HISTORICAL CONTEXT FOR PUBLIC HEALTH IN THE DEMOCRATIC REPUBLIC OF CONGO

by

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A THESIS

Presented to the Department of Global Studies
and the Robert D. Clark Honors College
in partial fulfillment of the requirements for the degree of
Bachelor of Arts

June 2023

An Abstract of the Thesis of

Brian Betcone for the degree of Bachelor of Arts
in the Department of Global Studies to be taken June 2023

Title: Historical Context for Public Health in The Democratic Republic of Congo

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Primary Thesis Advisor

Medical anthropologist Paul Farmer's 2020 book *Fevers, Feuds and Diamonds* was about the 2014-2016 Ebola outbreak in West Africa. Farmer puts the epidemic within the complex historical context of economic exploitation, colonialism and conflict in Liberia, Sierra Leone, and Guinea. This paper seeks to mimic the same steps Farmer followed in studying the West African Ebola epidemic from a social medicine perspective in regards to the outbreak in the Democratic Republic of Congo (DRC) from 2018-2020. An analysis of Belgian colonialism, colonial medicine and suppression of African nationalism will demonstrate how these forces of 'structural violence' have contributed to war and an under-resourced health infrastructure in contemporary Eastern DRC. The 2018 outbreak of Ebola will be used as a case study to examine the human consequences of the long history of economic and political marginalization of Congolese people. These consequences befall the health of Congolese bodies, especially women. Like violence with weapons, the violence of poor health is a human construction and therefore preventable. In the final section, recommendations will be made as to how the response to the 2018 epidemic could have been better informed by the unique historical context of Eastern DRC.

Acknowledgements

Merci beaucoup à mon directeur de thèse principal, Professeur Andre Djiffack, votre enthousiasme pour l'enseignement m'inspire. J'apprécie votre soutien constant tout au long de ce processus. Thank you to my CHC advisor, Professor Casey Shoop, for encouraging me to explore what history and public health say together that they do not say apart. I appreciate how generous both of you have been with your time in helping me to complete this project.

“Old carts can be repainted but they still keep moving in the same old ruts.” Mongo Beti 1978

Table of Contents

List of Figures

Figure 1: Provinces of DRC (Medecins Sans Frontieres)

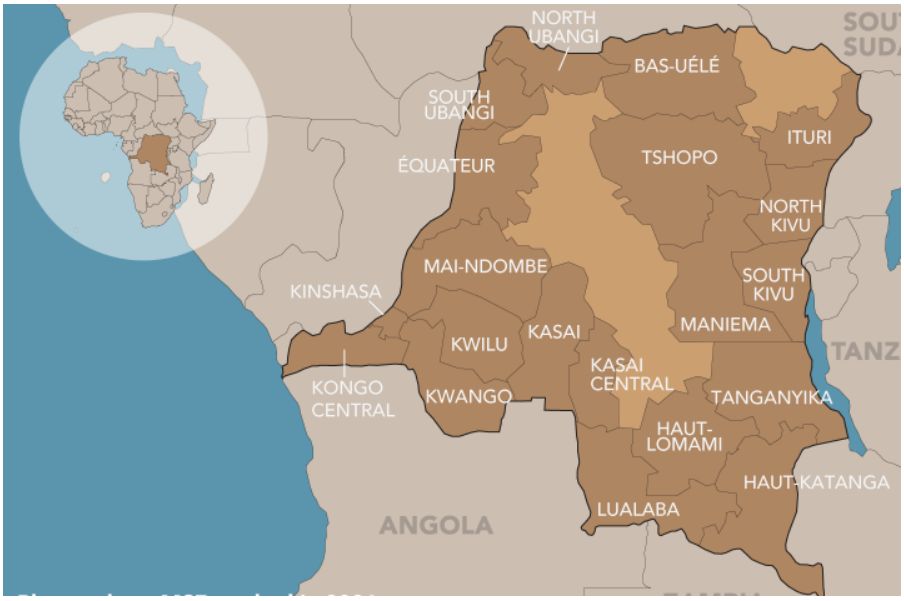


Figure 2: Geographic Concentrations of Mineral Resources in DRC (Le Monde Diplomatique)

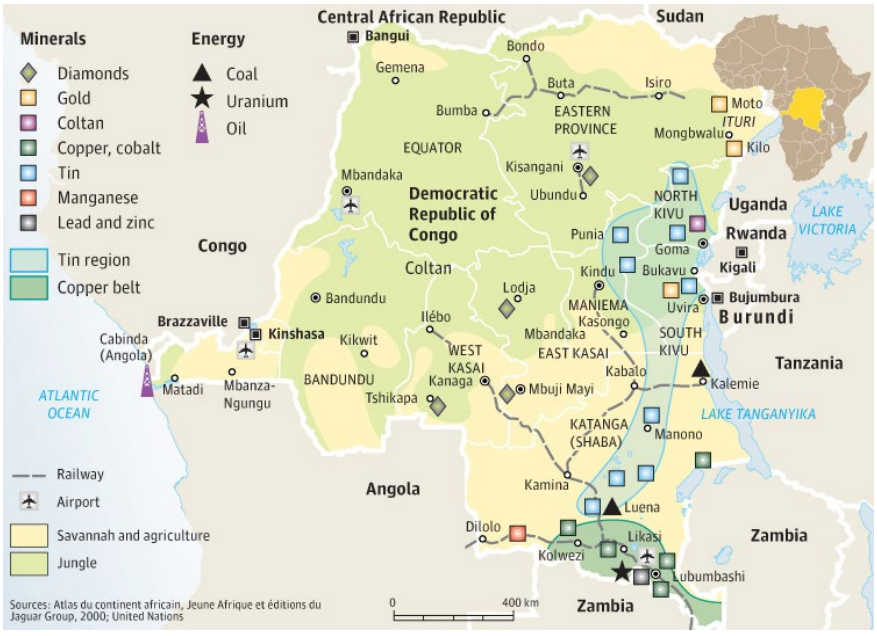
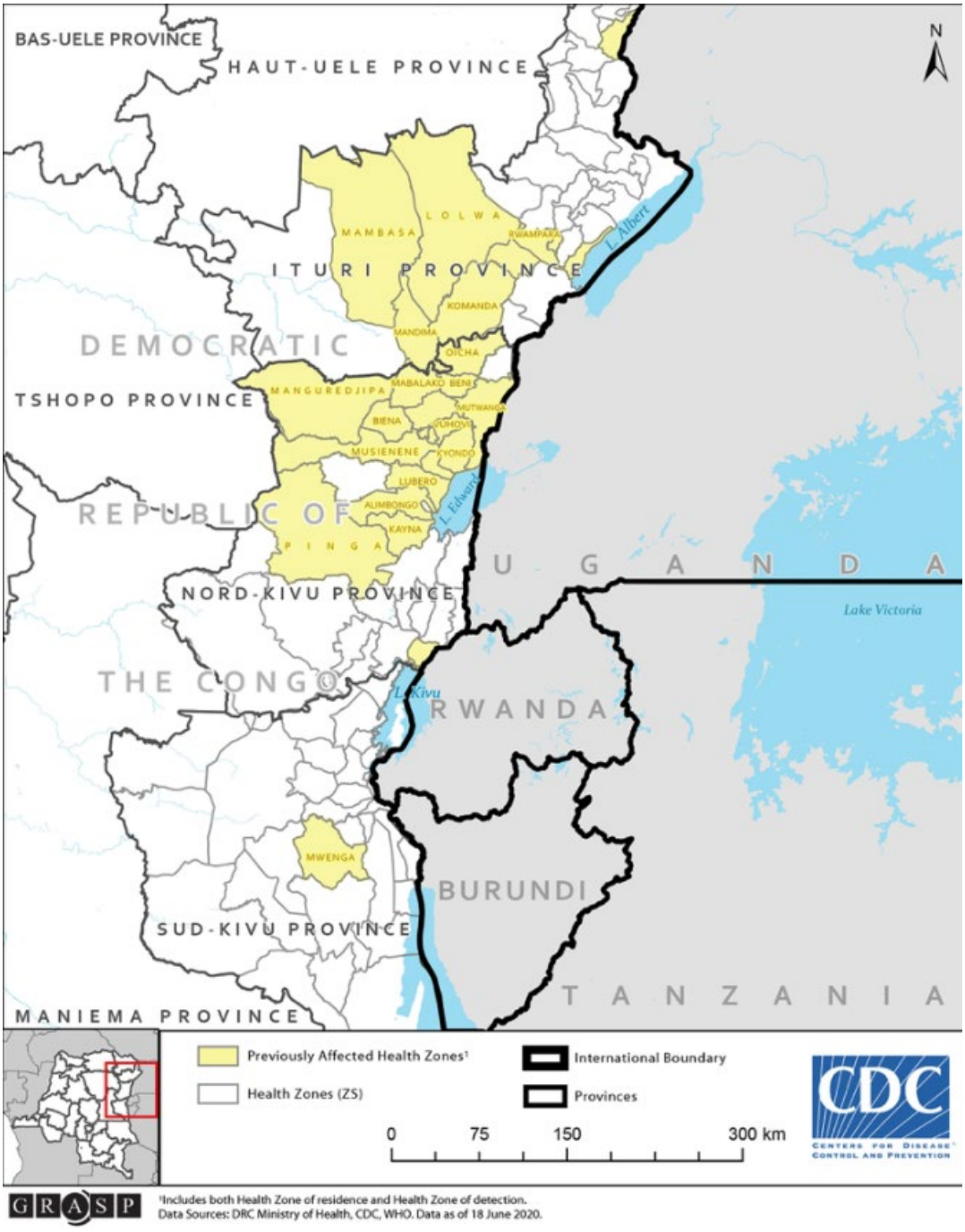


Figure 3: The Great Lakes Region (UN Geospatial)

Figure 4: Ebola Outbreak Locations 2020 (Centers for Disease Control and Prevention)



Introduction

The DRC is the 4th most populous country on the African continent, home to 92 million people in 2021 (The World Bank). Located in Central Africa, the DRC is the second largest country on the continent by land mass after only Algeria (Payanzo). This paper will first unravel the rich, complex and far too often exploitative histories of present-day DRC and Rwanda. Then the focus will narrow to focus on modern public health realities in the three Eastern provinces of the DRC: North Kivu, South Kivu, and Ituri (see figure 1). These three provinces border Rwanda and Uganda to their East and are considered a part of the African Great Lakes Region. They will be referred to as the "Eastern provinces" and "Eastern DRC".

Methods

This essay is mostly focused on the last 200 years of history in the Congo basin—beginning shortly before the Berlin conference in 1885 and ending in 2020 when the DRC was declared "Ebola-free" from the 2018 outbreak (Kisangani, 9). Implications of this history, and recommendations for the current moment in early 2023 are included at the end. Pre-colonial history is also included in the interest of not reducing Congolese history to suffering and to refute erroneous narratives about the "primitive African societies" promulgated by colonizers as having been all that existed before European arrival. This section is relatively brief, not for lack of importance, but since pre-colonial history of the DRC portion of the Great Lakes Region is not well documented. Archeological research is difficult in much of the heavily rain forested terrain that makes up much of the Congo Basin (Kisangani, 4).

This paper strives to illustrate a two-way street between public health and history. The first section explores the last 200 years of Congolese and Rwandan history through a public health lens. First, emphasis is given to the ways in which the conditions of the slave trades and

colonial era constantly threatened the health of communities. Next, the paper explores the troublesome concepts of colonial medicine and how post-colonial movements for social services like medical care were stifled in DRC. This historical backdrop sets the stage for the case study of Ebola that follows. The second half of the paper combines the themes of health and history in the opposite order as the first half, asking "how must we understand modern public health in DRC within a detailed historical context?" and "how does the historical context of Eastern DRC inform the appropriate response to contemporary challenges for healthcare delivery?".

Most sources come from the University of Oregon library database or popular media sources. A few, such as the Farmer sources, are print books. Sources written by Congolese scholars are prioritized over other sources. This is a deliberate choice, since the voices of those most close to the research topic and to the region are most reliable and authoritative. Similarly, firsthand accounts from Congolese people, whether found in scholarly or popular media are included wherever possible.

Visual aids are included before the paper to support the text. Figure 1, the map of DRC, seeks to familiarize readers with the provinces in question and to illustrate the vast distance between the political capital in Kinshasa, and the region of concern in the far East. This distance matters insofar as it is much easier for Congolese political elites to ignore the marginalized demographics in the far East of their country. Figure 2 is particularly useful for showing the concentrations of natural resources in various regions. This map shows how certain minerals, especially coltan (a key ingredient in electric batteries for phones and cars) are concentrated in the same places which had high Ebola incidence rates according to figure 4. This is not a coincidence. Figure 3 illustrates how the porousness of the border between DRC, Rwanda and

Uganda presents logistical challenges as it pertains to controlling spread of disease, taxing the exportation of raw materials out of the country and anticipating the next conflict zone.

Advising from Professor Andre Djiffack in the Romance Languages Department at the University of Oregon had a significant influence on the direction of the research and the selection of sources. Having grown up in Cameroon and gone to university in South Africa, Professor Djiffack has experienced firsthand the ongoing influence of colonialism throughout Sub-Saharan Africa. His input was integral in guiding the direction of this paper.

Much of this paper will focus on the human suffering occurring in Eastern DRC. This however, is an incomplete picture of DRC. The country, even the especially disadvantaged Eastern provinces, is far from just poverty and sickness. This trope about Sub-Saharan Africa is to be rejected. In fact, the DRC is renowned for "people [who] have armed themselves with an almost combative joie de vivre" (Jeter). French for "joy of life", this phrase describes many Congolese people's enthusiasm for joyous singing, dancing, and socializing even while living in the most challenging of circumstances. Unfortunately, a thorough overview about the culture of each of the Congolese communities discussed in this paper is outside the research scope. However, uplifting material is included in this essay as much as is relevant to the public health focus of the paper. The incredible dedication and eventual triumph of Congolese health workers over Ebola in 2020 is just one example of hopeful material that is included in this essay in an effort to paint an accurate and balanced depiction of life in the DRC.

Literature Review

Dr. Emizet F. Kisangani, currently professor of Political Science at Kansas State University, authored three important books upon which the historical background section of this thesis is largely based. The first book, The *Historical Dictionary of the Democratic Republic of*

Congo gives a broad overview of the country's history. The second book, *The Democratic Republic of Congo: Economic Dimensions of War and Peace* brings into focus the mineral wealth of Congo and how the imperialist aims of Western multinational corporations has created an "economy of war". A series of corrupt Congolese politicians in Kinshasa have aided and abetted in the pillage of these resources. The location of the minerals, copper, coltan, and cobalt in particular, correlates to places where epidemics of disease have spread the fastest (see figure 2). So too, does the location of heavily deforested regions—which increase the risk of contact between humans and zoonoses. The third book of Dr. Kisangani's, *Civil Wars in the Democratic Republic of Congo, 1960-2010* demonstrates the connection between German and Belgian 'race science' in present day Rwanda and the enduring civil war in the east of DRC today.

Kenneth White's scholarly paper, *Scourge of Racism: Genocide in Rwanda* goes into greater depth about how the Belgians introduced the concept of "race" to the Great Lakes Region. This ultimately led to the 1994 Rwandan Genocide and persisting violence in Eastern DRC, the negative health effects of which cannot be understated.

Adam Hochschild's book *King Leopold's Ghost: A Story of Greed, Terror, and Heroism in Colonial Africa* supplements Kisangani's historical accounts by providing insight into Belgium's motivations for colonial conquest in the Congo. George Washington Williams' open letter to King Leopold details the specific horrors of Leopold's genocide. The writing of W. E. B. Du Bois in *The Negro* is helpful for understanding the massive scale, gravity and enduring impact of Belgian genocide in the Congo. Du Bois, as both the founder of social epidemiology (see 1899 Philadelphia Tuberculosis Study[1]) and a scholar of Black history, is a very appropriate source to be included in this paper.

1

All of the aforementioned sources provide a thorough history of the Congo Basin. However, they do not delve into the human toll of such a tumultuous recent history. This thesis will add to the field of research around Congolese history by adopting a public health lens.

The worst consequence of ongoing war has been on the health of Congolese people, particularly women and children (Nagel). Information about the United Nations Peacekeeping mission MONUSCO's shortcomings in protecting women from sexual and gender-based violence comes from the Georgetown Institute for Peace, Women, and Security. While it is difficult to quantify successes of peacekeeping missions, it is clear that the mandate to "protect civilians" has not been achieved in many regards. While sexual violence has not been perpetrated solely against women, women, often underage, have been disproportionately impacted. This article is useful for examining the ways in which colonial power dynamics between foreign governments and Congolese people have simply reformed themselves for the present moment at the expense of the bodily autonomy of Congolese women.

Reports from the former Deputy Director of Human Rights Watch Africa region, Ida Sawyer provide further insight into the way war in Eastern Congo has been particularly devastating for civilians. Her 2009 book *You will be punished: attacks on civilians in Eastern Congo* and her 2017 report *The Crisis in Congo is spiraling out of control* shine light on how civilians are often targeted by armed groups at schools and medical facilities (Sawyer). Not only

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The 1899 Philadelphia Tuberculosis Study drew a link between anti-Black housing discrimination and redlining in Philadelphia and rates of Tuberculosis. Du Bois found that Black folks, forced to live in substandard housing with high population density experienced higher rates of tuberculosis since the respiratory illness spread through the air in each household.

is the health of civilians in peril due to the mental health consequences of living in a war zone, people are in physical danger at places like hospitals that ought to be a place of refuge.

Regarding the public health focus of this paper, two books from Dr. Paul Farmer, *Pathologies of Power* and *Fevers, Feuds, and Diamonds* provide great inspiration. The first book is focused on connecting health outcomes in Haiti to a long history of suppression of nationalist leaders. The book introduces the idea of "structural violence"— a framework that will be used in this paper to describe the policies economic and social policies of governments and corporations which harm health on the population level. Similarly, *Fevers, Feuds, and Diamonds* connects the history of the slave trade and colonialism in West Africa to the 2014 Ebola outbreak. This book provides a blueprint for analyzing the Ebola outbreak in Eastern DRC in 2018 and the long history that led up to it.

The impact of structural violence is best understood through its impact on the body. The focus on the bodily impacts of history is inspired by Ta Nehisi Coates' *Between the World and Me*. In his impassioned letter to his son, Coates writes "you must always remember that the sociology, the history, the economics, the graphs, the charts, the regressions all land, with great violence, upon the body" (Coates, 10). Time and time again, Coates invokes the language of the body to describe the experience of racism in America. This framing is apt beyond the American setting. Coates' focus on the body provides the inspiration for much of the public health analysis. After all, public health, at its core, is about the health of the body and the mind. Since everyone has a body, it is a universal way to connect audiences to an issue and to convey the human impact —everyone knows what it feels like to be sick in one way or another.

Much of the literature about Ebola in the DRC, though published in highly regarded medical journals like *The Lancet* and *The New England Journal of Medicine,* is strictly scientific

and studies the outbreak as though it occurred in a vacuum, ignoring historical context. This is a recurring shortcoming of "western biomedicine" research and practice more generally—treating symptoms of a disease instead of the underlying determinants which allow it to proliferate in the first place. "Social medicine" offers an alternative, using the technologies of biomedicine in a way which places sickness and health within the appropriate social and political context (Farmer). This means addressing social determinants of health like poverty, racism, and environment. Further, social medicine respects, embraces and coexists alongside forms of medicine other than biomedicine- affirming the existence of many ways of healing. Using the concept of social medicine, this paper seeks to bridge the gap between history and health—demonstrating how adverse health outcomes in contemporary DRC can be traced to a long history of economic exploitation by foreign entities. Likewise, health interventions can and should be informed by this history.

Pre-Colonial Eastern DRC

The historical record of pre-colonial era eastern DRC is quite incomplete. Archeological records provide some insight however. Indigenous people to the region include the Batwa and Bambuti peoples (IPACC). Referred to initially and disparagingly by colonial administrations as, and now colloquially referred to as "pygmy" for their slightly shorter stature on average, the Batwa (often referred to as Twa) and Bambuti peoples are hunter-foragers who continue to live a nomadic lifestyle in the dense rainforests of the Great Lakes Region (IPACC). The founder of the NAACP, American W.E.B. Du Bois wrote of the "noticeable artistic talents", especially painting and sculpting which the Twa possessed in his famous book *The Negro (*Du Bois, 91). Beginning around 2000 BC, other groups of people arrived in present day western DRC. These "Bantu-speaking peoples [then] spread to the savannas and towards the Indian ocean through

what are now the Kasai, Kivu, and Katanga regions" somewhere in between the years of CA 500 to 1000 (Kisangani, xxxi). Though many more Bantu-speaking groups existed, the Hunde and Bushi are two of the most well known. In CA 1000, "The Hunde people [reached] their present location in the Great Lakes Region of North Kivu" (Kisangani xxxi). Made up of Shi people, the Bushi Kingdom in present day South Kivu province was known for having "a common, integrated economic system" based on agriculture (Newbury, 131 and De Juan 103). This was a key distinguishing factor between the Batwa and Bambuti Indigenous people and the newly arriving Bantu-speaking people— the Bantu-speaking folks mostly formed agricultural, and thus permanent settlements. This made sense since "the advantage of the region over other areas in the Congo basin was the existence of rich volcanic soil" (Kisangani, 9). This led to an agricultural surplus, possession of which legitimized local rulers' authority and led to the development of expansive trade routes (De Juan, 103). Permanent agricultural settlement and expansive trade routes also signaled the arrival of the first major epidemiological transition in Africa as infectious diseases were able to spread more easily.

While the violence that did exist pre-colonization pales in comparison to the organized genocide to come, it would be inaccurate to say that people lived in complete harmony pre-colonization. This would be a major point of contention amongst Pan-Africanist leaders post-independence. Some Pan-Africanists advocated a return to a utopian Africa before White contact. Others contended that no such society existed. Both viewpoints contain some truth. As it is today, certain pre-colonial communities had very peaceful relations while others were less so.

The Slave Trades

Many legitimate items like cloth, pottery, and grains were traded along the new trade routes. This would soon change when "the organized slave trade of the Arabs penetrated the

Congo valley in the sixteenth century and soon was aiding all the forces of unrest and turmoil" (Du Bois, 76). By 1800 C.E, "the Afro-Arab trade [began] to flourish in eastern Congo" (Kisangani, xxxii). The trade in the East was run by Zanzibari slave traders who mostly spoke Swahili and would transport enslaved people to sell at ports along the Red Sea and Persian Gulf. This was known as the "Eastern and trans-Saharan slave trade" (Gakunzi, 40). Eventually, a man named Tippu Tip came to rule over the entirety of the Arab slave trade. His network would come to be a threat to Belgian colonial rule. His claims to Eastern Congo led in part to the Congo Arab War between the network of Arab traders under Tippu Tip's control and King Leopold's 'Force Publique' forces from 1892-1894 (Haskin, 2). Characteristic of most colonial conquest across the African continent, the parties with vested interest rarely put their lives on the line. Congolese people were forced to do most of the fighting and dying for both sides.

The Arabs were not the only ones engaged in the slave trade. In the far Western part of present-day DRC, the Portuguese were also engaged in the buying and selling of humans. For 4 centuries, from about 1500-1800 the Portuguese captured or purchased people from the once powerful Kongo Kingdom (Heywood, 1). These enslaved people were transported across the notoriously inhumane Trans-Atlantic trade route to Brazil, the Caribbean and North America. The Portuguese stopped pillaging the Congo of human bodies in 1836. But as a legacy, "the [trans-Atlantic] slave trade transformed social interactions among friendly neighbors to open conflict" (Kisangani, 5). Lacking unity and politically fractured, the communities in the Westernmost parts of Congo were in a vulnerable position to the next wave of European conquest. The exploitation of the slave trade had simply created an environment favorable to being further exploited.

In both the East and the West, the slave trade destabilized local political powers by instilling a sense of mistrust and fear amongst people. The persistence of the Arab slave trade in the East was advantageous for Belgium since the endurance of the practice of slavery could be used as a justification for occupying the territory. King Leopold II argued he was morally compelled to rule these regions so as to rid the world of the slave trade once and for all. Ostensibly supposed to rid the region of slavery, King Leopold II's free state simply invented a worse form and practiced it more widely.

Congo Free State

W.E.B. Du Bois asserted in 1915 that the Congo Free State and the Belgian Congo would remain "a monument of shame to Christianity and European civilization" (Du Bois 79). These words accurately characterized the last 30 years before the quote was written and prophesied the following 45 years that the Belgian regime would continue. Atop this monument of shame stands King Leopold II. Cunning, greedy, and downright evil, Leopold II spent most of his adult life in pursuit of a personal colony. He carefully curated a reputation throughout Europe as a great philanthropist and intellectual. He had won this reputation by giving his public statements about the Congo with "a strong humanitarian veneer. Curbing the slave trade, moral uplift, and the advancement of science were the aims he [talked] about" (Hochschild 42). He presented himself to other European leaders as not only a humanitarian, but also as a sophisticated intellectual. In reality however, King Leopold II was only "a dedicated scholar when it came to one thing, profits" (Hochschild 37). Almost every decision he made was motivated by his desire to accrue capital.

King Leopold II hired explorers like Henry Morton Stanley to do reconnaissance missions in the Congo Basin. He was encouraged by the economic potential he saw in the region

and the diminishing resistance among fellow European leaders to his presence in the Congo. So, beginning in 1879, Leopold II ordered Stanley to dispossess local leaders of their land through devious treaties. Leopold II's assistant did not mince words when he wrote to Stanley that "the treaties must be as brief as possible, and in a couple of articles must grant us everything" (Hochschild 71, Britannica). This proved fairly easy for a few reasons. First, due to language barriers, most of the chiefs probably had little idea as to what they were signing. Second, the superior armaments of the Belgians left them little choice but to concede their land. Not surrendering likely meant execution. Stanley was equipped with the "latest rifles and an elephant gun with exploding bullets; the unlucky people they fought had spears, bows and arrows, or, at best, ancient muskets bought from slave-traders" (Hochschild 49). The Zanzibari traders led by Tippu Tip who would eventually give Leopold II some trouble in the East, summed the situation up well with their Swahili saying that "Bunduki sultani ya bara bara (The gun is the sultan of the hinterland)" (Hochschild 71).

Leopold II's racism complemented his obsession over economic profit. From the beginning, the Black Africans labored while the few White Belgians in the Congo bossed them around. This was true even of the armies which fought for Belgian control of land. To ensure this system of White supremacy, an assistant to Leopold II, on the question of government, wrote to Henry Mortan Stanley that "there is no question of granting the slightest political power to negroes, that would be absurd. The White men, heads of the stations, retain all the powers" (Hochschild 67). This, despite the fact that the survival of these White men was often totally reliant on support from the same Africans they disparaged and murdered. As Stanley and the small army of Congolese he had forced into assisting him moved across the region, they often went hungry. In a striking parallel to the types of gender-based violence that persist in the

Eastern provinces of DRC today, Stanley "sometimes held women and children hostage until local chiefs supplied food" (Hochschild 99).

By the time the Berlin Conference rolled around in 1885, Leopold was in position to consolidate power over a region almost the size of Western Europe into just his hands (World Bank). There was not a single African person present at the conference. By the end of the conference, the Congo Free State was established. It is impossible to overstate the brutality with which Leopold ruthlessly ruled the region for the next 20 plus years. Best described as the largest genocide in human history, 10 million Congolese were murdered (Bate). Leopold II "tried to extract as much revenue as possible out of the country– primarily in the form of ivory and rubber, and on the basis of forced labor – without any concern for the human costs" (Bevernage, 208). His tactics for ensuring that enough rubber was gathered, and enough railroad built were especially despicable. The first major alarms about these tactics were raised on an international scale by George Washington Williams in 1890. An African-American civil war veteran, he wrote to Leopold after having visited the Congo and accused him of 12 "specific charges" against the Congo Free State (Jones, 40). Among these charges were enslavement, sexual violence, mutilation, and the frequent use of the "chicotte" (hippopotamus hide whip) as a murder weapon. The Belgian officers and enslaved Black soldiers they forcibly conscripted perpetrated these things themselves and did not even attempt to protect victims of intercommunal violence (George). Williams' letter started to bring international attention to the atrocities occurring in the Congo.

Belgian Congo

Under the Congo Free State, Leopold II's "power as king-sovereign of the colony was shared in no way with the Belgian government" (Hochschild, 87). Amid mounting pressure

about the human rights violations under Leopold II, the king was forced in 1908 to turn the Congo over to the Belgian government (Bevernage, 203). From 1908 until independence in 1960, Congo was a Belgian colony. Conditions for Congolese people were better without Leopold II. However, the Belgian Congo perpetrated its own share of human rights violations— "despite avowed intentions to improve human rights abuses in the Congo, the harsh labor laws persisted until the 1920's, and numerous rebellions, harshly put down, occurred" (Kisangani, 10). Even by 1935, the Belgian government had "a requirement that all Congolese must do 60 days of compulsory labor each year" (Human Rights Watch).

Initially, the activity and violence of the Congo Free State and the Belgian Congo was focused in the Western part of the country, where it was easier to export raw materials down the Congo River and back to Europe— "despite some early European intrusions in the area, [Eastern] polities remained autonomous during the Scramble for Africa" (Kisangani 9). The geographic distance and presence of competing Arab trade networks initially disallowed the type of direct rule that Leopold II had established in the West. Following their victory against Tippu Tip in the Congo-Arab war, "the colonial administration governed Eastern parts of the DRC indirectly, vesting administrative powers in the existing pre-colonial hierarchies" (De Juan 104). This was the one exception to the 'no political power for Black leaders' rule that was strictly abided by in the West. "Bukavu [present day capital of South Kivu Province] was the colonial center in the area, from which administrative and economic power was exercised and projected into the Eastern Congo" (De Juan 106). This indirect rule was nonetheless destabilizing and disrupted the existing political hierarchy in the region. Even though the communities in the DRC part of the Great Lakes Region were not colonized by the Belgians to the extent that those in other parts of DRC were, the colonial history of Western DRC has had immense consequences

for Eastern DRC. Since folks in the East of the country are today under the jurisdiction of the central government in Kinshasa, they are equally affected nowadays by the way that colonialism set back the timeline of nation building and establishment of social services in an independent Congo.

Colonial Medicine

In *Between the World and Me* Coates writes "in America, it is traditional to destroy the Black body—it is heritage" (Coates 103). Though widely critiqued for being overly pessimistic, Coates' realism is apt beyond the American setting. To steal Coates' language and apply it to Ebola in DRC, in the field of 'global health it is traditional to ignore the Black body'. First, health was ignored and constantly threatened during the slave trades. From the beginning of the Congo Free State, the health of Congolese people was not a concern. In his famous letter to Leopold in 1890, George Washington Williams remarked that all of the Congo had only "three sheds for sick Africans in the service of the State, not fit to be occupied by a horse" (Williams). This was not a coincidence. Congolese folks were in fact seen by some Belgians as more akin to livestock than to humans. They were certainly treated this way. Forced migration and inhumane, intense labor compromised the strength of people's bodies, making them more vulnerable to disease.

Eventually, the contemporary field of global health was established with the rise of colonial medicine. The history of colonial medicine matters because this is where the modern field of global public health has its roots. Though perhaps an improvement of sorts from a policy of indifference, colonial medicine (sometimes referred to as "tropical medicine") was explicit in its agenda. The first goal was to keep White imperialists alive and better enable conquest into the tropical climates of Sub-Saharan Africa. This was the first stage of colonial medicine and it was

not until this goal was achieved that the Scramble for Africa really began. For example, the European discovery of quinine (long used by Indigenous people in present day Peru), derived from the bark of the Cinchona tree, helped lower mortality rates from malaria for colonizers. The second goal of colonial medicine was to keep colonial subjects alive so that they were able to work (whether that be voluntarily or involuntarily) in service to the colony (Farmer 2013, 38). Though the true motive was better profits, the fact that some Africans received medical care (even though they were the last priority) was used as a justification for European imperialism. Medicine was heralded "as one of the virtues of the colonial enterprise" (Farmer 2013, 37). Some of the technological advancements like anesthesia, vaccines, germ theory, and eventually antibiotics that were associated with colonial medicine were indeed good for health. However, many of the concepts and ideologies that arose from this burgeoning field were far from virtuous.

An element of colonial medicine that would rear its head years later during the 2018 Ebola outbreak was "imperial hygiene". This approach "focused increasingly on the "uncivilized" and "unclean" practices of nonwhite subjects, whose "primitive" state made them a menace to the civilized world" (Farmer 2013, 39). In 2018, similar claims would be made about Congolese people regarding bushmeat consumption and burial practices, neither of which were major causes of Ebola transmission. Clearly, proponents of colonial medicine did not appreciate what "civilization" really means—in Paul Farmer's words "a decent provision for the poor is the true test of civilization" (Gutiérrez). Overemphasis of perceived individual risk behaviors related to 'cleanliness' served then and now to take energy and resources away from the true killer: social determinants like poverty and barriers to transportation and medical care– things that affected entire populations.

Equally destructive was the concept of the "primitive mentality" which argued that Western minds were superior to non-Western minds. This fallacy is infamous in the modern field of global health for being one of the reasons given for withholding antiretroviral therapy from folks living with HIV in Sub-Saharan Africa during the height of the AIDS crisis in the late 1990's and early 2000's (Farmer 2013, 39). The "primitive mentality" narrative is a recurring justification for withholding effective therapies for diseases of extreme poverty.

Colonial states were not the only ones practicing tropical medicine. "Christian medical missionaries" were spread throughout the Congo. Certain missionaries deserve major credit for shedding light on King Leopold II's atrocities and bringing down his reign. However, much of the "medicine" they practiced did more harm than good—violating the Hippocratic oath to "do no harm". Until the mid-nineteenth century when it became mandatory, many of these missionaries had very little medical training. Often, the medical care they provided accompanied aggressive attempts at converting people to Christianity. Having ulterior motives like wanting religious conversion as a condition of care is unacceptable.

Medical missionaries were one of the first, and far from the last, examples of "White saviorism" in the field of public health. Teju Cole, who founded the term, says that "the White Savior Industrial Complex is not about justice. It is about having a big emotional experience that validates privilege" (Cole). The concept refers to folks of privileged backgrounds, typically White and wealthy, who work within underserved communities of Black and Brown folks. This in it of itself is not necessarily problematic. However, all too often, these "White saviors" operate without cultural humility and actually cause harm in the communities they claim to be helping. Even when intentions are positive, when things go awry or they make mistakes, saviors tend not to be held responsible and communities get blamed for failed interventions. Common pitfalls on

the road to saviorism are overestimating one's own contributions and failing to recognize the structural issues at the root of the affliction being fought. “White saviorism” is a concept that will be revisited later in relation to the 2018 DRC Ebola response because of some unfortunate parallels between the international response to that epidemic and how the colonial medical missionaries operated.

Largely regarded as selfless heroes in Europe, medical missionaries during the colonial period set a few dangerous precedents that are illustrative of White saviorism and whose legacies persist today. First, medical missionaries were unfamiliar, and worse, uninterested with the historical context in which they were working. Second, there was a lack of accountability for the missionaries' wrongdoing. They did not have to answer to anyone for poor quality of care or for neglect. Third, medical missionaries typically received their funding through church communities. This meant that they could not deliver a consistent quality of care since funding was highly variable. A local health clinic upon which a whole community depended could disappear at any time (Farmer 2013, 47). Folks became dependent on medical missionaries' services and then would die of preventable illnesses whenever the missionaries decided to leave or ran out of money. Generally, short term or unreliable funding commitments like those made by the missionaries are inferior to longer term commitments. Medical missionaries were also dismissive and downright hostile towards practitioners of traditional and herbal medicine. This, despite the fact that most pharmaceutical drugs' active ingredients are derived from plants. Not only did missionaries reject the idea that biomedicine and natural medicine could coexist, those who believed in traditional medicine were deemed in special need of conversion to Christianity. This did not build the trust within colonized communities that is so essential to effective public

health delivery. Colonial medicine created a bad reputation for healthcare workers that understandably continues to this day among some Congolese people.

Finally, by labeling certain types of diseases as “tropical” and associating them with the colonial project, the institution of colonial medicine obscured the reality that the proliferation of disease is a product first and foremost of social factors. To blame geography or the individual behaviors of Africans was to absolve colonial health care providers of any responsibility in being a part of the colonial machinery that was generating poor conditions for health in the first place. Almost always, disease incidence maps align themselves with the places with the highest rates of poverty more so than any specific geographical conditions.

The faults of colonial medicine foreshadowed the type of mistakes that would occur in the global response to Ebola in 2018. Further, the memory of colonial medicine is connected to distrust of health institutions in modern DRC. Given that colonial medicine was what allowed colonialism in the first place, it is no wonder that many Congolese people today associate biomedicine with oppression and not with good health (Lowes).

Patrice Lumumba and Suppression of African Nationalism

Since independence on June the 30th of 1960, the government of DRC in Kinshasa has largely been unable to deliver services like healthcare to its people. Western governments and corporations are partly responsible for this—they have seen to it that nationalist leaders are crushed, instead implementing puppet leaders who will allow the extraction of its many precious resources. In the context of Sub Saharan Africa, the word “nationalist” is a complementary term. When your people are oppressed it's only right that they are your number one concern. The case study of Patrice Lumumba’s assassination is telling. A key actor in the movement for independence, Lumumba was the country’s first prime minister. He was a champion for the

health of Congolese people. At the All-African Conference in Leopoldville in August, 1960 Lumumba stated that "political independence has no meaning if it is not accompanied by rapid economic and social development". Lumumba's firm stance against the colonizers and his preference for serving the poorest Congolese earned him popularity in the Eastern Provinces. So much so that after he was assassinated, Kivu Province and others went as far as to secede from DRC in what became known as the Congo Crisis (Kisangani, xxxv).

These same stances that made Lumumba popular among the poor and marginalized, were alarming to Western powers. Outwardly, they cited a need to counter Soviet influence, but Lumumba's refusal to allow continued economic extraction likely played just as large of a role. Lumumba was killed by firing squad on January 17th, 1961. Adam Hoschchild recounts in his incriminating novel *King Leopold's Ghost* about how he "heard a [American] CIA man, who had had too much to drink, describe with satisfaction exactly how and where the newly independent country's first prime minister, Patrice Lumumba, had been killed a few months earlier" (Hochschild, 3). If the United States government did not participate directly in Lumumba's murder, it is quite clear they were complicit in preventing it.

Structural Adjustment

Lumumba's vision of a robust social safety net for Congolese people would be long delayed. DRC would continue to be manipulated by cold war politics and the leaders that would follow Lumumba were extremely bad. Most notable was President Mobutu, who was propped up by the United States and Belgium. He ruled DRC from 1965-1997 and notoriously stole billions of dollars from the Congolese public. Then in the 1980's neo-liberal structural adjustment programs (SAP's) forced previously colonized governments like DRC to cut back on social service spending in what became known as 'austerity' policies (Kiakwama, 12). Essentially loans

that could not be paid back without cutting social services, World Bank and International Monetary Fund SAP's were disastrous for public health. The right to health can only be guaranteed by the public sector and since the government of DRC was cutting health spending so as to qualify for debt-forgiveness programs, millions of Congolese people's health needs were not served.

Logistical challenges of Time, Distance and Location

Aside from a history of exploitation, poor national leadership and economic subjugation, the health of Eastern Congolese people has not been protected for logistical reasons. These reasons are also rooted in historical injustices but perhaps in less obvious ways. First is the issue of time. DRC, it should not be forgotten, is a very young country and it is normal for young countries to experience war and upheaval in the early years of their existence. Colonialism set back the calendar for the DRC to develop a robust health system to track diseases and to establish enforcement to effectively tax all of the mineral wealth that is now flowing out of the country untaxed. The colonial period also slowed the training of a health workforce—there was no university in Congo until 1954 (Kisangani, 11). As a result, "by the time of independence, the Belgians had allowed only 17 Congolese to obtain a university education" (Dowell).

The second logistical challenge has to do with distance. Firstly, the physical distance of Ituri and North and South Kivu from the capital of DRC in Kinshasa makes the eastern constituency easier to ignore politically. Further, the Congolese government "...currently has little administrative capacity and control over remote regions, such as eastern DRC. The lack of control is exacerbated by the long distances and the rudimentary infrastructure, which make transportation and communication difficult" (GAO, 6). There is a reason for this. Belgium established railroads along and connecting to the Congo River for efficient transport of raw

materials out to the main port on the Atlantic Ocean. There was significantly less transportation infrastructure built elsewhere in the country like the Eastern Provinces. Almost all of the roads in the east of the country are unpaved and slow-going (Bird). The terrain is rough and mountainous and seasonal deluges of rain can drastically change road conditions without warning. This poses another barrier to access for people who are sick since just getting to health facilities can take hours. For time sensitive health concerns like Ebola that worsen quickly, unreliable transportation infrastructure accounts for many otherwise preventable deaths (Bird). Additionally, delivery of health supplies and staff to the far Eastern provinces is challenging and it takes longer to gather and communicate epidemiological concerns.

The final logistical challenge with health delivery in East DRC is location. A key public health strategy for keeping local outbreaks from becoming regional epidemics or global pandemics is taking people's temperature as they cross borders and isolating people with an elevated temperature. Limiting the spread of disease to within national borders is critical. However, the Eastern provinces of DRC are adjacent to Rwanda and Uganda. Much of the border region is controlled by armed groups fighting over control of the mineral mines in the region. The border itself is very porous making epidemiological surveillance and epidemic control challenging. A lot of economic activity occurs across the border. Further, many people are fleeing the violence in DRC— "as of 31 October 2018, 568,530 refugees and asylum seekers from DRC were identified by UNHCR in Uganda, although the number is likely to be significantly higher due to undocumented entrants" (Bedford, 5; UNHCR). Indigenous groups have been particularly vulnerable to displacement (Jackson). Many people cross from DRC into Uganda informally across Lake Albert. The logistical challenges of health delivery in Eastern

DRC related to time, distance and location are partially bad luck. They are also, however, directly the result of Belgian rule in the Congo.

German and Belgian Colonialism in Rwanda

Because of its proximity to DRC, Rwanda's colonial history also plays an important role in explaining persisting violence and poor health outcomes in North Kivu, South Kivu, and Ituri Provinces, DRC today. North and South Kivu provinces share their western border with Rwanda, separated by Lake Kivu in some parts (see figure 3). Over the years, millions of people have gone back and forth across this border, particularly following the 1994 genocide in Rwanda. The history of Hutu and Tutsi identities in neighboring Rwanda is particularly relevant to public health in DRC today since much of the conflict in the region (which makes health delivery difficult) still revolves at least in part around these ethnic identities. The 2018 Ebola epidemic proved difficult to contain because of the ongoing war between these rebel groups and the Congolese government forces.

The pre-colonial relationship between Hutu and Tutsi is hotly contested and somewhat unclear since the majority of primary sources on the topic are from European perspectives during the late 19th century. Some historians argue that pre-colonization identities "were fluid to the extent that one could readily change their identity from that of a Hutu or a Tutsi merely, for example, by the acquisition of more cattle" (Cameron, 29). Others argue that it is inaccurate to place the entirety of the blame for the racialization of Rwandan society on the colonizers since political power and land ownership appears to have already been concentrated in the hands of the Tutsis since before European contact. In any event, what is certain is that colonization exacerbated whatever level of political hierarchy that previously existed in Rwanda.

The Germans were first to colonize present day Rwanda. They quickly decided that "the more physical European-featured Tutsis were deemed to be the natural-born local rulers, and the Hutus (short, stocky, more pronounced African physical features) were destined to serve them" (White, 473). The existence of very minor physical differences is best attributed to environmental differences and migratory patterns between people. Differences in appearance of course had nothing to do with intelligence or leadership ability. Nonetheless, "ethnic identities were fixed based on the theory of scientific racism (e.g. skull size, nose measurements) from Europe" (White, 474). Though a debunked "science" today, craniology was in vogue at the time and suited colonial administrators well in so far as providing a basis to divide the people they had colonized, thus strengthening their own hold on power. The Hamitic myth, blatantly racist and repeatedly disproven, drew on the aforementioned "race science" to argue that there existed an "African population supposedly distinguished by its race— Caucasian ... [that] were so politically sophisticated that they organized the conquered territories into highly complex states with themselves as the ruling elites" (Sanders, 521). The Tutsi were deemed to be the "Hamitic peoples" and the Hutu considered the "Black", and thus inferior, Africans. In this fashion, "Hutu" and "Tutsi" identities came to be treated as concrete "races" under German colonial rule. The overemphasis of trivial physical differences in the name of White supremacy set the stage for years of conflict in the region. Hutu and Tutsi would remain divisive categories for the next 200 years.

Following the end of World War I and as a condition of the 1918 Treaty of Versailles, Germany ceded control of the colony in present day Rwanda to Belgium. After officially "adopting" the colony in 1923, one of the first things the Belgians did was issue identity cards which divided people based on "race". Essentially, the Belgians codified into law the

racialization of Rwandan society that the Germans had initiated. A hallmark of racist societies like Nazi Germany and Apartheid South Africa, the racial identity written in one's passbook dictated the civil rights that the individual possessed.

Rwandan independence in 1962 did not bring the universal condemnation of racism that one would have hoped for. For many Tutsi political leaders, to debunk the manufactured significance of the ethnic identities would be to call into question their authority to rule. The Tutsi elite had a vested interest in maintaining the system. As a result, racist science did not leave with the departure of the Belgians, instead, it was "simultaneously adopted by scientists in newly forming postcolonial nations" like Rwanda (Weaver, 68). The manifestation of this was that "postcolonial [Rwandan] governments maintained the identity card system and required that citizens carry the cards with them" (Baisley, 41-42).

Everything boiled over in 1994 during the Rwandan genocide in which somewhere between 400,000 to a million Tutsis were killed by extremist Hutu militias and the Rwandan army. Retaliatory killings of Hutu people in refugee camps in DRC immediately followed. During the killings, racial identities were relentlessly emphasized and spread quickly through the radio. The Hutu government hired "Ferdinand Nahimana, 'an extremist intellectual', who used radio broadcasts to manipulate public opinion" in favor of violence against Tutsis (Baisley, 40). Tutsis were repeatedly painted as being untrustworthy because of their supposed collaboration with the colonizers.

The same ethnic identities of Hutu and Tutsi which characterized the passbooks and the genocide continue to be an organizing criterion for the many armed rebel groups currently fighting in North Kivu, South Kivu and Ituri provinces, DRC today. Due to the violence in Rwanda, perpetrators, victims, bystanders, and people whose identities span multiple of these

categories all fled into the Eastern Provinces of DRC. Some armed groups formed out of self-defense or to seek long denied political representation. Others took up arms to seek revenge. Historical grievances related to ethnic identity persist as one of the major points of conflict. One group, the FDLR, is majority Hutu and opposes the current Paul Kagame led Rwandan government (Hedlund). Meanwhile, the M23 rebel group is predominantly Tutsi and is ostensibly fighting for better representation for Congolese Tutsis.

Current War

The presence of these many armed groups with roots in the colonial cementation of Hutu and Tutsi ethnic identities continues to destabilize the Great Lakes Region and impact millions of people's lives. Whether to fuel their initial motives or not, the various armed groups increasingly began to fight over control of the rich natural resources in the Eastern Provinces. The national governments in the region want to capitalize on the mineral wealth as well, a 2003 "UN report accused Uganda's military of provoking conflict in the Ituri region to legitimize its continued presence there, allowing for its continued resource exploitation" (DRC, 2). The Congolese government has responded by venturing into Eastern DRC ostensibly to try to regulate the mineral trade and suppress rebel groups. The government is backed by U.N. peacekeepers who have deservedly received intense critique for their inability to uphold their mandate to protect civilians (Sawyer). Overall, "local peacekeeping presence enhances the effectiveness of civilian protection against rebel abuse, but … UN peacekeeping struggles to protect civilians from government forces" (Fjelde). One example of the way that conflict over minerals in the east has been extremely detrimental to public health is that gender-based violence has come to characterize much of the conflict.

Gender-Based Violence

In stressing the ways in which existing at the intersection of multiple marginalized identities is particularly difficult, Ta-Nehisi Coates wrote in 2015 that "the bodies of women are set out for pillage in ways I could never truly know" (Coates, 65). As with most hardships, women bear the brunt of the suffering in Eastern DRC. A particularly upsetting aspect of the war in the east is the ongoing use of "rape as a weapon of war" (GAO). A war crime of the most despicable variety, most every group in the region including the Congolese army and UN soldiers and staff have been accused and found guilty of committing sexual violence (Nagel, 3). A startling study "conducted in early to mid-2007 and estimated that about 8 percent of females in North Kivu and 6 percent of females in South Kivu had experienced sexual violence within the 1-year period preceding the survey (GAO, 2).

Clinging to an undying sense of hope, Dr. Denis Mukwege, a gynecologist, is "risking his life to treat women and end the use of mass rape as a weapon of war in Eastern Congo" (Kisangani I). At Panzi Hospital in Bukavu, South Kivu, Dr. Mukwege and colleagues put a major emphasis on mental health support in addition to taking care of women's physical health needs. They provide holistic care in an effort to help women "rebuild their self-esteem and occupy a non-humiliating, dignified place in their family, community and, more broadly, their country. Many projects have emerged like those of V-Day and the City of Joy (Cité de la Joie) to find ways to reintegrate women who have been severely molested" (Dickason). Dr. Mukwege is a strong advocate of transitional justice. Transitional justice seeks healing in the community by prosecuting past and current perpetrators of sexual violence. For his efforts to hold perpetrators accountable and for trying to bring international attention to the use of rape as a weapon of war in the DRC, Dr. Mukwege has been threatened by the Congolese government and even had

assassination attempts on his life (Nonfiction). As a Nobel Peace Prize Winner, Dr. Mukwege has become the most recognizable healthcare worker standing in solidarity with his countrywomen. However, he is far from the only person doing this type of work. Many of his coworkers are survivors of sexual violence themselves. Dr. Mukwege and staff are emblematic of the heroism of the thousands of Congolese health workers who are upholding people's right to health even in the most difficult of circumstances.

Disease Profile

The Ebola virus, also referred to as Ebola hemorrhagic fever, was discovered in 1976. The Congolese physician Dr. Jean-Jacques Muyembe was the one who took the blood samples which would identify Ebola as a new disease, though he has largely not been credited for his groundbreaking work (Peralta). The Ebola virus is a zoonotic disease since it is transferred from animals to humans—most typically from bats and nonhuman primates. At the beginning of sickness, common symptoms are fever, muscle pain, chills and headache. As the disease progresses, organ failure, severe bleeding, and death can occur (CDC). The incubation period for Ebola is quite a large window—"symptoms may appear anywhere from 2 to 21 days after contact with an Ebolavirus, with an average of 8 to 10 days". For this reason, tracking the spread of the virus is difficult and delays in treatment delivery can be disastrous. Unlike most respiratory diseases, someone's infectious period coincides with when their symptoms begin. While there are multiple different strains of the virus, the 2018 outbreak in DRC was of the *Zaire ebolavirus.* Ebola is endemic in Democratic Republic of Congo.

Social Determinants of Ebola

Ebola epidemics in West Africa 2013-2016 and DRC 2018-2020 have largely been depicted in Western media as being an almost guaranteed death sentence. It is a widely held

belief that there is something intrinsic and biological about the virus which accounts for such high rates of mortality. Though the biology of the virus is important for vaccine and treatment development and informing isolation protocols, social factors drive the spread of Ebola. Portrayals of Ebola as a 'super-virus' obscures the fact that the vast majority of Ebola deaths are preventable with proper and timely treatment. Further, this doomsday depiction that has become so common in western media ignores and diverts attention away from the historical underpinnings that allow Ebola outbreaks to spiral out of control in the first place. In reality, it is not the scientific profile of the Ebola which has allowed it to cause so much suffering. Rather, the social, political and historical context inform patients' health outcomes. In the DRC, the primary determinant of health is the long and continued history of various forms of violence and economic marginalization outlined previously in this paper. This history has concrete implications regarding the implementation of Ebola control and treatment measures. The 2018 Ebola response was emblematic of a larger level of indifference to the health of folks in Global South that originated with colonial medicine and persists today within the public health community.

Disparate Mortality Rates

An Ebola diagnosis has been similar to a death sentence only for those who live in under-resourced medical settings. Access to relatively low-tech medical tools has a major impact on mortality rates. For example, "facilitating early detection and isolation, RDT's [(rapid diagnostic tests)] could also minimize the number of people exposed and enable early rehydration, which is key for improving survival" of Ebola (Dhillon). Data from epidemics which preceded the one in DRC is telling – "during the early part of the 2013–16 west African epidemic when intravenous fluids were not readily available, the nearly four–fold difference in mortality between patients

treated in high–income countries (18.5%) compared with those managed in west Africa (70.8%) suggests that aggressive hydration, among other measures, could improve outcomes" (Kelly). Most of the patients in the high-income countries were health sector workers returning from working in Guinea, Sierra Leone, or Liberia (Farmer). If a mortality rate of 18.5% is possible in high-income countries, then any rate that is higher, anywhere else in the world, is a grave injustice.

Since the 2014 outbreak major improvements have been made as far as epidemic control, vaccination, and disease surveillance. Learning from mistakes made in West Africa, the World Health Organization and local partners engaged in "training thousands of health workers, registering 250,000 contacts, testing 220,000 samples, providing patients with equitable access to advanced therapeutics, vaccinating over 303,000 people with the highly effective rVSV-ZEBOV-GP vaccine, and offering care for all survivors after their recovery" (World Health Organization). Ultimately, from 2018-2020, there were 3,481 cases of Ebola and 2,299 of those people died in DRC for a mortality rate of 66%. This is compared to "more than 28,600 cases and 11,325 deaths" for a mortality rate of 39% during the West African outbreak 2014-2016 (CDC). As mentioned above, the mortality rate was extremely high early on during the 2014 West African epidemic before decreasing significantly with the arrival of significant international funding. Even with the unique challenges of fighting a disease in a war zone, the DRC outbreak was controlled more quickly and did not spread as widely in comparison. Partly to thank for this was the widespread use of vaccination in DRC— "over the course of the 22-month outbreak, two different vaccines were administered to more than 300,000 people" (Carter). Initially, the vaccines were only used in small scale trials. Eventually, as their safety and

effectiveness became evident, they were used more widely. The best of these two vaccines was the rVSV-ZEBOV-GP vaccine.

Horizontal Versus Vertical Interventions

Another notable improvement with the 2018 response was the training of thousands of health workers. Historically, the field of public health, and colonial medicine in particular, has put most of its energy and funding towards "disease-specific projects (termed 'vertical programming') rather than towards more broad-based improvements in population health, such as preventive measures, primary care services, and health workforce development (termed 'horizontal programming')" (De Maeseneer, 3). International non-governmental organizations tend to be more likely to focus on vertical interventions because they are easier to quantify and sexier to report back to donors. Horizontal interventions on the other hand demand partnership with national, regional, and local, governing authorities and are thus more time consuming and difficult. They create incremental, but longer lasting improvements. In the case of Ebola, a horizontal improvement might look like establishing rural clinics for earlier disease detection. This intervention would curtail Ebola but would also help to combat other health threats that will exist after the end of the current Ebola epidemic. In general, horizontal programs allow the communities in which an intervention is being instituted more autonomy since they are less likely to be left out in the cold once foreign organizations decide their work on a specific disease is complete. Done right, training of healthcare staff and building primary care capacity will leave communities with a stronger health infrastructure for the long term. Prioritizing horizontal programs over vertical ones is one way to depart from the problematic 'saviorism complex" that was discussed earlier in regards to missionary medicine. By training so many health workers, the 2018 Ebola response demonstrated a slight, but encouraging, shift towards more horizontal

public health programming. Ideally, the training would have been done preemptively instead of thrown together in reaction to a blossoming crisis.

The successful development and unrolling of a new vaccine, as well as an incremental shift towards more horizontal health interventions are both legitimate achievements that warrant celebration. Nonetheless, the DRC outbreak response could have been a lot better. It ultimately went down as the second largest in history, trailing only the one in West African nations with similar histories of exploitation to DRC. Even with improved technology such as a vaccine for *Zaire ebolavirus,* the mortality rate in DRC was 27% higher than it was during the 2014 outbreak in Guinea, Liberia, and Sierra Leone This means that among those who got sick in Eastern DRC, the prognosis was actually significantly worse than what it was in West Africa nearly 10 years ago. What these numbers make clear is that though the 2018 Ebola response unrolled state of the art technologies, technology and biomedicine only goes so far by itself. No matter how good the technology, people have to have *access* for technology's impact to be felt. An underappreciation for the social determinants of health which inform access to new technologies, treatments, and Ebola control strategies like contact tracing is to blame for persistent mortality rates from Ebola between residents of the Global South and residents of the Global North. All of the predominant negative social determinants in the Eastern provinces of DRC— particularly poverty and proximity to war, are deeply connected to the historical backgrounds outlined in the first part of this paper and help explain why these provinces were hit particularly hard by Ebola (see figure 4).

Health Interventions in Conflict Zones

For example, the current war, which stems from Belgian racism in Rwanda significantly hindered the response. The violence has had major consequences since time is of the essence

when fighting Ebola. Since the incubation period of Ebola can be as short as 2 days, outbreaks can grow large very quickly. It is imperative that epidemiological surveillance be done to track how the disease is spreading and what areas are at highest risk. For example, a key metric for analyzing the scale of the outbreak is called the effective reproduction number, often referred to simply as *Rt* (Tariq, 128). *Rt* is essentially "the expected number of new infections caused by an infectious individual in a population where some individuals may no longer be susceptible" (Gostic). Some people are no longer susceptible because of immunization, having already had Ebola, or by limiting exposure risk through health promoting behaviors. Knowing this number is critical for analyzing the effectiveness of control measures, vaccinations and anticipating how the virus might be evolving. Further, *Rt* rates ought to inform allocation of financial and human resources to higher and lower risk regions. However, in Eastern DRC, "deliberate attacks on the health care workers has hindered epidemiological surveillance activities, leading to substantial reporting delays" (Tariq, 128). Early in the 2018 Ebola outbreak, reporting delays were long. They steadily improved with time, but the health departments, healthcare facilities, and NGOs fighting the outbreak were playing catch up for the next 18 months because of the inability to sufficiently monitor transmission patterns in the summer of 2018.

The enduring conflict didn't only affect disease surveillance. Contact tracing is another very important tool for slowing the spread of the virus. Contact tracers ascertain who an infected person has had contact with and communicate isolation and quarantine guidelines to those people. In the case of Ebola, contacts can also begin intensive hydration measures which will help those people better fight the virus if they do become sick. Contact tracing requires a large team of community health workers with their boots on the ground. It also relies on reliable transportation. In addition to the logistical challenges of transportation mentioned previously,

armed groups frequently shut down roads, blocking access for health workers. Contact tracing also required trust within the community. Given the environment of war, trust in strangers was understandably low- "the Kivu region has lived through decades of armed conflict and insecurity, and its population faces a near-constant threat of displacement…when people were told they would have to be isolated because of Ebola exposure, they feared it was a trick to move them off their land" (Nolen). The third and final challenge had to do with staffing. It was difficult to recruit healthcare workers to put their lives on the line both by virtue of exposure to Ebola and by working in an active conflict zone. At the start of the outbreak "due to the ongoing conflict in the region, the US government … decided it's too dangerous to allow its top Ebola experts to work at the outbreak's epicenter. The US has maintained this stance despite outcry from public health officials who say the US isn't doing enough to help" (Belluz). Staffing shortages therefore were a real problem since the healthcare workers who did agree to work in that setting frequently had to isolate themselves after contracting the virus.

Other Health Threats

Even as Ebola in Eastern DRC during 2018-2020 grabbed headlines and garnered unusually high levels of international funding, it was just one of a plethora of health threats (Nguyen). The statistical killers are other diseases of extreme poverty like malaria, tuberculosis, and diarrheal diseases. Even at the height of the epidemic, Ebola was not the most pressing health concern for many people. Dr. Nguyen, who worked in DRC during the outbreak, observed that perceptions of Ebola as a lesser threat than other less well funded diseases led to the sentiment among some that "Ebola is just a business" (Nguyen, 1298). This echoed other findings that showed that "the introduction of a well-funded Ebola response (approximately $1.2 billion) into an area where basic services remain underfunded and people feel abandoned by the

ruling class gave an impression that the response aimed to benefit intervenors rather than local populations" (Prabhu). All of a sudden, the best paying jobs in the region were healthcare jobs, often occupied by foreigners. These people came to be known by some critical of the response as “Ebola profiteers” (Nguyen, 1298). What this all makes clear is that an Ebola response is only effective if the interventions employ and fairly compensate the affected community and if they also address other diseases at the same time.

Forms of Medicine

It is also important that International Non-Governmental Organizations and other health authorities operate with cultural humility. Too often, biomedicine has been touted as the only form of healing and wellness. Similar to how missionary medicine practitioners acted, other ways of knowing public health are not always appreciated. In response to the flow of funding and personnel from foreign countries an interviewee in Majengo, North Kivu expressed to researchers that "when it comes to health, we also have experts. I always wonder why people only believe in what comes from far away [...] Medicine always has to come from WHO, or White people, and yet we also have well-qualified people who can do important things” (Prabhu). The field of global health needs to be careful to seek partnership and not to replicate the paternalistic power structures of colonial medicine.

Health Protective Factors

Social determinants of health can be positive as well—these are called protective health factors or health promotion behaviors. These are even less recognized than the negative determinants particularly in the Sub-Saharan African setting where media coverage tends not to report anything unless it concerns immense suffering. All public health interventions, including those focused on Ebola should take ‘strengths based’ approaches. This means leveraging the

unique characteristics of a community that make it healthier or more resilient in face of sickness. Healthcare can be tailored specifically to these cultural values and strengths. Despite living at the intersection of multiple marginalized identities, communities in Eastern DRC possess many protective health factors that were underappreciated and under-harnessed by the large international public health actors that funded the 2018 Ebola response.

One of these assets is the community value of kinship—"the phrase 'umuntu ngumintu ngabantu' ('a person is a person through other human beings') captures this basic idea'' (Chand, 90). This concept of umuntu, sometimes also referred to as ubuntu, comes from people who speak any one of the many Bantu languages, who migrated into the Great Lakes Region circa CA 1000 and reside in Ituri and North and South Kivu provinces today. The philosophy is based on "the idea of people being people only through their relationship with and recognition by others" (Chand, 90). The popularity of this philosophy throughout Eastern DRC should be seen as a major asset by public health practitioners. This collectivist outlook makes some individuals more receptive to public health guidance, more likely to work as community health workers, and generally in greater solidarity with one another. One way that the positive influence of the Ubuntu philosophy could aid Ebola response would be by employing as many local staff as possible since these folks are most likely to empathize with the hardships their fellow community members are facing. Further, Congolese staff are more likely to have the communication skills and shared philosophy necessary to communicate health information in a way that resonates.

By 2020, a large network of predominantly Congolese health professionals ended the outbreak. In 2021, when Ebola briefly reared its head again, the health system was better prepared. A Congolese doctor, Dr. Yumaine was interviewed about why the 2021 outbreak only saw 11 deaths. He responded "that a key step that made a difference in shutting down Congo's

Ebola outbreak in 2021 was having local health officials in each community trained in the response." (Nolen). Dr. Yumains shared that "in the past, it was always people from Kinshasa who were coming with these messages," he said, referring to the country's capital. But this time, the instructions about lockdowns and isolation came from trusted sources, so people were more willing to listen and be tested" (Nolen). This trend towards community-based health systems is a reason for great optimism about DRC's public health future.

Conclusion

The field of public health too often fails to situate health conditions within the historical context of the region in which they are endemic. The case study of Ebola in 2018 in DRC is helpful for tying together how hundreds of years of exploitative history in the Great Lakes Region converges to make health delivery difficult. The real killer is not the Ebola virus itself but the slave trades, genocidal colonial governance, structural adjustment, and forced austerity all of which inform why the virus took so many lives in the present day. Congolese people, and health workers in particular, are incredibly resilient in spite of structural violence constraining their access to good health.

DRC's history is often characterized as depressing. This assessment is shortsighted. So too exists a long lineage of dissidents to the injustices and suffering which folks in Eastern Congo have been experiencing: George Washington Williams, Dr. Mukwege, Dr. Nguyen are only a few of the many. The current moment demands public health professionals who refuse to accept the current inequity in healthcare access. To respond better to disease threats in the future, all public health actors must have a basic understanding of the cultural and historical context in which they are working. The field must resist socialization for scarcity thinking and "failures of imagination" (Farmer)- demanding the resources necessary to uphold the human right to health.

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