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BY THE TIME YOU READ THIS, WE'LL ALL
BE DEAD: The failures of history and institutions
regarding the 2013-2015 West African Ebola
Pandemic.

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BY THE TIME YOU READ THIS, WE'LL ALL BE DEAD:

The failures of history and institutions regarding the 2013-2015 West
African Ebola Pandemic.

By

Georges Kankou Denkey

A Thesis Submitted to the Department Of Urban Studies of Trinity
College in partial fulfillment of the requirements for the Bachelor of

Arts Degree

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For Ameyo, for saving the world.

Abstract

The 2013 – 2015 Ebola pandemic had a devastating impact on the countries of Sierra Leone, Guinea, and Liberia, with a few regional and global sparks as a result of the 25,178 cases and 10,445 deaths that the epidemic has so far brought upon the three most affected nations by April First 2015. The epidemic has collapsed healthcare systems, economies, and the very social fabric of life within the subregion itself. In the light of this tragic epidemic, one question stands out above all, “How and why did this happen?” The medical literature around Ebola is sound and due to this current epidemic vast and greatly updated. However the story of Liberia, Sierra Leone, and Guinea and why they were so susceptible to the epidemic has not been reflected upon in modern academic literature. This paper will review the historical, institutional, geographic, and environmental factors that led towards the Ebola virus finding these three countries a near-perfect breeding ground as well as the consequences that this epidemic has for future outbreaks and the lessons it serves for public health policy.

Acknowledgments

For Kangni, Kafui, and Jordan. Thank you father for being the best man a son could ever have to look up to, you are my hero. Thank you mother for the unconditional love that I will always carry with me wherever I go, and the fashion too haha. Thank you brother for being my best friend, you are the smartest man I know.

For Dean Chen. Thanks for being a guide to me since my acceptance into the Cities program four years ago. Although I didn't attend, little did I know that I would be sucked into a crazed desire to understand the world of Urbanization, an understanding the Urban studies major has done so much to sate.

For Professor Myers. Mr. Africa. Your classes were always a great joy, and it saddens me I couldn't finish senior spring with the reflective conversations and insight you always have. Maybe the next time people ask you about Ebola, send them my paper haha!

For Professor Schulz, thanks for making me believe that I could excel at Trinity College. Thank you also as well for encouraging me in my pursuit of technology and science as a whole.

For Salima, thanks for being the best.

For Victor and Victoria, I think of you every day. One day Togo will find peace and prosperity once again. Although you are with the ancestors I love you.

For Virginia, We'll meet in Lome once again in December. I cannot wait my grandmother. You've talked to me about the importance of a devotion to education since the very start. I've done it grandmother.

To Immanuel, although I never met you, be proud and happy. Mawu is with us.

Introduction

Ebola altered our world. Over the course of one fear soaked year in a subregion of West Africa the world seemed to shake. This text is a repository about how the cities of Monrovia, Conakry, and Freetown coped with the drama and pain that came with the Ebola pandemic, a pandemic that arrived from the poorer rural upcountries of the various countries but soon caused its greatest chaos and havoc within the growing metropolises that were supporting these recovering countries. The 2000s had seemed to arrive in good fashion in all of these cities, the wars and political turmoil of the past had finally died down, debt relief was on the agenda after the horrific nineties, and Chinese investment and capital had finally arrived with a large agenda tied to continental progress as a whole. With this economic growth, these port cities soon greeted masses of new arrivals from their various upcountries. The attention it seemed would be firmly centered on recovery efforts for the next generation, optimism was high.

Ebola changed all of that. It delivered a stunning blow to fragile healthcare systems, overcrowded slums, still recovering economies, and a still insecure social contract between the various classes and ethnicities that had clashed strongly over the latter stages of the 20th century. The epidemic started in December 2013 in the Meliandou Township in the Gueckedou prefecture of southern Guinea with the death of a young boy¹ and slowly made its way across Guinea until it was detected in mid-March. With West Africa unused to the disease, countless cases in Guinea attracted suspicion but were dismissed as other tropical diseases such as Malaria or Lassa². The epidemic at first barely made a blip within international headlines or medical circles. The theory

¹ "Ground Zero In Guinea: the outbreak smoulders- undetected – for more then 3 months." WHO. 2014.

² Ground Zero In Guinea: the outbreak smoulders- undetected – for more then 3 months." WHO. 2014.

went that local MSF brigades would be able to contain the virus, as it had been able to be contained countless times before in Central Africa. Until it wasn't.

By early May, Liberia had begun to suffer from cases, and the virus had increased spread in Guinea finally reaching Conakry and throwing that country in chaos. By June, Monrovia had begun to be afflicted, with fear particularly present about the city's costal neighborhoods that were predominately slums and suffered from poor shoddy infrastructure and sewage systems³. Finally by July the entirety of Sierra Leone, including Freetown, had been overtaken, throwing that city into frenzy as well, as well as the mountainous upcountry of the nation that struggled to report data and receive quick medical intervention⁴. By the summer of 2014 the epidemic finally had the attention of the world and its media, various West African states dating from the spring but accelerating in the summer soon closed down both air traffic and land routes into the various countries⁵. For Nigeria it was too late, with the virus making its way into Lagos through Liberian- American trade bureaucrat, Patrick Sawyer, who would have perhaps created a greater humanitarian disaster were it not for the brave work of Dr. Adadevoh and her staff who managed to keep him enclosed⁶, their brave work ensured that Nigeria would only suffer twenty cases and eight deaths. By August Dakar would suffer a scare as well, but also through brave tracking measures would ensure that only one case ensued.

Nothing would alarm the world though as much as the fall of 2014 did. Throughout September the virus managed to seemingly accelerate throughout Liberia and Sierra Leone. Freetown and Monrovia were transformed into cities under siege. The national governments

³ "Liberia: Disease rife as more people squeeze into fewer toilets". IRIN News. 2014.

⁴ "How Ebola found fertile ground in Sierra Leone's Chaotic Capital". National Geographic. 2015.

⁵ "A son is lost without his mother. So is a country." NPR. 2014.

would enact local repression on Ebola hot spots throughout the cities that led to faster spread of the disease in those neighborhoods as well as complete economic collapse. This economic collapse was compounded by the fact that there was less access to food as a result of similar lockdowns in food producing areas in the rural upcountry⁷.

In October the world became further alarmed with the migration of the virus into Dallas through a native Liberian who had fled to Texas as a result of the epidemic. Cases also materialized in Madrid through a transmission of a sickened Spanish priest to a Spanish nurse. This seemingly international threat of the pandemic led to a large medical intervention from the world community with America, China, France, the UK sending military aid, and with the largest and most impressive contingent, the Cubans sending a large medical team. By January 2015 as a result of both international medical intervention but even more importantly social, political, and cultural shifts the virus began to dwindle on all three fronts with a fourth potential front in Bamako, Mali firmly shut down through early intervention. At the publication of this thesis in spring of 2015, the virus is still endemic to the region but the total caseload is now dwindling in both Guinea and Sierra Leone, with Liberia possessing no cases and on the verge of being declared Ebola-Free. Attention is now shifted as to how to move the countries and even more, the devastated capital cities into a mode of recovery.

This paper then as you can tell is a paper about the 2014-2015 West African Ebola Pandemic. It is primarily though a paper on how it impacted the countries of the region and the response and total impact of the pandemic.

⁷ "West Africa Outbreak: puts harvest at risk, sends food prices shooting up. ". *FAO*. 2014.

The first chapter of this thesis is the chapter you are currently reading, it includes the introduction which sets the themes and general tone of the paper, the methodology section which describes the paper's research methods as well as literature and datasets. Finally, it ends with the hypothesis section that describes the general theories I carried into the paper and the various answers I received.

The next chapter, Ebola: A Background covers a wide ranging base of material. It starts with a biological analysis of Ebola, including its viral structure, its symptom, fatality rate, as well as its history on the African continent up to that point. Also included in this chapter is a word on the novelty of the disease to a West African medical context and the challenges that West African medicine encountered while Ebola was making its sporadic imprint on Central Africa.

Chapter two moves towards historical variables that explain why the Ebola virus was able to thrive in these countries in part due to their fragile healthcare systems and weak governance structures. We explore how the histories of colonialism, corruption, war, and weak economic growth set the stage for the weak state these countries found themselves in from 2013 to 2015. In this chapter we move towards discussions of the turbulent histories of Liberia, Sierra Leone, and Guinea over the past two hundred years.

Chapter three then moves towards exploring the current pandemic's start in the Guinean upcountry, notably from November until March and then illustrating Guinea's first attempts at trying to monitor and control what had been termed in April as an Ebola outbreak. The chapter then moves focus towards Liberia, highlighting the interactions of Liberians in Northern Liberia with their close neighbors in both Guinea and Sierra Leone, the very rapid transmission of the virus in Liberia, and then ends with a general outline of the social landscape in Monrovia and

how the disease ultimately fueled chaos there. The chapter ends with a focus on Sierra Leone, the last country to be severely affected by the crisis, discussed will be the moderate Ebola ramp up in Eastern Sierra Leone and lastly attention on how the virus proliferated throughout Freetown.

Chapter four explores various cultural traits, some of which are shared by most of the ethnic groups within the E3 (the term used in this paper to refer to the three most Ebola-afflicted countries) that helped to spread the virus across the region even in spite of contrary words from Western medicine, but cultural traits and customs that proved to help facilitate of the virus within these countries.

Chapter five looks at the political variables of these three states that helped to also facilitate the spread of the virus. In particular analyzing the impact of the various brands of leadership and policies that largely were not ineffective and contributed to the spread of the disease.

Chapter six begins to explore the overall impact of the epidemic on the medical infrastructure of the three countries in particular. Examining the deaths of local medical staff, the neglect of traditional areas of medical concern, as well as the construction of new ETUs as a result of the crisis.

Chapter seven looks strongly at the impact of the epidemic on the economy, exploring how the epidemic has impeded economic growth, affected agricultural production, and affected the flow of foreign investment which marked these countries in the 2000s.

Chapter eight finally ends with a look at policy recommendations that could help us to prevent or navigate future Ebola/emerging diseases outbreaks better in the future. They are mainly suggestions that popped out to me when researching this paper.

This Ebola pandemic is a rabbit hole. It is a rabbit hole full of interesting facts that cover the scope of history, a rabbit hole that informs us about the power of biology, the ability of governments to act, the bonds that tie us both on the local, national, and global level. But most importantly it tells us that even in the face of apocalyptic tragedy and panic; we still have the resilience and ability to keep marching on, to invent from the rubble a better future. This is the story of the Ebola pandemic which altered the world.

Methodology

Methodology

Rationale for Case Selection

My paper focuses on the impact of Ebola within three prominent cities and countries. Those three are Monrovia and Liberia, Freetown and Sierra Leone, and Conakry and Guinea. I am choosing to focus on those three because they were the primary cities and countries most impacted by the Ebola virus. Guinea was where the pandemic started, Liberia was inflamed by the virus to host the largest caseload of all the three, and Sierra Leone is still embracing heavy blows from the virus and the pandemic. These are the three cities and countries that have received the most foreign intervention, attention, and have truly felt the crisis and pandemonium that the Ebola pandemic has wreaked on the world. At the outset of my research process I did envision also focusing on Bamako, Lagos, and Dakar, because they were the three other major African cities that either had small outbreaks or isolated cases and through both smart policy and rapid medical work managed to contain the threats from the virus. I also envisioned a section that would have examined the fall-out and failures of the reactions to the pandemic in both Dallas and New York. Commentary could also have been used on the cases that evolved in Madrid and

Glasgow as well. The sad reality is I don't have the time or energy to really fully analyze those cases without losing sight of the much more important and sweeping situation within the E3. This choice is rooted in my belief that this paper should not transform into a 200 page paper.

Data Sources

My data sources have come from major institutions and organizations. The first major source is the World Health Organization, which even with its many failings regarding this crisis has compiled weekly data sheets which track the spread of the virus. Furthermore it has also released a slew of publications which chronicle the virus's danger as well as its potential spread throughout the countries it has impacted, as well as possible regional spread.

The second major data source has to be MSF who has been engaged on the ground since the very start. Furthermore MSF has rigorously tracked the amount of patients it has treated, its success record in that regard, as well as the amount of medical centers it has established and its future plans in that regard as well. Furthermore MSF has written countless amounts of publications chronicling its experiences, its views of the performances of both national governments and Intergovernmental organizations, the lives and side effects survivors feel, the lives of the orphans of Ebola victims, the outlook for the pandemic, possible environmental causes of the pandemic, as well as recommendations for the next Ebola outbreak. MSF's work has truly been a labor of pain and love for its mission, on an unrelated point if any organization deserves the 2015 Nobel Peace Prize it is them and the countless amount of African doctors and medical staff who fought to tackle a global contagion.

The third major source of information had to be a collection of about ten – thirty books and journal articles that reviewed everything from previous Ebola outbreaks towards the current

one, medical studies that evaluated the potency of the Ebola virus, political narrations of the state of Liberia, Guinea, and Sierra Leone, and finally analysis of healthcare within the West African and African context at large. These sources of information helped to feed my research and always kept me up at night excited and pumped for my research.

The fourth major source can be described as a source of sources. HDX/ Quandl are web portals designed to be homes of data in this age of stunning data explosion. HDX markets itself as the home of humanitarian data sets and they had a treasure trove of data related to African health, the Ebola crisis, as well as relating to MSF. Their work and their citations were a huge help. Quandl is trying to make itself the hub of nearly all datasets on the website and their overall statistics on health as well as those datasheets were truly extraordinary, it enabled me to get a really great broad view of African health and specific figures related towards health indicators of all West African countries.

Challenges Of Finding Data

I did not have many challenges finding any of the data I wanted. There has been much written about the Ebola virus and its impacts even before the pandemic last year, and since the pandemic it has soared to the point where it was more a problem of curation than search. In terms of African medical data at first I had many troubles finding data that would have allowed me to contextualize the three most affected countries within their regional and continental context, but Quandl and HDX solved that problem easily. Due to the national health ministries of the countries involved, the WHO, and MSF, while there have been countless revisions it has been easy to track the increasing caseload and deaths from the pandemic. Lastly, given the fact that West Africa is such a vibrant political region there were many books, journal articles,

newspaper articles, and broadcast television recordings that captured the political history, recent trends, and daily events of the political scenes of the three most affected countries.

Hypothesis

I have five general hypotheses for my thesis. My five hypotheses are based on five questions that I hope to answer here in my thesis. These five questions correspond to different facets of the virus, and were first formed while I was conceptualizing about my thesis topic, and will be answered in a varying sequence in a start-stop manner throughout the progress of this thesis. Here below are their entire scopes as well as my answers to them. The research I have engaged in will bore fruit as to their effectiveness though.

1. How did this Ebola pandemic originate? And why was it so successful in penetrating contemporary West African urban society?

This Ebola pandemic originated in the Gueckedou prefecture of Guinea in mid-December 2013 when a young boy was believed to be playing in a tree filled with bats. The boy was believed either to have eaten a fruit also contaminated by the bats⁸ or to have been bitten by the bats. Regardless of how exactly it has happened, before long his entire families bar his father had been infected and were soon killed. The disease soon ravaged his village and the entire prefecture. By March 2014 the disease had made inroads into various rural regions of Guinea, colloquially referred to as upcountry. It was only until late March that the disease had been identified as Ebola. By that point, the first few cases had begun to trickle into Northern Liberia. By May the disease had reached Conakry, by June, Monrovia, and by late May Sierra Leone had also started to claim its first cases, soon by July the disease would

⁸ "Ebola "patient zero"; how outbreak started from single child". *Live Science*. Gholipour, Bahar.

reach Freetown, Sierra Leone's capital. From July until December the disease gained greater prominence worldwide as the burning epidemic generated scares in Lagos, New York, Dakar, Bamako, Dallas, Glasgow, and Madrid, although it failed to hold traction in any of those cities.

The disease was successful in spreading into the urban areas of the E3 in my opinion for two reasons. Firstly was the sheer novelty of the disease, it had never been identified in West Africa before; Ebola's traditional heartland in Africa had been Central Africa, in particular the DRC. Due to this ignorance of this disease as well as its remarkable similarity in early phases to more common tropical diseases such as Malaria and Lassa fever⁹ it allowed the disease to fester throughout the region for months before anyone was substantially alarmed, allowing the disease to inevitably proceed towards urban areas. The second reason though was the inability to manage migration within the rural areas, as the disease managed to accelerate out of control upcountry, it provoked a huge migration towards urban areas as it was perceived urban areas would be safe and also due to the higher quality of healthcare in urban areas relative to rural areas. This proved to be misguided, but by the time governments acted the diseases were fully concentrated in urban areas, and in dense settlements filled with poor sanitation and crumbling healthcare systems Ebola proved to thrive.

2. How have the municipal healthcare systems been affected by the breakdown of urban healthcare infrastructure?

My hypothesis is that within the E3 the municipal healthcare systems are now at the moment where they have completely broken down. My hypothesis would be that at this

⁹ "Fighting Malaria in Liberia In The Face Of Ebola". *MSH*. 2014.

point, foreign health agencies and non-profits are largely leading the charge in terms of processing patients, nursing them through the disease, preparing for possible evacuations if possible, and of course trying to manage the burial process. The impact of the Ebola pandemic has led to the deaths of countless amount of doctors, overtaxed other doctors, and led to the collapse of large branches of specialty medicine as nearly all medical attention is placed onto preventing the rapid spread of the Ebola pandemic. The years ahead will be crucial, as forward looking government policies will have to combine with foreign aid and support in order to rebuild the medical systems of the E3.

3. How has Ebola affected trust, stability, and credibility in urban and national governance in each of the three nations?

My hypothesis is that the pandemic will have done much to erode the average citizen's trust in their respective governments. Whether in the case of Liberia, where many parliamentarians are reported to have left for the United States at the first sign of emergency, with even the President's son who is an educated medical physician refusing to come and help out with the Ebola effort¹⁰. Or in the case of Sierra Leone where President Koroma has reacted to the pandemic by tightening further on dissent, imposing at times ineffective draconian quarantine legislation, it is clear that trust has gone out the window with a large portion of the populaces of the E3. In terms of stability, it could be argued that the Ebola pandemic has possibly made these countries even more stable as of the moment. The mass migration from the E3 towards other countries in ECOWAS feared never materialized, fears of a return to armed insurrection, and fears of a large scale protest movement also failed to pan out. Rather the pandemic has led to crisis battered governments made stronger due to the

¹⁰ "Many Liberian Doctors – Including President's Son – Are staying away." *Wall Street Journal*. McGroarty, Patrick.

emergency measures implemented because of the Ebola pandemic. So even despite the erosion of trust and the loss of widespread credibility, it could be argued that the pandemic has made the national governments of the E3 even stronger than before.

4. How did Lagos, Bamako, and Dakar manage to navigate their own Ebola crises? What policies, tactics, and/or societal differences led to their differing positive outcome?

Lagos, Bamako, and Dakar are all very interesting case studies of how West African cities after the announcement of the Ebola Pandemic were all vastly more ready and equipped at least in part to deal with the pandemic. Lagos imported the disease in mid-July due to the exploits of Patrick Sawyer, a Liberian bureaucrat entrusted with attending a trade conference in Lagos¹¹. A man though who collapsed in the airport upon his arrival and was then perturbed to be escorted towards a private hospital, going so far as to supposedly vomit upon the visiting hospital staff. His demands to leave the hospital, urged on by Liberian governmental officials were stopped by the brave work of Dr. Ameyo Adadevoh, a descendant of the founder of Nigerian nationalism, who demanded that he remain at the hospital for care. Her brave work cost her, her life. However it also led to the containment of the Nigerian outbreak, limiting it to twenty cases with only eight deaths¹². A miracle in Africa's largest city, a city that both sprawls with some of the most affluent suburbs and neighborhoods on the continent and contains deprived and degraded massive slums.

Dakar's experience proved to be easier; a Guinean student who attended college in Dakar fell sick in Dakar upon his arrival. He was immediately escorted to a public hospital and

¹¹ Ebola Virus Disease Outbreak – Nigeria – July – September 2014. *CDC*. 2014.

¹² "How Nigeria Defeated Ebola". Juma, Calestous. *Guardian*.

survived the disease. The episode though reinforced Senegalese efforts at the border¹³ but also received plaudits for the case tracking efforts of the Senegalese medical authorities as well as their ability to retain calm among the populace.

Bamako's experiences were far more captivating and tragic. Bamako received two isolated cases of Ebola. One that ultimately did not pan out to much, and the other that nearly caused alarm that a fourth front in the war against Ebola would open up. The first case involved a two year old girl who had travelled from Guinea into the city of Kayes in Mali in a crowded bus, but a girl who had along with her grandmother stopped in various cities along the way, including Bamako. What further alarmed health authorities were the reports that the girl had been nose bleeding and vomiting along the route. Upon news of her death and confirmation that it had been Ebola, a massive contact tracing investigation of over 100 people was started. Luckily her case did not transmit to anybody else. But just as Mali was about to be declared free of Ebola a second case involving a Muslim imam who had travelled to Guinea was implicated as an Ebola case after a nurse who had treated him had died. His case sparked eight cases with six deaths among them. However it did not transform into an outbreak thanks to the work of the Malian government and WHO and on January 18th Mali was officially declared Ebola-free.

5. What impact has Data/lack of Data had on explaining the trajectory and spread of the Ebola Pandemic? Can Data play a decisive role towards combating the pandemic?

Data has played an outsized role in terms of the pandemic so far. Both the data we have received and the lack of it. The data sets we have received so far have been pretty limited in

¹³ "Ebola Crisis: Senegal Defends Guinea Border Closures". *BBC News*.

terms of only describing how many have been infected and if they have survived. They have excelled though in terms of breaking down the case patterns by geography though.

As of the moment though, we do not have reliable data to the specificity of how Ebola progressed at a regional movement level. We can understand the general broad movements the virus made, but we cannot fully understand how or why it went that specific way. We also do not have reliable data either as to how many people died from other medical causes due to neglect by the medical system due to the justified single minded focus on Ebola that transpired in the summer of 2014 until winter 2015.

Hypothesis Afterthoughts

As can be seen then, our hypotheses contain a wide variety of topics that refer to the stunning complexity and challenges of understanding the story of Ebola and the power and dynamics that it sowed throughout the region. From its impact on the medical systems of these three cities, its destabilizing economic effects, as well as the impact it had politically in a broader world that was shocked by the slow-motion train wreck that it was witnessing. The rest of this thesis will now delve into the world of impact and consequences that this epidemic wrought.

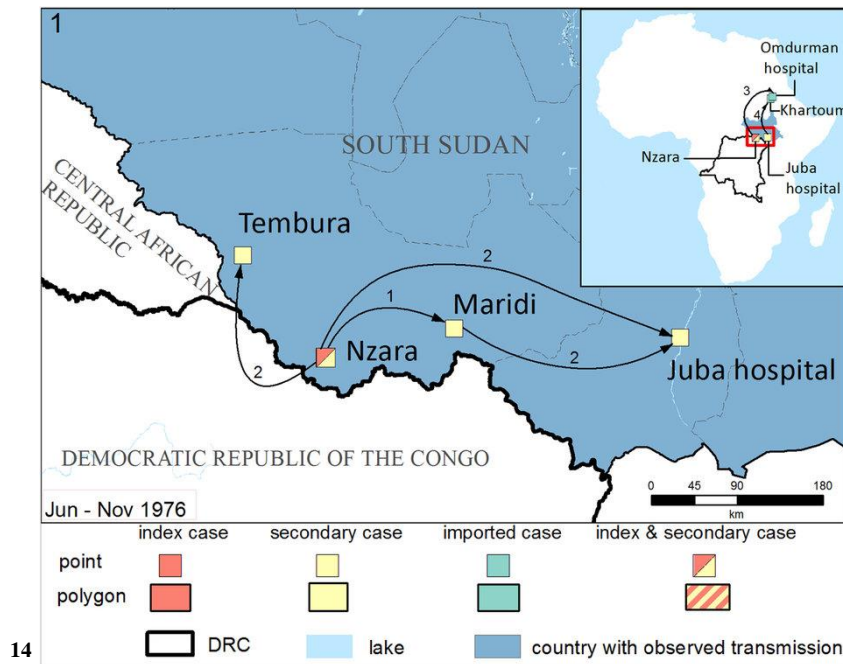
Chapter 1

Ebola: The Background

In The Beginning

In 1976 the World Health Organization was beginning to receive disturbing reports from the midst of South Sudan, which was obviously back then just another town in the massive Sudan. In the extreme Southwestern portion of the country, in Nzara County in the town of Nazara, nearly bordering the Democratic Republic of Congo, a strange disease was manifesting among the workers of a cotton factory.

Map Of Nzara



Nzara was a cotton town, dominated by a single factory that nearly every working adult male was employed by. The outbreak of this strange new disease started in June, and by

¹⁴ "Map Of South Sudan 1976 Ebola Outbreak". *Nature*. 2014

September had transformed into a regional outbreak plaguing this sparsely populated region of only 20,000 people, by the end of the outbreak in November, 251 cases would be reported, ending in the deaths of 140 people¹⁵. Reports trickled into WHO headquarters in Geneva of a disease that seemed to have no treatment or cure, a disease that resembled Malaria in early stages but soon progressed to destabilize every organ in a human's body. A disease that had an incubation period of one to three weeks, but up to six in the most extreme cases. A disease that brought along with it symptoms of vomiting, diarrhea, bleeding from nearly all orifices, intense chest and stomach pain, and even rashes. Progressing to loss of eyesight, the continued degradation of the immune system, and extraordinary fatigue. Culminating in a nervous system collapse that often resulted in intense delirium and finally a temporary coma before death¹⁶. However this outbreak would end by November with epidemiologists unable to examine the outbreak or the disease. However incidents 1,000 kilometers to the west in Northern Democratic Republic Of Congo in the town of Yambuku that sat astride the Ebola river would change the course of medical history.

The Yambuku Sickness

Yambuku was buried deep within the Equateur province of the northern Democratic Republic Of Congo, which was then called Zaire, and was serviced by a medical mission serviced by Belgian nuns¹⁷. The widely affirmed patient zero was a schoolteacher by the name of Mabalo Lokela; Lokela was initially diagnosed with Malaria and given anti-malarial

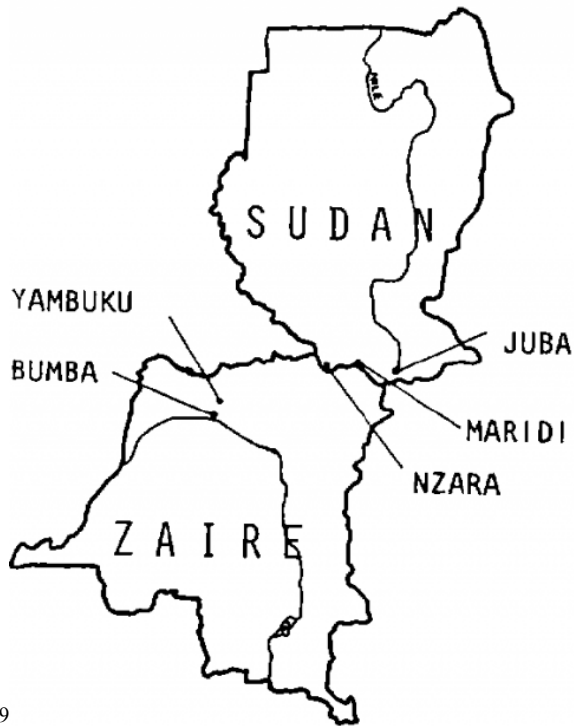
¹⁵ "South Sudan (1976) Outbreak". 2014. *Nature*.

¹⁶ "Signs and Symptoms". CDC.

¹⁷ "Containment and Surveillance of an epidemic of Ebola virus infection in Yambuku Area, Zaire, 1976". 1978. Piot, P, et al

treatments¹⁸. He was sent home from the medical mission and was found dead within five days, within two weeks after his funeral 21 of his family members had fallen sick, with 18 of them falling dead. The world's first recognized Ebola outbreak was underway.

Map Of First recorded observances of Ebola Virus



19

The location of Yambuku in relation to Nzara

The Discovery

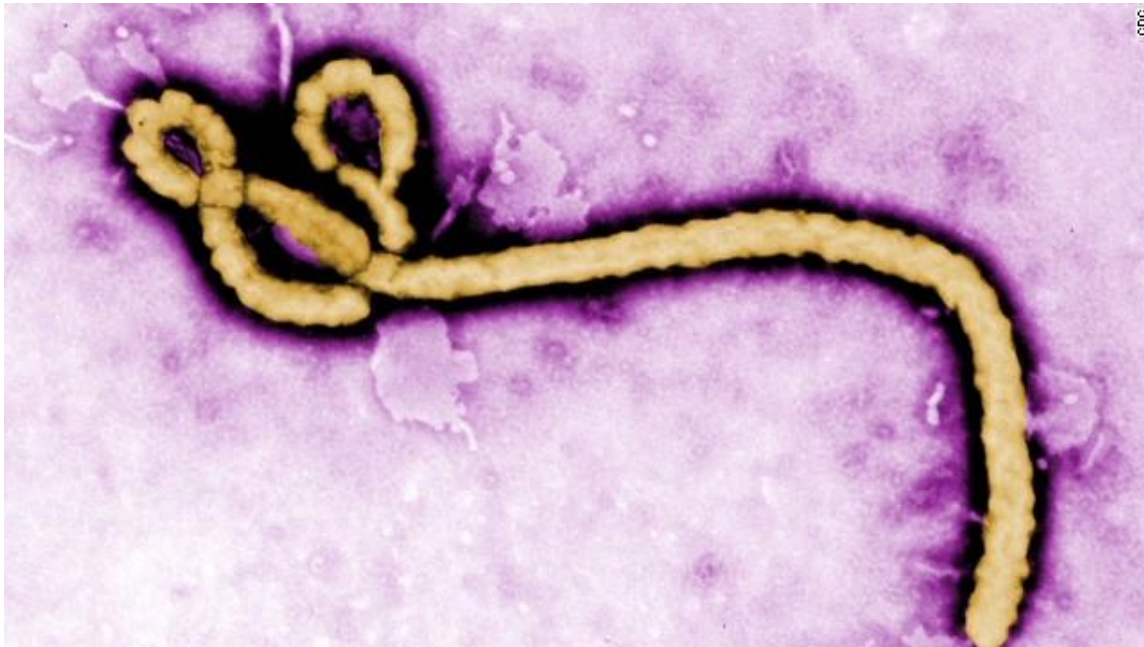
In mid-September 1976 a Congolese doctor by the name of Dr. Mgoi Mushola arrived to the medical mission to observe cases of the fast spiraling disease. He produced the first descriptions of the disease and observed that no treatment seemed to have a successful impact on

¹⁸ "Containment and Surveillance of an epidemic of Ebola virus infection in Yambuku Area, Zaire, 1976". 1978. Piot, P, et al

¹⁹ "Ebola: Comment Tout a Commence en 1976." Sciences Et Avenir. 2014.

the disease, a revelation repeated many times in the decades that followed. He advised that vials of blood from a sick Flemish nun patient at the time be drawn and sent to research labs in Belgium that could potentially add insights about the disease. His work was pivotal in helping to lead to the formal diagnosis of the Ebola virus. By late September Peter Piot and a group of Belgian epidemiologists would change the course of medical history, finally getting a chance to take one of the most iconic pictures of medical history, the image that captured the Mickey Mouse wormlike appearance of the Ebola virus.

Appearance Of Ebola Virus²⁰



The famous picture that captured the strange appearance of Ebola.

The Belgian epidemiologists quickly realized that they were on the cusp of a new exciting discovery as the virus seemed to resemble a more potent form of the Marburg virus.

²⁰ "Ebola Virus: 9 Things to know about the virus." 2014. *CNN*. Cullianne, Susanne; Park, Madison.

With news of the devastating effects of the epidemic spreading throughout the subregion of the province and reports of at least 150 cases by Mid-October²¹, Peter Piot and his gang of epidemiologists were dispatched to Yambuku in mid-October to conduct an exploratory mission for the World Health Organization. They arrived in Yambuku to find a town under siege. The disease's stunning spread had crippled social relations, halted economic activity for a fortnight, and created an aura of fear around the medical mission manned by Flemish nurses. During interactions with Ebola afflicted patients, the epidemiologists were proven correct in their assertion that they really had stumbled upon a new terrifying disease, with the symptoms and the pace of death caused in the victims noted, as well as the ease to which the disease spread to the medical staff that was treating it.

The epidemiologists noted two things about the spread of the disease within the village. Peter Piot made the prescient observation that the disease was in part being spread by the reuse of needles, the Flemish nuns had resorted to that strategy due to their limited supplies as well as the difficulties it was to restock in this small village, which was nestled deep within the DRC's tropical forest landmass. Through reuse of needles, the virus was easily propagated throughout many who had to use the medical mission's services. The second was the lack of any containment of these deeply sick patients, which allowed the deeply violent virus with its intense vomiting and bleeding symptoms to easily penetrate and reach others in the vicinity. The situation outside the hospital in the surrounding region was not much better, with the virus spreading easily due to local, and arguably human, traditions of family members caring intimately for those who are sick. In Ebola's case though, this intimate connection allowed the

²¹ "Containment and Surveillance of an epidemic of Ebola virus infection in Yambuku Area, Zaire, 1976" . 1978. Piot, P, et all.

disease to easily spread through sweat and blood which are the two most favored modes of the virus, which has still not yet mutated to transmit itself through airborne means.

Faced with what was essentially the first Ebola outbreak ever recorded the epidemiologists retreated to their camp by the Ebola river a few miles south from the village. As they gathered by the river bed, they decided to term the new syndrome they were witnessing the Ebola virus, in honor of the river, rather than Yambuku virus, which they felt would forever stigmatize the town.

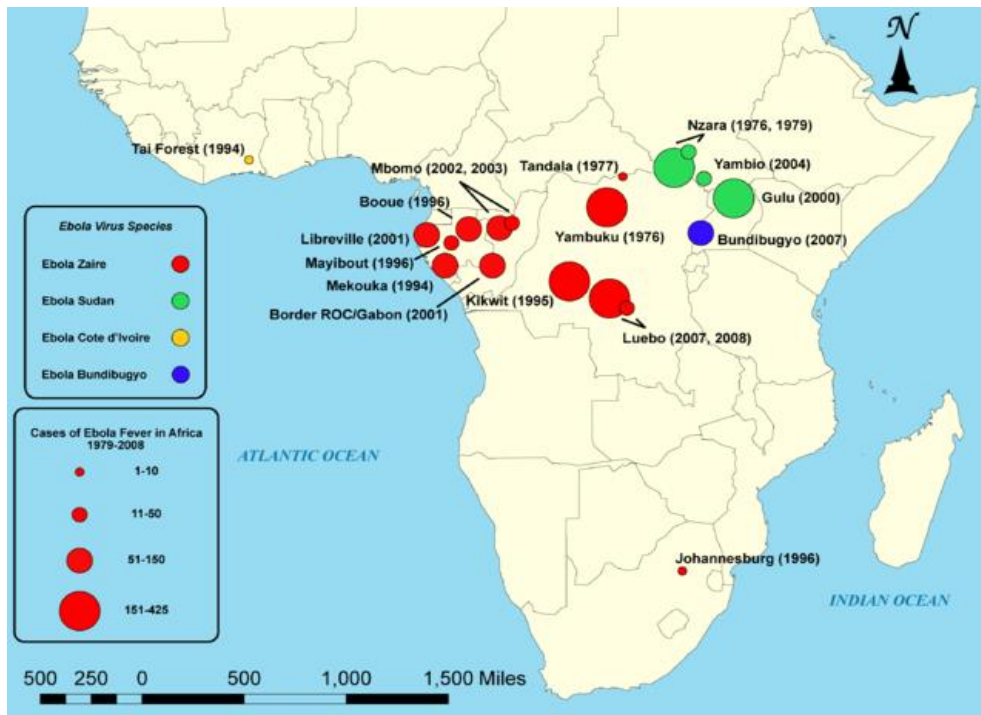
They then also embarked upon three strategies which would become cornerstones of Ebola medical treatment even until the present day. Firstly, they emphasized quarantine measures for patients afflicted with the disease, this was meant to upgrade hospital security and protect non Ebola patients from having a greater exposure to the virus. Secondly, they commenced the tradition of treating Ebola patients in biohazard tested suits/uniforms that would protect medical workers from easy access to the sores, rashes, blood, and other bodily fluids that Ebola thrived in. The third reform implemented would prove the most important in future outbreaks, for it was a reform that was people-centered and was based on communication to local communities impacted by the Ebola virus. Communication based on what the virus was, its deadly effects and impact, steps to be taken to prevent its spread, as well as open communications with local political, religious, and economic leaders who had influence and sway. A second component of this communication systems approach was also related to contact tracing, with steps taken to ensure knowledge on how many individuals an Ebola patient had contact with, so that quarantine or monitoring could be conducted. These three steps helped to

ease the Yambuku epidemic and within a few months after 318 cases and 280 deaths, the outbreak had ceased²².

Ebola’s Story

Ebola’s story within the African continent and medical history was not ending though. For the next four and a half decades the Ebola virus would proceed to cause 24 outbreaks and over 1,700 cases, with a typical outbreak ranging between 25 percent and 90 percent fatality.

Cases Of Ebola Fever In Africa From 1979 to 2008²³



Map of all previous outbreaks in Africa leading up to the 2013 – 2015 West African Ebola pandemic.

²² “Containment and Surveillance of an epidemic of Ebola virus infection in Yambuku Area, Zaire,1976” . 1978. Piot, P, et all.

²³ Cases Of Ebola Fever In Africa from 1979 to 2008.” *Wikimedia*.2011.

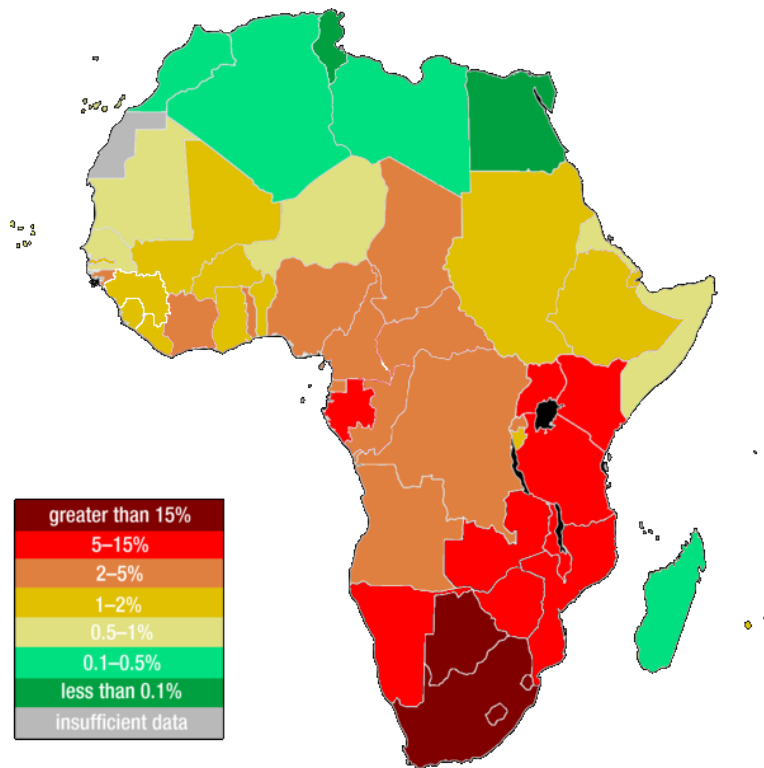
Central Africa naturally arose to become the hotspot of the disease, with Sudan, the Democratic Republic of Congo, Sudan, the Republic Of Congo, and Uganda gaining repeated outbreaks. Ever since the 1990s as well, there has nearly been an outbreak on average every two-three years. The limited research into the virus has concluded that fruit bats are the natural carriers of the virus, and some outbreaks have been linked to either fruit bat bites or flawed cooking of a fruit bat leading to Ebola transmission²⁴. In a few outbreaks in Gabon, flawed butchery of monkeys by rural residents was found to be the cause. Vaccine research revolving around Ebola was also barely funded in comparison to other diseases, with the US Military the keen leader in the field primarily due to its fears of Ebola's potential potency as an effective bioterrorism agent²⁵.

West African Health

For the virus's history though, West Africa was normally seen as a safe haven from the virus. West Africa in contrast to the rest of the continent health's focus was mainly on Malaria as well as Tuberculosis. The HIV/AIDS epidemic of the 1980s had left the subregion largely untouched, with rates affecting only 1 to 4 percent of the adult population, unlike Southern Africa which had rates exploding into the twenties and thirties. The map on the next page clearly portrays this situation.

²⁴ "Fruit Bats as reservoirs of Ebola Virus." 2005. Leroy, E. et all. *Nature*.

²⁵ "Ebola hemorrhagic fever in the age of bioterrorism". 2003. Polesky, A; Bhatia, G. *Seminars In Respiratory Infections*.



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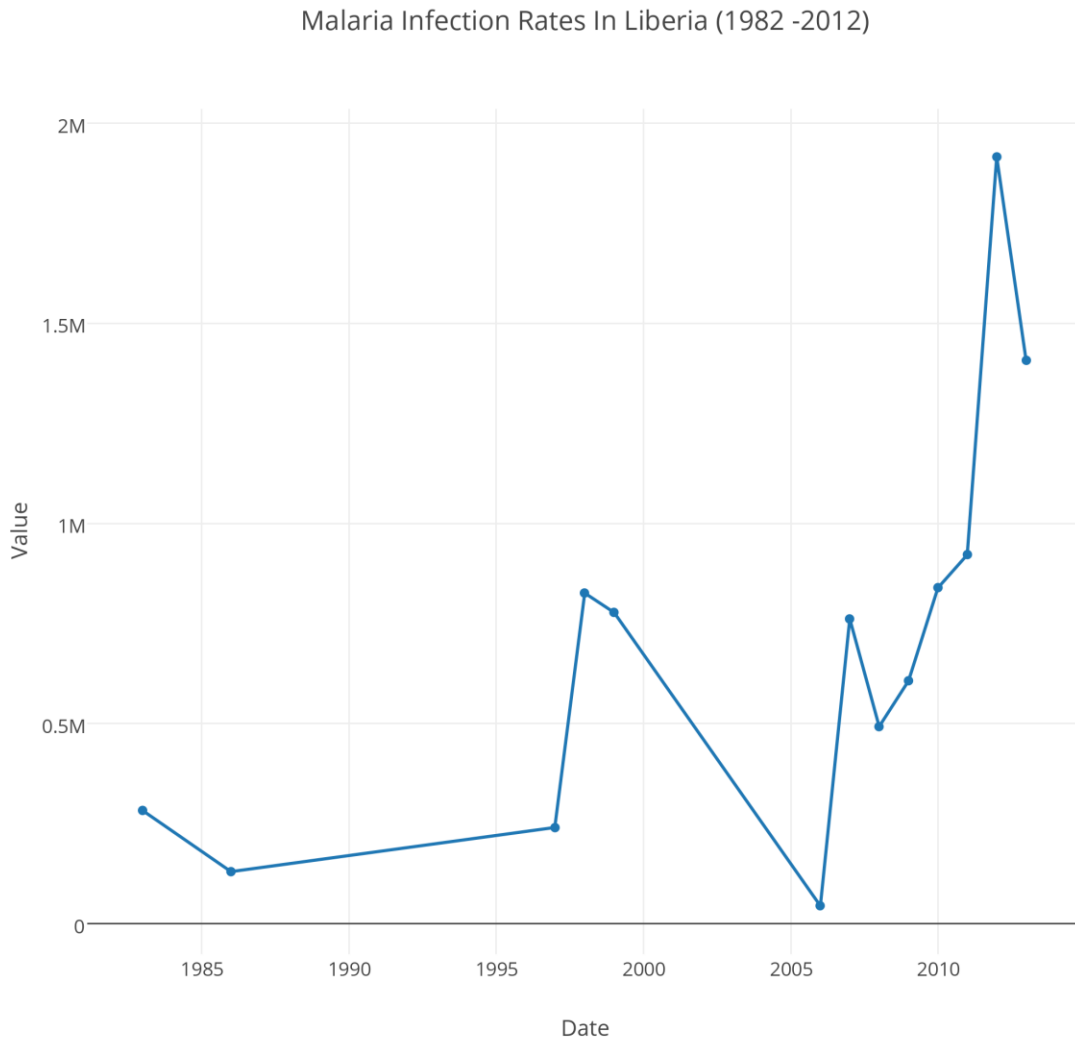
Map that depicts HIV/AIDS rates as a percentage of the adult population within African states. Notice how most West African states have rates between 0.5 – 2 percent, with none possessing a rate above five percent.

Western Africa though was not a complete success however, far from it, the subregion also suffered from various factors that helped to prevent its medical infrastructure from scaling up towards European or East Asian standards. By 2010 the region still boasted high rates of Malaria, traces of polio in Nigeria, and a myriad of other tropical diseases such as Lassa fever

²⁶ “Estimated HIV Infection In Africa In 2011”. 2011. *Wikimedia*.

and river sickness²⁷. As the graph below shows, Malaria alone in Liberia, one of the E3, produced 1.4 million cases in 2012, nearly a quarter of the country's entire population.

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West Africa also has a wide variety of other medical issues, including the troubling rates of infant mortality, in particular in the northern sections of most of the costal West African

²⁷ "Ebola intensifies the struggle to cope with Lassa Fever." 2014. Ruz, Camilla. BBC.

²⁸ World-Bank Cross-Data. 2015.

nations. To most observers of medical policy, there are a variety of factors that help to explain why the subregion's medical infrastructures were just strong enough to be viable to handle normal functional life, but weak enough to invite in the explosive growth of the Ebola pandemic. One note must be attached though that even within this subregion there are immense gaps between quality, in affluent neighborhoods of Accra and Lagos one could get treated at a comparable level to Western institutions, however travel far inland into the continent, let's say Gao in Northern Mali, and the medical infrastructure would be heavily lacking and conjure up images most often thought of when thinking of African medicine.

The sins of corruption

The first factor that helped to impede the progress of West African medical progress is the factor of organized corruption. Upon the onset of independence, the world greeted the new entrance of these states; states that they hoped would be able to prove to the world a new model of development. Colonial West Africa at that time was seen as a bit more advanced than much of Colonial Asia in terms of both infrastructural capability and political competence²⁹. Ruthless as the Western colonizers were in certain aspects, but in terms of medicine, they proved a huge and beneficial role in laying the foundations for what could have been classified as modern medical systems, at least in the urban capitals they had been most entrenched in. By the early 1980s West African medicine had largely reached a decline, by the mid-2000s it was in shambles through the majority of the subregion. The primary factor that caused this can be attributed to the endemic corruption that gripped many of these states upon independence. Corruption proved largely debilitating to the medical sector as medicine is a very capital-intensive sector and requires

²⁹ Meredith, Martin. 2010. *The Fate Of Africa: A History Of Fifty Years Of Independence*. PublicAffairs.

significant infusions of capital to function properly³⁰. Not only in terms of the actual infrastructure of a medical center or ambulances, but also in terms of materials at said medical centers/vehicles, cost of medications/vaccines, the constant funds needed to restock basic supplies, energy costs, as well as most importantly the wages needed to furnish Doctors and nurses with salary for their tireless work.

Corruption managed to prevent all of this from going further, and foreign aid from Western states was insufficient to meet the gap, and often mostly focused on rural areas not connected to the teeming metropolises which were the true battlegrounds of healthcare, or focused on diseases such as HIV/AIDS that while a threat to the public welfare were not true pan-population healthcare concerns. Furthermore, certain knock-on effects of corruption such as degraded transportation infrastructure, erratic energy systems, and a culture of commonly accepted bribes all helped to make West African societies iller societies from a health perspective.

The Brain Drain

A secondary factor which helped to cause this lackadaisical state of West African medical infrastructure has to do with what is now commonly referred to as the brain drain. Due to both colonial efforts as well as the visions of Africa's founding fathers, West African medical infrastructure on the onset of the 1960s was poised for progress. For centuries in European society, West Africa had been labelled the White Man's Graveyard³¹ due to the high rates of fatalities caused to both explorers and traders as a result of the various tropical diseases which populated the region and still do to an effect. With this reputation on the outset of the imperial

³⁰ "Combating healthcare corruption and fraud with improved global health governance". 2012. Mackey, Tim; Liang, Bryan. *BioMedCentral*.

³¹ "The End of the White Man's Grave".1990. Curtain, Phillip. *Journal Of Interdisciplinary History*.

mission that England, France, and Portugal set upon, an effort was made to create at least a network of modern western clinics that primarily functioned to treat both tropical diseases and reproductive health. While the clinics were primarily initially built to house and treat European administrative³² staff, eventually they spread and created a basic network that also existed to serve native populations.

At freedom's first dance, it was a common part of many independence party era manifestos to advocate for both expansion of health services as well as directed moves to try to eventually create a universal healthcare system for their newly liberated countries. Disease was naturally seen as an inhibitor of human potential, and thus the national economy. A common way to ensure expansion was then to create national medical schools that by the 1980s while not as advanced as those in the developed world still managed to churn out talented and competent graduates that could pay heed to the medical needs of these developing countries.

By the 1980s as a result of the Volcker Shock and increasing inability to command proper payments and a fair wage, recruitment efforts began by the United Kingdom, the United States, and Canada to try to attract in particular West Africa's doctors and nurses³³. Lured by the prospect of astronomical wages as well as access to the latest medical technology and proper continuing education resources a flood ensued. Liberia and Sierra Leone were particularly impacted, with their civil wars luring many competent doctors and nurses to the NHS in Britain. This had the effect of ensuring that some of West Africa's most intelligent individuals and the backbone of its medical systems were forced out, leaving the country not only spending millions

³² "Black Death, White Medicine: bubonic plague and the politics of public health in colonial Senegal, 1914 – 1945". 2002. Echenberg, M.

³³ "The Migration of physicians from sub-Saharan Africa to the United States Of America: measures of the African Brain Drain." 2004. "Hagopian, Amy; Thompson, M.; Fordyce, M.; Johnson, K.; Hart, Gary. *Human Resources For Health*.

training doctors to only see them all emigrate to more welcoming climates but also leaving the country's medical systems severely understaffed and the staff left behind overstressed and worked.

The Washington Consensus and the fall of states

The third factor that can explain West Africa's medical infrastructure lag was the effects of the Washington Consensus and the rapid expansion of IMF assistance into those states following the Volcker shock of the late 1970s. In the 1960s and 1970s newly created West African states found it incredibly easy to access both private and public markets for loans to assist with development. The interest rates on these loans were generally at low rates for the next two decades in part due to the fact that the reserve currency of the world, the United States Dollar, carried low interest rates as well. By 1979, battling a deep recession and facing questions of rising unemployment, Paul Volcker, the chairman of the Federal Reserve raised interest rates within the United States³⁴. This had a disastrous impact worldwide as with a hike of interest rates once manageable debt loads became quite untenable and thus with the formulation of the Washington Consensus, neoliberalism became seen as a potent ideological project that could help to revive suddenly ailing West African economies, and at the same time perpetuate Western economic neo-colonialism within the continent.

In exchange for liquidity to suddenly cash strapped governments, the IMF often mandated a policy change from governments that were strongly wedded to socialism and state capitalism to adopt strident capitalist policies along with austerity measures meant to stem the hemorrhage.

³⁴ "Africa, imperialism & new forms of accumulation". 2003. Bracking, S.; Harrison, G. *Review Of African Political Economy*. Routledge.

The problem was these austerity measures often targeted public goods that were meant to benefit wide sections of the population, education and healthcare in particular came in for cuts that intensified the situation for what were already desperately poor populations. The Washington Consensus remained religion within the world of geopolitics for over two decades, until the influx of Chinese capital and debt relief in the 2000s. In those two decades though, African medicine went backwards. The HIV/AIDS pandemic managed to destroy Southern African quality of life and stressed its medical system³⁵, in the Horn of Africa with food stresses apparent and droughts becoming more common as well as the Somali Civil war, life indicators plummeted³⁶. Central Africa had long found itself cursed by its landlocked status as well as its abundance of tropical diseases. Only Western Africa and Northern Africa seemed to have escaped somewhat unscathed, but even there malnutrition was a huge problem within the growing slums and cities of North Africa. As we will also see from our West African examples corruption and war had managed to also perverse development there as well.

Three nations

Our paper then turns towards Guinea, Liberia, and Sierra Leone. Three nations whose medical systems have now been torn apart by the Ebola pandemic which has through its efforts managed to reverse a decade of progress after recovery from the tragic civil wars which gripped the subregion in the 1990s. The story of these three nations also follows the standard trajectory of many West African nations with the trajectory of hope at independence largely coming to terms with chronic corruption and external factors that largely impeded medical progress. Listed here below are stats that support this story of dire underdevelopment in the

³⁵ "The HV/AIDS pandemic in South Africa: Sectoral impacts and unemployment". 2001. Arndt, C; Lewis, J. *Journal Of International Development*.

³⁶ *Disaster and Development In The Horn Of Africa*.1995. Sorenson, J. Palgrave Macmillan.

medical sector for the E3. Note in particular the low amount of community health workers per a thousand people, the percent of the population undernourished, as well the lower than average life expectancy numbers, which supports the inevitable conclusion that all three countries were perfectly fragile enough for the Ebola pandemic to wreak havoc. These three countries were the definition of African medical underachievement.

Liberia Health Data (Sourced From Quandl)³⁷

Source	Indicator	Level	As Of	Chg	5 Yrs Ago
World Bank	Fertility Rate - Liberia	4.87	2012	0.00%	5.28
World Bank	Life Expectancy at Birth - Total - Liberia	60.21	2012	0.00%	57.19
World Bank	Life Expectancy at Birth - Female - Liberia	61.18	2012	0.00%	58.08
World Bank	Life Expectancy at Birth - Male - Liberia	59.28	2012	0.00%	56.34
World Bank	Percent Under Nourished - Liberia	28.60%	2012	0.00%	29.70%
World Bank	Depth of Hunger - Liberia	330.00Cal	2008	0.00%	n.a.
World Bank	Percent Wasting - Under 5 - Liberia	7.80%	2007	0.00%	n.a.
World Bank	Percent Overweight - Under 5 - Liberia	4.20%	2007	0.00%	n.a.
World Bank	Percent Overweight - Female - Liberia	45.41%	2010	0.00%	41.57%
World Bank	Percent Overweight - Male - Liberia	32.66%	2010	0.00%	29.57%
World Bank	Community Health Workers per 1000 people - Liberia	0.04	2004	n.a.	n.a.
World Bank	Nurses per 1000 people - Liberia	0.17	2004	n.a.	n.a.
World Bank	Health Expenditure - Liberia	101.65	2012	0.00%	43.13
World Bank	Age Dependency Ratio - Liberia	84.92%	2013	0.00%	86.89%
World Bank	Age Dependency Ratio Old - Liberia	5.61%	2013	0.00%	5.71%
World Bank	Age Dependency Ratio Young - Liberia	79.30%	2013	0.00%	81.18%

³⁷ World Bank Cross Data. 2012.

Sierra Leone Health Data (Sourced From Quandl)

Source	Indicator	Level	As Of	Chg	5 Yrs Ago
World Bank	Fertility Rate - Sierra Leone	4.78	2012	0.00%	5.23
World Bank	Life Expectancy at Birth - Total - Sierra Leone	45.33	2012	0.00%	43.53
World Bank	Life Expectancy at Birth - Female - Sierra Leone	45.52	2012	0.00%	43.74
World Bank	Life Expectancy at Birth - Male - Sierra Leone	45.15	2012	0.00%	43.33
World Bank	Percent Under Nourished - Sierra Leone	29.40%	2012	0.00%	34.10%
World Bank	Depth of Hunger - Sierra Leone	340.00Cal	2008	0.00%	n.a.
World Bank	Percent Wasting - Under 5 - Sierra Leone	9.20%	2010	0.00%	10.20%
World Bank	Percent Overweight - Under 5 - Sierra Leone	10.30%	2010	0.00%	5.90%
World Bank	Percent Overweight - Female - Sierra Leone	49.12%	2010	0.00%	44.45%
World Bank	Percent Overweight - Male - Sierra Leone	26.31%	2010	0.00%	22.36%
World Bank	Community Health Workers per 1000 people - Sierra Leone	0.02	2010	0.00%	n.a.
World Bank	Nurses per 1000 people - Sierra Leone	0.23	2004	n.a.	n.a.
World Bank	Health Expenditure - Sierra Leone	204.94	2012	0.00%	137.48
World Bank	Age Dependency Ratio - Sierra Leone	79.28%	2013	0.00%	81.65%
World Bank	Age Dependency Ratio Old - Sierra Leone	4.78%	2013	0.00%	4.56%
World Bank	Age Dependency Ratio Young - Sierra Leone	74.50%	2013	0.00%	77.09%

Guinea Health Data (Sourced From Quandl)

Source	Indicator	Level	As Of	Chg	5 Yrs Ago
World Bank	Low Birth-Weight Babies - Guinea	12.00%	2005	0.00%	n.a.
World Bank	Under-Nourished People - Guinea	1,600,000.00	2012	0.00%	1,500,000.00
World Bank	Adults Living with HIV - Guinea	110,000.00	2013	0.00%	89,000.00
World Bank	Nurses per 1000 People - Guinea	0.47	2004	n.a.	n.a.
World Bank	Health Expenditure Per Capita - Guinea	67.29	2012	0.00%	60.64

But in order to understand this story of comprehensive failure. This story of overall medical incompetence and struggle, one must analyze the overall histories of the cities and countries involved. We turn our attention now towards these countries history, exploring how they largely developed historically, how they were impacted by the coming of Western modernity in the form of colonialism, how they coped in their first few decades of independence, and what the past decade has brought them.

Chapter 2

The Past is a foreign country: Historical Variables behind the spread

LIBERIA



In late 18th century to early 19th century Western civilization, slavery had become a hot-button issue. With the success of the Haitian revolution against the colonial French overlords, throughout the New World, the largely successful plantation economy within New World societies began to fear both the prospects of violent slave revolutions as well as the growing voices growing in Europe for a global abolition of the slave trading practice. On the streets of London, which was the hub of the British Empire that envisioned itself as the leading power of the day, there were calls to ban the practice³⁸, with what we would call modern non-profits heralding the issue. America influenced by this growing clamor would ban slave trading by

³⁸ *Caribbean Slave revolts And The British Abolitionist Movement*. 2013. Matthews, G. Louisiana State University Press.

1808, with Britain following in 1811, for the rest of the 1810s various Western European powers would follow. This ban on slave trading was enforced with fleets of British naval ships policing the West African coast and arresting traders willing to defy what was quickly becoming global international law³⁹. This new policy helped to ensure that the African population of the New World would not increase tremendously for the rest of the 19th century. However it then translated to a conversation on how to manage this large population that was seen at odds with the European ethos of the emerging states of the Americas.

A call in the Americas

Prominent American policymakers and intellectuals theorized ways to then deal with the massive African-American population. Most of the responses from our contemporary perspective reek of racism and superiority complexes, with Thomas Jefferson in particular arguing for the potential full scale banning of slavery and removal of the African-American population back towards the West African coast. This idea generally started to serve as a lightning rod for action and the American Colonization Society soon emerged by 1817 advocating for the abolition of slavery and the resettlement of ex-slaves and freedmen on the West African Coast, where they would presumably be able to create their own societies and attain their visions of emancipation. The idea was heavily influenced by the British Empire's own examples with Freetown which drove the campaigners to in 1820 start their own resettlement campaign. With the purchase of the Cape Mesurado by armed force and flimsy gratuities towards the local kingdoms of the Deio and Bassa people, an agricultural rich region bordering the coast near what is now present-day Monrovia, the first settlers began to arrive. By 1822, Monrovia had been established by the settlers to serve as the local port and administrative

³⁹"The Formation of the American Colonization Society". 1917. Sherwood, HN. *The Journal Of Negro History*.

capital of what they hoped would become an internationally recognized country. By the early 1840s, nearly ten thousand African-American settlers had settled among four colonies all throughout the Liberian coast⁴⁰. This combination of both density of population as well as projection into the country that then enabled Liberia to declare themselves an independent state by 1847⁴¹, becoming the internationally recognized free and independent Republic Of Liberia.

A New State

The new state committed two actions in particular, which ensured that its foundations would prove perilous during the Ebola pandemic. The first action was to create two tiers of citizenships between the small but wealthy Americo-Liberian population and the large mass of indigenous kingdoms and states which had existed before the intrusion of the Westernized returnees. The second was to ally itself with the United States in response to French and British incursions.

In the decades after Liberia's creation, one of the main goals of the government was to expand the territory, this was done through creating Americo-Liberian settlements in the Liberian interior, and through this expanding settlement the use of force in order to bring existing kingdoms and states that refused to yield to what they deemed correctly as a hostile state, into the Liberian political order. With this mass of indigenous population, the Americo-Liberians used them to mainly first serve as contract laborers on the coffee plantations which served as the backbone of the economy until the 1880s and from the 1920s onwards on the rich rubber yards of the country. A caste system of segregation was utilized in order to preserve Americo-Liberian control over the economy and politics, one way this was utilized was through the way in which

⁴⁰ "Black Christian Republicanism: a southern ideology in early Liberia, 1822 to 1847". 2001. Burrowes, CP. *Journal Of Negro History*.

⁴¹ 'Liberia: The Price Of Independence'. 1971. Hargreaves, JD. *The Journal Of Yoruba and Related Studies*.

settlement in Monrovia was restricted only to a few indigenous Liberians, a town which resembled the cotton towns of the antebellum south, with the Victorian architecture and even the fashions being identical. This discriminating and abusive system of relations between the colonizing Americo-Liberians and the native majority would ensure in the future, and especially from the combustible 1980s onwards harsh consequences for the stability of the country.

The second strategy that the nascent Liberian state prioritized that would have lasting consequences would be its patronage under the United States. For the first few decades of its independence it became the land that America forgot, with barely any relations or assistance forthcoming from what was still a bitterly divided and racist United States. In the 1870s with both hostility growing from certain native Liberian kingdoms as well as incursions from both the British in Sierra Leone, and France's attempts to carve an expansion of French Guinea and French West Africa, the Liberian government extended a plea of help to the United States to save its experimental state⁴². This would for the next seventy years place Liberia under intense neo-colonial governance. Administrators would often be sent to the country to help manage the country's "finances" and from the 1920s onwards, at the behest of the United States Government, the Firestone Corporation would set up some of the world's largest rubber plantations within Liberia, in Harbel⁴³. This would help to revitalize the Liberian economy but also placed it chained to the global economy as a permanent resource export economy, and prevented diversification of the economy, which kept the country poor and wage inequality extremely high.

⁴² *Another America: The Story Of Liberia and the Former Slaves Who Ruled It*. 2013. Ciment, J. Macmillan.

⁴³ "The Firestone Rubber Plantations In Liberia". 1969. Church, RJH. *Geography*.

By the late 1970s, modern Liberia was changing. Hundreds of thousands of rural native Liberians were beginning to stream into Monrovia, rubber was no longer keeping the state afloat as it once had, and civil unrest was increasing along with population. President William R. Tolbert Jr. facing economic pressures decided to remove various subsidies regarding rice which was a basic crop⁴⁴ and an essential part of the West African diet. This resulted in massive street protests that led to the state army to shoot and fire on protestors. With public opinion heightening in April 1980 against the Americo-Liberian regime, Master Sargent Samuel Doe, a native Liberian and a member of the Krahn group launched a coup against the government killing President Tolbert and scores of his cabinet. The next year would be an orgy of violence, with many prominent Americo-Liberian political officials being killed in Monrovia's public squares. In one stroke 140 years of Americo-Liberian political dominance had ended. The famed dynasty that had produced Liberia's basic character was suddenly wiped away. This resulted in a substantial portion of Americo-Liberians fleeing the country for America, where many found it easy to immigrate to due to historical ties and cultural familiarity.

The First Liberian Civil War

Samuel Doe proved to be a divisive and disappointing leader, having to encounter a myriad amount of coups in the 1980s. Furthermore he also stroked violence against northern ethnic groups. This violence would prove to backfire against him as Charles Taylor, a charismatic American educated half Americo-Liberian and half Gola people emerging politician used the anger to train a group of defected soldiers and ethnic northerners in the Ivory Coast called the National Patriotic Front Of Liberia⁴⁵. He invaded in December 1989, commencing the

⁴⁴ "Rice Policy In Liberia". 1979. Monke, Eric. USAID.

⁴⁵ "Reinvention of an African Patrimonial State: Charles Taylor's Liberia". 1995. Reno, W. *Third World Quarterly*.

start of the first Liberian civil war. By mid-1990 he had consolidated control over most of the country, even in spite of ECOWAS and UN protests for him to come to the table and sign a ceasefire that would have led to democratic elections. By September ninth, President Doe was ambushed outside of ECOWAS's armed forces (ECOMOG) camp in Monrovia upon where he was ambushed, kidnapped, and then killed. By the end of the year various new rebel movements had emerged and the country was essentially in the midst of internecine ethnic warfare. In 1995 under the tutelage of Ghanaian statesman Jerry Rawlings a deal was concluded to end the war and guide Liberia towards elections, elections that Charles Taylor, by long now a proven sadist and psychopath, won in 1997 through intimidation and threats to reignite the war if he did not get victory⁴⁶. By this point his actions had already led to the death of over 200,000 Liberians and the complete destruction of its infrastructure.

The Second Liberian Civil War

By 1999, with diasporan Liberians and residing Liberians disappointed in the Taylor government, and knowing he was quite unlikely to acquiesce power at the ballot box, they turned to Guinea. Guinea, wary of Taylor's attempts to foster a war and rebellions within their homeland helped to create Liberians United For Reconciliation and Democracy and helped to channel it both arms and funds. In 1999 war kicked off once again and LURD invaded from southern Guinea The war was fought with high intensity until 2002, when the Taylor government concentrated all of its resources in Monrovia as LURD had succeeded in conquering most of the interior and was only 44 kilometers away from conquering the capital. The Ivory Coast, seeing the winds of change and also desiring to finish Taylor once and for all also nursed their own

⁴⁶ "From "warlord" to 'democratic" president: how Charles Taylor won the 1997 Liberian Elections". 1999. Harris, D. *The Journal Of Modern African Studies*.

rebel movement to aid LURD. Taylor seeing the signs of his demise but seeking a way to safety went to the table in 2003 and signed along with regional actors and rebel movements the Accra Comprehensive Agreement of 2003⁴⁷. He soon received exile in Nigeria, but was soon promptly arrested by Interpol for crimes against humanity and was sent packing towards a trial with the ICC.

The war left Liberia devastated, with nearly 3000,000 deaths and a maelstrom of social consequences. Rape, the use of child soldiers, sheer potent cannibalism, ethnic violence, and the breakdown of any semblance of political order or rule of law led towards the country psychologically damaged and in need of both time and massive investment. In one and a half decade more than half a million lives were taken away from what was already a poor country and that had a historical legacy of stark class and ethnic divides.

In 2005, seeking to move towards peace, elections were held, the contest pitted the controversial but celebrated Ellen Johnson Sirleaf, a Harvard educated World Bank economist beating international football icon George Weah, of 1990s football fame in the presidential run-off. Ellen Sirleaf has been applauded for her work in terms of reconciling the population and in terms of consolidating democratization within Liberia to the point where she has become a Nobel Peace Prize winner. However Liberia's development still remains in a tricky state and has been compounded even further by the Ebola pandemic. Liberia's history has shown that its history of caste based segregation as well as its role as a resource depot for the West led towards low GDP per capita income, limited levels of development, and a high degree of ethnic and class tensions which managed to climax in two horrific civil wars which destroyed any chances of an advanced medical infrastructure or strong state.

⁴⁷ "Liberia: an analysis of Post-Taylor Politics." 2003. Jaye, T. *Review Of African Political Economy*.

Sierra Leone



At The Start

Sierra Leone was settled over 2,500 years ago from the North, East, and West by various different ethnic groups. However it was not relevant politically until the 16th century when the Mande people, through the great vessel that was the Songhai Empire conquered the interior territory and spread their principles, culture, and war technology among the pacifists groups that had settled in what would become Sierra Leone⁴⁸. This conquest prompted further immigration, especially of the West African transnational ethnic group, the Fulani and the Mandinka, that were vital trading groups throughout the region and in trans-Saharan trade as well. This expansion of the Songhai Empire also introduced new political forms and economic expansion to what had been a stagnant region.

⁴⁸ "A Reconsideration of the Mande Invasions of Sierra Leone". 1967. Rodney, W. *The Journal Of African History*.

By the 17th century, European naval vessels were regular visitors to the coast, first for trading of various goods, but with the opening of vast plantations in New World Societies soon eager to come to trade with local monarchs to poach humans that would be worked rigidly and abused on New World plantations. The Portuguese and the British were the most avid customers and through their avarice introduced the practice of slavery, albeit a mild conditional time constrained form of it, to the region's ethnic groups, which had lacked it before within their own social organization. By the time 1807 had rolled around, millions of what we would now term Sierra Leoneans had been abducted from their homeland, leaving the region far more sparsely populated, as well as disrupting traditional economic models that had once reigned in the region⁴⁹.

In The Name Of The Crown

By 1787 the world had become a transformed place as a result of the triangular trade that had developed between the Americas, Africa, and Europe. In London, there had developed a noticeable class of poor urban African-descended residents. Some were slaves and servants; others were African-Americans who had immigrated to Britain after the American Revolution as a result of their service to the crown, and many others were Afro-Caribbeans who were in London at the time for various working projects. In order to confront this crisis, the Committee For The Relief Of The Black Poor was formed⁵⁰, a collection of wealthy benefactors, concerned citizens, and various parliamentarians they discussed that the best way to confront the crisis was for Britain to create and sponsor a new colony on the West African coast that would

⁴⁹ "Slavery and the Slave Trade In the Context of West African History". 1969. Fage, JD. *The Journal Of African History*.

⁵⁰ *Black Poor and White Philanthropists: London's Blacks and the foundation of the Sierra Leone Settlement, 1786 – 1791*. 1994. Braidwood, SJ. Liverpool University Press.

help to not only produce better lives for these subjects of the British crown but also expand the reach for the British Empire. Purchasing land from the Tenme kingdom through a contrived legal document they settled in Sierra Leone's extreme West, by the coast in a settlement that they would call Granville Town in 1787.

The first 400 settlers were mainly Black males and their white girlfriends; they would form the basis of what would become the Krio people of Sierra Leone. Granville Town would be joined by Freetown, a settlement that would be established by a group of African-Americans who had settled in Nova Scotia and also sent to the new colony. Thomas Peters, a former African-American freedman who had participated in the American Revolution for the British army along with 1,200 recently escaped slaves and freedmen established themselves at Freetown and upon reaching land prayed under a cotton tree⁵¹. They declared on August, 24, 1792 the formal creation of the Sierra Leone colony. In 1800 they were soon joined by migration of freed Afro-Jamaicans. After the ban on international slave trading in 1808, liberated slaves from vessels trying to defy the trade were sent to Freetown and soon assimilated into the Krio culture. Thus from African-Americans, Afro-Caribbeans, and liberated Africans was the Krio culture that would dominate Sierra Leone formed. And it was this triumphant culture of hope and domination that would influence the experiment that would soon form in Liberia in the decades to come.

Throughout the 19th into the late 20th century, under both British and Krio sponsorship the Sierra Leone colony expanded deep inland from the coast. At times various ethnic kingdoms were brought off by British largess and promises of funds and easier access to trade, other groups

⁵¹ "The Freetown Colony And The Development Of "Legitimate" Commerce In The Adjoining Territories. 1970. Ijagbemi, EA. *Journal Of The Historical Society Of Nigeria*.

that were more prompt to resist the Western incursion were put down by Krio militias and the might of the British army. Following the Berlin Conference of 1884 Britain scrambled to seize as much of the inland territory as it could, knowing that France was also scrambling to consolidate French Guinea, and knowing that after earlier incursions due to American support, Liberia was off-access.

Despite various colonial wars and resistance movements, Sierra Leone gradually became seen as a valued part of Britain's African possessions, with Freetown serving as an important African administrative center for the British Empire. In the 1950s Sierra Leone suffered deep unrest due to calls for greater autonomy and rights to be accorded to the country. It was at this desperate time that Sir Milton Margai, a native born Sierra Leonean man who had completed medical education in the United Kingdom stepped to the fore and balanced both British expectations and Sierra Leonean demands to guide the country towards a limited parliament in 1957 and finally in 1961, independence.

Independence

Sadly, Sierra Leone's hopes for independence did not last long, Sir Milton Margai managed the country's transitions well during the early years, brokering power between the country's sixteen ethnic groups and ensuring that corruption did not creep into public life, but his life was cut short in 1964. He was succeeded by his brother, Sir Albert Margai who destroyed the balance of power that his brother had constructed, cutting Paramount chiefs of the nation's sixteen ethnic groups off from communication on important policy decisions as well as deciding to ban multiparty democracy⁵². This resulted in mass riots and unrest throughout the country,

⁵² "Politicization of ethnic identities in Sierra Leone". 1992. Kandeh, JD. *African Studies Review*.

with the epicenter at Freetown. This resulted in his political downfall and the eventual lurch of the country into military rule with three coups being launched within a three-year period. At the end of this tumult though, Siaka Stevens eventually rose to power. For the next two decades until 1985, Siaka Stevens ruled the country with a potent iron fist, suspending multiparty democracy, engaging in deeply corrupt behavior, and fostering close links to an armed force that enabled him to quickly repress any signs of dissent. In 1985, tiring of the daily bustle of politics and content with the promise that he would not be prosecuted for any crimes committed in office, he resigned, to be replaced by his handpicked successor, Joseph Momoh, who was elected in a general election widely suspected of rigging. Momoh ruled until 1990 and faced the same criticisms as Stevens, however he would face far greater challenges than any preceding Sierra Leonean prime minister.

Civil War

Charles Taylor, nursing a successful and burgeoning rebellion in Liberia was threatened of the way that ECOWAS peacekeepers, in particular Nigerian forces, were using Sierra Leone as a staging ground to thwart his success in the Liberian civil war. He thus used Foday Sankoh as a vanguard through which he could accomplish two actions. One, stymie the ECOWAS peacekeepers from intervening in Liberia and his plans to dominate the country politically, and secondly to also secure control of Sierra Leone's rich mineral resources, particularly diamonds, so that he could thus fuel his army and psychotic war with the illicit funds⁵³. His gambit played off, Sankoh was a zealous commander of the Revolutionary United Front and he dove into the war in Eastern Sierra Leone with pleasure, making sure to seize the diamond mines. The national government feeling threatened promised multiparty democratic reforms and fresh elections, as

⁵³ *A dirty war in West Africa: The RUF and the destruction of Sierra Leone*. 2005. Gberie, L. Indiana University Press.

well as actions to ensure peace would return to the country. Those failed when in 1991 with the economy tanking and wartime casualties rising, Momoh was overthrown in a coup and exiled himself to Guinea. For the next five years the military junta failed to stop the RUF. In its wake Sierra Leone was plunged into crisis.

Tens of thousands had been slaughtered, an equal number of children were transformed into drug addled foot soldiers or forced diamond miners, the economy both in the upcountry and Freetown fled as any remnant of foreign investment fled from the violence, and the ECOMOG forces failed to combat the spirit of the RUF. The medical infrastructure especially in the north was ripped into tatters; hundreds of doctors fled the country towards the warm inviting arms of the NHS as well as America and Canada. In 1997 due to ECOWAS pressure, elections were held, and despite various military coups to reverse the situation, Ahmed Kabbah arose to become President of the country. He navigated the desperate war with skill and precision, reaching out to both the British and UN peacekeeping forces to try to at least protect Freetown from the approaching onslaught of war. The United Nations concerned about the growing implosion in Liberia and the continued deadliness of the conflict agreed to formalize a UN Mission to Sierra Leone in 1998⁵⁴. Britain under the stewardship of Tony Blair also decided to engage in the multilateral intervention. In June 2000 under the cover of Operation Pallister, this tripartite force led by the British engaged deeply into Sierra Leonean territory, formally ending the war in 2001

Recovery

The war though had lasted for a good eleven years and the end of it had exhausted Sierra Leone. The country had gone from one of the wealthiest and best educated African states at the

⁵⁴ *Peacekeeping in Sierra Leone: The Story Of UNAMSIL*. Ollonisakin, F. 2007. Lynne Reinner Publishers.

onset of independence to one of the worst governed and poorest at the dawn of the 21st century. This was the war that set Sierra Leone up for its harsh collapse from the Ebola epidemic. By the end of the war only a handful of doctors remained in the country, malnutrition rates had soared, an entire generation had grown up more exposed to hard drugs and suffering from PTSD related symptoms. Furthermore women and reproductive health had become dire, with medical infrastructure in the east largely shot, leading to a wide host of consequences for the people of the region who had already suffered so much.

In the decade after the close of the war, both President Kabbah and his successor President Earnest Bai Koroma worked hard to try to both lead the country to recovery as well as to try to resolve the pains caused by the war. A truth and reconciliation committee was formed to try to question why certain actors both in government and in the rebellion forces acted the way they did, modeled off the one conducted in South Africa after the fall of apartheid. They also tried heavily to attract foreign investment and aid, this worked spectacularly well. China had deep and extensive interests in West Africa, and Sierra Leone, both due to the Freetown port as well as its mineral resources attracted attention for both. Just like in its neighbors, Chinese companies and migrants started flocking to the country, bringing both benefits and deep controversy⁵⁵. Roads sprouted up, new work was completed on administrative buildings, as well as a vast increase in trade between the two nations. Also given the fact that nearly all major settlements had experienced some vestige of the war, construction became a major activity throughout the country. This vast increase in economic activity led to the start of the creation of a small middle class, as well as rising wages for the poor. Economic growth rates soared often into recovery became the ethos. The medical sector which was ruined to a great extent also

⁵⁵ *China's Second Continent: How A Million migrants Are Building A New Empire In Africa.* 2015. French, H. Vintage.

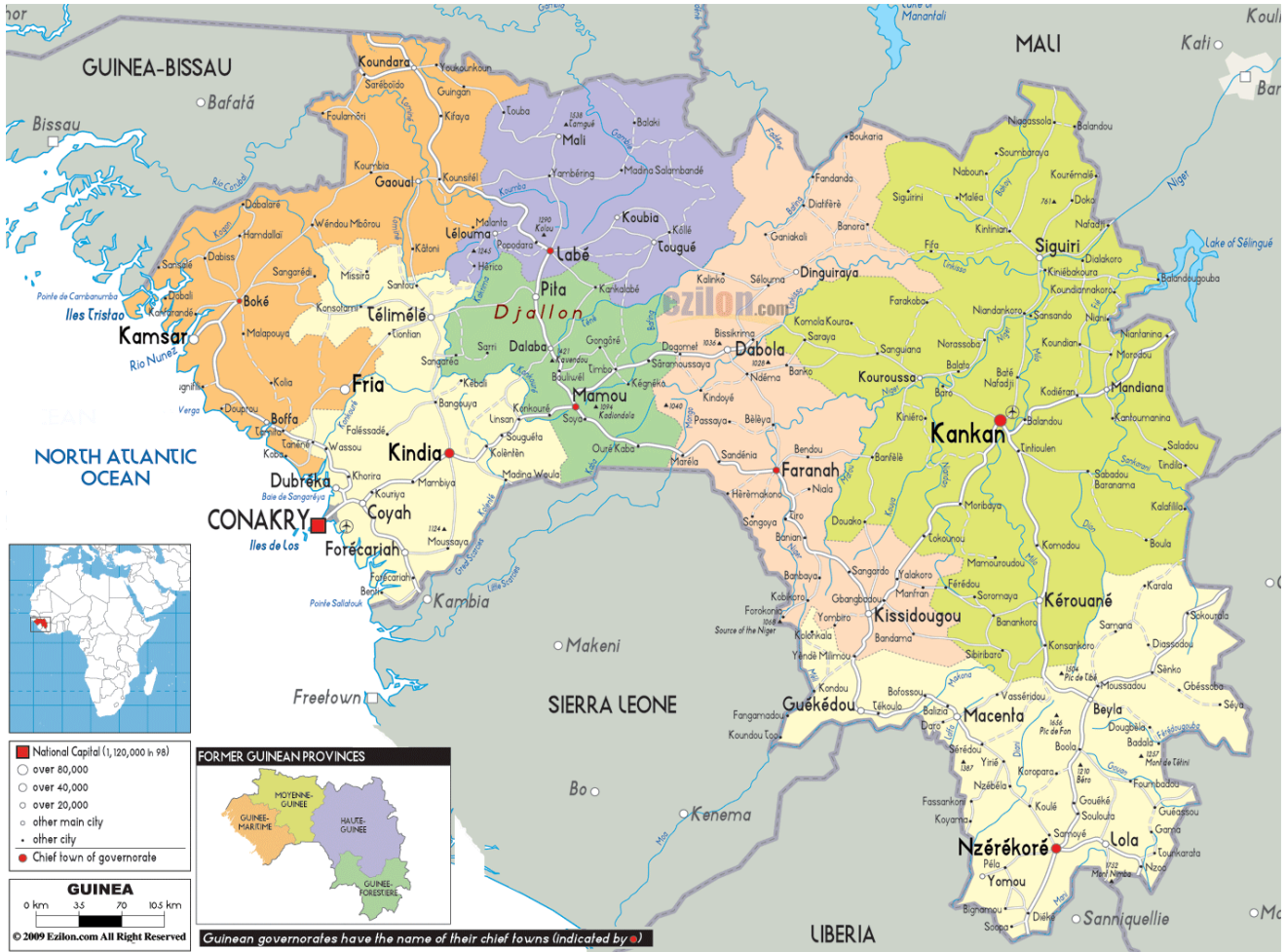
experienced some injections of capital, however not much to make it strong, and certainly not enough time had passed to retrain hundreds of medical professionals, all of this as the birthrate continued to explode.

Nevertheless, Sierra Leone's history placed it at a vulnerable position to be affected in the severity that it has by the Ebola virus. It has traditionally always operated as a fringe area for the legendary West Africa empires of the pre-colonial era but then evolved into a vassal colony manned by a cosmopolitan ethnic group that was a diasporic motley collection that yearned to return to the West African coast to escape poverty and discrimination in the Western world. It was managed by the British and expanded with impunity throughout the 19th century by assimilating and conquering various ethnic kingdoms that had never existed in a political entity with each other and often distrusted each other.

However unlike the Americo-Liberians and the French in nearby Guinea The British did manage colonialism very well in terms of balancing the demands of various ethnic groups, creating a gradual pathway towards autonomy and eventually independence, establishing educational institutions and pipelines meant to nurture the creation of a competent elite, as well as road and rail infrastructure that knitted Freetown to the rural interior. Rather it was native Sierra Leonean rule that managed to tear the fabric of the country, with strongman appearing after strongman and the foundations of both multiparty and consensus democracy slipping away. This eventually led to in 1991 with the onset of the Liberian civil war, the perfect foundations for a depraved rebellion movement that feeded as much off Liberia's troubles as it did off the economic decline and political tensions of Sierra Leone. This civil war lasted eleven years long, managed to kill upwards of 250,000 citizens, and launched an even larger refugee crisis. Most importantly within the context of Ebola, it destroyed what strong fabric the medical

infrastructure in Sierra Leone had left. This is what history had brought Sierra Leone prior to the start of the Ebola Pandemic.

Guinea



An established history

Guinea's history has long been as a well-settled mineral rich region often desired and prized by surging imperial powers with regional designs. Even in the days of African iniquity when the famous triad of the Ghana, Mali, and Songhai Empires rose and fell between the period

of 300-1650 AD Guinea was either conquered in order to gain easier access to trading goods⁵⁶ or seen as an outpost through which markets could also be accessed through. Various minor empires did start in Guinea such as the Empire in the 1700s or the Futa Jallon in the 1800s but they still revolved around the trans-Sahel civilization that Guinea was a strong member of, in this distinction then, the ethnic groups of Guinea can be seen and represented as branches of mainstream African civilization, unlike the examples we saw in Liberia and Sierra Leone.

In the late 1800s the French, already possessing Mali and Senegal were eager to increase their foothold in Western Africa, Guinea was seen as a comfortable hedge through which they could frustrate British expansionism of Sierra Leone as well as American sponsorship of Liberia. They met one of the fiercest episodes in African colonial resistance in the form of Samori Ture, the last emperor of the Wassoulou Empire and a prized military general. This vast resistance was defeated in 1898⁵⁷ and France would proceed to rule the country for sixty years.

The Colonial Era

French rule over Guinea produced very little. Unlike Sierra Leone and Liberia nearby, efforts were not made to build infrastructure nor encourage legislative representation nor the creation of a meaningful middle and upper class that could assist the French in running the colonies. The French operated the colony from a very direct rule minded perspective that was keenly focused on accessing Guinea's rich mineral resources. In particular bauxite that helped to keep many industrial functions profitable. Conakry was founded in 1888 on the extreme Southwestern coast in order to serve as a port city so that French ships could easily access the

⁵⁶ *Ancient West African Kingdoms: Ghana, Mali, & Songhai*. 2002. Quigley, Mary. Reed Educational & Professional Publishing.

⁵⁷ Meredith, Martin. 2010. *The Fate Of Africa: A History Of Fifty Years Of Independence*. PublicAffairs.

minerals mined and transport them from the rural interior of the country. In the 1950s as in many other African colonies civil unrest grew, this in the light of French military defeats in Indochina and Algeria that sent French policymakers scrambling on a way to quiet the growing turmoil south of the Sahara. Charles De Gaulle, of World War II fame and by now the French head of state decided to resolve these dual contradictions with a new supranational union to be called the French Community⁵⁸. This would be put on referendum in all of France's colonial possessions, if rejected, independence would be granted. Under the leadership of Ahmed Sekou Toure, a great-grandson of Samori Ture, one of Africa's great nationalist leaders, Guinea was the only one of France's remaining colonies to reject the invitation and in 1958 raised its flag to become the second Sub-Saharan African nation to gain independence.

A turn to darkness

On this high note though, things quickly got out of hand. France was perturbed with the dismissal and quickly cut Guinea off from any offers of economic or technical aid, leaving Guinea to align itself with both the Soviet Union and Sekou Toure to model his state on what he proclaimed the Beijing model, ironically making him the first follower of that school of thought decades before it would be fashionable under a more state capitalist hue. Sekou Toure ruled for two decades, until his death from a heart attack in 1984. Under his rule, Guinea, already desperately poor upon independence grew into one of the poorest states in the world. Guinea became a militant socialist state ruled and governed under a one party state religiously led by Toure and by the 1970s with the economy growing even more decayed he became an even more dictatorial and repressive ruler.

⁵⁸ *Africa And The North: Between Globalization and Marginalization*. 2005. Engel, Ulf. Routledge.

Various camps were opened up around the outskirts of Conakry and transformed into labor re-education camps meant to neutralize opposition. Thousands of intellectuals, outspoken businessmen, students, and revolutionaries were shuttled off to the camps. Out of fear, thousands more fled to neighboring African countries or to France. By 1984, Ahmed Sekou Toure had developed heart disease and promptly died.

Upon his death, the military assumed power and Colonel Lasanna Conte assumed power. Despite his promises of democratization, an end to human right abuses, and a pledge to liberalize the Guinean economy he would also become a formidable tyrant in his own right. While he would never go to the lengths that Toure did against dissidents, he also did not tolerate much free speech against his regime. Furthermore while Guinea did undergo various privatization regimes during his presidency, the corporate groups who would win the bidding process were still deeply connected to the ruling party and a corruption carousel still ensued. And while democratization in its basic cosmetic form of elections and freedom to form parties was granted, Conte always found a way to stay entrenched in power. The only saving grace of his stay in power was that he managed to repel any extension of the Liberian-Sierra Leonean civil wars into Guinean territory even with the large influx of refugees that Guinea received. And eventually through daring and international support he helped to channel funds and arms to the various rebel movements that would end Charles Taylor's reign of terror in both Liberia and Sierra Leone.

Nevertheless, after a sustained period of illness, Conte would die in 2008 leading to a dramatic two-year period of military rule replete with killings, drama, mass rape episodes, intense corruption, and widespread allegations of human rights abuses⁵⁹. However under the

⁵⁹ "The 2008 Guinea Conakry Coup: Neither inevitable nor inexorable". 2010. Picard, L.; Moudoud, E. *Journal Of Contemporary African Studies*.

stewardship of the former Burkinabe President, Blaise Compaore, agreements were made in 2010 for elections to be held. Through this covenant, in 2010, elections were held and long-time dissident Alpha Conde became president of the long maligned country. It is not an understatement to say that his presidency has been hugely dramatic and disappointing.

A turbulent time

In 2011 he nearly suffered from a coup launched at his palace that involved rocket propelled grenades and intense gunfire, launched by a segment of officers supposedly doing it at the behest of Guinean military command. However he survived and then blasted enemies who he said were trying to splinter Guinean unity⁶⁰. Granted this didn't incline him to greater receptivity with the military, which is why in 2013 after a plane crash that involved the head of the Guinean military he was suspected of playing a role. Then later on in 2013 when a census was to take place in order to create the rolls required for the 2015 Presidential elections and he opted to use a South African firm to create the process, further unrest was uncited, with mass riots on the streets of Conakry leading to nine deaths and intense tensions between the Fula plurality and the Mandike minority from which Conde hails⁶¹. Alpha Conde had increasingly gone from proud opposition warrior towards the embodiment of the ethnic clash and tensions increasingly emerging within Guinean society, and that have emerged due to the desperate poverty still afflicting many parts of the country.

Guinea by the early 2010s was described as a state that was on the verge of becoming a failed state. Health indicators in the country were lacking, with rural areas lacking a network of health clinics, average life expectancy at 59.60 years old, higher rates of HIV/AIDS

⁶⁰ "Guinea's President survives assassination attempt". 2011. *Associated Press*.

⁶¹ "Guinea Riots spread outside capital, election talks splutter". 2013. Samb, S. *Reuters*.

in the country compared to the regional average, with a five percent rate in Conakry alone, as well as intense malnutrition rates up to 40 percent in certain deprived mining zones in the north. But is it any wonder? Guinea had been a neglected French colony, receiving little investment in anything besides mining. Upon independence it was ruled in succession by two strongmen more devoted towards attaining a cult of personality, developing ideological projects, and obtaining lavish wealth than in broad national development goals.

Then with the death of Conte in 2008, ever since, it has been drawn into a game of chance and ruthlessness between democrats eager to burgeon Guinea's democratic credentials and a military intent on preserving its totem place atop Guinean society. It is a story then of utter neglect of the real heroes of Guinea, the countless millions of working class citizens who trudge off towards formal or informal work every day in the hopes of navigating a corrupt politically tense country that has still not yet shed its historical tag, that of the resource rich province that was often always the vassal of imperial power eager to latch on to its golden age. This is the history of Guinea before the Ebola epidemic.

And now as we proceed towards the next chapter, it is with Guinea where we will begin the story of how the virus managed to make its ways through these maligned states, lurching them even further into chaos and tragedy.

Chapter Three: Ebola: The detailed trajectory

Emile

On December 2, 2013 Emile Ouamouno was playing in the forested areas near his home. Emile lived in the town of Meliandou in Nzekore region in Guinea, Guinea's most southernmost region, and one that was heavily impacted by the Liberian/Sierra Leonean civil wars of the 2000s.

It was and still is the poorest region in the country. But on this day, two-year-old Emile was doing what all children doing, playing by the trees. Trees though that were host to numerous hordes of free-tailed bats, a species of bats that in recent decades has had more and more interactions with humans due to the increasing expansion of African settlements onto what had once been deep forested areas. Emile most likely contracted the Ebola virus in one of two ways according to epidemiologists who have tried to reconstruct the patient zero episode. The first was that he picked up a fruit that had fallen from the tree that had already been nibbled at by a bat, and the virus was then able to spread and successfully transmit into his body, this is the most popular explanation as there were no scars on his body to suggest that Emile had suffered a bat bite⁶². The second explanation though is that that the bat bite was simply not located and Emile somehow scared the hordes of bats, incurring the bite of one or several, thus the bite leading to the injection of the virus into his bloodstream. By December sixth Emile was sick, by the eighth his family had rushed to the local hospital, afraid of his deteriorating state. The local medical mission diagnosed him as simply suffering from Lassa fever, one of the many tropical diseases that Ebola has long been mistaken for, Emile was given a wide variety of medications, however

⁶² "Tracing Ebola's Breakout to an African 2 – Year – Old". 2014. Grady, D; Fink, S. *New York Times*.

he soon died on December 13th. His death in any case was marked with solemnity and the traditional Guinean customs. His body was washed by his mother, older sister, and other women in the community. He was properly buried and the village properly mourned. However a week later both his mother and sister had fallen ill, they too were diagnosed with Lassa fever and they too soon died, leaving his Father the last member alive of his family.

The virus also soon infected a few other women in the community, from there in January and February the virus had begun to spread covertly through all of Nzekore and also into the bordering Macenia region, Ebola was on the march. Local midwives that had attended to some of the first victims trudged throughout the rural passageways and roads, bringing the specter of death with them. By this point, the Guinean Ministry of Health was beginning to receive updates about surges of Lassa fever from the Guinean forest country. At this point, the ministry decided it was probably nothing to worry about, who would have thought Ebola would finally have intruded on West Africa? Furthermore no doctor had yet questioned the validity of the Lassa Fever Diagnosis. This would all change in Mid-March; the virus had finally reached a major Guinean city in the form of Kissi, a city within the central-south that was home to 400,000 souls and a substantial proportion of Liberian and Sierra Leonean refugees who had turned into by the 2010s permanent immigrants. Two doctors within the town requested that samples of blood from various victims within the city be sent to the WHO's African regional headquarters in Dakar, Senegal. On March 23, 2014 after extensive testing, the World Health Organization declared that the Ebola Virus had finally been detected in West Africa for the first time and placed Guinea as suffering from an Ebola outbreak, by that point 49 cases had been detected⁶³.

⁶³ "Ebola detected In Guinea Victims, 50 dead". 2014. *Associated Press*.

Crisis

From that moment, President Alpha Conde implored the nation to put the ethnic and political tensions of recent years behind it and declared a national emergency, he ordered medical quarantines to be placed around medical hot spots, increased screening along road checkpoints, as well as promises to seek foreign aid to help to build up the medical infrastructure of Guinea.

It would not prove to be as easy as President Conde put it; by late March the epidemic demonstrated its potency as it infiltrated from southern Guinea towards Northern Liberia in Lofa County, highlighting the extensive links between the communities that populated the border regions between Sierra Leone, Liberia, and Guinea. Links that even with the erection of colonial regimes and the eventual creation of new states overcame the fiction of borders and statehood as they stretched for thousands of years.

Besides the President's words, actions did not come quickly from either the National administration or the WHO, road checks were not manned properly and cordon sanitaries were not properly enforced with armed forces, this allowed the virus to easily spread throughout all of Guinea. Furthermore, the National administration failed to publicize the virus and make known the epidemic's true threat. The international community within the early months of spring saw the epidemic as a traditional Ebola epidemic that would eventually fizzle out once it had burned itself through enough bodies. This though failed to highlight the fact that this virus had already ceased being a mere rural virus, it had already marked itself by spreading into regional town centers spaced quite a distance from each other. By late May though the world would realize its

fully when Conakry announced its first cases⁶⁴. The virus reaching Conakry finally caused the executive branch of Guinea to fully panic. MSF doubled down its efforts on the country, calling for a greater flood of medical professionals to treat the sick, by May the virus had already reached 100 – 200 cases and resulted in 63 deaths, and as Conakry was packed and filled with inadequate sanitation, the fears were that the virus would eventually grow out of control.

The fears were not unproven, Conakry soon spiraled out of control, by June an unceasing flow of Ebola cases were rocking the city, with ten to fifteen cases a week following into the overburdened hospitals of the city⁶⁵. By late June the virus had reached 490 cases and resulted in 270 deaths⁶⁶. While Conakry’s epidemic never reached the heights of either Monrovia or Freetown, it did set the stage for various observations of the virus, at least within the Guinean context. By October, while Guinea had escaped the brunt that the virus was inflicting on Liberia and Sierra Leone, the virus was still nowhere near towards being eliminated, with an average of ninety cases a week. With this in mind, the virus started to impact local traditions and customs, with local Eid celebrations cancelled.

Ebola Situation Report – October 31 – Guinea Case Load⁶⁷

Country	Case definition	Cumulative Cases	Deaths
Guinea	Confirmed	1409	*
	Probable	204	*
	Suspected	54	*
	All	1667	1018

⁶⁴ “Ebola Virus reaches Guinea’s Capital, Conakry.” 2014. *Associated Press*.
⁶⁵ “Ebola Virus Update – West Africa – update June 23rd 2014”. 2014. *WHO*.
⁶⁶ Ebola Virus Update – West Africa – update June 23rd 2014”. 2014. *WHO*.
⁶⁷ “Ebola Response Roadmap Situation Report”. October 31, 2014. *WHO*

By October the virus was nearly present throughout the entire country, only a few far eastern provinces bordering Mali, as well as various portions of Labe and Mamou districts had escaped the brunt of the Ebola virus. By November to December though, the virus had returned to its usual ebb within Guinea, and of the 34 districts within the country, only 24 had retained the virus, unlike the situations in nearby Sierra Leone and Liberia where the virus was far more lethal and transmission had affected every district of their respective countries. By December, the virus remained telling; staying committed to its usual elevated ebb by now of one hundred to one hundred and ten cases a week as can be seen if one peers at the cases in the past 21 days section and averages it out.

Ebola Situation Report –December 10– Guinea Case Load⁶⁸

Country	Case definition	Cumulative cases	Cases in past 21 days	Cumulative deaths
Guinea	Confirmed	2051	321	1207
	Probable	221	*	221
	Suspected	20	*	0
	Total	2292	321	1428

⁶⁸ “Ebola Situation Report – 10 December 2014.” December 10, 2014. *WHO*.

The naturally sunnier months in Guinea provided the chance for a respite from the virus, along with better policies, by March 25th 2015 Guinea was reporting on average 70 – 75 cases a week, a notable decline.

Ebola Situation Report – 25 March 2015– Guinea Case Load⁶⁹

Country	Case definition	Cumulative cases	Cases in past 21 days	Cumulative deaths
Guinea	Confirmed	3011	198	1865
	Probable	398	*	398
	Suspected	20	*	‡
	Total	3429	198	2263

An Interesting Position

Guinea now then stands at a very unique position as of the epidemic. It can take solace from the fact that unlike Liberia and Sierra Leone, it never suffered a turbulent phase of rapid transmission that truly completely overwhelmed society and turned its urban landscape towards nearly ungovernable territory. It can also be proud of the fact that only 2/3 of its political districts have suffered from the epidemic, with only a further few truly have widespread and debilitating spread.

⁶⁹ “Ebola Situation Report –25 March 2015.March, 25, 2015. WHO.

Guinea though must be frightened of the epidemic's staying power, already its epidemic, lasting as it has since December 2013 has lasted longer than any other Ebola outbreak in modern history, this gives credence to fear that if the virus is not fully tackled by the end of this year, that the Ebola virus could become endemic within the region, never disappearing and always there with the potential to strike out and cause recurrent epidemics⁷⁰. Guinea must also be disappointed with both the speed and efficiency at which its government has responded. Unlike Liberia in the form of President Ellen Sirleaf Johnson, Guinea has not been able to seize world media attention in terms of attention, this has meant that it did not draw as much foreign intervention as either Liberia or Sierra Leone, although France and MSF have stepped in to fill in any effective gaps, however it did not draw the mass of funding, foreign soldiers from both the United States and China, as well as the increased speed at which medical centers were built in both Liberia and Sierra Leone.

The Guinean government must also be disappointed at the attitudes of certain segments of its population; Nzekore and Macenia region, which traditionally have always been rural backwaters. Backwaters that have in recent years also been further inflamed with ethnic tensions have at times reacted harshly to the spread of the disease and in particular the foreign medical workers trying to mitigate the spread of the virus. In Womey, Guinea, eight medical workers dressed in the Ebola biohazard suits that have been likened to astronaut suits were attacked and then killed and mutilated⁷¹. This has worked to reduce the effectiveness of MSF to penetrate certain rural regions and has also rendered the National government and local authorities inefficient and at times seemingly incompetent.

⁷⁰ "Endless Ebola Epidemic? That's The Risk We Face Now, CDC Says". December 15, 2014. Doucelff, M. *NPR*.

⁷¹ "The Massacre Of Womey". Jan 24 2015. *Washington Post*.

Lastly, the World Health Organization must be most disappointed with how the epidemic rolled out in Guinea most of all. Both regional and global headquarters upon the declaration of the pandemic mainly played a hands-off approach in terms of mitigating the virus, with memos from World Health Headquarters confirming that the WHO vacillated in terms of declaring the pandemic an Ebola pandemic a global emergency in August of last year, due to fears that doing so would cause immense political issues and issues around funding⁷². By doing this, it failed to secure precious resources in terms of fighting the disease from March towards August. This doomed Guinea in the long-term and Liberia and Sierra Leone in the short to medium term. By focusing on politics and the cynical funding battles of western governments, the WHO demonstrated an appalling lack of leadership and tact. Barely weeks after the declaration, the virus surged to incredible levels of death and turmoil in the country that received its first cases in late March, in its upcountry where trade and communication with Guinea was blossoming. Liberia was next.

Chaos In The Liberian Upcountry

In late March, when Liberians first began to hear disturbing reports of a few cases of Ebola being detected in Lofa County, the mood was one of an overall collective shrug. The feeling was that the Sirleaf administration and various international medical non-profits such as MSF would be able to help halt the debilitating spread of the virus. Furthermore by this point in history, Northern Liberia was universally regarded within Monrovia policy circles as a troublesome region, always a source of drama and conflict. As policymakers at the World Health Organization were not perfused, the general feeling was that the Ebola virus would run its

⁷² "Documents shed new light on WHO's slow Ebola Response". 2015. Schnirring, L. *Center For Infectious Disease Research And Policy*.

course, as it always had in many other places in Sub-Saharan Africa throughout its nearly 38 year modern history.

By late April, those predictions were beginning to be looking a bit foolish, by April 23rd there had already been up to sixteen recorded cases, and six deaths, with perhaps even more underestimated in the early stages of the virus due to the fact that its signs were not yet well known throughout the country. By early June the virus was no longer an upcountry problem, as the WHO saw that Guinea was unraveling, Monrovia was woefully unprepared for the introduction of Ebola to the city streets.

Monrovia Storm

For the majority of the 2000s, Monrovia had simply been a city under immense stress. Monrovia had continued the exponential clip at which it had grown from in the 1990s due to the civil war and the need for shelter among residents of the upcountry, but in the 2000s more so because of the economic opportunities it offered rural Liberians who were finally beginning to abandon either the subsistence agricultural or mining labor economy they had struggled under for decades⁷³. In conjunction with this growth, large slums and shantytowns began to become the mode for the city's life. The city's administration, unwilling to absorb the growth of poor suburban slums did not formally annex these new dense towns. It was unable to though neglect responsibility for the hyper packed state of its Western edges, with the most famous of those western neighborhoods, the infamous West Point becoming one of the epicenters of the virus within Liberia.

⁷³ "The overcrowding Of Monrovia and its links to Rural – Urban migration in Liberia: causes, consequences, and solutions". 2010. Ngafuan, R. *The Perspective*.

Picture Of West Point⁷⁴



West Point was infamous for two reasons, firstly because it featured an intolerable amount of shacks, apartment blocks, and ill built houses abutting the Atlantic Ocean, between 75,000 and 250,000 souls called the place home. Secondly, it was infamous due to the lack of proper sanitation services within the neighborhood; the waters around the neighborhood were deeply polluted, with no sewage and clean water pipage pumped into the neighborhood, not to mention other vital services such as electricity and running water, all were missing from the hell that West Point had become. By late June, there had been recorded over 50 cases of the virus

⁷⁴ "Rhetoric and Reality On War". Sawyer, P. 2011.

within Liberia, with eleven alone in Monrovia⁷⁵. The remaining summer and fall though summer would change Monrovia’s destiny forever.

It was a hot summer worldwide; the world had been distracted by the horrors of ISIS’s rise within Iraq and Syria, the captivating World Cup in Brazil, and not to mention the controversial Israeli-Palestinian war that would erupt in August. Perhaps this is why the tumult within Monrovia was ignored, because from June through August 1, 378 Ebola cases were recorded in Liberia, with between 400 – 500 in Monrovia alone⁷⁶.

Ebola Situation Report – 29 August 2014 –Liberia Case Load

Liberia	Confirmed	322	192	60	225	16	7	70
	Probable	674	423	63	301	24	8	45
	Suspected	382	251	66	168	14	8	44
	All	1378	866	63	694	54	8	50

1, 378 cases recorded, 866 deaths.

The Liberian government proved deeply incapable of doing anything to stop the bloodshed. The first action that it launched upon was a public relations campaign to warn people of the virus, including statements from doctors and local entertainment stars to continually wash hands and refrain from close body contact with all, as well as common symptoms of Ebola. This failed miserably at first, with many segments of the population skeptical of first the disease, and

⁷⁵ Ebola Virus Disease – West Africa – Update June 23rd 2014. June 23rd 2014. *WHO*.

⁷⁶ “Ebola Response Roadmap Situation Report – 29 August 2014”. August 29 2014. *WHO*.

worse in some segments seeing it as a Western conspiracy to destabilize the country, with the Sirleaf Administration willing participants. By the end of August Monrovia had surged to nearly 100 cases a week with the disease spiraling out of control, the statistics coming out of Monrovia were the biggest impetus that pushed the WHO to declare the Ebola pandemic a global health emergency by August after months of hesitancy.

Unrelenting Pressure

By mid-September health centers throughout Liberia, but in particularly those in Monrovia had completely cracked under the relentless pressure of Ebola. All specialties were diverted only towards the treatment of Ebola, this helped to increase the general chaos in both city and state as once treatable diseases such as Malaria, Tuberculosis, Lassa, and Flus would turn deadly as Ebola was deemed the dominant focus of the medical system. Not to mention the deaths within the medical community to doctors and nurses themselves, as Ebola, a disease completely prone towards targeting the caretakers of the world was perfect for infecting even those suited up the nines in biohazard suits. By the end of September over seven Liberian doctors had died, three within Monrovia itself, this in a country where at the start of the year there had only been 50 practicing doctors, a stark decline from the 3,000 who had been practicing in the 1970s before the disastrous 1980s and 1990s⁷⁷. As the table on the next page will show, courtesy of the World Health Organization's data, although it is dated to April First 2015, it will reveal just in stark terms the amount of healthcare workers, both doctors and nurses, that have been infected and then have died.

⁷⁷ "Ebola Outbreak: Liberia close to collapse – Ambassador". October 7 2014. Kay, K. *BBC News*.

Ebola Virus Disease Infections in Health Workers In The E3⁷⁸

Country	Cases	Deaths
Guinea	186	94
Liberia	372	180
Sierra Leone	303	221*
Total	861	495

As this table clearly shows, the virus over the course of the year rendered even more chaos due to the power and potency it had on caretakers, ranging from family members but especially towards the healthcare workers right on the frontlines of the war against Ebola.

This desperate situation positioned President Sirleaf to resort to desperate actions, for nearly two weeks in late August quarantine was placed over West Point. The quarantine was ill executed, soldiers engaged in human rights abuses, shooting dissidents, allowing those who paid bribes or sexual favors access in and out, as well as an innumerable amount of secret pathways out of the neighborhood, at the end of the day it only bred resentment and furthered conspiracy

⁷⁸ Ebola Situation Report – 1 April. April 1 2015. *WHO*.

theories which had at that point been running wild⁷⁹. Furthermore with the flight of Patrick Sawyer to Lagos, Nigeria in mid-July along with Thomas Duncan's flight to Texas in October the Sirleaf government was criticized for its lack of ability to police its citizens from spreading the disease towards new fronts which helped to further stigmatize the image of Liberia and Liberians worldwide.

With the crisis heading towards overdrive by October, the international community fearing the contagion of the disease towards their shores began to formulate solutions for the crisis. Facing the threat of a global contagion as well as criticism that the international community was not doing enough to combat the crisis. The United States, France, the United Kingdom, China, and most impressively of all Cuba committed medical resources to assist the ailing E3. While their resources and aid did contribute towards the fight against the Ebola virus in the region, as will be discussed later, the data shows that caseload steeply declined within Liberia in November and December, long before the promised medical centers and supplies of resources began to have a major impact. Look for example at the table on the next page that depicts the situation report for November 26th 2014.

⁷⁹ "Liberia's West Point: Life After Ebola Quarantine". September 1 2014. Butty, J. *Voice Of America*.

Ebola Situation Report – November 29 – Caseload for E3⁸⁰

Country	Case definition	Cumulative cases	Cases in past 21 days	Cumulative deaths
Guinea	Confirmed	1850	374	1050
	Probable	210	*	210
	Suspected	74	*	0
	Total	2134	374	1260
Liberia ⁵	Confirmed	2727	319**	‡
	Probable	1754	*	‡
	Suspected	2687	*	‡
	Total	7168	319**	3016
Sierra Leone	Confirmed	5441	1339	1189
	Probable	79	*	174
	Suspected	1079	*	35
	Total	6599	1339	1398
Total		15 901	2032	5674

Note at how Liberia by this point has improved to the point where its caseload in the last twenty-one days has begun to dip beneath that of Guinea's. Sierra Leone is at this point though in such a state of flux that the data on 21 days cannot even be confirmed.

⁸⁰ "Ebola Response Roadmap Situation Report". November 26th 2014. *World Health Organization*.

What began to change the discourse in Liberia was simply culture. By early November the country had been shocked with the most traumatic episode in the nation's history since Charles Taylor had stormed into Monrovia and killed the once idolized Samuel Doe, people saw their communities destroyed. In Monrovia medical ambulances became symbols of the latest Ebola case, bodies were strewn across the streets in certain sections of the city, secrecy became the code of the day as national authorities and MSF were seen as stigmatizing the disease and driving it underground.

A change in culture

By this point the government's national campaign of Ebola began to work, the standpoint that Ebola was not real could no longer stand. Behaviors began to shift in November and December, buckets filled with washing water were soon adorning offices, restaurants, and public spaces; the mantra of keeping away from others became hardly encoded into what was otherwise an extremely warm culture, and MSF was no longer feared as once before. By late November, within Northern Liberia cases were no longer being recorded and the virus that had swept like wildfire throughout the region was declining. By mid December, even while Sierra Leone was still revving up, Monrovia had become tranquil just as the spate of medical centers built by foreign powers had become ready to startup. By late January the number of cases in the entire country had been reduced to ten, and finally by early March for a period of two weeks there were no recorded cases in the country⁸¹. At the time of writing the epidemic of the virus within Liberia may be nearing completion, however it will depend heavily on if its neighbors Guinea and Sierra

⁸¹ "Liberia cautiously optimistic despite New Ebola Infection". 2015. *Deutsche Welle*.

Leone can also defeat the virus, for one cannot remain Ebola-free long while the others still wither under the virus.

The Faults

Liberia's experiences under Ebola had two primary faults. The first like Guinea's was the amount of time it took to respond the virus, the Liberian national government can be found liable as responding to the virus in a very slow fashion which helped to enable the virus the amount of little time it needed to proceed through the entire country. Unlike Guinea, Liberia did not even proceed at the start to place quarantines or emergency cordon sanitaries upon the rural regions where the virus was found. As the virus also started to impact Monrovia, the government always seemed as if it was reacting rather than being proactive and setting the agenda. It was as if it was a race and the virus was always ten meters ahead of the struggling government. The second mistake the government committed was being too flaccid in terms of its decision making in the early stages of the virus, being unable to decide if it wanted a strategy like Sierra Leone which decided to aggressively target the disease and punish those flouting governmental quarantine and restriction orders or a strategy more like Canada during the SARS epidemic where open communication, transparency, and local ties were stressed. Instead the country stumbled until October in the manner of China during the early stages of SARS, not moving quick enough to stamp the virus out, but not woeful enough to ignore the mounting caseload.

The Liberian national government did perform on one factor extremely well, and this is in relations to the fact that it managed to publicize the virus to an extent that Sierra Leone and Guinea didn't. This is in part due to the international reputation and fame of Ellen Johnson

Sirleaf who as a Nobel Prize Winner and Africa's first female head of state has an amazing power and ability to influence media channels. When her written letters to President Barack Obama went viral in late September it was in part due to her brand as a servant of the Liberian people and as a reformist in the broad spectrum of African politics.

This along with the extreme caseload reported managed to turn global media attention towards the epidemic by mid September. By publicizing the epidemic, funding and military aid finally unrolled through the country and the wider Ebola afflicted subregion. It also helped to ensure that humanitarian corridors were established through Accra, Ghana, and Abidjan, Cote D'Ivoire towards the E3. The second policy platform that the Liberian national government excelled in was through the constant public relations campaign that eventually proved off after an unceasing torrent of the virus until early November. The virus though did not stay contained to Liberia and Guinea; it eventually rolled towards Sierra Leone.

Into Sierra Leone

Sierra Leone from March until May watched the virus's progression with the same kind of apprehension that its fellow West African states were also experiencing. Efforts were made to somewhat restrict border movements from both Guinean and Liberian citizens, even if no total border ban was implemented. However in Sierra Leone's case this was unlikely to pan out, smushed in between the two countries it was perhaps only a matter of time before Sierra Leone had become impacted. By late May Sierra Leone finally had suffered its first case, with the death of an influential traditional healer in Kalihun⁸², which incidentally was host to one of Sierra Leone's most famous and better prepared hospitals that hosted the world's only medical wing

⁸² 'Sierra Leone: a traditional healer and a funeral'. 2014. *WHO*.

specifically devoted to Lassa Fever. This one case though started an Ebola transmission link of approximately 365 cases, setting off a tragedy in Sierra Leone.

Location Of Kalihun



This patient zero case in Sierra Leone was no ordinary case though, Kalihun is a city perched in Sierra Leone's extreme southwestern corner, within easy access to Nzekore region, border controls although meant to be rigid and tightly controlled were quite lax. This enabled this traditional healer to enter Nzekore region to tend to dying Ebola patients within Guinea, among various Mende families. Coming back, within days she also suffered from the Ebola ailment. Her

funeral was heavily attended and flocked to by hundreds, many of whom touched her and washed her as they bid farewell to her.

Drift To Crisis

This caused catastrophe, within two weeks there had already registered an incredible fifty cases within the country, with the majority around Kalihun. By the end of June 158 cases had already occurred as the virus began to move its way northwards⁸³. By mid July, the first cases had begun to appear in Freetown, this drove terror as due to seasonal weather patterns due to heavy rains flooding was caused in rural regions, this had two effects. Firstly medical authorities could not attend to those rural regions then suffering intensely from Ebola, secondly this seasonal rain distribution often drove many seasonal agricultural workers to move to Freetown and sell their wares in the country's political and economic capital. This had the effect of compounding the virus within Freetown and the external areas of the country.

By mid July leading doctor Sheik Umar Khan had died, he was Sierra Leone's leading hemorrhagic fever specialist and had helped to create the world's only known specialized Lassa Fever wing. The government was deeply blasted for first failing to airlift him to a Western country for medical survival, secondly for being unable to administer him with what would have been the first application of ZMapp that year, an application that helped to save the lives of countless Western patients. By late July, two more of his colleagues had joined him, along with Sierra Leone's 400-500 patient strong caseload. Throughout August the situation flared out of

⁸³ "Ebola virus disease, West Africa -Update". 2014.*WHO*.

control within Sierra Leone, with 1,026 cases by the end of the month and over 300 confirmed deaths, with a third of those in Freetown⁸⁴.

Ebola Situation Report – 29 August 2014 – Sierra Case Load⁸⁵

Sierra Leone	Confirmed	935	308	33	380	35	9	41
	Probable	37	4	11	34	2	6	92
	Suspected	54	19	35	8	2	25	15
	All	1026	331	32	422	39	9	41

By July 30 a national emergency had passed, furthermore anyone found to be hiding someone infected with the Ebola virus was legally consigned to two years of prison. This drove the disease further underground by August.

By the time September had come, just like Liberia, Sierra Leone was on the verge of exponential growth. The disease seemed to be doubling in caseload every fifteen-twenty days. The statistics of that period are truly grim; by the end of the month 2076 cases had been recorded with 574 confirmed deaths⁸⁶.

⁸⁴ Ebola Response Roadmap Situation Report – 29 August 2014”. August 29 2014. *WHO*.

⁸⁵ Ebola Response Roadmap Situation Report – 29 August 2014”. August 29 2014. *WHO*.

⁸⁶ “Ebola Response Roadmap Situation Report – October 1 2014”. October 1 2014. *WHO*.

Ebola Situation Report – 1 October 2014 – Sierra Case Load⁸⁷

Sierra Leone	Confirmed	2076	788	38%	574
	Probable	37	0	0%	37
	Suspected	191	106	56%	11
	All	2304	894	39%	622

Freetown by this point had suffered one physician death and countless more nurses and related medical workers death and just like in Monrovia all medical specialties were thus converted towards Ebola wards and medical centers. However due to the reality of underreporting the caseload just as in neighboring countries might have been at 2.5 times larger than reported, making the likely caseload then at that time nearly 5,000 individuals, with 30 percent of that centered in Freetown. The situation had grown so dire that from September 21st to September 23rd President Ernest Bai Koroma announced a three-day national lockdown that would require no market activity, work, occurrence of any transportation services, or any cultural activities. For those three days medical staff, both foreign and national would have unlimited permission to attend to every home in the nation and talk to household residents about the Ebola virus⁸⁸.

October was no kinder to Sierra Leone, with October 4th being a black day for the country, with 121 deaths recorded that day alone in the country⁸⁹. This unrelenting spread of the virus continued throughout the entire month. Rays of hope were felt in Mid-October when the

⁸⁷ "Ebola Response Roadmap Situation Report – October 1 2014". October 1 2014. *WHO*.

⁸⁸ "Sierra Leone begins three day shutdown to contain Ebola outbreak." 2014. Mark, M. *Guardian*.

⁸⁹ "Sierra Leone records 121 Ebola deaths, 81 new cases in single day." 2014. *Reuters*.

United Kingdom announced that it would devote sole attention towards helping Sierra Leone recovering from the Ebola pandemic. It soon sent the naval ship *Argus* to immediately operate as a naval medical center that would treat Ebola patients as well as armed officials to construct medical centers and laboratories throughout the country⁹⁰.

Nothing Works

Nothing seemed to help the situation, unlike Liberia the situation in Sierra Leone continued to accelerate. By mid-November a two-week lockdown was placed in the north of the country in the Tonkoli district and in the east, the Kono district which was going through a rapid Ebola cycle and which had already known so much pain during the Sierra Leonean civil war. Mid-December also added to the glut of immense statistics surrounding the Ebola virus in West Africa. With 979 new cases being announced by the end of December leading towards 9,446 cases in total by the end of the year⁹¹ in Sierra Leone alone.

January and February though were more comfortable months for the country. By mid-January the trend lines which had surfaced in Liberia two months earlier had begun to resurface in Sierra Leone, a very interesting trend that we will explore later, as although it occurred sequentially later than Liberia's one must remember that the Sierra Leone outbreak occurred two months after Liberia, however Sierra Leone's trendlines started to switch downwards chronologically the same time it happened in Liberia's outbreak. By early March, after numerous

⁹⁰ "Royal Navy prepares for Ebola Deployment." 2014. *Royal Navy Of The United Kingdom*.

⁹¹ "Ebola Situation Report – 31 December 2014. December 31 2014. *WHO*.

outbreaks Sierra Leone was still at a worrying but improving forty cases a week⁹², if it stays true to Liberia's chronological timeline it should be nearly reduced to zero by April or May.

The Failures of Koroma and the Sierra Leonean State

Sierra Leone's journey through the Ebola epidemic has been of general failure and chaos. The Koroma administration cannot be spoken of in kind tones regarding its handling of the crisis. Firstly, it failed to lock borders and air connections seriously when countries such as the Ivory Coast and Senegal in similar situations had long closed the border as soon as Guinea announced that it had an Ebola outbreak. This a shocking error when one notes that Sierra Leone is directly abutted by the two countries that primarily had been affected by the crisis until that point. It is even more shocking when one notes that it had two months to prepare and witnessed firsthand what occurred to Liberia in late march when it failed to secure its borders.

Secondly, the Koroma administration was wrong in its attempts to forcibly insert into national legislation the criminal code that those who did not bring or return an Ebola patient to medical centers as a crime punishable up to two years. All this did was to reinforce erroneous attitudes that cultural customs such as washing of the dead and tending to the sick were being taken away, and many thus preferred to stay home. Furthermore victims of other tropical diseases such as Malaria and Lassa were also scared to come to the hospital as they feared being mingled with actual Ebola victims and then getting the disease themselves. By going too brutal in their punishment and rhetoric the Koroma administration drove the virus into the underground, and the caseload of 11,948 cases in Sierra Leone as of April First is widely estimated to be

⁹² "Ebola Situation Report – 25 March 2015. March 25 2015. *WHO*.

underestimated by a factor of perhaps even three given the extent to which victims of the virus have gone underground.

Thirdly, the Koroma administration failed Sierra Leone to the extent that it allowed politics to play a role in terms of the fight against Ebola. On August ninth an extremely large shipment of medical supplies was parked outside of Freetown port⁹³. The shipment was so large, it would have properly stocked a substantial portion of hospitals within the country. However it was a shipment that was funded by the main Sierra Leonean opposition party, the APC. The Koroma administration refused to process it in a timely manner, with the Presidential administration arguing that the reason for the delay of the shipping of the products to hospitals was due to customs and payments issues. The delay lasted three months until Mid-December, by which point the epidemic had reached critical stage. This sole choice probably indirectly led to the death of hundreds as this vital supply could have helped medical professionals to more easily battle the epidemic. But due to political partisanship and petty power politics, a simple measure that could have saved the lives of hundreds or even thousands was rejected for the sake of pride and power consolidation.

This was not the only instance where politics was allowed to play a deciding role in how the virus would be battled though, the Koroma administration has also been alleged to have used the various lockdown and quarantine orders it enacted as an opportunity to arrest various leading opposition members and protestors long opposed to the Koroma regime⁹⁴. This gross abuse of power and close attention to partisan politics at a time when the nation was caught up in a moment of deep panic and chaos can only suggest that the Koroma administration did not take

⁹³ "Ebola help for Sierra Leone is nearby, but delayed on docks." 2014. Nossiter, A. *New York Times*.

⁹⁴ "Sierra Leone: Journalist arrested after questioning official Ebola response". November, 5, 2014. Mark, M. *Guardian*.

this epidemic seriously, or if they did, they viewed it only from a prism of how it would affect the power complex of Sierra Leone, such an approach can only consign Sierra Leone towards many more months of struggling with the world's worst Ebola outbreak.

At the time of writing, Sierra Leone is the country that has struggled the most out of all three with the Ebola virus in terms of total caseload as well as death. For a country that had numerous months to prepare for a potential patient zero situations, its performance and the attitudes of its government can only be described as disappointing. In the months to come the hope is that Sierra Leone and Guinea can take the steps that Liberia has taken and hopefully condemn the outbreak to the trash basket of history.

Chapter Four: Why It Spread: Cultural Variables

The Sadness Of Funerals

The first basis through which Ebola spread so rapidly and rampantly throughout the countries involved revolves around cultural factors. Cultural factors played a huge role in why the disease drove so quickly throughout the region involved.

The first cultural factor that can be explained for the disease's growth has to focus on the burial culture of the countries involved. One common bond that links many ethnic groups within the Mano River Valley (a valley that can be said to extend across the three countries in particular) is the fact that many of their burial customs involve elaborate rituals around death, far more advanced and complex than those of the West⁹⁵. There is a designated order for how the dead will be clothed upon burial, a designated process of general washing by close family and friends before the esteemed burial, a general designated time before burial for both Christians and Muslims within the various countries, and finally very long and often celebratory funerals that can last for either an entire day to days. The last feature of elaborate and at times celebratory funerals is a feature that cuts through the vast majority of Sub-Saharan African ethnic groups.

This process and system of funerals then served as a brilliant vector for the Ebola virus as the disease is at its transmission peak in the days close to the death of the patient and the first few days after the process, this is why the MSF often recommended for the burning of the dead or for medical workers to conduct the burial process. This would not go down very well with the very religious masses of West Africa though, and so these public and immerse funerals provided an excellent transmission strategy for the virus. Epidemiological studies of the virus indicate that a

⁹⁵ *Funerals In Africa: Explorations Of A Social Phenomenon*. 2011. Jindra, M; Noret, J. Berghahn Books.

large percentage of Ebola cases occurred at funerals. These burials attracted a wide section of the population and catered to all classes and most ethnic groups. They were essentially then amazing vectors.

One of the planks of Liberia and Sierra Leone's public relations campaign against Ebola was a full throated campaign against the burial culture, with many arguing that families understand the necessity of medical staff either burning the bodies of the dead or supervising the funerals themselves without many of the cultural ornamentations involved in burials. This did not receive mass popularity from the public and in some cases drove many families to hide malarial like cases (due to the wide variety of disease that Ebola could be in its early stages) as they not only feared being cooped up with Ebola patients but also not having the option of getting the burial they deserve. The problem though is that even now in limited regions of Guinea and Sierra Leone; these traditional burials are still inevitably occurring. One action that Liberia committed very well was the way through which it communicated to local priests and imams to modify the culture. Emphasizing that this did not need to be a permanent change, but just a temporary one for the duration of the virus. The burial culture's decline within Liberia from November through February thus is one of the major reasons why Liberia's caseload has stunningly decreased. Sierra Leone with its overt attitude of repression and punishment and Guinea with its overall approach of fearing to step on the toes of long standing cultural institutions have failed for the most part in that regard.

Human Warmth

A second cultural trait that allowed the disease to fester so well in the region was the close contact promoted in regular social interactions. Western Africa, just like large swathes of

the Middle East, Latin America, and Francophone Europe possesses very warm cultures that emphasize touching, communal activities, and close body contact. This is perfect for a virus like Ebola that thrives off close contact with sweat, blood, and body contact. Furthermore this works even better when the patient is already incubating the virus, and even better once the patient is sick and needs close attention. It is a tradition worldwide, a human practice deeply embedded in our genes to care for the sick in our family. Now add to the fact that there were governmental restrictions for this practice of caring your family, the fear of not being able to bury your loved one, the fear of being cooped up with Ebola patients in an overcrowded and ailing hospital, the overall climate around you of skepticism and overt fear surrounding this strange disease that is taking away the fabric of your society and then you can understand the psychology of local citizens in terms of clinging to local cultural customs.

Western portrayals of the situation often tried to portray the local population as being idiots who were fools for not trusting the medical establishment and government. But these are countries where the medical establishment had always been under extreme stress and governments had largely failed the states they were entrusted to safeguard. Can anyone then blame the residents for being a bit afraid and then tending to their distressed and sick family members and friends themselves? Although their position is one that has a lot of empathy, it played an even larger role in the transmission of the virus, with at least half of the cases being blamed for this. Being in close contact with the vomit, sweat, touches, and in some cases body fluids through sex of such victims is the most effective way for the virus to spread, this is the reason medical professionals were so vulnerable to the disease, especially in earlier phases when biomedical hazard suits were not out in full abundance. Thus both burial culture and tending to

sick family members can be directly blamed in my opinion for eighty to ninety percent of the cases.

The third cultural trait that helped to facilitate the disease was the overall air of conspiracy that clouded the region from summer forward. The populations of the local states had for decades confronted tragic wars, shady neocolonial interventions and meddling in their affairs, as well as a long history of in mistrust in their states. This as we have seen in other regions such as the Middle East produces a culture well suited towards believing and propagating conspiracy theories, for as research proves the less power a population believes it has over its destiny the more conspiracy theories there are usually produced. This was especially seen by the most persistent conspiracy theory, mainly that Ebola was not real and the entire scheme by local medical authorities, MSF, and global powers was just an attempt to harvest the organs and blood of the local population⁹⁶. Sierra Leone's efforts at repression and then targeting of opposition activists did not do much to dissipate those concerns among a wide section of the population. As the months proceeded, even more fantastical conspiracy theories emerged, such as that a cursed demonic airplane had crashed in the forests of Sierra Leone and cast a spell over the three countries, a curse that can only be fought by drinking Kola beer.

Cultural factors played a huge role in the transmission of the virus throughout these three regions but they did not play a decisive role, as will be explored, political and institutional factors largely played a facilitating role as well in their failures. Combined, these two blocs of factors along with historical variables explain why the Ebola pandemic in West Africa raced out of control.

⁹⁶ "Ebola, AIDS Manufactured by Western Pharmaceuticals, US DoD". 2014. Broderick, C. *Daily Observer*.

Chapter Five: Why It Spread: Political Variables

The Ebola pandemic in West Africa while complicated by cultural factors was ultimately undone by the political institutions meant to safeguard these societies and ensure a pandemic of such scale could never happen.

Life in Brazzaville and Geneva

The first blame has to lie with the World Health Organization. The World Health Organization was formed in 1948 to serve as an extension agency of the United Nations; it was formed in part to prevent early 20th century health disasters like the 1918 Spanish Flu epidemic. The World Health Organization had been intimately involved from the start of the Ebola crisis in late 1976, helping to try to analyze the disease and monitor the trends of the disease and its spread throughout Africa.

On this front though, both global and regional headquarters failed. The headquarters of the World Health Organization are based in Geneva and it has six regional offices worldwide that correspond to various geographic regions. Most of Middle Africa falls into the Regional office based in Brazzaville, the capital of the Republic of Congo. The regional office attending to Middle Africa for years had been accused of having mainly political appointees who were mainly there due to power wrangling and corruption between various African nations⁹⁷, furthermore the global headquarters often chose to ignore the inefficiency of this arrangement at the regional headquarters. This played a huge role in the slow attention paid to the crisis by WHO. In March after declaring the pandemic, the WHO literally stood silent; besides sending a few advisers it mainly relied on MSF and local governments to tackle the problem. Even by June with the atmosphere of crisis thickening and the pandemic nowhere near an end in sight, the

⁹⁷ "Ebola Dominates WHO Vote In Struggling Africa Office". November, 2,2014. Gale, J.; Lauerman, J.; Bennett, S. *Bloomberg*.

global headquarters hesitated about declaring a global health emergency, a special status which would have attracted a flood of health workers, funding, and attention that could have done much to alleviate the crisis two to three months before efforts ramped up.

This internal debate was precipitated by the fact that the WHO had previously declared only one international health emergency in recent years, namely the Swine Flu Pandemic of 2009. The internal debate at global headquarters though bordered on the ridiculous. By early June senior staffers in Brazzaville recommended to the Geneva brass that an international health emergency be declared once the virus seemed to be showing substantial spread within the three most affected countries. They also advised that unless action was taken soon, Mali, Guinea-Bissau, and the Ivory Coast were at high risk of being the next nation to be attacked by the deadly virus. The Geneva brass neglected the concerns, arguing that if an international health emergency was called there would be substantial opposition from the governments of Guinea and Sierra Leone who would obfuscate the proceedings, leading their action to be labelled a hostile act. Senior African staffers bristled at the seeming irrationality of the counterpoints, stressing that lives were deeply at risk. WHO headquarters then proceeded to mention that there could be political fallout for the agency, indicating that it could lead to criticisms that they were overreacting over a crisis that could eventually fizzle out. Mentions were also made of the harsh funding climate for health issues in the developing world due to the global recession, as well as the effectiveness of a global health emergency being declared when West African borders were so porous.

These memos show that during the course of the world's worst medical pandemic since the HIV pandemic kicked off in the 1980s the WHO abandoned its technical and professional obligations in the interest of politics. Their delay in seriously tackling the crisis led to a short gap

of funding and attention, leaving MSF and national governments to attack the problem on strained budgets and resources. By early August the virus had spread to Lagos, Monrovia was up in flames, and Guinea and Sierra Leone were still struggling under the chaos of the virus. By early August, in part due to the WHO's failures to take the virus's early growth seriously, the death toll continued to inch up. The WHO could wait no longer; by August eight a global health emergency had been declared⁹⁸. The WHO, the organization devoted towards solving the medical emergencies that events like the Ebola pandemic had presented failed miserably, but they were not the only ones, the national governments involved also failed.

National Governments and Quarantines

All three national governments failed miserably in their attempt to control the virus. Common threads in the failure were firstly failed quarantines.

Quarantines work well as a tool through which to regulate the spread of medical viruses, but only if the quarantine is truly lock-proof, efficient, ensures the shipment of food and other public services to the people involved, ensures proper compensation for loss of work time, and also proper medical attending and evacuation towards those suspected to be ill within the quarantine region. In Liberia, the West Point quarantine was the primary example of a failed quarantine, a mistake that the Liberian government would not repeat again.

The West Point quarantine was secured by the Liberian army from August 19th – August 30th and it was a disaster. The quarantine first involved mass resistance from residents of the slum causing civil unrest on the streets that resulted in the Liberian army shooting at dissidents, killing four and injuring nineteen. This set public opinion against the government from the start

⁹⁸ "WHO Declares Ebola epidemic an international health emergency". August 8, 2014. *Reuters*.

and encouraged negative conspiracy theories. Secondly, the quarantine failed due to abject corruption, residents found that by paying the soldiers hefty bribes they could secure their way out of the quarantine zone. Furthermore, not all pathways out of the neighborhood were fully secured, leading to migration and drift away from the zone by secret channels. Thirdly, the quarantine was hardly efficient, food was never shipped in so residents desperately clambered out, and lastly the quarantine further compounded economic difficulties as the neighborhood was a major working class hub and further increased the drive of people to circumnavigate the quarantine as they could not survive without the meager income they already lived on. All in all, by August 30th the lockdown was called off because of the ways it further spread the disease throughout the city. The problem is this record of failed quarantines applied to nearly all the three target countries, with Sierra Leone using quarantines as a tool to arrest political dissidents, to Guinea's failures to secure its borders in the first place that allowed the disease to drift to its neighbors.

National Governments And Partisan Politics

Secondly, the national governments involved failed in their attempts to keep partisan politics away from the fight against the Ebola pandemic. This chaos was the perfect time to let old tensions and conflicts remain in the past and use the crisis as the perfect opportunity to rally the country together as one nation. Instead the acrimony of political partisanship and conflict got entangled in the battle against Ebola, as both the Guinean and Sierra Leonean governments saw it as an opportunity to consolidate their hold on power over their countries.

Sierra Leone as discussed before often-launched operations during regional or urban district lockdown and would go after certain well-known dissidents. Koroma was also

harsh on the press during the duration of the crisis, with critical reporters being jailed for defying the public peace and endangering the Anti-Ebola operation. Not to mention his overall stance on shipments of medical supplies funded by the APC, an attitude that doomed Sierra Leonean hospitals to be underequipped for a fortnight. In Guinea as well, President Conde, only a year removed from protests which threatened his presidency and four years removed from a coup that would have terminated his presidency also retaliated with punishment directed at certain members of the press and opposition members, an extraordinary action not only because it occurred during a time of Ebola, but also because President Conde himself had once suffered at the hands of previous Guinean political régimes and also because fall 2015 is scheduled to be a crucial presidential election. Nevertheless these actions were taken at a time when action and necessity should have been fixated on actual positive reform and fighting the virus.

National Governments and Corruption

The third way the governments failed were due to both corruption and inertia. African governments generally speaking for the most part are not the most modernized and efficient. The vast majority move along at a snail's pace, have a strict hierarchal culture, and an ingrained culture of both open and subtle corruption that can impede on more efficient ways to run their states. The problem with the Ebola crisis was that this culture did not abruptly shift even with the onslaught of the virus and its effects on the local population. In Liberia for example, allegations emerged that a substantial segment of the Liberian parliament rather than standing with their nation at a time of immense crisis simply fled towards America, where many retained citizenship/residency and the overwhelming majority had homes in the Atlanta area. This stunning inertia and lack of spine crippled parliamentary discussions and led President Sirleaf to strip all such members of the national legislature of their seats. Furthermore inertia led the virus

to easily spread throughout all three countries. From early February onwards, various health organs of Guinea's government were cluing in to the presence of a possible hemorrhagic virus spreading throughout the southern portion of the country; however the office of the presidency did not react with major attention or speed, allowing the virus to continue to fester in the countryside until late March.

But even with the inertia, the corruption that pervaded the three states also prevented the governments from truly tackling the conflict to their greatest potential. Take a look at Sierra Leone for example where it was reported that an Ebola fund maintained and funded by the Sierra Leonean government could not account for a third of its National Ebola budget by November⁹⁹. This specter of corruption, which had played such a large role in initially degrading these healthcare systems along with the civil wars also helped to prevent these countries from firmly destroying the threats in front of them.

Cultural factors played a huge role in spreading the virus throughout the Mano River valley. But political failures helped to accelerate the disease's projection and impact through shadowy governance and inefficiencies that produced institutional bottlenecks that were unable to fully focus on fighting the virus. Furthermore corruption, partisanship, as well as old-fashioned fear prevented the national governments most affected by the crisis to focus on the conflict and perform to the high standards that the situation necessitated. The Sierra Leonean and Guinean governments deserve the harshest words, and the roots of the failure stretch back to the top with their chief executives failing to act in a manner that showed that they truly cared about the welfare of their people. Their actions were so cynical, so self-preserving, so misguided that we can only say that the ballot box and ultimately history will be their cruelest judge.

⁹⁹ "A third of Sierra Leone's Ebola budget unaccounted for, says report." 2015. O'Carroll, L. *Guardian*.

The World Health Organization deserves probably the greatest opprobrium. The world's states and citizens expect more from them. We expect them to be at the vanguard of medical emergencies, to have contingency plans devoted towards endless amounts of medical situations, to compel medical research forward, and to lastly be above politics in its many forms. The World Health Organization has still not admitted its many failings last year, they have still not attempted extensive reform of both their global and regional headquarters, and they have still played a lagging role in terms of reacting to the virus in stark contrast towards leading non-profits which led the charge towards fighting the deadly virus.

But nevertheless, regardless of the cultural and political factors that drove the disease, the fact is that the virus made huge impact on the countries it impacted. The next two chapters will focus on the impacts it incurred on the health and economic landscapes.

Chapter Six: The Impact On Medical Infrastructure

The Ebola virus’s primary impact was on the medical infrastructure of the three countries involved. As discussed a myriad amount of time in this paper, the three countries already had deeply fragile medical systems due to the strength of their civil wars and the relative weakness and inefficiency of their governments. Ebola managed to rip the fabric off these countries medical systems, a rip that at times helped to further the pandemic in the three specific countries.

Ebola Virus Disease Infections In Health Workers In The E3¹⁰⁰

Country	Cases	Deaths
Guinea	186	94
Liberia	372	180
Sierra Leone	303	221*
Total	861	495

Death Of Medical Workers

There were 860 health worker cases, and 495 deaths up until April First in terms of the fight against Ebola. Nearly all of these deaths occurred to indigenous workers and not the massive corps of foreigners who also helped to fight the disease. These cases involve doctors,

¹⁰⁰ Ebola Situation Report – 1 April. April 1 2015. *WHO*.

nurses, ambulance drivers, assistants, as well as funeral workers and those hired to transport Ebola patients. This death of medical workers had a devastating blow on the countries involved.

The impact of this was strong for two reasons. Firstly, the loss of medical doctors was a crushing blow for countries that already found it hard to compete in the knowledge intensive air of the modern world. These were countries that had lost a major portion of their best staff to western countries that offered better working conditions for their workers. It was even more crushing due to what it represented, it represented a loss of great medical expertise at a time when the countries needed a boost of medical expertise and action. Doctors like Sheik Umar Khan were often the leading experts of virology and more specifically hemorrhagic diseases within their regions, helping to prevent deaths on related viruses such as the Marburg virus. With their deaths, the sense of chaos spiraled out of control.

Secondly, the impact of this was important because at its heart it showed how the disease was easily transmitted with cases that revolved around close contact with blood and/or sweat. Doctors and nurses were on the ground at the site of most cases, in the early stages of the virus when it was made unaware to the populaces of the three countries that doctors and nurses then served as an easy facilitator through which the virus could spread and infect other patients who had the misfortune of meeting the doctors who were incubating Ebola. This was probably a huge reason why the disease was able to make inroads in the summer even after the rate of reporting had increased as a result of a substantial portion of the country reporting to hospitals at higher rates. Even with biohazard suits available, with minor errors and slip of hands, it was still possible for doctors to receive the disease, and then transmit it to other patients. This is thus one reason then why the experimental vaccines have been so targeted to medical professionals, as it is believed that if medical professionals gain immunity it will be easier to process and handle

new patients while at the same time preventing transmission or infection to those patients who desperately seek medical attention for non Ebola related causes, and also importantly for other medical staff who these doctors interact with.

Neglect Of Traditional Medical Areas

The Ebola virus also impacted the medical infrastructure in another very important way. It impacted the countries involved through the way it helped to feed crises in other medical fields besides Ebola. By the summer the medical systems of the three countries involved had ignored other important diseases such as Malaria, Lassa, HIV/AIDS and of course traditional concerns such as reproduction, cold and flus, and cancer. With Ebola occupying the minds and workload of all medical workers, those specialties and areas of concern were ignored. The impact of this cannot be ignored in an analysis of the virus, it ensured two results. Firstly, due to the neglect of other medical areas for rightful reasons it meant that medical cases that could typically be treated became severe and thus resulted in deaths. This then added to the considerable death toll that the countries faced during this difficult time. It also had an impact in terms of the fact that hospitals and medical centers became ignored by a large portion of the countries involved due to the fact that there was fear that contact to medical centers would result in unavoidable Ebola death and then unfair burial that ignored cultural traditions. These two factors combined together added to a medical climate in which many died either at hospitals or at home surrounded by family due to disease and conditions that in more normal times would not cause commotion. Added with the death of medical specialists it does not bode well for the future of healthcare within these countries.

A New Hope: ETUS

However the impact on the medical infrastructure of these countries was not always negative. Due to the foreign intervention one positive meaningful action was accomplished, and that was the creation of temporary/permanent medical centers accomplished by foreign powers in the Northern Hemisphere fall and winter. The United States, China, United Kingdom, France, and MSF as a power in its own right rushed to build at times permanent facilities that were meant to treat what was in the most severe computational models expected to be the millions of patients who would potentially be infected with the virus. These facilities numbered in the tens and while criticized at the time for being few in number in comparison to the other theory of building more temporary flexible camp-like facilities, now represent a great opportunity for the countries involved to have a wider variety of advanced medical infrastructure. These facilities usually come with a basic amount of medical infrastructure, waiting rooms, as well as specialized features meant specifically for the Ebola pandemic including a biohazard stocking room, tons of the specific water needed for oral rehydration therapy, as well as clean needles, gloves, and white coats as well. These facilities were built in the haste in the fear that the epidemic would enter further stages of troubling and explosive growth. Many in Liberia, Sierra Leone, and Guinea stand unused but they do not need to have to be forever. As outlined in the recommendations section these facilities can be the future for a thriving medical infrastructure in the E3.

The Ebola pandemic had the impact of rendering fragile medical systems even weaker, it managed to destroy the lives of prized doctors and medical professionals, closed the processing for conditions other than Ebola which caused a considerable amount of pain and deaths for cases that in normal times would have been treated well, and it also left the medical

systems at a crucial inflection point where they would require both time and massive investment to bring them to systems of even pre-Ebola crisis functionality. However even in the midst of death and chaos, one gift was given, even though it was slightly inflexible. And that was the gift of the expanded physical medical infrastructure that was built in these three countries in the form of emergency treatment centers that were meant to host and cope with an expanded Ebola contagion. Treatment centers that automatically became some of the most advanced within their countries and offer the chance to potentially revamp the medical sector.

Although the damage to the medical sector was extreme and caused unimaginable pain and suffering, it did not stay limited to the matters of the body alone. The problems of the Ebola pandemic also helped to reduce the quality of life for the citizens of the three countries as well, with shock effects throughout the region and the world. The economies of the three countries in particular faced unique challenges unseen before in the contemporary world.

Chapter Seven: The Impact On The Economy

Welcome to the noughties Africa

The 2000s had been kind to most of Africa. The 1980s had brought immense debt loads and endemic corruption that invited the poisonous Washington Consensus in the cabal of the World Bank and the IMF. The 1990s brought even more pain and suffering with civil wars, low growth rates, the expansion of the HIV/AIDS crisis, and in the form of South Africa's embrace of democratic governance, a continued reliance on neoliberal economic orthodoxy. The situation had worsened to the point where by the late 1990s, a magazine cover of the Economist painted the entire African continent with the broad brush of "The Hopeless Continent".

The 2000s changed that entire equation. Emboldened by higher commodity prices, an influx of Chinese capital, a wave of debt relief packages, higher remittances from the diaspora, a spark of foreign direct investment interest from private equity firms and corporations, and transportation infrastructure improvements the continent finally began to wake up with extremely high growth rates throughout the board. Guinea, Liberia, and Sierra Leone were not spared from this rising continental narrative with the three countries extremely prized by the Chinese in terms of investments due to their impressive mineral wealth and strategic location within the broader West African region. Guinea in the 2000s averaged 5 percent growth, Sierra Leone seven percent, and Liberia a whopping ten percent¹⁰¹. Guinea was helped by an increase in commodity prices as well as Chinese investments. Sierra Leone grew by seven percent primarily due to higher port activity, construction, and telecommunications growth. Liberia's growth rate was based on attracting rising rates of foreign investment in part due to the sterling

¹⁰¹ World Bank Cross Data. 2012.

reputation of the Sirleaf administration. The amount of Chinese within the region also grew to unprecedented levels, reaching the level of 50,000 Chinese within the E3¹⁰², bringing with them a revitalization of the commercial districts of Freetown, Conakry, and Monrovia and impressive new storefronts, hotels, and restaurants catering to the growing professional class as well as the expat scene.

Beijing Comes To The Mano River

Along with this wider narrative of growth there were also improvements with road infrastructure, mainly led once again by the influx of Chinese state investment. In the border regions, the national highways of all three countries were linked together in a move that was designed to ensure an easier flow of peoples and goods that was hoped would both ignite intra-African trade as well as ensure that the port cities of the region could then ship out higher volumes of goods. The hope was that infrastructural developments throughout the continent would result in a continent highway super infrastructure.

This growth in economic conditions was very welcome for the simple fact that the subregion had seen horrific times in the 1990s. Even with the economic boom in the 2000s these countries still hosted some of the poorest residents in the world, with GDP per capita in all of the countries in the \$400 - \$700 range as of even 2013¹⁰³. The growth in the 2000s while affecting all the spoken countries and applied to all regions within the countries was not exactly distributed evenly. The spoils of the growth was mainly being felt by public servants, closely connected native businessmen, and of course the cadre of Chinese entrepreneurs also gaining access to the pie. Furthermore the vast majority of the growth was visible in the national capitals

¹⁰² *China's Second Continent: How A Million migrants Are Building A New Empire In Africa*. 2015. French, H. Vintage.

¹⁰³ World Bank Cross Data. 2014.

what with their new stadiums, rebuilt skylines, and improved road infrastructure. In the interior, specifically in mining rich regions and the agricultural heartlands, the two predominant contributors to the growth, the effects of this national campaign for growth could barely be seen. In northern Guinea in particular, wages per capita barely trickled upwards even though that was where the majority of bauxite reserves were located. With this in mind it was no surprise that urban growth accelerated in the decade. As the gravity of currency and power continued to swing to the cities and there was no longer any prospect of urban warfare or crisis, the pendulum continued to shift to the port cities.

So by 2014 the state of these countries seemed to be quite bright. With a growing youthful population, encouragement of democratization, and a world of investment possibilities the hope was that the dark 1990s could remain a unique chapter within the histories of these countries never to return again. The hope was that these countries, even if not future regional powers in the waiting could at least carve a niche as stable growing countries that could potentially expand beyond serving as resource economies into industrial and consumer oriented economies with growing middle class populations. Together they would be part of a new West Africa, a new Africa. Ebola changed all of that.

Ebola shutdown

Ebola first managed to shut down the general state of business within the countries. With shutdowns and quarantines occurring regularly throughout the country, especially in the capitals, this managed to impair the regular functioning of businesses within the countries involved. This particularly affected the operation of local mines and farms. With mining and agriculture serving as the two largest industries within the country, this impairment

of operations managed to reduce the flow of investment, profits, and funds needed to maintain the operations. This then cut into local paychecks, leading to cutbacks within the employment ranks and reduced incomes.

The habit of quarantines and shutdowns particularly compounded the economic problem within Sierra Leone. The virus made major inroads in Eastern Sierra Leone, particularly in the Kalihun district, which is where the majority of Sierra Leone's food production originates. With the virus making large inroads into the area, cooperation on agricultural matters largely vanished and agricultural productivity vanished. Quarantines were enforced by army units who wanted to ensure that there was no private sector work done on farms. This has thus led to the perilous state of affairs we find ourselves in here in the Northern Hemisphere spring of 2015 where Sierra Leone has immense failures in its agricultural sector which has already led to hunger in over 50,000 homes and by the end of the year could affect one million homes throughout the entire E3 if serious action is not taken¹⁰⁴.

Foreign Investment Crippled

The impact of the Ebola pandemic on the economy also extended beyond the severe impacts of reduced incomes and agricultural crises. It also extended into the world of perception and the impact on foreign investment that had been so crucial in driving these economies forward. Although a miniscule amount in the broad world of foreign investment where some of the figures can make you pop, the figures that these countries had combined to reach in 2013 helped to generate employment and infrastructure that was crucial to helping these countries recover. FDI has shown in the 2000s that it is a far better avenue through which growth can be

¹⁰⁴ "Reviving Agriculture in Ebola-hit Guinea, Liberia, and Sierra Leone". 2015. *World Bank*.

ignited as can be seen in the amazing rise of China and India. In previous decades Singapore, South Korea, Taiwan, and even within the African continent, South Africa, used FDI to propel their countries towards an industrialized state. The fact is though that with the overall sense of crisis that the Ebola pandemic has brought the members of the E3, that foreign direct investment will trickle and dry up for a while, perhaps even for years after the pandemic ends due to the negative reputation that the virus brought upon the three countries and the broader West African region as a whole.

Even the Chinese, the new sudden patrons of the region have fled the region for the time being, with many members of the diasporaic Chinese community allegedly having abandoned the region during the crisis of the pandemic. This is particularly damaging especially when one keeps in mind that the Chinese were the major contributors to foreign investment in a region former western powers had forgot. The impact of this drying of foreign investment will have negative ramifications and will make it much harder for these countries to truly recover from the trauma of the Ebola pandemic. This will allow for less growth in both the mining and agriculture sectors, fail to entice retail efforts, and prevent the development of the ports and neighborhoods of these costal cities. All of which will prevent the formation of a solid middle class and consistent economic growth in all of these countries.

Basic Food Prices Rise

Another way that the Ebola pandemic had a negative economic impact on the countries involved has to do with the way that it allowed the prices of basic goods to soar. In terms of agriculture, food prices for basic necessities such as rice, bread, and cassava soared. This makes economic sense as food production crawled to a slow start in all the three countries, but also

because imports became more expensive due to increased processing times at ports and of course at times closures due to the pandemic, which increased transportation prices of these basic items. This ensured that food prices stressed the average citizen at a time when both they and their governments were seeing reduced income and capability to deal with such a price rise. It is then an amazing surprise that even with this stress that civil unrest did not roil the streets and cause potential anti-government protests. Although the sentiments were there, the overwhelming air of contagion prevented frustrations from reaching that point.

Tourism Aspirations Dashed

But finally the economic impact materialized in one final way, and that was of frustrating tourism on both a national and regional level. Freetown is one of Africa's most beautiful cities in terms of natural scenery. The image of the city and its massively sprawling neighborhoods abutting the Atlantic Ocean, with a long impressive beach coast, with stunning green mountains in the background, and a reputation for a hectic wild nightlife scene offers stunning tourism potential if the country can ever stabilize itself. With the country gaining global public prominence for Ebola, that opportunity is now gone for at least a generation as the E3 are now associated strongly with Ebola, disease, and public unrest. The sad thing though is that the entire continent was tarred unfairly with the Ebola brush and this had ramifications on other parts of the continent. Such as in Kenya in which Korean Airlines, the national airline of the Republic of Korea, either due to an actual reason of cost-cutting an unprofitable air route or if it was truly due for health reasons, used the atmosphere of fear to cancel all flights to their African hub in Nairobi as they claimed that Kenya's chances of receiving Ebola were far too high¹⁰⁵.

¹⁰⁵ "Korean Air suspends Kenya flights as Ebola precaution". 2014. Mutzabaugh, B. *USA TODAY*.

It also had the impact where safari trips to South Africa and Tanzania also experienced dips. It seemed that to the public imagination, Africa was still one strongly linked public brand and occurrences in one country had an overbearing impact on others even though the distance from Cape Town to Conakry is 3,663 miles, or in Americanized terms 1, 215 more miles than the distance from New York City, which had one case of the virus, to Los Angeles.

The economic impact of the Ebola pandemic cannot be ignored. It destroyed the economic fabric of countries that were on an upward trajectory and whose progress could have within a generation resulted in middle-income status for these countries. Instead it marginalized their powerhouse industries, choked their showcase cities with death and fear on every corner, made life for the common man harder with increased prices, and completely managed to erase any tourism potential they had as well as causing regional effects, but yet even with all of this, with the gradual fight back against the virus there is a chance these countries can come back like they always have. And with the lessons learned from this Ebola pandemic there is hope for the future.

Chapter Eight: Policy Recommendations For The Future

Fires Spread

The Ebola pandemic of 2013 – 2015(hopefully) managed to change a lot of our conceptions about many areas of our modern world. The governmental institutions of Sierra Leone, Liberia, and Guinea have firstly been questioned. Secondly, the WHO and its operations have taken a hit in public opinion. The relationship as well between the developed world and the developing world also has to be examined as the Ebola pandemic demonstrated furthermore the stunning complex linkages of our world, as a fire in one location can easily spread.

But most importantly the pandemic has also forced us to investigate incredible questions about our current global medical infrastructure and the disparities that separate developed countries from developing countries. It forces us to ask if we truly have an effective formula and set up that can quickly deal with pandemics, if we truly have a sensible medical research strategy, and if we have sensible data strategies so that pandemics can be quickly analyzed and defeated. But furthermore the pandemic asks us to ask ourselves what is the value of a human life and knowing its value the steps we can then take to ensure that a pandemic such as the one we saw in late 2013 never happens again, to rob human life of its potential and dignity. Ebola is a cruel enemy, but surely it is one that can be defeated by human ingenuity and planning.

The paragraphs ahead will sound very arrogant to many readers. I am just a college senior. What right do I have then to proclaim these grand policy pronouncements of fields that I don't even have a PH.D in? I will admit that I am no expert in these fields. However for this thesis I have had to read a copious amount of texts for its completion, and these are all recommendations that either have occurred to me organically or have been suggested by leading

academics, doctors, or philanthropists. This paper has truly been a labor of love and represents in a sense an intellectual graduation that is occurring along with my collegiate graduation.

Graduation is in a sense an ascendance into that often acclaimed “real world”. Our generation inherits a world of immense challenges, challenges that are quite complex. One of those challenges will be to secure our growing planet safe from a pandemic of immense proportions like the 1918 Spanish Flu, the 1980s HIV Pandemic, even of the scale of the 2013- 2015 West African pandemic. These policy recommendations are not easy but could potentially trigger a more dynamic, safe, and equitable world.

- 1) Create a Global Medical taskforce team whose sole duty is to respond to the emergence of outbreaks/new viral diseases. A SWAT for medicine.

Currently in terms of Global medical policy we have the World Health Organization whose bureaucracy has created the situation where it is the jack of all trades from a health perspective but a master of no exact medical situation and we also have a large assorted list of both national health institutions and non-state actors such as the MSF that either act stunningly efficient or others that at times act in a corrupt and inefficient manner. Add to the fact that the medical sector globally is host to stunningly large disparities and at times limited global cooperation and we have reached the situation where in our contemporary world viral outbreaks and emergent diseases are not dealt with in a cohesive fashion. It is the idea then of many leading doctors, and the world’s richest man and leading philanthropist, Bill Gates then to create a specialized medical taskforce that would only respond to viral outbreaks. This taskforce would be composed of several hundred to several thousand doctors skilled in infectious diseases from

around the world from both developing nations and developed, with hopefully representation from all settled continents, leading academics, a few policymakers, as well as a dedicated staff of administrators. They would ideally be an independent organization but one with strong links to both the WHO, non-profits, and national governments. Their budget would be funded by national governments, sovereign wealth funds, perhaps the UN, and philanthropists willing to assist the cause of fighting viral outbreaks before they become full-scale pandemics. Their sole mission would be to monitor the world for signs of potentially explosive viral outbreaks. Type IV biohazard viruses such as the Ebola, Nimpah, and Marburg viruses fit into this schema. Plus such as Bird Flu, SARS, Swine flu, and the emergent MERS would also fall under the scope of this organization. Other diseases that slot into this category are also mutant antibiotic-resistant diseases as well as newly emergent diseases that we cannot even fathom yet. The team would be an ad-hoc team that would emerge into action in cooperation with other actors such as national governments, MSF, and WHO. They would help to take the lead along with national governments in terms of outlining and combating the risks inherent with viral outbreaks.

Having such an organization during last year's Ebola pandemic would have made a massive difference in terms of action taken. By the time that reports of a virus that struck like "thunder" were circulating around in Guinea in early March, this medical SWAT team would have sent in a few medical doctors onto the ground to investigate. Once the news got out of the virus's confirmed diagnosis, a large portion of the team would have plummeted onto the ground along with the MSF and national authorities. With this taskforce of a few dozen to hundreds ready to step in at medical centers throughout Guinea, and a few dozen in nearby countries ready to act as regional preparation advisers, along with the administrative wing blaring out the alarm to official organs such as the UN and the governments of the broader international community

the stage would have been set for the disease to have been confronted with a rapid urgency and efficiency. There would no longer be a need to have the WHO declare the virus as a global medical emergency, there would be no more need for MSF to have to shoulder an unfair portion of the medical burden early on, and there would be easier global coordination that would ensure that outbreaks would remain outbreaks and not evolve into epidemics that would form into pandemics.

2) A reform of the WHO, both Global and Regional Headquarters

The WHO caused major consternation when due to their political processes they first failed to monitor the growing chaos unfurling in Guinea, Liberia, and Sierra Leone, failing to approach the disease and the disorder it caused through the prisms of a regional contagion with the potential to go global. Secondly, the WHO failed the international community when they failed to declare the pandemic a global medical emergency in June and July when it seemed evident that the disease was on the edge of entering a dangerous and harmful cycle. A decision that as reflected earlier resulted in action being taken later than if committed early perhaps could have stemmed the march of the epidemic. The WHO then needs a reform at the global headquarters level in two fashions. Firstly it needs to reflect less on politics and the role that politics can play in the medical process and simply focus on health, as that is what it was established to do, to stand above politics and provide for the common medical welfare of the planet.

Secondly, at regional headquarters the decision for which medical officers are appointed and for the specific office hierarchy of who sits on the regional executive board needs to be disconnected from politics. For too long at the African headquarters in Brazzaville and

worldwide in other regional WHO offices, the choice for who is asked to be sent to the WHO country and regional offices and more importantly who leads it has been muddled in politics and gamesmanship that has been more focused on political horse-trading and interest rather than who has the medical expertise and policy nous to competently manage the vaunted organization. This gross culture of privilege and status showed itself tremendously well within the management of the crisis, with the WHO playing backseat to overburdened national governments and non-profit groups such as the MSF and Samaritan's Purse. Always trailing behind the speed and viciousness of a virus that was remaking a subcontinent.

3) Greater emphasis on Rapid Time Containment

In terms of direct Ebola management, the principle of rapid time containment first pioneered by Peter Piot in the Yambuku case and then validated in over ten future outbreaks was completely validated by the experience of the 2013 – 2015 West African Ebola pandemic. It was validated in part due to the successes of the West African cities of Lagos, Dakar, and Bamako. All of whom had initial scares of emerging as a new front in the Ebola pandemic but due to their quick action managed to all scrape through with minimal damage from the Ebola virus.

The common principle evident in the approaches of all these countries and cities specifically was the fact that they all focused on rapid time containment. They knew that the window for containing an infectious virus like Ebola within their cultural and political context was extremely limited. Within Lagos, one of the first actions conducted was to begin a massive contact tracing experiment that covered over eight hundred people, relating to people who had gotten in contact with Patrick Sawyer and the people who had contact with those people. The contact tracing also expanded as the medical staff that treated him got infected, and soon random

passerbyers who also got into unfortunate contact with other victims. For a period of two months, an emphasis was placed on regulating the movements of the nearly one thousand people who had been exposed to victims in either the first or second degree.

The episode ended off relatively happy for Nigeria with twenty cases centered in both Lagos and Port Harcourt, and only eight deaths. A miracle solution in both Africa's largest metropolitan area as well as Africa's largest country. The solution for this rapid time containment also extended to both political readiness and local engagement, with prominent members of both the executive and legislative branch sounding the word on the Ebola virus and mobile texts sent to the vast majority of the population talking about the symptoms of the virus but pleading for public calm and vigilance.

This also extended into Dakar which experienced a moment of fright when a Guinean college student managed to navigate through the border and reached Dakar ailing, he was promptly diagnosed with Ebola at a major hospital in Dakar. The Senegalese government was quick in declaring the fact that the nation had just experienced its first case of Ebola within its borders, as well as also launching an exhaustive contact tracing program that managed to isolate the driver who drove the student into Dakar as well as those in the hospital who might have had limited contact with the student. Senegal, by virtue of its geographical location had also had constant media reporting of the situation of its neighbors to the south so the population had a good grasp of the severity of the disease as well as the basic symptoms. Also when one takes into account that Senegal boasts higher GDP per capita income, more doctors per capita, and both currently and historically stronger and more stable standards of governance then it makes sense that Senegal was also able to rapidly contain the virus within the limits of time containment.

Finally there is Bamako that also succeeded through time containment in repressing the disease. When the first case of Ebola was confirmed in Mali in Kayes, a city two hours north of Bamako, stress and panic reached the international community. Mali was a country under heavy stress due to both an Islamist and ethnic inspired insurgency in the north as well as tensions with maintaining its democratic identity after clashes between the army and democrats who refused to abandon Mali's democratic credentials. The fear was that such a stressed and burdened country compounded even more by its status as one of the poorest countries in the world would not be able to handle the panic and chaos of a potential Ebola outbreak.

Mali though, under the principles of rapid time containment handled the stress well. Immediately after the first case they located all the fellow riders on the bus that had traveled from Northern Guinea through Southern Mali all the way to Kayes with the young three-month-old baby who was supposedly vomiting and bleeding throughout the journey. They also helped to contact trace the people who the grandmother of the three month old baby had come into contact with during a stay in Bamako. Upon the baby's arrival in Kayes, after her death in a local hospital, samples of her blood proved the existence of Ebola within her bloodstream. Immediately the grandmother was isolated in a tent outside the hospital and a major contact-tracing episode was launched. But just as Mali thought it was out of the woods, a second case emerged involving a Malian Imam who had traveled to Guinea to perform at a funeral of a noted Ebola victim. The imam then returned to Bamako and died at the city's well-respected Clinique Pasteur. The case spawned seven additional cases and six deaths in total.

But yet the Malian government led by President Keita continued to operate by the principles of rapid time containment, utilizing contract tracing, fostering relations with community leaders, and using media to its advantage. With this approach, even with the lax

border regulations with Guinea, Mali was able to defy the doomsayers and chart its way out of the crisis.

If the 2013 – 2015 Ebola pandemic proved anything, it is that proper application of rapid time containment is the best way to tackle any emerging Ebola outbreak as it forces governmental action, engagement with local populations, cooperation with the international community, and most importantly readies all medical actors to understand and prepare contingency plans to deal with the impact of Ebola cases. Ebola is a disease that thrives off of momentum. The goal of a medical infrastructure must be to ensure it never reaches that momentum.

4) Greater funding for vaccines for emerging diseases

The Ebola crisis has revealed that our current strategy for funding vaccines for what are termed as “emerging diseases” or diseases that have either been never witnessed or rarely witnessed in modern medical history is completely woeful. Currently we leave it up to a profit driven pharmaceutical sector that has to spend tens to hundreds of millions on both research costs as well as patent costs in order to make profits or even revenue off drugs that can take years or decades to manufacture if they even pass trials successfully at all. At the same time Ebola vaccine research whenever committed was always usually conducted by the US military or military affiliated organizations. This ensured that Ebola research was always oriented around biomedical warfare purposes and not targeted towards a vaccine that would be of greater security towards residents of Africa and the world at large. While smart startups like MAPP Pharmaceuticals based in San Diego have driven research in that regard, due to their limited capabilities to scale both financially and in terms of manufacturing the sheer units needed to be

required in the event of an outbreak, we cannot count on them for the magic bullet/bullets that would be a potent vaccine. It is of my opinion to propose a new arrangement whereby the U.S. Federal government and of course governments in Europe, South Africa, and India who are also research powers would help to subsidize research for emerging diseases for pharmaceutical corporations. This would help to ensure the research was properly funded, that there were ethical safeguards placed over the research, and also a recruiting lure for the next generation of research scientists, doctors, and epidemiologists seeing that there would be career opportunities in that field. It would also help us in other related medical fields of broad concern to all humans such as antibiotic research, a field in desperate need of fresh ideas as due to mass agriculture and overt prescription we are in the situation in a few decades where whole families of antibiotics will be rendered useless by the new superbugs beginning to emerge. The specifics of this financial arrangement need to be decided by the health policymakers with more knowledge of pharmaceutical economics as well as how federal subsidies work.

- 5) A medical school exchange program for talented prospective African medical students to train in the developed world/ Construction of new medical schools

This program would be a radical new way through which to train more doctors in developing African countries that sufficiently fall short of what would be an advised baseline of 1 doctor per 1000 people. In my very fervent imagination this program would start with the three most affected E3 nations and perhaps then would expand into up to at least fifteen other African states. The problem with many African states at the moment is a short supply of medical schools, although many countries are scrambling to scale their programs to a 21st century world and exploding populations. This program would have African states transfer financial payments to medical schools in the Americas, Latin America, Europe, Asia, and Australia for the placement

of tens to hundreds of students. This would be a useful stopgap measure for at least a decade to two decades while new medical schools are built to house the growing population of new doctors needed in the country. In order to then ensure that students selected to study abroad would return there could be a covenant applied where the student could not seek employment in the country where he studied or any other besides those of his home country, with the ultimate sanction being loss of home country citizenship in order to ensure that this scheme would result in a larger population of doctors for these countries.

The best and most fair measure, both for Africa and the world though is to scale these countries towards 21st century medical systems. This means that the endemic corruption in terms of healthcare matters needs to be ended and most African states should devote five to ten percent of their budgets towards healthcare. Part of this means creating a well built and strong pipeline for the future in terms of well trained, well paid, and strong doctors that can help to be the guardians of the country's future.

Conclusion

Ebola has radically altered our world. For West Africa, the prospect is of three devastated countries that were far from total recovery from decades of civil wars as well as underachievement before Ebola threw things into even greater turmoil. The prospect of three weakened states is only compounded by the fact that unless defeated by the end of this year, Ebola has the potential to transform itself into an endemic disease that while no longer a blazing epidemic always has the potential to infect victims unless a vaccine is made. Thus it will mean a world where Ebola is always with us.

For the international community, the virus was a reminder of two things, one the stunning capacity for any epidemic to find a perfect breeding ground in 21st century Earth, a world of immense transport linkages of fast speed, and two the failures of our current global medical infrastructure, an infrastructure that fails to properly take care of the vast majority of the population. This failure of the global medical infrastructure does two things; firstly it makes it easy for its many flaws and point of vulnerabilities to affect all of us. Secondly, the more painful reality is that it leaves tens of millions in the world on a daily basis unable to access efficient and good healthcare. It is the flaw of this medical infrastructure that leaves a large portion of our world with higher infant mortality rates, lower life expectancy, greater susceptibility to tropical diseases, leaves chronic diseases as killers, and wounds the cognitive and physical potential of children with high malnourished rates.

For the medical world, it was a painful year. Hundreds of competent medical staff who fought for the health of their patients were sadly taken from us and still are being taken away. It

was jarring for epidemiologists to see how Ebola would play out in an urban and global context, removed from the countryside that the virus had initially thrived in. It was also an experimental time though, as various treatment strategies were tinkered with. The medical world also witnessed the most ambitious vaccine race in human history as candidates dropped in to rush to develop their potential Ebola-killer and then unfolded out the most rapid large scale experimental vaccination programs in human history. Finally, the medical world was invited to question the ethics of the correct procedure for returning doctors in relation to a panicked populace and a political world ready to seize on the panic over the words of the medical world. Even beyond these issues though, there were many other issues at play in the medical world including the possibility of finally tracking the substantial effects of Ebola on survivors, possible mutation rates of the virus, as well as experimental procedures and technologies to better identify Ebola.

The Ebola pandemic of 2013-2015 will not be soon forgotten in West Africa or within international health policymaking circles. It's devastating scope and rapid transmission upturned our traditional view of Ebola as well as the world's capability to deal with an epidemic outbreak. The lessons it gives us must be remembered and applied, for diseases will always be a threat to the Human race and lapses like those that occurred within the last year cannot always result in leaving us unscathed. For the victims, the thousands of doctors, nurses, and ancillary health workers, the governmental bureaucrats who leaped into action, as well as the academic and medical researchers working on a vaccine, I give my full thanks. Both for fighting Ebola, and giving us all hope that a better world can be forged even within the midst of chaos.

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