witchcraft. And in Kenema, ...a 'running battle' ensued between the police and protestors who were threatening to burn down the hospital and were demanding the release of all patients in the end of July [of 2014]. (HEART 2014)

Another article also reports that "text messages circulated that these deaths were not due to a virus but to the fact that multiple witch airplanes crashed into densely populated neighborhoods. All the witches onboard were killed, as well as some unlucky souls on the ground" (Bolten 2014).

Responding to the disbeliefs and groundless rumors, sensitization campaigns were held, providing information about how to avoid Ebola and how to deal with suspected cases. Signboards were set up on streets. Some of them claim "Ebola is real" (cf. Start Fund 2014).

I conducted fieldwork in Sierra Leone after the epidemic (it also means after the symposium). Sensitization campaigns were conducted by mobilizing local elites who was trained in workshop by the government with assistance of international organizations. Chiefs in various level, staffs of community based organizations (CBOs), and local politicians were involved in the sensitization. This is because they are widely known, and their face-to-face relationships worked for people to trust the sensitization campaigns. In the campaigns, what symptoms of EVD are, what to do when finding a suspected case, and how a patient will be treated after there are quarantined, were instructed.

### **5.2 How People Began to Believe in EVD**

For people to believe in the existence of EVD, direct observations are important. People began to believe in Ebola, when they actually see the patients or they heard stories directly from acquaintances who actually see the patients. One Sierra Leonean friend of mine who lived in Bo gave his observation via telephone to me;

*At first, people did not believe in Ebola. People rumored that it was witchcraft, or it was biological weapon. However, when famous doctor was killed [by EVD], people got serious.<sup>8)</sup> Also, people began to see actual patients. In Bo town, a treatment center<sup>9)</sup> was established. In some cases, whole villages were taken to a treatment center and quarantined. People could see inside of the treatment center. They saw patients died one by one. We saw them. We had no choice but to believe in Ebola.*

(A male in his 30s. Interviewed in August 19, 2015)

His experience tells that direct experiences are important for people to understand EVD. The above-mentioned case of Fogbo also tells that people realized that “Ebola is real” not from sensitization campaigns but from direct experiences.

### **5.3 Measures taken by Paramount Chiefs**

Once people believed in EVD and recognized the threat, people responded voluntarily. In the above-mentioned case of Fogbo, a town chief contacted health officials after recognizing EVD. It means that the information which people do not care at first would be taken seriously after being realized the importance.

In other cases, chiefs could recognize the threat from events in neighboring areas. In Lugbu Chiefdom, the paramount chief mobilized people for protecting his chiefdom (James 2015). I also heard from my informant that Malema Chiefdom in Kailahun District could prevent any loss of human life despite that a neighboring chiefdom was hit by EVD. My informant who is the son of a ruling family in Malema chiefdom told me that;

*Fortunately, no one died in Malema chiefdom. The neighboring Jawei chiefdom was seriously affected. The paramount chief [of Malema chiefdom] and the elders decided that ‘nobody should enter, nobody should leave’ [sic]. Public transportation had not worked already. They cut entire transportations including private motorbikes. You could not enter to the chiefdom. Yong men were posted in the border. One day, one man entered the cheifdom [in secret], but they made him leave in a day. Muslims sacrificed every Friday to protect the chiefdom.*

(Interviewed in August 19, 2015)

In this case, traditional leaders learned the threat of EVD from neighbors. Thus, once they realized the threat from their experience, they attempted to take measures voluntarily.

### **5.4 A Center of the Epidemic Moves Quickly**

It is difficult to conclude whether people’s responses would reduce the affected cases or not. However, at least, quantitative data tells that the epidemic in one province quickly faded away. Figure 4 shows the number of death per month in all province in Sierra Leone (Eastern province is further divided into two; (1) Kenema

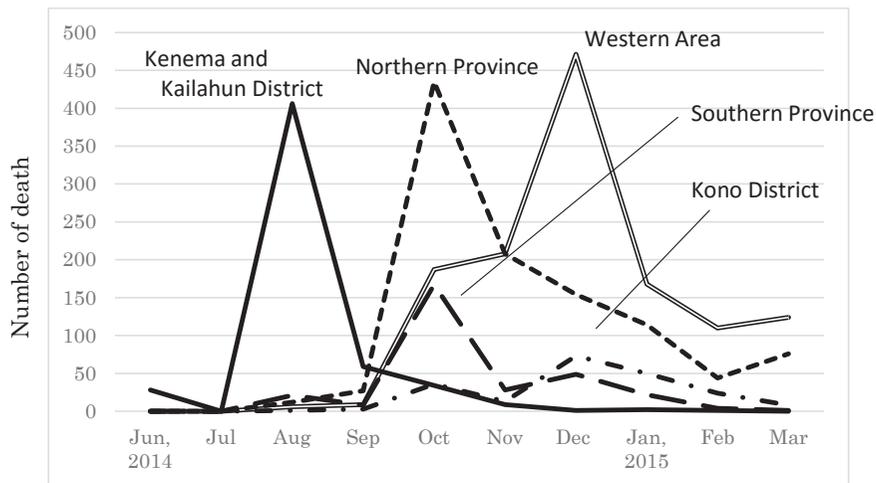


Figure 4 New death per month. (Source: Ministry of Health and Sanitation, Government of Sierra Leone)

and Kailahun District which were initially hit by the epidemics, and (2) the other district (Kono District), to which EVD came later). What I want to emphasize is the peaks of graphs. The peaks of graphs shows that EVD hit suddenly, but the number of death decreased rapidly in the following months. The sharpness of the peaks show that a center of the epidemic did not stay long in one province. The center moved from one province to another. The highest peak is less than 500 deaths. It means that only limited areas were affected in each province (the population of Sierra Leone is 6 million). It is impossible to judge whether such graphs are due to people’s response, international assistances, or other reasons, but it is conceivable that some workable measures were taken to prevent the further spread.

## 6. Conclusion

This article looks at miscellaneous social aspect of the Ebola epidemics from 2014 based on observations from outside. The sources for this article are mainly from internet and emergently published academic articles as well as people’s voice from telephone interviews. This “armed chair” research tells the necessity of further research in the field. In order to understand the epidemic, how people began to believe in Ebola, and, from what sources people gathered information, are need to be addressed. In other words, people’s belief on EVD is one of key aspects for understanding people’s behaviors under the epidemic.

However, as anthropologists knows, to believe or not to believe is not a clear dichotomy (For example, a person who say he/she does not believe in ghost also

hesitates to go to a place where, in people's rumor, a ghost lives). Therefore, I set this question as temporal one for elucidating how people respond to the epidemic of EVD. The experience of Chigusa Nakagawa, a sociologist who researches on Ebola in Guinea, tells a reason why belief is important. According to her, people in the capital Conakry did not pay attention to EVD and even said that "there is no Ebola" in the early 2014. Nakagawa mentions that people's attitudes are because they had no acquaintances in proximity who suffered EVD. Being worry about her acquaintances, she kept sending emails on EVD from her home country to her friends in Guinea. But, her friends had not taken seriously. The situation changed since the later part of 2014. Her friends began to contact her seeking information on EVD by themselves because Nakagawa's acquaintances believed the existence of EVD. They began to believe in EVD because their acquaintances were involved in the epidemic (Nakagawa 2015a). Nakagawa argues that sensitizations on EVD had worked in the sense that people can touch with the information on EVD but, to believe or not is another story. People in Guinea knew measures to prevent EVD from sensitizations. But such information is one of information abundant in their surroundings. She argues that to know information, and, to confirm that the information is collect are different matter (Nakagawa 2015b). Nakagawa's argument tells that questions on how they began to believe in EVD and how they knew the measures against EVD should be addressed.

EVD spread rapidly. People did not believe in the existence at first. However, people later perceived that "the Ebola is real." Then, they took measures against EVD by their own. Within the process, they should pick up 'correct information,' and rejected 'wrong' information (I mean 'correct' and 'wrong' being the basis of whether the information is appropriate for preventing further expansion of EVD or not). How people corrected information, how they chose the one, and how to proceeds measures against the EVD are need to be tackled for future researches.

## Notes

- 1) The declaration of the outbreak is announced 42 days (two 21-day incubation cycles of the virus) have passed since the last confirmed case has tested negative. For detail, see the website of WHO; WHO "Criteria for Declaring the end of the Ebola Outbreak in Guinea, Liberia or Sierra Leone" (7 May 2015) Retrieved from <<http://www.who.int/csr/disease/ebola/declaration-ebola-end/en/>>
- 2) On detail, see the website below; WHO "WHO declares the end of the most recent Ebola virus disease outbreak in Liberia" (9 June 2016) Retrieved from <<http://www.afro.who.int/en/media-centre/pressreleases/item/8699-who-declares-the-end-of-the-most-recent-ebola-virus-disease-outbreak-in-liberia.html>>
- 3) Local news reported the similarity of the symptom with typhoid and malaria, which are popular in West Africa (Fofanah 2014). The article sensitizes readers by introducing a

case of an infected woman, who first thought her own symptom is that of malaria or typhoid.

- 4) In Liberia, official language and lingua franca is English.
- 5) At the time of civil wars in both Liberia and Sierra Leone, Guéckédou and Macenta were used by armed groups of these countries as rear-bases or safe-heaven. Refugees also had settled in these towns. They have kinship ties across the borders, not a small number of refugees settled depending on such ties (van Damme 1999).
- 6) However, it is possible that this two-month silence is because of lack of capacity by the Liberian and Sierra Leonean governments to collect information from border areas.
- 7) Details are explained in Associated Press and Damien Gayle for Mail Online (2014).
- 8) The doctor in this story is Dr. Sheik Umar Kahan, who died at 29 July, 2014. He was the head of the Lassa fever programme in Kenema Government Hospital. He extended his clinic to accept patients of EVD, but overcapacity caused infection to medical workers including himself. As he was famous, his death gave people a shock.
- 9) He mistook “holding center” as a treatment center. Treatment center is those who confirmed positive by laboratory test were brought and medicated, while a holding center is a place where patients who wait for laboratory result were held. Treatment centers were established in suburban area which concentrate on treatment of EVD, while holding centers are set up by allocating a part of facilities in hospitals which also covers other medical treatments. (This information is based on interview to a Sierra Leonean consultant of a NGO, Medecins Sans Frontieres which established treatment centers in Sierra Leone. Interview is held at 6 September, 2016 in Bo)

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