

Character Trials: Managing Epidemic Disease in the 19th Century American South

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“There is nothing that deprives men of the natural use of their reasoning powers so quickly and entirely as fear,” a New Orleans newspaper reported in 1878.¹ These written words, intended for the eyes of local yellow fever hysterians, speak to an unending struggle to cope with fear and its consequences. For those suffering from infectious disease, fear twists and fits into the very essence of a person or population, shaping the malleable perspective of the afflicted.

In the nineteenth century, infectious disease ravaged humans across the globe. Typhoid, cholera, the bubonic plague, and tuberculosis, to name a few, besieged the people of the world in epidemics and pandemics, resulting in hundreds of thousands of deaths. Cholera, a disease caused by the bacterium *Vibrio cholerae*, killed roughly half of those who contracted it. In the nineteenth century, epidemics in 1832, 1849, and 1866 in the United States alone were responsible for tens of thousands of deaths, so many that physicians, in some instances, “did not even bother to report their cases.”² Similarly the bubonic plague, known for its fourteenth century decimation of the European population, resurfaced in late nineteenth century Pacific-linked port cities like Hong Kong, Bombay, San Francisco, Buenos Aires, and elsewhere. Tuberculosis, meanwhile, was the number one cause of death in Europe and the Americas from the late eighteenth to the early twentieth century and in South Africa, demonstrative of the disease’s global effect, and claimed the lives of 15 residents per 1,000 annually.³

Yellow fever too, ravaged populations worldwide, particularly in warm temperature locations. Brazil, Cuba, and the United States each had a slew of major epidemics resulting in mass death and hysteria. In the summer of 1849-1850, more than a

¹ Bloom, *Mississippi Valley's Epidemic*, 91.

² Rosenberg, *Cholera Years*, 32.

³ Packard, *White Plague*, 1, 3.

third of Rio de Janeiro's 266,000 inhabitants were estimated to have contracted the disease.⁴ Interacting with cholera (another disease endemic to Brazil), yellow fever decimated the population and made control efforts difficult. In Cuba, though many of its indigenous inhabitants were immune to the disease, yellow fever consistently recurred and played an important role in dissuading foreign occupation during the Ten Years War and the Spanish-American War of 1898.⁵ Due to the awareness of political complications caused by yellow fever in Cuba, a popular Caribbean trade stop, Americans frequently blamed the island for its epidemics with the malady. Indeed, yellow fever devastated the eastern seaboard of the United States, particularly Philadelphia and cities in Virginia, before thriving, ultimately, in the American South.

The purpose of this essay is to present the story of yellow fever in the American South as one where the disease not only devastated the region, as scholars have well proven, but also tormented the people there, namingly the caregivers charged to treat the malady and the laypeople beset by it. Rampaging across a region for decades without a cure or any effective treatment, yellow fever elicited responses from contemporary caregivers and laypeople that remain pertinent to health workers and clinicians today. In the subsequent pages, a brief history of yellow fever will be explained, its effect on both caregiver and patient will become clear, and an argument for its continued relevance will surface and persist.

Today, yellow fever is a well-understood and preventable, though incurable, disease. Also known as yellow jack, the disease is caused by a virus transmitted most commonly by the mosquito *Aedes aegypti*. Yellow fever has three symptomatic stages

⁴ Chalhoub, "Politics," 442; Peard, *Tropics*.

⁵ Espinosa, *Invasions*.

and is most known for its jaundice (yellowing of skin and eyes) and black, blood-filled vomit. The virus initially affects a human much like other fevers, causing headaches, elevated body temperature, and muscle and joint aches. Shortly after, a brief remission occurs, leading to either complete recovery or the final stage of infection: an acute recurrence causing delirium, organ failure, and potentially death.⁶ Within two weeks, the virus has run its course and either resulted in fatality or for the survivors, immunity.

The lack of a cure for yellow fever does not stem from scientific misunderstanding. The virus, of the *flavivirus* genus, is transmitted by mosquitoes that breed in warm, stagnant water collections. The nineteenth century urbanizing Western cities made excellent habitats for these insects, much like developing countries do today. Now, Africa and Latin America host the majority of the 200,000 cases and 30,000 deaths per year, though epidemics of the sort seen in the nineteenth century, to be discussed shortly, have been avoided with mosquito netting and greater knowledge of the disease's etiology and natural history. An effective vaccine was discovered in 1937 and with its success (when applied), the push to develop a cure or completely eradicate the disease, has simply waned.⁷ Instead, yellow fever persists as a lessened, though continued (particularly for tropical and underdeveloped regions), threat. For this work, yellow fever proves to be an excellent opportunity to examine the emotional toll of epidemic diseases. For others, it has helped describe shifting disease transmission theories, early public health efforts, and the economics and politics of endemic disease in the American South.⁸

⁶ PubMed: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002341/> and World Health Organization: <http://www.who.int/mediacentre/factsheets/fs100/en/> Accessed 20 March 2013.

⁷ Stepan *Eradication*, 14

⁸ Stepan, *Eradication*; Trask, *Ravages*; Bloom, *Mississippi Valley Epidemic*; Carrigan, *Saffron Scourge*; Dickerson, *Fever*; Ellis, *Public Health*; Espinosa, *Invasions*; Humphreys, *South*; Tomes, *Germs*; Peard, *Tropics*; Arnold, *Colonizing*; Grob, *Truth*, Chalhoub, "*Disease Control*"; Sutter, *Agents*; McNeill, *Ecology*

Controversy surrounded the cause and transmission of yellow fever in the late nineteenth century. Experts and policymakers believed that yellow fever's incidence could be decreased with improved sanitation measures; indeed, improved sewage decreases potential breeding grounds for *Aedes aegypti* mosquitoes. Though effective in practice, the ideas behind these measures were misleading. The origin and application of sanitation measures as disease preventatives lie in ideas about the noxious effects of the proliferation of filth and decaying organic matter, which presumably produced disease-causing emanations known as miasmas.

The 18th century discovery of cells and microorganisms using the microscope led to novel concepts of the existence of miniscule disease-causing “germs,” which shaped the surge in cleanliness. For the first time, scientists could detect disease-causing factors, but these discoveries introduced as much excitement as controversy. Only after decades of debate did these microbiological discoveries earn acclaim beyond the initial intrigue generated by the pioneering ideas. The association that we now take for granted between filth and disease-causing micro-organisms is a recent acquisition, and its original proposition frightened people and entrenched their previous beliefs.⁹ As disease theories reconfigured, sanitation fanatics called for extensive sanitation efforts. Meanwhile, those in control of sanitation funds and oft-criticized for failing to prevent disease, like boards of health, leapt on the opportunity to convince the public of salutary benefits of sanitation. Newspapers filled with advertisements designed to coax readers into purchasing salubrious and disease-thwarting products. Yellow fever was among the

and War; Herring and Swedlund, *Spaces*; Numbers and Savitt, *Science and Medicine*; Leavitt and Numbers, *Sickness*.

⁹ Tomes, *Germs*, 3.

popular targets by both these parties, but it was only nominally affected by improved sanitation efforts as mosquitoes had not yet been identified as agents of transmission.

Germ theory-based interventions against insect-borne diseases saved lives and ended suffering for many, but they also opened new doors to imperialistic pretensions, previously limited by endemic diseases that affected outsiders in colonized parts of Africa, Asia, and the Americas. Many historians argue that disease control, in one way or another, should be examined as an extension of imperialism.¹⁰ Imperial interests, benefitting from disease containment, encouraged the advancement of yellow fever understanding.

The impact of imperialism on yellow fever's emotional toll is loose, but unmistakable. After its last major yellow fever epidemic in 1878, the United States sent a health commission to Havana, Cuba, in the early 1900s to investigate the origins of yellow fever (the disease was believed to have started in Cuba before arriving in the United States via trade ships during the 1878 epidemic). Once settled, the commission, led by military physician Dr. Walter Reed, substantiated the growing claim that yellow fever was mosquito-borne. Though eventually supportive of the emergent scientific opinion, the Commission was costly in human terms – one of the physicians and several other test subjects died after intentional-inoculation by infected mosquitoes – and generated a great deal of popular anxiety about yellow fever.¹¹ When the Panama Canal was being constructed in subsequent years, the U.S. sent a yellow fever specialist to launch an all-out assault on disease to avoid the thousands of casualties, and subsequent

¹⁰ Stepan *Eradication*, Arnold, *Colonizing*; Headrick, *Health and Illness in Africa*; Espinosa, *Invasions*; McNeill, *Mosquito Empires*, et. al.

¹¹ Dr. Jesse William Lazear.

public clamor, that the French suffered during their attempt to construct the Canal.¹² In essence, disease in the nineteenth century was a major target for powerful governments because, once contained, disease no longer stood as a boundary for international involvement and the related economic and political benefits. Even before the beginning of American imperialism, the militant attitude toward disease already existed, as health and political leaders sought to limit disease by encouraging expensive community sanitation projects like those designed by Southern scientists and policymakers to contest yellow fever.

Most historians studying yellow fever and its transmission have focused on the political and economic factors surrounding epidemics, on the fact that caregivers had no effective treatments, on the Reed Commission, and on the eventual vaccine discovery decades later. Margaret Humphreys, for example, describes the business impact of seasonal disease and quarantines, focusing also on the roles of the Boards of Health to determine effective methods for disease prevention.¹³ Embedded in her examination of the disease is a lost confidence in existing methods of treatment and an ensuing disorder amongst business people and others to cope with the rampaging disease. This notion can be extended into a more deliberate reflection on the emotional consequences of epidemic disease.

Others have focused on the region, but not the people when studying yellow fever. Khaled Bloom offers a sweeping look at yellow fever in the Mississippi Valley Region, an apt locational choice considering the importance of the Mississippi River to the spread of the disease via trade ships and the resultant commercial consequences of

¹² Stepan, *Eradication*, 53.

¹³ Humphreys, *Yellow Fever*.

Mississippi River quarantines.¹⁴ Focusing on the 1878 epidemic, in many regards the worst to date, Bloom extensively documents the outbreak in New Orleans, Memphis, and the surrounding areas, establishing the region as one particularly marred by the disease. Jo Ann Carrigan further develops the idea of place and relates it to yellow fever.¹⁵ She focuses on New Orleans in the context of the greater Louisiana and the localized strain caused by recurrent outbreaks during the years 1796-1905. *Plague Among the Magnolias* author Deanne Stephens Nuwer excellently approaches the 1878 epidemic in Mississippi, narrowing the scope established 15 years prior by Bloom.¹⁶ Dwelling on a single place at a single time, Nuwer recounts the historiography of yellow fever and its place in the South, like Carrigan, but dedicates a chapter to the “Human Suffering” of Mississippi during the summer and how help given to the state from surrounding areas addressed the lack of quality health care for the sufferers. In the end, the purpose of her book is to make clear the role of charities and a new public health movement in response to the epidemic and how Mississippi took for the first time a foothold in the public health arena. Missing in the focus on economics, politics, and place in these works, is people during the diseases and how they *felt* about the epidemics.

Using this scholarship as a buttress, trade cities across the South become easily relatable. During the height of yellow fever anxiety, New Orleans, Memphis, and another coastal city on the boundary of the Mississippi River Valley, Galveston, Texas can be linked to one another for similarities in their approaches to commerce, culture, and importantly, yellow fever. All cities of the Confederacy, each underwent tremendous makeovers following the South’s surrender, to strengthen themselves post-war and

¹⁴ Bloom, *The Mississippi Valley’s Epidemic*.

¹⁵ Carrigan, *Saffron Scourge*.

¹⁶ Nuwer, *Magnolias*.

redevelop identities altered by political changes.¹⁷ Slavery had driven much of the economy and trade before the Civil War, and shaken politicians struggled to cope with the changes being forced on them, in many ways leading to the political battles of the late 1800s before Jim Crow laws of the 1900s. What resulted was complicated race politics, beyond the scope of this paper, and regional and national support of commerce through financial backing.

Throughout the 19th century, proximity to the Gulf of Mexico and the tropics, emerging industrialization and railroads, and Mississippi River flatboats and steamships made each city important to trade in the American South. Before and after the war much of the Southern trade centered on dealings with tropical regions to obtain fruit, coffee, tobacco, and sugar. The years 1880 to 1901 proved particularly prolific for the southern ports as Galveston and New Orleans ranked second and third, respectively, behind New York for export value increases. Based on these data and others, the federal government provided stimulus packages to the cities to continue to improve the states of their economy as it believed them to be central to the nation's. From 1891 to 1906 the federal government awarded \$7,500,000 to Galveston and \$8,000,000 to New Orleans as part of a river and harbor improvement movement.¹⁸ Memphis meanwhile, served as a gateway to the West as railways grew. It had already been established as a trader's town for its location along the Mississippi river and immediacy to New Orleans, but the Memphis and Charleston Railroad established in 1857 linked it to the eastern states, broadening its range of trading partners. The three cities then, ought to be seen as relatable for their experiences as established and still promising trade centers.

¹⁷ Ayers, *The Promise of the New South*.

¹⁸ Woodward, *The Origins of the New South*.

Connected by their trade cultures, these cities' social elites mimicked one another in ways that speak to their commercial interests. In 1871 Memphis for the first time celebrated Carnival, a spring festival similar to the Mardi Gras celebration popular in New Orleans and Galveston.¹⁹ The significance of celebrations like Carnival and Mardi Gras in these cities was two-fold. Held at the same time of year, these festivals demonstrated both how closely related the cultures of the three cities were and how competitive they were with one another. For Memphis, a place marked by yellow fever, cholera, and malaria outbreaks, the city needed a way to feature its attributes as the South's second largest city and develop a reputation that Memphis was more than "a stricken city of riverboat gambling and death carts."²⁰

Carnival, or the Memphis Mardi Gras as suggested by some, served to highlight the burgeoning city as a place welcoming to traders and investors where money was in excess and good times prevailed, thereby drawing attention from the South's largest city, New Orleans. The earliest celebrations occurred in 1743, when New Orleans chose to celebrate its French origins for the first time.²¹ Lavishness and entertainment, as well as funeral processions on All Saints Day, were the prominent themes for the celebrations of French Creoles, who dominated the province. After the Louisiana Purchase, Mardi Gras galvanized more regional attraction and outside guests. Quickly, Mardi Gras became synonymous with extreme festiveness and prostitution, leading cotton brokers, among other business men, to be attracted to its ports.²² The advent of Mardi Gras or Carnival in

¹⁹ Crosby, *American Plague*.

²⁰ *Ibid.*, 24.

²¹ Schindler, *Mardi Gras: New Orleans*, 16.

²² *Ibid.*

Galveston and Memphis, respectively, allowed local leaders to celebrate their own successes and not lose them, potentially, to New Orleans.

In Memphis, a public leader in 1870 had surveyed the city, its various health maladies, its poor but promising economic state and decided that, according to Molly Caldwell Crosby, “what the depressed river town needed was a party.”²³ Indeed, Memphis’ celebration of Carnival brought in 10,000 tourists in 1878, filling hotels and jumpstarting the economy. City leaders cleaned the streets of Memphis and invited businessmen to donate money (nearly \$40,000 in 1878 was obtained from private funding) to the support the main event, a parade. With booming railroad construction and highly trafficked ports, further enhanced by the business influx created by Mardi Gras celebrations, cities that participated in the spring festivals enjoyed many benefits from them. Nonetheless, the pervading theme between these city’s and their need for attention reveals them not as unique places celebrating individualism, but as siblings, undeniably competitive and incontrovertibly similar. Therefore Memphis, New Orleans, and Galveston can be seen as regional siblings; in the 19th century each had unique qualities and unifying resemblances, and competition drove them to self-improvement.

As a trio that depended on open trading and good weather for success, the cities loathed the near-annual bouts with yellow fever and the economic cessations they caused. To manage yellow fever outbreaks, governments installed quarantine and sanitation practices that, despite enthusiasm and confidence, did little to abate the fever. This trapped the cities in circular dealings with yellow fever as scientists and politicians hoped to prevent the fever to avoid poor health and economic downturn, offered no reliable measure to improve the situation after it inevitably arrived, and forced quarantine as a last

²³ Crosby, *American Plague*, 24.

effort to minimize the disease's effect. These similarities allow broad conclusions to be made about the emotional damage that occurred during these outbreaks. In other words, the cultural, societal, and medical connections between these trade cities provide a backdrop against which the experiences of individuals affected by fever can be positioned.

The intention to focus on the personal in the context of epidemic diseases emerged, in part, from the recent scholarship of physicians in the workplace. Despite rapid advances in medicine over the past 50 years, every day in every country in the world, health workers must try to help patients they know they cannot cure. In some cases, this is because certain diseases are not curable. In others, including curable infectious diseases in underdeveloped countries, health care providers lack access to medications that would cure or at least improve the health of patients. Jacalyn Duffin, for example, has recently compiled a set of essays that exposes the fears and struggles of doctors, despite expectations of perfection.²⁴

After reading these writings and others, the questions had to be asked: how did early physicians respond, or did they, to mortality of patients despite their treatments? As a corollary, were patients in any way cognizant of physician responses? Evidence to answer these questions is scarce, but powerful.

For yellow fever, the tremendous fear and uncertainty surrounding the seasonally expected epidemics did more than generate spirited camaraderie between cities; it crept into the minds of caregivers charged with treating the malady. Faced with unheeding and unsolvable cases, despite much pontification about methods, professional and otherwise, caregivers of all types struggled to cope with professional futility and personal

²⁴ Duffin, "Confronting Futility."

inadequacy. Expressed by a small population of perceptive doctors and nurses, the self-doubt was likely heightened by workplace mortality, as healthcare providers, as well as patients, died from the sickness. The trail of clues left behind by these emotionally cognizant medical workers offers a glimpse into the caregiver experience during yellow fever epidemics, infrequently touched by historians. They comprise an essential angle from which to view the epidemics, as those most-adept at handling disease questioned their own methodology and, sometimes, their very being, turning to religion to help them cope. Further, they remind us of the personal nature of disease, regardless of the time period, and through their keen words allow us relate to and understand the complex emotional consequences of failed life-saving.

In 1878 William Armstrong, MD lived in rural Columbia, Tennessee with his family and wife. When yellow fever hit Memphis that summer, he decided to leave the comforts of his home and country practice to serve the stricken. Armstrong remained in Memphis throughout the outbreak and wrote expansive letters to his wife detailing his experiences and struggles. Importantly, the letters detail some of the most evocative reflections from the 1878 outbreak as he expresses doubt and helplessness to deal with dying patients. Despite lacking a viable curative, he remains devoted to caregiving. In addition, his words leave behind a persistent, unfortunate guilt. The discomfort that his failed interventions created is striking. “I feel sometimes as if my hands were crossed and tied and that I am good for nothing,” he wrote, “death coming in upon the sick in spite of all that I can do.”²⁵ Armstrong’s words demonstrate the challenge of managing unstoppable epidemic disease. Moreover, Armstrong’s reflections force him to emerge as

²⁵ Crosby, *American Plague*, 74.

a representative for understanding the cost of yellow fever on 19th century medical workers. Others left clues to their feelings as well.

One New Orleans nurse, corresponding with her sister in Madeira, Portugal frequently turned to religion during times of distress, though little comfort was received. Like Armstrong, she expresses guilt for not being able to resolve the ailments of her patients. She also articulates a guidelessness to managing the disease and desperation for supernatural intervention. “I often wondered if I had sinned that my patients recover,” she wrote.

... I sometimes when out in the yard. Look up and think will God not hear me? That stars look down upon me with their diamond eyes are they smiling on me. Or are they mocking me in my despair?²⁶

Tormented by helplessness, Armstrong and DePelchin vocalize concerns and challenges unspoken by other caregivers. They expressed grave notions of what to do for oneself - as floundering medical workers sought and failed to remedy a ravaging disease -and what to do for others as their ineffectiveness affected the lives of patients.

Amidst the struggles to contain disease, laypeople fixated on the medical community’s failures. The South’s finest scientists and health boards were vocal about their efforts to halt the epidemics, resulting in public censure when those efforts failed. Newspaper headlines blamed the health boards for government-initiated sanitation policies and those who could afford to would flee the cities during the summer months, knowing no existing measure contained the disease. For those who remained, scientists and policymakers documented and announced fever-ridden neighborhoods to avoid, offered explanations for outbreaks there, and recruited caregivers like Armstrong and

²⁶ DePelchin Letters, October 31, 1878.

DePelchin to help care for the infected. For all the policies enacted, theories proclaimed, and caregivers recruited, laypeople remained skeptical as death tolls climbed.

Some laypeople and patients coped with unstoppable disease through dark humor. Targeting Boards of Health and medical workers, these lay folk criticized the handling of disease, articulating the public's distrust toward fever preventative and treatment methods, and likely accentuating the futility felt by medical workers. For example, the year 1853 delivered one of the highest death tolls for yellow fever in New Orleans, as 8,000 suffering from the disease's worst consequence. One resident of New Orleans derided quarantine measures claiming, "as soon as a man arrived on one of the steamboats, the office of the Board of Health immediately took his name and entered it in their books as *deceased*, to save all the trouble in calling upon him again."²⁷ The joke overstates the city's procedural quarantines to make a clear point: medical experts could do nothing to halt yellow jack's progress.

As the ill and unaffected publically scorned the beneficent, the consequences of elevated tension regarding yellow fever in the American South emerged. A final source to be discussed today, is a satire novel written in New Orleans in 1879, the year after its worst epidemic. *Doctor Dispatchemquic A Story of the Great Southern Plague* suggests and affirms the public's unrelenting despise for certain archetypal physicians.²⁸ The author's voice and the voice given by the author to characters such as the repulsive protagonist Dr. Dispatchemquic – who was renowned for his pomposity and impressively quick "dispatching" of patients, excellently points to the triviality perceived by the public of fever restriction and treatment efforts. That New Orleans, a city as maligned by yellow

²⁷ Carrigan, *Saffron Scourge*, 71.

²⁸ Dugan, *Doctor Dispatchemquic*.

fever as any, produced such a comedic and poignant reflection on the disease's wrath and its failed interventions underscores the impact of the disease there and elsewhere. As a whole, the book helps to elucidate a previously lacking aspect of epidemic disease scholarship: how *people* viewed epidemic and uncontrolled disease. Understanding these emotional reactions is necessary to our overall assessment of the impact of any epidemic.

Conclusion

Though this discussion of caregiver and patient anxiety toward yellow jack is pertinent to the broader yellow fever scholarship, it can also, if applied appropriately, serve the greater ideology of disease history and understanding. Indeed, a comparison between the yellow fever epidemics in the nineteenth century and the present-day HIV/AIDS one, suggests that continuities exist between these events, and that, therefore, previous epidemics warrant close examination in order to place current health issues into perspective and to better recognize the costs of epidemics on health care workers and the afflicted.

Despite recent scientific advances, HIV/AIDS continues to cause high mortality and medical quandaries, and has sunk whole nations and populations into states of cultural hysteria. Disease, as historian Gerald Grob suggests, is inescapable and correspondingly, the ever-emergent and “novel risks to human health and life,” can generate somewhat predictable responses to unsolved epidemics, vestigial of previous eras before changes in our environment and disease created new health risks.²⁹ In other words, the public, political, and scientific hysteria surrounding HIV and AIDS, well-documented in recent years, are not entirely new phenomena.

²⁹ Grob, *Truth*, 5.

In addition, HIV/AIDS caregivers face struggles in the workplace. Faced with an annual mortality of AIDS patients worldwide in the range of 1.8 million, scientists and the public continue to ask the question, “25 years of HIV research! ... and what about a vaccine?”³⁰ As a result, health workers and others struggle to cope with sentiments of futility. Studies have, not surprisingly, shown a higher prevalence of job burnout among medical and paramedic personnel due to close contact with patients and work overload. Burnout, a condition characterized by exhaustion, cynicism, inefficacy, and depersonalization, is among recent scholarship that, though necessary and helpful, would be remiss to ignore the historical roots of futility amongst caregivers in response to unyielding disease and high patient mortality; burnout is not a novel concern brought about by modern stresses. Instead, feelings of inadequacy and self-doubt have existed for far longer, including in the nineteenth century, as a result of yellow fever in Louisiana, Mississippi, Tennessee, and Texas.

In Sub-saharan Africa, one of the most affected locales of HIV/AIDS, there exists an intersection between international politics and its limitations to prevent local pain, as explored by Hakan Seckinelgin. The intersection, like that experienced between yellow fever sufferers and policy makers, proves policies of health care ineffectual to the needs of the ill. Instead of objectifying the sick as objects of medical study, Seckinelgin argues, it is important to consider the relevance of the experiences of people “infected, affected and living in the context of disease.”³¹ In the ongoing study of HIV/AIDS and other epidemics past and present, policies and scholarship must better consider the needs and experiences of the afflicted populations or else enhanced circumstances of caregiver

³⁰ “Worldwide HIV & AIDS Statistics” Avert.org. Accessed on 20 March 2013; Appay V., “25 years.”

³¹ Seckinelgin, *Politics of HIV/AIDS*, 1.

distrust, and caregiver helplessness, might hamper improvement. The same may be recommended for the ongoing Ebola outbreak in Western Africa, where disease has taken locals, governments, and caregivers by surprise and grown beyond prediction. For a case study in previous epidemics and the cultural and personal devastation they inflict, look to yellow fever and how apprehension and unheeding disease, heightened by scientific futility, marked a region for decades.

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