Disease and Labor in the Brazilian State: A Socio-Political Approach to Public Health, 1833-1882

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Introduction

This dissertation approaches the emergence of public health as a process of negotiation between the popular sector, the enslaved, state and health officials. In doing so, it provides new understandings of Brazilian state building. It focuses on public engagement in the evolving nature of state policies of health protection between 1833 and 1882 to shed new light on the making of state institutions and nineteenth-century political legitimacy.[1] At the center of this analysis lies the question of why public health should matter to illuminate new perspectives on state building. My research shows that it matters because public health was imbued in social questions, and its outcomes were intertwined with political goals and individual interests. For this reason, I argue that because public health belonged to Brazilian political processes it provides a critical outlook to understand how health intersected with broader Brazilian projects of state building. In my research, this analytical frame reveals the critical presence of the popular sectors and the enslaved in the directions health politics took during the empire.[2] Health was a topic of concern for anyone who lived in the nineteenth century, an era full of uncertainty and absent of solutions for many health issues that afflicted humanity, especially for those whose living conditions were far from ideal.[3] It was thus a common ground for political negotiations on how to protect it and what benefits that protection could bring to the actors involved. Public health thus reveals itself as a rich and underexplored terrain to understand how the state incorporated the masses, including the enslaved, in state building projects because it intersected with questions of labor, the economy, and state legitimacy.[4] The negotiations and tensions among these groups transformed public health into a space for public engagement.

My research sheds new light on Brazilian state building by investigating the role of public engagement in the making of imperial public health. It looks at the politics of health in imperial

Brazil between 1833 and 1882 to answer the following questions: what led to the creation of public health? And, what does a study of public health tell us about the political history of the empire? In looking at public health as a subset of state authority, I argue that its development in the empire was a product of public engagement on matters of health, and that negotiations over health politics revealed a way in which political legitimacy could be created. Both the state and the people needed to acknowledge each other's importance in the making of health politics whenever necessary for the maintenance of their goals.[5] The ebbs and flows of imperial public health belonged to the ways the imperial state perceived its importance and opens opportunities to understand how states began experimenting with institutional practices.

To examine public engagement in public health provides new reflections on institution building. To be clear, I do not suggest that imperial public health was a full-fledged institution like the national project observed in the transition to the twentieth century.[6] Imperial public health was made of constant trial and error based on the extent to which it represented a clear benefit to the Brazilian state. It was often made of councils, meaning, offices that offered advice to national or local governance on how to prevent disease outbreaks and improve local and national hygiene.[7] For this reason, it held quite limited power throughout its existence and the little effort the central government put to improve its national reach spoke more of how the state interpreted its importance than about its strength to make it work.[8] Still, the struggles of public health open critical opportunities to explore how they fit into larger political projects because the higher or lower attention it received from the empire depended on its ability to fulfill socioeconomic goals.[9] This way, seeing imperial public health as a process of state experimentation helps us reflect about how nation-states began to consider the institutionalization of public services. In this case, my

dissertation shows that it was intrinsically related to the government's interaction with and objectives toward the public.

Public health in Brazil gives us an opportunity to examine how state-popular interactions reflected the imperial development of health politics and political legitimacy. Even if the power dynamics between both groups were imbalanced, the overall scale of public engagement in health politics was critical for the birth of public health initiatives countrywide. Public engagement came in varied forms and could be sporadic.[10] Yet, its resurgence in different moments reflected the contextual challenges attached to health matters. And, regardless of the suspicion that either the state or the people felt toward each other, if negotiations about health could benefit their interests, they usually pursued them.[11] If the state saw health as beneficial to its economic and legitimacy plans, it focused on improving public health. These included health for economic purposes in the 1840s, as a source of social stability during the cholera epidemic of the 1850s, or even as a way for health officials to reclaim disease prevention and greater control over the terms of engagement with the sick migrants during the drought of the late-1870s.[12] If the people believed the state could alleviate their suffering, for instance, during epidemics or the drought of late-1870s, they expected and pursued assistance from the state.[13] The empire made decisions that directly affected the outcomes of public health, but public health was not only affected by one-sided governmental decisions.[14] It was a political arena in which the local networks of engagement affected national experiences and vice-versa. To look at public health is to better understand the making of the state in imperial Brazil.

Public engagement in health politics also helps us find nuance within the state as well. It shows it was not a monolithic entity, but rather made of a multiplicity of actors, each carrying their own personal and professional wants.[15] In this dissertation, two groups stand out from the

government: the public health officials and the state officials. The first championed their goals for disease prevention and sought to impart greater influence in the government.[16] Their efforts served to protect life and health for the purposes of maintaining a labor force.[17] This focus on labor helped link issues of public health to economic matters; it made the nascent public health broadly relevant. Indeed, Brazilian physicians later involved in public health shared contemporary beliefs that statal strength was directly related to the health of its citizens. By framing health investments as a solution to labor questions, physicians sought to gain the attention from the government and improve their careers.[18] After all, in the early decades of the Brazilian empire (1822-1889), a career in medicine itself did not guarantee one's success. Rather, it was patronage ties and political positions that dictated professional growth, especially in a slave economy based on monoculture that limited career prospects.[19] The second group, state officials, in general did not take the advice of public health officials, but still paid lip service in annual meetings about the importance of the institution.[20] At times their interests converged. In many others, they did not. Yet, both groups looked at the populace and the enslaved to integrate their health projects.

The presence of the populace and the enslaved was critical for imperial health politics and brings to light questions of political legitimacy. My research between 1833 and 1882 shows that the masses were considered in state health objectives as more than targets for services; they were incorporated in the development of healing or in the provision of public health services and engaged accordingly.[21] Their healing knowledge was used to advance state objectives at some points and were combatted in others when they did not serve governmental goals.[22] At times their voices and threats to social stability, when their health and lives were at stake amid epidemics, led to negotiations on public health decisions.[23] At others, their actions also provoked strong governmental responses.[24] Their bodies were used in experiments and served to improve the stock of smallpox

fluids when local public health struggled to get vaccination pus from the government.[25] They also provided labor for public-health campaigns.[26] The population also engaged the state to the extent to which it made sense to their health protection, or their ability to make some money in health-related labor, for example. This provokes reflections about matters of political legitimacy because it shows that, depending on the circumstances, both sides saw advantages in relating to each other as they shaped the politics of health.

Setting

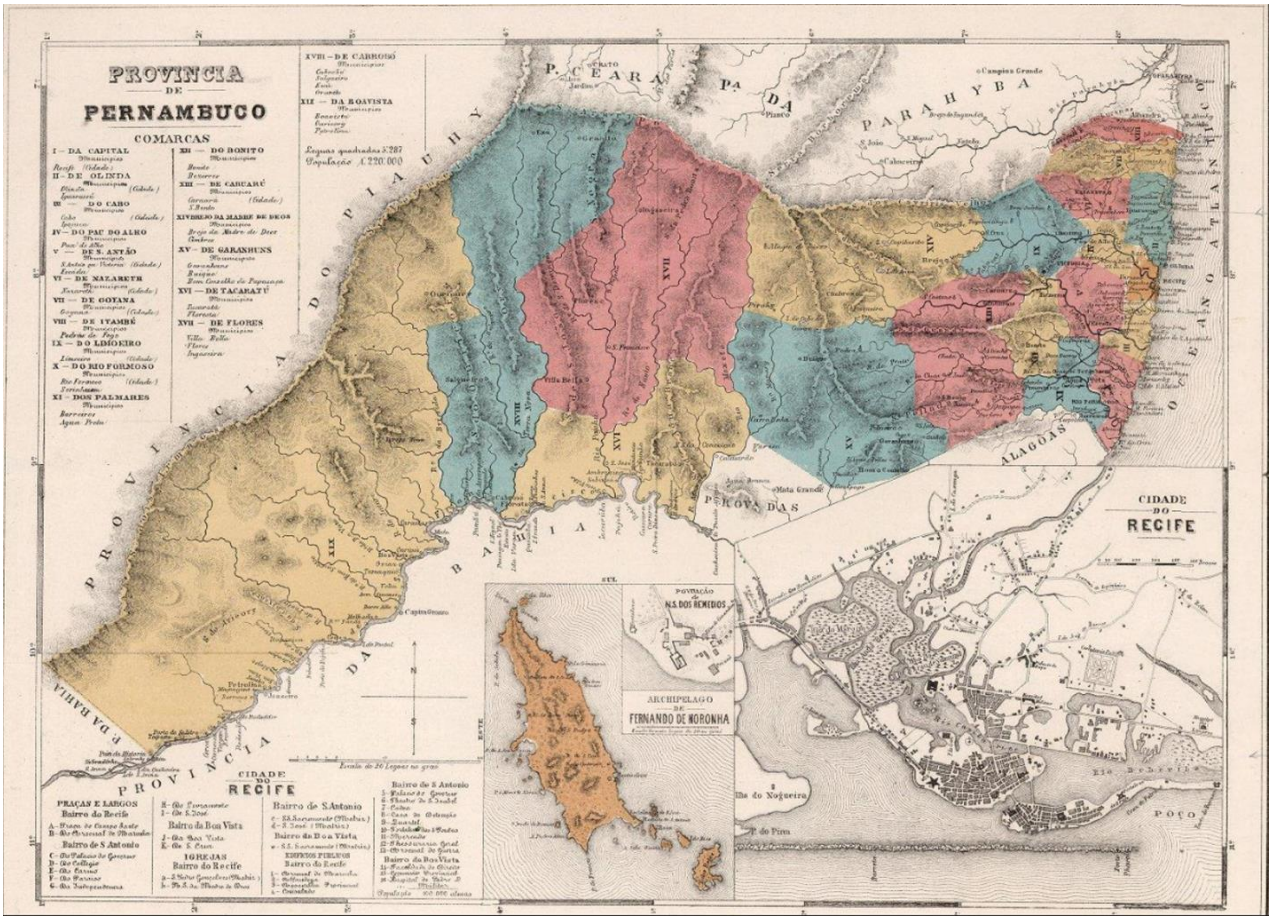


Figure 1: Candido Mendes, "Provincia de Pernambuco." Lithographia do Instituto Philomathico, Rio de Janeiro, 1868 (David Rumsey Historical Map Collection).

I focus on the province of Pernambuco to better understand how public health was construed in Brazil. To look at Pernambuco may seem odd at first because that province was not at the center

of national medical and public health developments. Rio and the city of Salvador, in Bahia, were the places where one found the two schools of medicine during most of the nineteenth century.[27] Rio, in particular, was where national decisions were made about public health matters. So, why Pernambuco? Because a focus on it brings into light important dynamics of state/local relationship, and because given Pernambuco's regional prominence we get glimpses of wider regional developments otherwise not considered in local studies of public health, or outside the Rio-Bahia focus. For this reason, I situate it in conversation with northern provinces and Brazil's capital, Rio, to understand the networks that shaped its local public health experiences.

I situate my analysis in a province that even if not holding the decision-making powers of public health was still very important for the maintenance of public health works in the northern portion of the country. From being immersed in the early national scientific investigations to being the place where many northern provinces turned to in order to have access to smallpox fluids, for example, Pernambuco represented a critical point of contact for northern public health.[28] Further, Pernambuco was strategically located in terms of the country's exposure to foreign diseases, like cholera. It was also one of the first provinces to have a public health council, founded in 1845.[29] Finally, it was a critical site to where thousands of people migrated during the drought of 1877-79 and the province that received the third most funds for relief at the peak of migration in 1878. Its history helps explain why it held this regional importance.

Pernambuco's history proved paramount in Brazil's socioeconomic experiences. Located on the upper east coast of South America, it became economically relevant to the Portuguese empire, particularly in the seventeenth century, because of the successful sugarcane enterprise initiated there since the 1500s.[30] The politics of plantation-based colonialism transformed parts of its landscape made of tropical forests into a region of sugar mills, known as *engenhos*, that profited from enslaved

labor.[31] In the 1800s, the three-century clash of Europeans, Africans and Natives would alter the racial composition of the region and reflect the mixed-race identity of the country.[32] After Brazilian independence in 1822, Pernambuco was one of the eighteen provinces of Brazil, a country of ten million people and the second most populated in the Americas after the United States.[33] Pernambuco's 850,000 inhabitants placed it as the fifth largest province in terms of population, and the province's past was an important reference regarding national narratives of cultural diversity and historical relevance. These included the recovery of the region from the Dutch occupation of 1630-54, and revolts that took place in the province during the independence conflicts of the early-1800s.[34] Its capital, Recife, also figures prominently in this dissertation.

Recife was the site of local governance and through where the province connected to the rest of the empire and the wider Atlantic world.[35] Made of three parishes, the provincial capital shared characteristics of other cities in the country where the enslaved, the urban poor, and members of the elites and local officials lived.[36] Its 115,000 inhabitants by the 1870s were mostly comprised of whites and free *pardos* (mixed European and African). Afro-descendants represented about forty-seven percent of the municipality, and over ninety-five percent of the inhabitants were Brazilian-born.[37] The enslaved, classified as being 2/3 black and 1/3 *pardo*, comprised ten percent of its inhabitants by the 1880s. Following national trends, that population declined while the empire saw the number of the free people triple between the 1810s and the 1870s.[38] *Caboclos* (mixed European and Native) represented less than one percent of the city's population. Recife's parish of São Pedro Gonçalves, where the port was located, held a large concentration of enslaved dwellers in comparison to the free due to the different types of work and services required at the port.[39] It was also where the public health council was located for most of the nineteenth century. The parish of Santo Antonio (split into two in 1855) was the most populated in absolute terms and was where one

could find theaters, governmental buildings, newspaper offices and, later in the 1800s, abolitionist societies.[40] The third one, Boa Vista, was mostly a residential parish where the elites lived and domestic slave labor predominated.[41] Still, the city in general suffered with hygienic problems and diseases. One of them related to water. Problems with access to fresh water throughout the 1800s, stagnant waters and flooding issues due to its location by the sea, and the poor living near swamps and *manguezais* (vegetation made of mangroves) constituted some of the local challenges to sanitation.[42] Urban hygiene also suffered with the absence of sewage or extensive latrine systems, the disposal of garbage on property lots, the tortuous streets and taller edifices that restricted access to sunlight.[43] All these issues became opportunities for physicians to demonstrate their importance through plans to prevent the deaths of current and future laborers, while also inserting themselves in broader national conversations.

The rise of Brazilian public health was tied to the country's process of state building. Between 1822 and 1889, Brazil was a monarchical parliamentary regime with a slave-based economy. Despite some dissent, the greater part of the elites considered a monarchical regime to be more suitable for state legitimacy and social order than a republic. Indeed, the Brazilian constitution ensured the high centralization of the state overseen by an actively interventionist monarch who was given a moderating power.[44] As head of the executive, the moderating power allowed him to, among other things, appoint officials to the senate, dissolve the chamber of deputies, sanction legislation passed by the Parliament or even approve or suspend provincial legislation while not being accountable to anyone.[45] This model of governance had been established by João VI, king of Portugal, when in exile between 1808 and 1820 in Rio. Differently from its neighbors, Brazil managed to attain independence and territorial integrity without much conflict with its former metropole. The monarchy thus would not be challenged until the final decades of the empire, but

the constitutional constraints on the monarch would cause division throughout the regime's existence.[46]

The maintenance of the regime and the struggles in it marked the historiographical concerns about the Brazilian empire. Between 1822 and 1889 multiple watershed moments concerned the economic and political events that shaped the country's future. The first half of the 1800s represented the period of national political consolidation. The First Reign (1822-1831) was marked by conflicts coming from liberal elites and urban militants against impositions from the emperor Pedro I that led to his abdication as those conflicts began to threaten political order. The result of the abdication led to another important moment in Brazilian history, the Regency (1831-1840) which experimented with reforms against monarchical centralism to undermine the emperor's constitutional domination. By 1835, the erosion of state authority coming from changes that increased local autonomy, and the abdication of the emperor led to concerning levels of political division that threatened the integrity of the territory and social order in unprecedented ways. Local and bloody revolts and attempted coups led to a critical shift to reconstruct state power and legitimacy through the *Regresso* legislative movement (1837-1842) dominated by a party that would be called Conservative by the 1850s. Many of its members were closely connected to the planting elites and the agro-export oligarchies. Its opposition was formed by Liberals, but in general, the leadership in both parties were connected to slavery, landholding and the export and domestic economies. Afterall, liberalism held multiple variations that fit into this type of statism. Party distinction was mostly found, particularly after 1848, on the extent of state power in local affairs and consequently the role of the monarch, by then Pedro I's son, who came to power in 1840 as a minor as a symbol of protection to the integrity of the territory and of the state. Pedro II would play

a critical role in securing the empire, and his later political decisions would also cause political rifts toward the end of the century, particularly in matters of the economy.[47]

Slavery was a fundamental part of the empire's social order and for the monocultural economy based on coffee, cotton and sugar. For Brazilian statesmen, the state would intervene to maintain the society and the economy. Agriculture held an integral role and its success made officials overlook and disregard other types of endeavors, such as manufacturing. Because planters and slavers were often the wealthiest in that society, their take in politics tended to be more conservative to avoid risk in unknown enterprises and maintain the context that brought them success. By 1850, Pedro II's ability to gather authority and recognition consolidated his role, making him capable of selecting officials who did not challenge his preference for moderate reforms. It was in this transition between 1848 and 1853 that we saw substantive laws being passed, including the abolition of the slave trade and the Land Law in 1850. The first sought to satisfy British pressure against the trade, a country of extreme economic importance for the Brazilian empire; the second was apparently designed to strengthen the grand landholding class by regularizing access to land, and to attract labor from Europe. With time, slavery would turn into an incongruence between the state and the elites. In particular, in later 1860s, the monarch himself came to challenge the *status quo* of the slave system through a moderate abolitionist process known as the "free womb" law. His move was unconstitutional and shook his relationship with the elites, and along with the abolition of slavery in 1888 there was a compounding of the alienation toward the state's political support. That ultimately led to its demise in November, 1889 after a coup from the Republican Party with the help from the army.[48] Within this political context, public health can offer a relevant prism to better understand how state building unfolded.

Historiography

State building tends to be analyzed through the frame of political history and it is often concerned with the conflicts between liberals and conservatives, and the growing importance of the emperor Pedro II in the country's politics. State building is thus largely focused on explicit political conflicts and tend to emphasize the first half of the nineteenth century because of the consensus that the emperor succeeded in making of Brazil a unified nation-state by 1850. It is within these conflicts that the masses are also analyzed in moments of resistance or as victims of political exploitation, such as their presence in revolts and uprisings during the 1830s and some moments in the 1840s; the exploitative patronage relations that limited the free poor's autonomy for participating in elections; and the role of violence and corruption in these instances of civic engagement.[49] Race also figures prominently in the analysis of these tensions, particularly when considering the prevalence of the poor of color in the 1830s and 1848 revolts in northern Brazil, and the 1835 slave revolt in Bahia.[50] Despite the importance of these works, an analysis of public health broadens our understanding of political participation because matters of health extrapolated issues of rivalry in political bipartisanship. My research shows that whether in the 1830s when liberals were in power, or the 1840s when conservatives had taken over, public health gained steady attention and was discussed in local and national political outlets in spite of the conflicts taking place during that period. Further, to look at this moment using public health as a frame helps us reflect about the issue of periodization because it leads to questions about 1850, considered a watershed moment of Brazilian political consolidation. For example, even though public health gained a national office in 1850, epidemic challenges like cholera in 1855 were dealt with mostly through local decisions, not national ones.[51] Further, often peripheral options to treat cholera (that also included popular healing) were implemented nationally, not the other way around.[52] Because science and medicine escaped the immediate knowledge of most state officials, decisions in moments of crises tended to be more open to advice or suggestions from outside Rio, the center of political power. This reality

exemplified the ways in which this consolidation, at least in matters of national decisions overriding local ones, was effective.

The scholarship on state building is also concerned with issues of state capacity, meaning, the extent to which state policies are successfully implemented across a nation-state. Notwithstanding the importance of these works and in focusing on the Brazilian state more specifically, there's a tendency to see the state as weak based on its uneven presence in its different regions.[53] My research seeks to provide a different perspective from this one in three ways: first, that the state was made of people who carried different interests and thus did not see state priorities or lack of its priorities the same way; second, that the central government's "inability" to reach multiple regions evenly with public health spoke less about capacity than about how the state saw public health as a benefit to its goals. And lastly, we are able to see that public health was not only a product of state goals but emerged also from the engagement of the state with the population in matters of health.

The frame of public engagement enriches our understanding of Brazilian public health in the nineteenth century. In general, scholars tend to examine the antagonistic experiences between the state and the people based on the idea that public health was about state control and power.[54] This perspective tends to offer public health more strength than it actually had. It also gives the idea that its goals were fixed, rather than evolving in conversation with the contemporary sociopolitical context, which scholars also tend to overlook when examining imperial public health.[55] Even though I agree that public health existed to serve state goals and that such goals often could create tensions with the people, my research seeks to show it actually was a place of negotiations about health politics that intersected with state building projects. Such negotiations required a certain level of acceptance, for example, to popular expectations at times, or even the introduction of popular

healing in official practices if it could benefit the state.[56] In framing public health through the lenses of public engagement we see that it was less top-down in its decisions than the historiography tends to emphasize, and that imperial public health experiences cannot be analyzed outside the political context it was immersed. Public engagement also shows that popular antagonism was not necessarily the default response to state public health initiatives, but that the population interacted with it based on whether they believed the institution could benefit their health interests as well.[57] To frame it within a political context thus reveals broader questions about the meaning of health for the state that can provoke new reflections on themes already explored in the historiography, including tensions concerning popular healing or the racial dynamics of health.[58] In my case, I consider how public engagement in health politics sheds new light on political participation in Brazilian state building.

Exploring the politics of public health can also illuminate the influences of state officials and social groups in contemporary medical decisions. In general, scholars tend to examine medical instances of persecution to popular healing methods, the medical use of the poor's ill health as an argument to gain greater governmental influence as well as popular challenges to public health goals toward greater social oversight.[59] Even though my research also acknowledges the close relationship between medicine and public health, it prioritizes how public health officials, who were health practitioners, operated within broader social and political events that oftentimes dictated the outcomes of their decisions. For this reason, I go back to the 1830s to understand how concerns with the country's economy informed physicians' claims in the 1840s that public health could be the answer for potential labor problems.[60] This way, rather than looking at it through a more established timeline of medical accomplishments post-1850, and as a unilateral attempt of social control, I investigate public health as a sociopolitical project whose original goals were constantly

reframed by the groups it affected. This reframing was based on the need for adaptation in order for the institution to survive, especially because of the drastic cuts in funding that took place after the cholera epidemic of 1855.[61] Funding had to do with the priorities of the government and the hierarchical structure in which public health existed.

To understand the importance of public engagement in health politics it is important to know that public health works were a part of local governance, and local life was the way through which most Brazilians experienced the empire.[62] The Additional Act of 1834 that modified the constitution of 1824 by granting provincial governments legislative authority, placed the municipality as the main provider of public services. One of them was the promotion of public health. However, because local governance was tied to an indirect tax system that prioritized funding the central over local government, public health investments suffered. Municipalities also lost great autonomy with that Act because it subordinated them to provincial governments' decisions over their budgets, appointments for positions and approval of their proposals on local issues.[63] This is probably why the first attempts to develop a public health office in Pernambuco were a provincial, rather than municipal, endeavor. Reports from Pernambuco's public health council will provide an understanding of health officials' relations with the municipal council whenever possible. National and local public health reports, including from the vaccination office, provincial and ministerial reports, letters from physicians and surgeons, newspapers, correspondence from charity-based institutions, medical journals, national and local legislation, and official publications constitute the evidence for my analysis.

Structure

I divide my dissertation in four chapters. Each chapter explores the role of public engagement in health politics and seeks to show how it gives us new ways of understanding institution building

and political legitimacy. Chapter one examines the importance of public engagement for the rise of public health initiatives that focused on state economic projects. Chapter two focuses on the influence of public engagement in the management of the cholera epidemic. Chapter three examines the relevance of public engagement during the 1860s to maintain public health amid the national constraints based on shifts in socioeconomic priorities. The final chapter explores how health practitioners and health officials attempted to gain greater control of their terms of engagement with the public amid the drought of 1877-79. I use the terms populace, population and the poor interchangeably to indicate the socially marginalized. I also classify state and health officials as actors in distinct groups. The former indicates political authorities who did not work in public health directly, such as provincial presidents and ministers. Health officials constituted the group of health practitioners hired by the state to promote public health works in Pernambuco and other parts of Brazil.

CHAPTER 1

"To Propagate Science and Protect the Indigent":[64] Labor and the Rise of Public Health

Introduction

In 1843, a surgery performed on an enslaved girl in Recife to fix her disabled hand displayed the critical role public health would play on national goals toward improving the health of all workers. Dr. José Joaquim Sarmento's tenotomy (the division of a tendon) on the right hand of citizen Joaquim Cavalcanti de Albuquerque's twelve-year-old slave girl sought to restore her abilities and "usefulness" to her owner.[65] The girl, who already suffered with unknown skin eruptions, complained of a pain and heat sensations on the palm of her hand, which was also swollen. As the pain spread through her right arm leaving it swollen with burning sensations and an eventual accumulation of fluids, her owner hired a lay surgeon who "opened up that profound abscess."[66] By then she had kept her hand shut because it "alleviated the pain she felt." As her owner took her to Dr. Sarmento, he noticed her finger articulations were in permanent and "invincible" contraction, which hindered her ability to make any movements. Attempting to prevent her from being "hopelessly disabled," the girl was subjected to an experimental and, according to Dr. Sarmento, very risky procedure not advised by French surgeons.[67] His decision to make limited incisions on her hand to prevent problems proved successful, according to him, as he managed to get some of her fingers moving again.[68] For Dr. Sarmento, discussing the success of his surgery in a medical association's meeting, the goal was to spread the word of the benefits of such surgeries.[69] This event illuminates critical aspects of public health in Brazil in the 1840s: the presence of popular healing and allopathic medicine in procedures over physical disabilities, and the relationship between health and economic 'value'.

This chapter analyzes how public health became a site for public engagement based on its connections to economic political projects between 1833 and 1851.[70] This timeline corresponds to a series of transformations in the Brazilian political scenario, including national debates about labor, particularly after the 1831 treaty with England that sought to end the slave trade to Brazil.[71] I intend to understand how physicians sought governmental favor by using their expertise to benefit the economy. Physicians inserted themselves into broader political conversations as they attempted to convince the government to look at the importance of health for labor and the economy through disease prevention.[72] They managed to attract governmental attention to the pursuit broad of answers to diseases that affected the population, and even created international interest in national investigations against leprosy.[73] At the same time, public health goals would be influenced by their interactions with state officials, the population targeted for services, and the limitations of health officials' own medical knowledge.[74] In this chapter, state officials corresponded to authorities in provincial and imperial offices that usually dictated the final decisions on public health matters.[75] The populace are represented here by the sick dependent on charity-based services for subsistence in Brazil, such as the leprosy victims at the Lazarus hospital, indigenous peoples forced into compulsory labor, criminal suspects, and urban physical laborers in general.[76] The extensive analysis of medical journals, governmental reports, public health reports and local newspapers inform the organization of this chapter.

Why did the government invest in public health during this early period? I argue that the idea of health to benefit the economy proved convincing enough to stimulate the first local investments, including bringing popular healing methods to the mix to achieve that goal. I explore this argument in two parts. Part one investigates the initial efforts from Pernambuco's Society of Medicine to put forth the idea that there was economic value in investing on populational health.[77] I examine how the poor and their bodies figured in physicians' attempts to paint a clearer picture to

the government about how their services could move governmental plans for healthier laborers forward between 1833 and 1844. I explore how they used popular health problems to seek infrastructural improvements and to advertise their skills in healing physical disabilities, which included incorporating popular healing methods when necessary.[78] Part two investigates the role of the free poor and their bodies to protect health through research against leprosy, a disabling disease, with the founding of Pernambuco's public health council in 1845.[79] By focusing on leprosy more specifically, this part examines the interactions between the sick and health officials that informed the expansion of Brazilian scientific investigation abroad. This included the co-optation of popular healing against leprosy to benefit the state, and how the sick and the state both negotiated and violated their terms for participation in experiments at Recife's Lazarus hospital.[80] The public health goal to strengthen bodies to benefit the economy spoke to governmental interests.

Part 1: Engaging the Public in the Politics of Health

Between the late-1830s and the 1840s, the development of public health initiatives for economic purposes in Pernambuco demonstrated its reliance on public engagement. Health initiatives showed that the state considered popular health as a lens to understand the limitations in local economic growth. Both the state and medical practitioners came to partake in that interpretation. By doing that, the official solutions to overcome local health problems engaged the populace not only as targets for service, but also as providers of healing knowledge and as sources of medical investigation and practice of procedures. Yet, the unevenness in the power dynamics between those groups did not preclude the necessary interdependence between the state and society that raised governmental attention to public health in the early decades of Brazil. This first part analyzes the initial stages of public health in which physicians sought to gain greater credibility within the state, and in turn, also opened spaces for the masses to participate in contemporary

politics of health. These spanned matters of infrastructure, methods to recover physical abilities, and reproductive health among the poor.[81] I will only focus on the first two issues because they reflected the more immediate ways physicians attempted to improve the local economy and gain governmental importance.

The provincial impetus to wade into health matters in the 1830s and 40s stemmed from the idea that public health was a local and, I argue, economic matter.[82] Between 1839 and 1851, Pernambuco's provincial government financed multiple medical endeavors that represented greater national plans for economic growth. These included providing funds for the maintenance of the first local Medical Society, founding the first public health council in the province and funding their scientific experiments.[83] Providing the state with access to healthier laborers through preventative health measures, in particular, was critical for nascent public health initiatives during that time. References in speeches that either physicians or state officials would make, for example, about the 1831 treaty with England that sought to end the slave trade to Brazil worked as a constant reminder for the national need to invest in the health of captives on one hand, and to see the free poor as important for national labor needs outside the export plantation economy, in the other.[84] The ostensible official fear of reduced access to labor during that time, it is important to note, led to the illegal trade that brought at least 800,000 more Africans to Brazilian shores until the end of the slave trade in 1850. Still, the free population approximated almost seventy percent overall by 1820, from which its vast majority was composed of poor people.[85] The ratio of the free, or non-enslaved, vis-à-vis the total would only increase over the nineteenth century. Constituted mostly of individuals from African and indigenous descent, they engaged in domestic production of foods as sharecroppers or small farmers and were seen in urban spaces working in different industries, from brick layering to ironsmith works, for example, when they became a public health focus in the 1840s.[86]

Physicians' attempts to enforce the economic benefits of public health revealed that medical decisions were imbued in political expectations. Besides its clear economic importance, philosophical reasons enforced governmental opinions on the social benefits of labor. State authorities believed in the importance of having the populace develop a "love for labor" because it was considered a relevant aspect of a civilized society.[87] Physicians thus looked at their expertise as a way to achieve that state goal because they believed that medicine had social responsibilities, such as to protect the life of individuals and contribute to their moral and intellectual growth.[88] Morality defined a society's ability to achieve civilization, which physician Dr. Nicolao Joaquim Moreira from the Academy of Medicine in Rio understood to be the ability to exercise rights and safely participate in social relations.[89] Public health should thus play a critical role in these goals because it attempted to create the paths that could lead the free poor into that labor-driven and moral direction. It would do that by investing in the physiological strengthening of those who, in also following public health advice, would accrue the tools to become the type of citizen capable of learning to love "working, industry and liberty."[90]

When the provincial president of Pernambuco proclaimed the need for a provincial public health council during his 1839 presidential speech, he displayed his belief in the economic value of health. For Mr. Francisco do Rego Barros, to have an institution in charge of public health meant providing the provincial government with greater knowledge about "all matters of public hygiene" that impacted the poor and the province.[91] For instance, a long-standing issue Mr. Barros raised about a swamp between the cities of Olinda and Recife reflected the importance of public health measures to improve the economy of the region. This is because the swamp was located in a "very fertile" terrain that could serve the provincial agricultural industry.[92] Further, it also made the inhabitants around it constantly sick because they used its "stagnant and filthy waters."[93] The swamp had been a problem for over a decade. The 1822 unrealized project to get rid of it reflected the

bureaucratic ties that transformed it in both a public health menace and wasted economic gains.[94] The provincial president then saw public health as a solution to its health threats and to improve policies that offered "advantages and guarantees" for those wanting to invest in public works, including on the swamp. In keeping pushing for a body of specialists to oversee health matters in the province, Mr. Barros, in his 1840 speech, showed how the provincial government could benefit from the expertise of physicians who, in turn, would need to prove their worth through works that should investigate health problems among the poor and find their respective solutions.[95]

The founding of the Pernambuco Society of Medicine in 1841 showed how local governmental support to public health aimed at benefiting Brazilian state building goals that were already considering the economic value of health in the empire. Indeed, despite the political crisis in which the country was engulfed in the 1830s, by then the minister of imperial affairs Joaquim Vieira da Silva e Sousa had already discussed the importance of promoting populational growth in the country based on its relevance for the "prosperity of the States" in his 1835 speech.[96] Despite endorsing to increase the country's population of laborers, the minister stressed the importance of promoting growth among nationals, such as developing colonies of nationals with people "from one sex and the other" that could ultimately form families to provide works in remote areas and facilitate communication between regions.[97] Overcoming public health issues that could prevent deaths was also of critical importance for the 1833 imperial minister Antonio Pinto Chinchorro da Gama who equated the maintenance of citizens' life to "the hope of our [national] prosperity."[98] Consequently, I depart from scholarly claims that public health was more concerned with places than with people in Brazil. Considering health for economic benefits showed that populational health turned into a priority in these early years. Public health investments should aim toward scientific investigations that could help the country find answers to the "diseases that foment in our soil" and this way provide healthier, able-bodied laborers that could alleviate the alleged decline in slave labor.[99]

In undergirding these national objectives, the Society of Medicine enforced the importance of the public in health politics. Until 1845, the year when the society was dissolved and the provincial government founded its first public health council, the research members conducted and supported prioritized investigating diseases among the poor and the enslaved.[100] To generate and maintain their political relevance, physicians sought to protect the health and life of the populace and the enslaved through disease prevention and to improve reproduction among the free poor. They did so via advice to the state and research about infrastructural and sanitation needs, about diseases afflicting the populace and the enslaved, and via imparting direct bodily intervention through surgeries to improve their health for labor. [101] Thus, at the core of their attempts to greater political influence was the extent to which they could succeed in improving the health of the public to benefit the economy.

Because many of the members from the Society of Medicine were either involved in politics or wanted to be, they showed that their medical decisions spoke to the political nature of their interests. For example, when medical doctor Antonio Peregrino Maciel Monteiro assumed the presidency of the society he was already a member of the provincial assembly.[102] He had also been elected *deputado* (a legislative official) multiple times before becoming the minister of international affairs in 1837, and the emperor's councilor in 1841, for example. One of the founders of the society created on March 9, 1841, Dr. Joaquim d'Aquino Fonseca, would become a municipal councilman and later a member of the provincial assembly.[103] He also took on the role of president at the public health council of Pernambuco in 1845. Other members provided services either in other state facilities, such as the jail, or charity hospitals and schools for orphans that also received governmental subsidy.[104] Most of the Society's seven founders were already building their reputation in Pernambuco via medical studies or services, like Jose Eustáquio Gomes who had created a surgical school during the 1817 liberal revolt, and Simplício Antonio Mavignier who

taught obstetrics to women at the Paraiso hospital in Recife between 1840 and 1856.[105] In short, the overall goal of the society to promote the advancements of medicine in the province involved the strengthening of their reputation to increase their political legitimacy by transforming health into an economic benefit.

These men, known as allopaths, like the Latin-Americans and the Americans (at least until the 1860s), were greatly influenced by French medicine and made use of French medical knowledge to advance their agenda.[106] The French sanitary movement, which associated lack of hygiene with disease, also influenced Brazilian, Latin American and European concerns with public hygiene.[107] French medical methods constituted the training found in Brazil's two medical schools. French schools also trained some of the health practitioners found in this research. Brazilian schools drew from the French example the development of their curriculum, decisions on dissertation topics for their students and discussions in medical journals.[108] The schools, located in Rio and Bahia, were under tight control by the Brazilian empire, especially after the 1854 educational reform that ended their autonomy over finances, nomination for directors and selection of professors.[109] An education based on French medicine, considered as the foundation of clinical practice, consisted of practical experience at the dissecting table, autopsy and analysis of direct correlations of signs of infection and symptoms observed at the bedside. Some scholars also claim that it was at the birth of modern medicine at the prestigious Paris school where the human body was reduced to an object of knowledge like any other. The dehumanizing tendencies of modern medicine took place when the focus shifted from the sick individual as the target of healing to their disease as the target for analysis and research.[110] In Brazil, both sanitation as a form of disease prevention and allopathic, or Western, medicine converged into a political answer to improve populational health for labor. To gather resources to do so they needed to show the provincial government why their ideas mattered.[111]

The economic aspect of health in Brazil could be traced back to the Enlightenment. This had to do with the interest in social scientific analysis of the health of populations that had begun during that period.[112] The early modern relationship between health and economy also received attention in the 1700s when ideas about central states emerged, leading to mercantilist concerns with populational health and number of individuals, who came to represent statal strength.[113] The Society's goal to "benefit and provide services to humanity" via their studies, some free appointments and free medication to the sick reflected the socioeconomic interests of the province. It had decided to provide a small fund for its maintenance by betting on the "great services the Society of Medicine can offer to the country."[114] Further, physicians also believed that in investing on the physiological health of individuals they could ensure the citizens' "ability to exercise their social rights and duties," which included contributing to "the expenses from the State according to their means" as established by the imperial constitution.[115] One way to achieve that by showing their awareness of local health issues among the population.

In prioritizing the poor to demonstrate the Society's commitment to the state, its members displayed the channels of interdependence between their politics of health and the public. Their reports – which were advertised to the public for purchase in stores and were distributed to the provincial assembly in large quantities – emphasized the scientific importance of the Society for the province and the country as it would enable state officials and citizens to learn about the "physical constitution" of their environment and its influence on diseases.[116] Investigating the most common ones among the populace also worked for the state to learn about the potential risks the climate and Brazil's geographical position could cause for national health.[117] It does not seem coincidental then that the first topic of discussion in all the reports from 1842 to 1844 began with an overview of the main problems the population was facing in Recife, and sometimes in the interior, and how the Society's members managed to save lives.[118] To ensure officials and citizens who read their works

understood that those physicians held a strong and much needed understanding of Recife's health problems and their environmental causes, their reports rarely brought up doubts or uncertainty regarding the origins of common illnesses, such as ophthalmias that could cause blindness.[119] On the contrary, they often emphasized the direct correlation between local climate, local hygiene and sickness in order to show how its members could serve as scientific investigators and medical problem solvers who knew how to practice medicine based on the reality they lived and the people they cured. Learning about the diseases themselves required them to be immersed in the reality of the poor by working in hospitals or providing free consultation to the destitute three times a week through the Society.[120] They also needed to showcase their knowledge of how infrastructural issues contributed to illnesses.

In emphasizing how manmande problems could affect infrastructure and labor performance, they sought to prove the correlation between the local economy and populational health.[121] When the Society discussed the rise in "previously rare" diseases in the province during 1842 - such as intermittent fevers, tuberculosis, and diseases connected to elephantiasis, such as hydrocele and erysipelas – they related them to manmade problems that were exacerbated due to the local "hot and humid" weather.[122] Some of these problems included swamps that helped proliferate insects and made people sick when they consumed their waters, Recife's streets full of mud in the winter or allergenic dust in the summer, dirty yards from the inhabitants collecting trash, riverbanks and beaches full of dead animals and even cadavers, and its unhygienic slaughterhouses where one could find pools of blood "spreading horrific smells."[123] This way the Society's contributions to public health focused on scientific investigation about illnesses affecting the poor as they demonstrated to the government how diseases intrinsically connected to the urban unsanitary problems in which the population lived. In trying to be "useful to the Country, to humanity, to the current generation and to future ones that will be thankful and will count the Society's blessings" physicians associated

their professional roles to the country's ability to produce a healthier population of citizens that could contribute to its future.[124]

The push for prevention of diseases among the poor and laborers in general also represented the economic aspect of the 1840s politics of health.[125] Indeed, reports tracked the diseases that were most prevalent during the two seasons Recife experienced more clearly, summer and winter, in scientific terms to display to the government and other readers the level of competence of its members. In their reports, they broke down how weather affected propensity to illnesses, how diseases affected different organs and what the best courses of treatment should be.[126] By sharing the different challenges summer and winter brought on to the people, the Society allowed the state to anticipate potential epidemics, such as those of diarrhea in the summer, or respiratory problems, like a spike in bronchitis during the winter, while demonstrating the relevance of allopathic medicine to curtail them.[127] For example, in the winter of 1842, the Society reported on a rise in deadly intermittent fevers that could only be treated through a "very well developed and well executed treatment." One of their patients, an ironing lady who was between thirty to forty years old and was described as "strong and sturdy," became dangerously sick after ironing clothes outdoors because she was sweating while exposed to the cold winds and some drizzle that hit her on the chest.[128] Considered one of the most serious cases they had, physicians diagnosed her with a type of pneumonia caused by fevers.[129] They succeeded in saving her life through allopathic methods, such as bloodletting and quinine sulfate, while discussing the sanitary problems of the city that likely contributed to her and the other sick poor being affected by such fevers.[130] Between 1841 and 1844, investigating what physicians considered to be endemic diseases among the populace and the enslaved took precedence in showing the government which ailments most afflicted the population's ability to work.[131] It also demonstrated the ways in which physicians sought to incorporate the masses in public health goals.

Attempts to heal physical disabilities revealed the dynamics of power and engagement in health politics. Members from the Society sought opportunities to combine their interest in medical knowledge advancement with national economic goals. To do that they needed to increase their access to patients from the populace willing to subjugate themselves to these procedures.[132] The ostensible successful surgeries performed by Society members Dr. Joaquim d'Aquino Fonseca reported on May 18, 1843, and Dr. José Joaquim de Moraes Sarmento in March that year on two slaves and a free minor served as examples of their attempts to advertise their skills and to influence those with more autonomy to consider surgeries if necessary.[133] This is because these procedures sought to remove from the populace and families the generalized fear of surgeries, since physicians claimed the people believed them to be worse than the actual illnesses they suffered. Through these attempts, physicians displayed the autonomy of the free poor in relation to the ones subjugated to the surgeries, and the ability of medicine to improve physical limitations among the enslaved and the free that would help them become able to work.[134]

Surgical procedures in Pernambuco revealed the terms of engagement physicians sought to impose on those who could not consent to these performances while they tried to convince the stat and the people of the economic and health benefits that surgeries could produce. For example, Dr. Fonseca's tracheotomy (an incision in the windpipe to relieve a breathing obstruction) on a young slave man with a severe difficulty in breathing, and Dr. Sarmento's tenotomy on a pre-teen slave girl whose right hand was constantly shut attested to the importance of surgery in the medical community to restore the economic value of disabled enslaved people for their owners.[135] Both the twelve-year-old slave girl and the young slave man survived the procedures and were allegedly healed. The young man was even taken to the May, 1843 Society meeting as proof of Dr. Fonseca's and his team's success. Both were advertised as clear cases of how medicine and surgery could improve the bodies of the free and the enslaved for labor.[136] Further, Dr. Sarmento's tenotomy on a

free boy with a disabled foot - whose father had authorized for surgery - also demonstrated how physicians sought any chance they had to "re-establish [the disabled's] natural form and restore useless and deformed limbs" that would benefit their health and the state.[137] Besides surgery, statal interest in solutions to disabling diseases also welcomed popular healing methods.

Besides targeting their bodies for surgery, the state consideration of popular healing in official medical practice showed that public engagement involved more direct popular participation if it could help the state find solutions to diseases could affect the economy. These involved mobility-related illnesses. One of them was elephantiasis, a term used to indicate leprosy, which, according to the Society of Medicine, had been drastically increasing in Pernambuco by 1842 while other officials corroborated its growing presence nationwide.[138] Already described in ancient Indian, Greek and Persian texts for its deformative properties, in the 1800s Brazilian physicians tended to group both current filariasis and the contemporary leprosy as types of "elephantiasis."[139] Characterized by skin lesions of greater or smaller proportions, leprosy is an infectious disease caused by the slow-growing bacterium *Mycobacterium leprae* that affects the skin and peripheral nerves, and can, in its severe forms, cause damage to the eyes and to the bones.[140] Leprosy is, as it also was in the nineteenth century, associated to warm environments where poverty (or challenges with hygiene) is prevalent. Indeed, since the 1830s, concerns with leprosy, or Greek elephantiasis, populated the reports from the ministry of imperial affairs.[141] Between 1838 and 1845, multiple ministers shared information about thermal and sulfurous waters believed to heal that and other skin problems in varied locations in the country, including Goiás, Santa Catarina, Pernambuco and Sergipe.[142] Concerns with how to find the cure for this and other illnesses led the 1834 minister of imperial affairs, Joaquim Vieira da Silva e Souza, to push for more leniency in having non-experts not only contribute to providing health services in "remote lands" of the empire, but also support scientific research as well:

It is important to contemplate people who, even if not belonging to the referred [medical] professions, have knowledge of medicines that Medicine ignores, and that their experience reveals good results (…) such as those found in the province of Maranhão regarding elephantiasis, where we can hope to find the method for healing this scourge.[143]

The people to whom the minister was referring was the populace and those in captivity. This case in particular concerned a slave healer who was reported to have found the cure for Greek elephantiasis in Maranhão in 1833.[144]

In pushing for popular methods to receive more attention, the minister indicated the complex relationship public health would develop with the poor and the enslaved in which their knowledge should be valued when it could benefit the state. Rumors that the slave healer was successful in curing leprosy reached surgeon José Maria Barreto who had a seventeen-year-old slave girl suffering from the disease.[145] Barreto's decision to have the slave man heal her led him to write a letter to the minister sharing the news of the healer's successful method. The slave's treatment was even implemented at the Santa Casa Lazarus hospital in that province at the time.[146] After a year or so of her return from treatment, however, the surgeon noticed she was becoming swollen again. For this reason, he penned another letter in 1835 demystifying the healer's techniques after the vice-president of the province, Mr. Quim, put together a board of physicians to test the slave's method because he "did not want to make a decision on his own" since "the *povo* held great faith in the healer."[147] This episode indicated how the state was willing to incorporate popular methods to serve its economic and scientific goals. It also shows the strong presence of the popular classes and the enslaved in shaping scientific investigation in Brazil for public health purposes even when physicians opposed popular findings because they still needed to acknowledge popular methods (by testing them), and the support that usually followed.[148]

In Pernambuco, the Society's investigation of popular healing methods demonstrated how public engagement revealed the limits of their prejudice when allopathic practices failed to cure

diseases that could affect labor. An 1843 report from the Society's secretary, Dr. José Joaquim de Moraes Sarmento, on its members' activities exhibited the limits in medical attempts to downplay popular practices to cure hydronemia - known in the early 1900s as tropical anemia, which was to blame for the lack of energy and consequent impact on people's labor performance. The Society agreed that hydronemia was prevalent among the populace and the enslaved.[149] Considered a public health problem because it "has been taking many victims to the grave," the Society associated its effect on people's blood to local humidity, hygienic problems and the "uniformity of foods", namely, poor nutrition, the free poor and the enslaved were subjected to.[150] Paying attention to this issue, particularly among the enslaved, should be something slave owners needed to consider "now that there will be even fewer arms [available] to work".[151] The Society's concern with investments on the nutrition of the enslaved to cure hydronemia unsurprisingly displayed how they saw a healthy enslaved population as a building block to the health of Brazil's economy. However, Dr. Sarmento's acknowledgment that European healing with iron had not been very successful in Pernambuco against hydronemia forced the Society to consider what "commoners in their ordinary exaggeration" used to cure it.[152] The people believed that *gameleira* juice, extracted from the fruit of the *gameleira* tree which belongs to the Ficus family, held great results against hydronemia (popularly known as *frialdade)* as well as leprosy.[153] Not finding other allopathic options, the Society's members then decided to investigate the fruit's properties and its juice to find a scientific answer to the problem. The Society's creation of the *gameleira* medical prize for the year 1845 attested to the medical consideration of popular healing methods on scientific investigations for public health.[154]

The lobbying the Society conducted during its three years of activity proved fruitful even though tensions between members reflected greater issues within that organization that eventually threatened its existence. In 1844, a member from the provincial assembly, Mr. José Pedro, proposed an amendment to cancel the provincial budget allocated to the Society in order to help alleviate the

deficit in the provincial coffers.[155] He also argued that the Society provided limited services to the province, cited the lack of provincial donations to other civic organizations that relied solely on their members' investments, and the problems among the Medical Society's members that were making Brazilian physicians leave it to foreign doctors.[156] Yet, Mr. Pedro was not able to convince other members from the provincial assembly, when they gathered on April 10, of the assertion that saving governmental funds by cancelling the donation to the Society was a good investment long-term to the province or Brazil.[157] As the only *deputado* in favor of the amendment, Mr. Pedro's defeat exhibited the successful lobbying of the Society because they convinced officials of their importance to investigate diseases among the populace and the enslaved that could protect health through research and prevention for the benefit of the province.[158] Further, a year later the provincial government passed the law no. 143 that founded the first public health council in Pernambuco, thus proving the success of the Society in influencing the creation of the first institution of health in the province that would secure seven times the original funding the Society received from the government.[159] Made of some of its former members, the public health council would continue to seek the cure for diseases that affected the poor and their physical abilities as they visited hospitals, inspected Recife's streets and hygienic conditions, and became in charge of preventative methods, such as the vaccination office.[160] Yet, as the sick poor interacted with physicians more often they tried to influence improvements to their living conditions in state-sponsored health institutions while they became more vulnerable to medical research, especially at the Lazarus hospital.

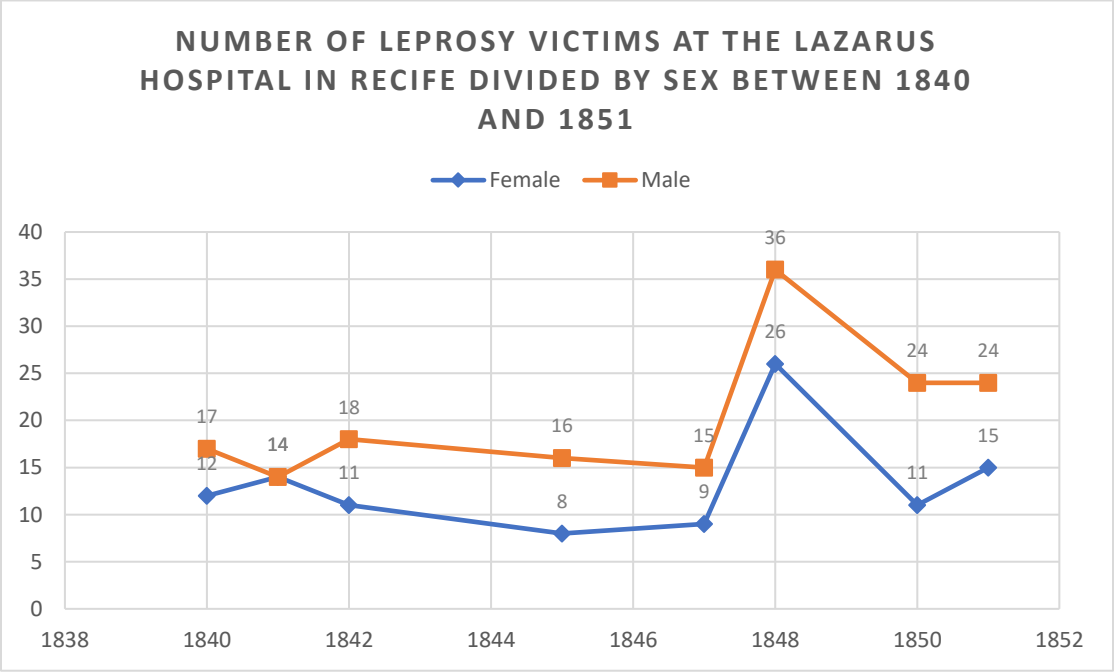
Part 2: Leprosy and Protecting Health in the Rise of the Public Health Council

This final part examines the rise of the public health council within the context of scientific campaigns against leprosy in Brazil between 1845 and 1851. 1851 was the final year of the reports from the council before the public health nationalization in 1850.[161] It seeks to better grasp how the engagement between officials and the sick poor shaped the state goals to invest in public health for

socioeconomic purposes.[162] This period was marked by the crushing of the final challenges to the integrity of the imperial state by separatist and Republic-inspired Farroupilha Revolt in the southern province of Rio Grande do Sul in 1845, and the end of the Praieira Revolt in Pernambuco (based on disputes between the conservatives and liberals that substantially mobilized the masses) in 1848-49.[163] Public health threats also constituted other national challenges, such as the yellow fever epidemic that took over the coast of Brazil in 1849-50.[164] For this reason, the maintenance of research about leprosy within such a turbulent period makes the medical and political interest about the disease among the poor, and their influence in its studies, even more remarkable.[165] I focus on the growing presence of public health officials in charity-based institutions and its consequences for the sick and for the investments on leprosy research, both in Brazil and abroad. Leprosy research indicated how the public health council put the tenet of protecting health into practice. [166]

The founding of Pernambuco's public health council exhibited the long-term interests of the province in improving its awareness toward hygienic challenges that directly impacted its socioeconomic reality.[167] Besides the effective convincing from Pernambuco's Society of Medicine, the council's founding was inspired by a series of events that included a public health council created in Bahia in the 1830s.[168] Its five members (three physicians, two pharmacists), plus two adjuncts, were responsible for the administration of vaccine-related duties, inspections of public spaces, public (such as the jail) and health assistance facilities, as well as inspection of pharmacies, and the combat of charlatanism. Through their inspections, council members alerted the province of problems within state-sponsored facilities. They also influenced the development of studies that represented the moral, economic and social gains associated with disease prevention.[169] Leprosy gained priority in these local and national attempts to strengthen the health of the poor as their

bodies and the hospital where they survived, with its subpar infrastructure, came to represent the limitations in political projects for local and national growth.[170]



Recife's Lazarus hospital was one of three found in the country (the other two were located in Rio and Bahia) and shared the challenges found in other Brazilian hospitals that made the population avoid them whenever they could. The number of victims in it throughout the years reflected both popular decisions to not go there for treatment and the extreme destitution of those who had no choice but live in the hospital.[171] In fact, physicians in different parts of the country often said national charity-based hospitals could barely be classified as such due to the almost, if not complete absence of adequate health services the sick experienced in them.[172] Originally maintained through private efforts, the Lazarus Hospital's responsibilities were transferred in 1831 to the Administration of Charitable Facilities, an office created by imperial decree and placed under the oversight and financial support of the provincial government of Pernambuco.[173] According to that decree, the office should administer properties from charity-based institutions, keep track of

their maintenance, and provide statistical reports about admissions and death counts.[174] Between 1840 and 1851 the hospital received an average of twenty-seven victims per year, except for 1848, 1850 and 1851 that saw a slight surge above thirty.[175] In general, men tended to be found in higher numbers than women, which according to the Academy of Medicine showed their greater predisposition to the disease.[176] Pernambuco's council however disagreed with that claim and believed that men were more willing to subjugate themselves to the terrible treatment found in charity hospitals than women, thus justifying the higher male population at the Lazarus hospital.[177]

Its isolated location on the road between the cities of Recife and Olinda reflected the stigma the victims carried when diagnosed with Greek elephantiasis, or leprosy.[178] The overall low number of victims treated throughout the years in a building that could house at least 300 people according to the council, if the government added a second floor to it, likely demonstrated the overall preference of those with any resources to be treated anywhere else. Treatments outside the hospital included popular methods, some of which will be discussed later in the chapter.[179] The small number of patients at the hospital did not reflect the probable much higher visibility of leprosy victims in the empire. This was exemplified by state investments between 1846 and 1851 to find a cure for the disease at the national level, and complaints from health officials about their presence in urban centers that discredited Brazil's "civilizing" objectives among foreigners.[180] Economic goals were also intrinsically connected with the benefits of curing leprosy.

The push for leprosy research indicated governmental economic attempts to prevent long-term expenses with the sick. Besides protecting health for labor purposes, to find a cure for those in state-sponsored hospitals meant finding alternatives for the state not to spend much on health assistance, and rather use those funds to further other economic projects, such as investing in different industries where the "honest" poor could "find [both] the employment they don't have and decent means of subsistence."[181] Officials saw health assistance negatively because they believed it

stimulated bad habits of governmental dependence among the poor.[182] The priority for public health services during this time thus concerned the prevention of diseases through scientific investigation, vaccination and advice regarding public sanitation.[183] Even though the state hired physicians and surgeons to provide health services to the poor, it saw health assistance as charity rather than state duty. This is observed through the chronic issues with lack of adequate medicine and funds in the spaces physicians worked at (such as the jail or public hospitals), and the language of philanthropy used to describe these works.[184] Public health, on the other hand, held a greater governmental purpose. Health officials from the council visited health assistance facilities to inform the provincial government of its hygienic problems and of alternatives to find the cure for diseases that challenged Brazil's access to a healthy population and to prove their importance toward making its society civilized.[185] The contemporary belief in the "spirit of association" in which greater ideas could be generated when multiple minds worked together also promoted interest in leprosy outside Brazilian borders.[186]

The international take on answers about leprosy indicated the extension of health communications to benefit the economy. Between 1845 and 1852 officials from the Pernambuco's public health council followed a race for a cure for leprosy that involved local, national and foreign investigations. It initially involved the Brazilian government looking for a cure in Peru and Chile between 1846 and 1847, and later through *uassacú*, a fruit from northern Brazil considered to hold anti-leprosy properties.[187] Research at the Lazarus hospital in Recife began in 1846 after news from the French newspaper *Mémorial Bordelais* were released in Brazil about a man from Peru who had been healed from leprosy after directly working with *guano* (bird excrement).[188] According to the article, incredulity about this event "dissipated among physicians" in Peru when they visited the *guano* deposits in Chincha island where "witnesses were convinced of the curative effects of this substance."[189] Further, it explained that the general commission for hospitals from Chile had

decided to send some leprosy victims to "one of its islands with abundant *guano*" where they ostensibly felt much better. The report claimed its healing properties originated from breathing the ammoniac gases it released.[190] As soon as January, 1846, Pernambuco's council requested the provincial government to purchase sacks of *guano* to begin experiments at the Lazarus hospital, which the government granted by February 4.[191] Their interest directly spoke to national ones, such as those of the Ministry of Imperial Affairs who had also concomitantly requested the Medicine Academy of Rio to study the "efficacy of *guano* in treating Greek elephantiasis."[192] Meanwhile, between 1846 and 1847, the Brazilian Ministry of Foreign Affairs also requested the country's consuls in Peru and Chile to find out more information about *guano* and the extent to which those republics were conducting research against leprosy.[193]

Brazil's international search for a cure for leprosy demonstrated the dimension of the state's interest over a disease that substantially affected the lower sectors. For example, while experiments were being conducted in Bahia and Pernambuco, the Brazilian consul in Lima, Antonio de Souza Ferreira, sent a letter to the general physical major of Peru's *protomedicato* – a medieval Spanish institution responsible for regulating different kinds of healers – Dr. Caetano Heredia regarding the potential medical use of *guano* against leprosy.[194] Ferreira justified his inquiries in August, 1846 when saying that the Brazilian "government had ordered me" to find whether the French publication held any valid claims because leprosy "is frequent in some places of Brazil's interior", and that he saw the physical major as the "most apt person" to answer his questions.[195] About a month later, Dr. Heredia replied to the consul saying that they were conducting the necessary investigations to know if "*guano* had in fact healed an individual who says he had suffered from this illness or whether he was attacked by morphea or by a herpetic eruption."[196] By late 1846, the general consul from Chile, Bento Gomes de Oliveira, submitted a report to the Ministry of Imperial Affairs about a doctor in that country who had claimed to have "completely" cured six leprosy victims using

guano treatments.[197] These news encouraged the Brazilian government to request answers from the Academy of Medicine which, by that time, had received authorization to work with some of the sick at Rio's Lazarus hospital. In October that year the French medical journal *Gazette Médicale de Paris* also featured an article from a French physician describing the Brazilian morphea, its symptoms and similarities with the French leprosy.[198] It stated how it affected Brazilians of all ages, regardless of race, but that it seemed to affect more directly those with less access to hygiene, and that the disease seemed more prevalent in places with "humid and high temperature." [199] Even though not focusing on *guano* per se, his mentioning of the damage it caused in the brain and nervous systems of its victims through autopsies he conducted in Brazil also enforced the reasons behind the government's interest in a disease they saw as a growing threat to populational health.[200] Local initiatives however took precedence in seeking to fulfill this national scientific agenda.

The decentralization of studies about *guano* exhibited a critical aspect of early public health in Brazil that relied on local populations and resources for its development. Between 1846 and 1847, experiments took place in at least four provinces: Bahia, Pernambuco, Rio de Janeiro and Santa Catarina. Yet, the pace of investigation depended on whether financing came from local or national coffers. For instance, the Bahia's Lazarus hospital doctor submitted his initial feedback about *guano*, albeit inconclusive, to the central government in March, 1846 whereas by November that year the Medicine Academy in Rio was still requesting the central government to "purchase some *guano*" and "have some morphea victims available to the Academy" for them to initiate their tests.[201] Pernambuco's council had by then experimented with *guano* on leprosy victims for months since the provincial government had authorized the president of the public health council to "purchase the amount of *guano* he needs for the first experiments in the province" by April.[202] Further, it had also sought to find information on national *guano* from the Fernando de Noronha Island in April, located 220 miles offshore from the Brazilian coast on the north.[203] Pernambuco's

council also actively engaged with national debates by extensively publishing their results and even collaborating with their detailed reports in national private medical publications and national official publications on the types of leprosy found in the country.[204] It is possible that multiple interests were at stake among the physicians involved in the experiments in Pernambuco and other parts of Brazil. These likely concerned their personal and professional goals toward scientific recognition and their attempts to gather greater political importance because physicians often pursued governmental careers, like lawyers did, due to the restricted possibilities of success outside the plantation economy and the government at the time.[205] Such scientific and political recognition however depended on having access to the sick.

Public engagement in guano research brought to light the complex dimensions of power imbalances and hope that constituted victims' experiences. This happened because while being subjected to procedures, victims likely wanted to be cured. This happened after publications in Rio celebrated positive outcomes of this new treatment. As early as February, 1846, Physician A.J. Peixoto published his ostensible successful treatment in seven patients at his private clinic in Rio.[206] Aware of his account but cautious with his celebration, physicians in places like Pernambuco and the Medicine Academy in Rio began developing strategies to conduct their own experiments. The former decided to create a medical prize for the year 1847 for any physician who provided a better answer to the efficacy of *guano* in treating "Greek elephantiasis, commonly known as morphea."[207] The two tons of *guano* the public health council of Pernambuco purchased in May nonetheless demonstrated both theirs and the government's deep interest in confirming Peixoto's claims. Yet, they questioned Peixoto's methods.[208] This is because Peixoto's treatment consisted of giving patients *guano* pills that they ingested, which the council did not approve of and did not offer to the sick at Recife's Lazarus hospital "because it seems useless, if not harmful, to overload the gastric system with earthy substances."[209] This was however not the decision the apothecary from the

Lazarus hospital in São Cristovão, Rio de Janeiro province, made for himself. His desire to be cured from leprosy convinced him to follow Peixoto's method.[210] His decision exhibits the complex circumstances regarding the hope for cure when even those who had a choice voluntarily participated in medical experiments.

In Recife, though, the gradual and somewhat invasive evolution of different uses of *guano* on leprosy victims exhibited the negotiations among health officials and the sick poor that permeated the trials. Physicians decided to choose victims in different stages of the disease.[211] At first, they attempted to reproduce the environment in which the Peruvian man was allegedly healed because *guano* surrounded him, exposing him to gases he breathed in and were claimed to have cured him. *Guano* was then spread throughout the patients' rooms "in large portions."[212] Not seeing explicit results, the council decided to add *guano* to patients' baths. A third attempt was then made with *guano* directly applied to patients' skin "through friction" while adding already known methods of sea bathing and strict dieting to this phase of the experiment. After three months of unsuccessful trials patients contributed to the end of the experiments as they "lost [both] hope in getting better and their patience" with the procedures, convincing the council to stop.[213]

The allopathic failures of *guano* informed official consideration of increased popular participation in leprosy research through their healing methods. Despite physicians noticing some relief among its victims under treatment in Santa Catarina and Bahia, none of them besides A.J. Peixoto – whose treatment the Academy of Medicine completely discredited in 1847, and had already been challenged by Pernambuco's council in 1846 – openly defended *guano's* properties against leprosy.[214] The development of phlyctenoides, or pustules on the skin of victims under *guano* treatment in Recife convinced the council, and very likely the patients suffering with these side effects, that the experiments were not working.[215] Varied contemporary descriptions of phlyctenoides include variations of skin inflammation, be them associated to herpes or erysipelas,

which could resemble shingles covered with pustules that caused substantial pain.[216] In Rio, the apothecary who used *guano* internally and externally on himself and his patients also suffered with phlyctenoides, which he accused of making his condition much worse since they took very long to heal.[217] It would not take long then for physicians to seek substances that seemed less risky for experiments, even if they were recommended by the common folk. For instance, when Dr. Maximiano Marques de Carvalho visited São Cristovão's Lazarus hospital in Rio province and noticed the serious consequences of multiple experiments in its patients he decided to promote the medical analysis of yams. He explained that "lately we have been hearing from sharecroppers that yams are a powerful medicine against Greek elephantiasis."[218] He believed the plant deserved to be analyzed empirically especially because it "is in no way dangerous" for the sick in case experiments failed. Dr. Carvalho's interest in yams exemplified physicians' concerns with their reputation if the sick became worse because of their treatments and exhibited previous governmental openness to popular methods of cure when allopathic medicine fell short of its goals. Another plant used in popular healing however received enough attention to move efforts away from *guano* toward investigating its properties.

National and international research about *uassacú*, a plant from the northern province of Pará, exhibited the direct influence of the populace in the Brazilian pursuit of scientific knowledge production against leprosy. When news of a man who was "almost" healed in Pará because of that plant reached Rio's *Jornal do Commercio* in mid-1847, they sparked another round of hope and experiments in different parts of the country, and even in Portugal later in 1848.[219] José Joaquim de Souza Gomes, widely known in the then Lower-Amazonas village of Santarém as "quite damaged by the scourge" one day appeared almost healed, "almost" because experts had declined to consider him fully healed from the disease.[220] His cure was attributed to a man considered *pardo* in some sources and *mameluco* (of European and indigenous descent) in others, Antonio Vieira dos Passos,

who by then had been in jail as a suspect for either committing or being an accomplice in the murder of an entire indigenous family whose bodies were found floating in the Amazonas river about ten years beforehand. When the municipal judge João Batista Gonçalves Campos talked to Passos, the healer confirmed his work on Gomes before he was imprisoned.[221] Described as "energetic, rustic, not able to read, but can sign his own name," Passos also claimed he had "fully healed" a *tapuia* (indigenous group in Brazil) man, Theodozio, who was a carpenter at the compulsory labor program for indigenous peoples in Pará named *Corpo de Trabalhadores*, in the city of Faro.[222] Passos explained he had learned about *uassacú* and its healing properties against leprosy from the deceased and "old *caboclo* man," Manoel José Joaquim, who was also a worker for that state compulsory program. Brazil's potential drug against leprosy thus held strong ties with the populace.

The complex *uassacú* finding reflected the intrinsic relationship between protecting health for labor, and public health in Brazil. For example, Theodozio's ostensible cure was beneficial to the state because it allowed him to continue to provide compulsory labor to the province.[223] Further, *uassacú* placed a poor indigenous man and a *pardo* or *mameluco* criminal suspect as responsible for what physicians hoped would finally help them find a cure for leprosy, which in turn could guarantee a higher number of apt and healthy citizens to the national prosperity. Aware of such controversial origins, physicians often chose to not mention them in their reports, particularly if we consider the international repercussion of *uassacú* in Portugal where experiments had begun in Lisbon by 1848.[224] Instead, physicians focused on both the medical techniques developed in Pará and on creating their own experiments locally.

Uassacú experiments exhibited the critical and yet fragile connections that linked provinces and people in the national pursuit of scientific knowledge. News about *uassacú* arrived in Pernambuco via the former army commandant from the province of Pará who had shared the June newspaper with council members.[225] Those then turned to the provincial president by October 1847

requesting him to contact Pará's president in order to send them a portion of that plant and instructions on how to use it for healing.[226] Yet, the constant issues with *uassacú* supply the council faced caused great challenges for research because of the restriction it imposed on the access to the concoctions. Supply challenges caused problems to retain enough participants for trials and to maintain some consistency with the experiments.[227] For instance, problems with the first delivery in 1848 forced the council to reduce the initial number of ten participants to four, two men and two women, which "made some of the sick complain" about their unanticipated exclusion from the experiments.[228] The council had not received the correct dosage for ten people they had paid in full for the pharmacist in charge of making *uassacú* products, Mr. José Acurcio de Macedo, in 1847.[229] In using the sick to enforce the need for the delivery to be corrected physicians sought to convince the provincial government that the experiments should receive priority for completion because even the sick were committed to the process. By January 1849, the council noticed that the then reduced number of two participants were showing improvements "not only regarding their [physical] aspect, but also their suffering," which, they made sure to say, the other sick observing their friends confirmed as well.[230] Because the council had requested information about applications, they likely followed procedures done in Pará that consisted of internal and external methods, which included the ingestion of pills made of *uassacú* extract or its use in baths.[231] A brief understanding of how they worked help us visualize what leprosy victims experienced and how far their opinions could go in this medical research.

Feedback from participants in trials revealed the power dynamics in public engagement in which popular opinion should favor medical interests regarding the experiments.[232] Vomiting, for example, provided important information to physicians who observed how the group made of the slaves Domingos Manuel and Maria do Rosario, and the poor white men Antonio H. Martins and Raymundo Gonçalves da Cunha, reacted to a vomitory made out of the plant.[233] Physicians were

particularly interested in positive feedback from the sick that they could report to the government. One of them included, for example, when the sick explained that the second round of vomiting from *uassacú* revulsives had caused a great relief from the previous heaviness they used to feel on their faces, and that they could more easily use their limbs. In contrast with *guano*, negative feedback to *uassacú* treatment made physicians downplay participants' opinions because physical reactions to it were not visible.

The medical attempt to dissociate leprosy victims' bodies from their voices represented their vulnerability to state-sponsored pursuit of scientific knowledge when their opinions challenged state economic goals. These included labor; to diminish expenses with health assistance, in this case for leprosy victims in case a cure was found; and likely toward the economic gains stemming from a plant originated from national soil to cure a disease found globally.[234] Among all those reasons and considering the career goals of the physicians involved in *uassacú* research, leprosy victims in Recife's Lazarus hospital found limited space to impart greater influence in how long, for example, experiments should last and the trade-offs for participating. For example, experiments in 1849 were forced to stop after some participants refused to continue because "chicken had been removed from their diet prescribed during the first days" of trials. However, the council's promise to the provincial government that "it will employ all the necessary measures to finalize the experiments" exhibited the limitations the sick faced in securing their terms for this negotiation.[235] By October that year, some of the involved were vehemently cursing out the painful sensations the experiments were causing in their skin because of an "intense and unbearable" heat caused by the concoctions physicians were using.[236] According to the council, the participants would "have already abandoned these applications a long time ago if they were not forced to put them on."[237] Despite the clear dissatisfaction among the sick, however, the council still decided to maintain the experiments until

the first half of 1850 for believing the sick's reported sensations not to be enough evidence that *uassacú* did not work.[238]

Public engagement also depended on the extent to which victims showed interest in the research. In Bahia, for example, leprosy victims seemed to have much greater autonomy regarding their participation in *uassacú* experiments. Despite using *uassacú* in "several of the sick", the physician in charge of the Lazarus hospital was only able to get one leprosy victim to accept the prescribed treatment consistently because he was "the most docile" of all.[239] It is possible that the sick at Recife's hospital did not have the same opportunity because, differently from the single physician in Bahia, Pernambuco's entire council was in charge of experiments, which probably affected the amount of pressure they could place on the sick to not quit the trials. Ironically, despite the downplaying of their opinions regarding *uassacú* experiments, their grievances about their living conditions produced much better results with the council.

The growing interactions between the sick poor at the Lazarus hospital and public health officials during those years helped shape the former's sense of right to better treatment since they began to see the latter as a source of communication between them and the Administration of Charitable Facilities. The evolution in the reports regarding the conditions in which health officials found leprosy victims at the hospital attested to the sick's influence on improving its management as their complaints demonstrated the country's distancing from progress - the idea that interprets history as determined by the inexorable path of peoples towards a better future. For example, when the council visited the Lazarus hospital for the second time in 1845, victims "in unison, bitterly complained against the terrible treatment received at that Hospital" regarding their diet, the fact that they had to do the cleaning of the institution "and even wash their own clothes" despite their "wounded hands at times missing multiple fingers."[240] The sick also complained of the only servant

at the hospital who was able to work, a freed *pardo*, who only agreed to do some groceries from time to time.[241]

Their expectations toward this servant displayed their expectation toward the Administration of Charitable Facilities that was responsible for the hospital and, consequently, its terrible conditions. Spoiled foods, lack of clothing and bedding, lack of medication for their wounds and even of a physician to regularly treat them constituted the overall complaints the sick expressed to the council during the first encounters.[242] Within a year, as the visits became constant, the sick insisted on issues that had not been addressed since the council's previous inspection (such as the lack of clothes for them) and increased the details of their grievances, including their wish to have holiday foods added to their diet, such as cod fish during Lent.[243] Their complaints resulted in improvements as by April, 1848 the sick were already provided with clean bedding, regular visits from the physician who also worked at Recife's Charity Hospital, provision of ointments and other materials for their wounds, and clothing.[244] Until the council's final report in 1851, the maintenance of the sick had become much more stable concerning food supplies and medical treatment, a reality that ultimately defied the original interests of the central government and some local officials who criticized health assistance.[245] Meanwhile, leprosy would continue to haunt physicians who also by 1851 had to deal with new constraints to their pursuit of medical research.[246]

Conclusion

Public engagement was critical for the rise of local public health for economic purposes in Brazil during the 1840s.[247] In building from the existing provincial interests in health improvements, physicians from the Society of Medicine shaped health protection into a marker of long-term benefits for labor in the province of Pernambuco that spoke to alleged anxieties toward the end of the slave trade in the 1830s. To achieve their objectives in disease prevention among the free poor, however, they incorporated the masses not only as targets for services, but also as sources of

practicing of medical techniques and even of healing knowledge. Incorporating popular methods into official practices was not an isolated circumstance because imperial ministers, at least since the 1830s, also demonstrated greater acceptance to it if it could benefit state goals. By looking at how enslaved and indigenous methods of cure were examined and used in official practices we notice the complex networks that constituted the emergence of Brazilian public health, one that required enough negotiations with the populace to be able to exist. Notwithstanding the power imbalances between these social actors, considering for example the compulsory *uassacú* trials conducted in Pernambuco, the roots of national public health would come from processes of public engagement.

Public engagement revealed the initial constructions of Brazilian health politics. It displayed the multifaceted role of health that incorporated the interests of those involved. To gain political importance, physicians made health protection appealing to state economic goals; the state, both at the local and national levels, invested resources in scientific experiments because the medical promises seemed relevant for its economic profitability. These included the desire to find a cure for leprosy, which would make health assistance less costly for the state, and if successful, the possibility of exporting medicinal drugs for a disease found worldwide. For the sick placed in trials, there were the immediate interests to improve their living conditions and access to better foods, as well as the hope for a cure despite their vulnerability to state access to their bodies. The multiplicity of interests that led to public health experiments during a turbulent moment in the history of Brazil is quite remarkable and showed that the politics of health were intertwined with broader political objectives.[248] As public health matured and gained attention from the central government other priorities and epidemics surged that shaped its direction in the 1850s.

CHAPTER 2

The Politics of Health Protection in the Time of Cholera

What happened to my friend, the one I loved?
Where can I seem him? Where is he? Who took him away from me?
Has death, cruel death, snatched him?
Has death snatched the man for whom I cared?

Yesterday he was full of life
Hope filled his mind
Today he is still: no life, he rests
In the tomb fate reserved for him[249]

Introduction

On Mach 15, 1856 a poem published in the *Diario de Pernambuco* about a cholera victim reflected Brazil's vulnerability to a disease about which there was no contemporary consensus on its cure, pathology, or cause.[250] Amid the most violent month of the epidemic in Pernambuco, the death of Roberto Peregrino Padilha, to whom the poem referred, was one of thousands the province experienced between December, 1855 and April, 1856.[251] Hired as a physician's assistant to provide health services in a plantation, Padilha passed away two months after starting his job despite "the promptest aids dispensed to him," included by a surgeon hired to heal him. The failure of official treatments to save his young life indicated greater governmental challenges in the administration of the epidemic regarding the overall lack of answers about cholera.[252] Uncertainty transformed public health into a political space in which different groups exercised their views over how to protect health from cholera.[253]

This chapter explores the role of public engagement in the outcomes of the cholera epidemic. It examines how physicians, state officials and the population conceived of ways to protect life and health amid the threat of cholera in the 1850s.[254] I look at how these groups' conceptions affected

the management of the epidemics in Pernambuco within a national context from 1849 to 1856. Even though the cholera epidemic only began in Brazil between 1855 and 1856, I go back to 1849 to understand how threats of cholera already in the late-1840s began informing decisions to prevent the disease in the country.[255] I seek to answer the question: how did public engagement amid cholera transform public health into a political space? I argue that it did so by revealing that the state methods against cholera were attempts to political legitimacy. Health protection carried political intentions and sociopolitical implications.[256] For the state, health protection was about social stability. By having the population conform to its methods of prevention and containment of cholera they could prevent social disorder.[257] For the physicians, it was about their reputation and legitimacy. By having the state and the population adhere to its methods, they could ensure the supremacy of their knowledge and of their professional objectives.[258] For the people, it was about survival. To reconcile these different interpretations into social stability the state needed to find a certain level of compliance among the population, a move that required enough popular acceptance of official preventative and healing methods. The state pursued this acceptance by engaging the population in different ways. I divide the chapter into three parts that go over the outcomes of those pursuits. The first one focuses on how the state interpreted popular expectations to prevent the epidemic in the late-1840s and how officials proceeded to negotiate them into governmental methods of prevention.[259] The second part examines statal instances of manipulation to get the population to adhere to its conception of health protection.[260] The final part delves into the failures of those attempts and the results for the management of the epidemic in Pernambuco.[261]

A close look at this also helps us reflect on the political consolidation of Brazil. As a parliamentary monarchical regime, the transition from the 1840s to the 1850s saw the country's emperor, Pedro II, strengthen his political influence and power among the liberals and conservatives, and seek the expansion of national projects.[262] Exploring public health during the

cholera epidemic however leads to questions about the extent of that consolidation because it shows that local governance and local actors often dictated the outcomes and decisions to prevent and contain it, not the central government. Indeed, the nationalization of public health in 1850 after the yellow fever epidemic (1849-1850) represented one of these consolidation projects of the empire.[263] However, the limited staff put in place in Rio could not viably oversee the public health matters of a continental country like Brazil, especially if we consider infrastructural challenges that affected communication between and within regions.[264] Yet, problems with the epidemic were not only a matter of state capacity. Lack of knowledge about the disease made it very difficult to control it as well. At the same time, uncertainty created opportunities for multiple groups to engage with each other to find best practices against cholera.[265] These best practices spoke to their interests, and because sometimes one group's interest went against the interest of the others, tensions ensued.

In this chapter, the poor included compulsory laborers during the epidemic, migrants and victims of cholera. I also include the enslaved in my analysis. The poor knew they were the most vulnerable and sought ways to lower their risks by either conceding to or contesting official methods. This depended on how they interpreted the efficacy of these methods to their survival.[266] Their fear of cholera would often inform governmental measures toward health protection. In this case, I see fear as a reaction that led to preventative measures among the populace.[267] For the state, fear was a problem because it could lead to unexpected behavior and panic that threatened social stability.[268]

Part 1: Negotiating Public Health amid an Epidemic Threat

This first part examines the role of public engagement in negotiations toward health protection as it led to consensus on prevention of cholera. In particular, I explore statal adherence to quarantines and popular healing methods, which exhibited its interpretations over the best strategies to maintain social stability.[269] Afterall, epidemics tend to promote social crises as death

and fear destabilize social structures. Epidemics, as a social phenomenon, also push societies to make sense of the lessons learned.[270] The response of those who lived through epidemics, especially cholera ones, was often informed by a sense of fear, particularly when they were aware of the high mortality rates it caused in the nineteenth century.

Cholera was the king of epidemic disasters and the most feared disease of the nineteenth century.[271] Responsible for seven pandemics in the 1800s, cholera reached Brazil for the first time during its third wave, between 1846 and 1862. It also affected Asia, Europe and North America during this period.[272] Even though cholera arrived in the country through a vessel coming from Porto, Portugal, to the northern province of Pará in 1855, expectations toward the disease ran rampant years before that, especially if one was aware of its symptoms.[273] When a person that had ingested the cholera bacteria developed the infection, the evolution of the disease was striking. At first, the victim could feel some mild discomfort, such as diarrhea as if the person had eaten spoiled food.[274] As the disease advanced, the victim would begin to suffer with muscular spasms, vomiting, profuse diarrhea and pain in the chest and abdomen.[275] The diarrhea was very characteristic of the disease because it had no smell or fecal color to the stool, which was watery with white particles suspended in it. This was considered the second-stage of cholera. The final stage was marked by a profound collapse of the victim, with the face and extremities turned dusky, the body cold, and the pulse almost absent while they retained their mental function throughout the pain.[276] The white watery stool was caused by a reaction from the body when trying to attack the infection. The bacteria attached to the intestines provoked an immune response that, while killing the *Vibrio cholerae* bacteria, made them liberate a poisonous enterotoxin that causes the intestine to work in reverse. [277] Instead of absorbing nutrients from the bowel into the bloodstream, its liquid portion, the plasma, was drained into the digestive tract and expelled explosively through the rectum. Considering such

gruesome symptoms, as the first news of a cholera epidemic in England arrived in Brazil, physicians and health officials considered it based on popular reactions.[278]

Public engagement played a critical role in the medical responses to the 1848-1849 epidemic in Europe. Besides reflecting the uncertainties about cholera, discussions physicians in Recife and Rio began developing about it were based on the accounts of popular fear of it.[279] In January 1849, Dr. Marinho, a military hospital physician in Rio, published an article in the *Jornal do Commercio* newspaper with the intention of refuting the reasons for the panic that had overtaken Rio's population.[280] Titled "Cholera-Morbus and its Influence in Brazil is Almost Unlikely," his article sought to stress the "unfounded" terror of cholera in Rio city by explaining the geographical and populational differences Brazil had in comparison with countries being ravaged by the disease.[281] For Dr. Marinho, cholera was prevalent in places where the population was denser and where the climate was more temperate, both absent characteristics of Brazil. He even claimed that the epidemic that was also taking place in the United States was disproved to be of cholera to enforce the idea that it only traveled through land, not sea, meaning it could not cross the Atlantic from Europe to the Americas. "Considering the evidence provided," he asked, "how could Brazil fear contagion from cholera-morbus, when [the country] has not even one of the possibilities that facilitate choleric transmission?"[282] In contrast, his colleague in Recife, Dr. Joaquim d'Aquino Fonseca, legitimized the fear that was "gaining the spirits" of the inhabitants in the city as he sought to implement measures of prevention around the same time Dr. Marinho published his article, such as quarantine at the port and the cleaning of the city.[283] Both initiatives were directly related to how health practitioners were interpreting popular expectations for cholera prevention.

Public engagement toward health protection informed the implementation of quarantines against cholera in Recife. Quarantines had been used as a defense against the plague since the fourteenth century in the Mediterranean, later against yellow fever by the eighteenth century, and

cholera in the 1800s in European and North American ports.[284] In general, despite the differences among countries, quarantines followed roughly the same procedures of isolation, ventilation, chemical disinfection, and attentive waiting.[285] Those who considered themselves contagionists corroborated the need for quarantines because they believed that contact either with a sick person's body or with fomites from infected clothing or bedding could lead to diseases. This opinion was strong during the 1831-32 cholera epidemic in Europe.[286] However, it lost ground to anticontagionist perspectives that promoted the idea of atmospheric changes producing cholera susceptibility among individuals and to miasmatic opinions on local conditions as producers of the disease, such as filth liberating poisons that could lead to epidemics.[287] Indeed, as Recife's public health council considered its alternatives for prevention, the provincial presidency shared with them a report from the General Board of Health from London − a sanitarian, local miasmatic and anti-quarantine institution − which suggested the presidency acceptance of anti-quarantine measures in Recife.[288] The council itself demonstrated uncertainty about the efficacy of quarantine as vessels from England kept arriving at Recife's port. Yet, despite considering the report from London to "hold ample evidence" in disproving the efficacy of quarantines, the council nonetheless concluded that they should maintain quarantines because "its suppression would expose the council to the reprimand of the population."[289] Believing that the absence of quarantines could lead to tensions, the public health council used it as a political measure with explicit performative value "to show that the government is not indifferent to the dangers that threaten them (the population) and the council will not back down from [these dangers]."[290]

Negotiating health protection methods also indicated limitations in knowledge about cholera. Any choice the council made that could be considered heterodox could be blamed for in case of a potential cholera invasion as the they would not have the exact answers to explain how they did not facilitate the introduction of cholera into the city.[291] So, despite blaming the population

for their lack of "instruction" to understand an anti-quarantine approach to disease prevention, the council decided to make use of quarantines because they did not want to be accused of negligence.[292] In this case, implementing a widely known protocol of prevention over a virtually unknown disease was considered the best alternative to show the population that they did everything they could in case the epidemic manifested in the city. Hence, the uncertain grounds in which public health officials found themselves made them see quarantines as an exercise of caution for their own sake "if by disgrace of this province and Brazil the epidemic developed."[293]

Popular rumors belonged to the local networks of information about health that were considered in officials' decisions about quarantines. Their maintenance over rumors about the death of a seaman in Recife indicated that the public health council was considering it a source of social stability. In December 1849, a Bahian seaman who had arrived in Recife by the French boat *Alcyon* fell ill during the travel and was permitted by the office of the health of the port to be treated in a private clinic without being quarantined.[294] Coming from a region of Bahia that was facing a deadly and unknown fever (which later would turn into the national yellow fever epidemic) this case led to great tensions between health officials from the office of the health of the port and the public health council.[295] The council overruled the inspector of the port's decision and promptly demanded the removal of the seaman back to his boat where he ended up succumbing to the disease. News of his death soon gained the city streets.[296] Because the population was aware of the fever in Bahia, popular rumors developed by claiming it was already spreading into Recife. Council members even reported to being approached by many people who were accusing them of facilitating the fever introduction in the city, forcing them to defend themselves to the provincial government and to those individuals.[297] Meanwhile, the intensity of the rumors led the *Diario de Pernambuco* daily to claim "so much has been said about the death of one of the seamen from the French boat *Alcyon* (…) [and] there have been so many complaints about this subject (…)" by the *povo* that its

journalists decided to begin an investigation on the topic.[298] The investigation concluded with defending the public health council, accusing the inspector of the port from causing the whole ordeal and reinforcing the belief in disease prevention as part of health officials' duties to rid the population from similar future experiences with "the panic that had taken over them."[299] Panic and fear, as we will see later, were considered a problem because they could lead to unexpected actions from the population. Governmental decisions in favor of quarantines were often based on local rather than national demands.

Local events seemed to determine, more often than not, local decisions on methods of health protection. Following a similar experience to Recife in 1849, in January, 1856 in Rio Grande do Norte the population "gathered with the firm resolution to throw Your Excellence (the provincial president)" into a vessel that was authorized to enter the province's port in Natal even though it was coming from Pará, the locus of the epidemic at the time.[300] The apprehensive population showed that "the *Natalense* (natives of Natal) people respect but do not fear the president" while they had to be dispersed by sixty police officers. Their threat of violence made the provincial president establish quarantine measures at the port and select a particular house on the coast to work as a quarantine station.[301] Preparing for cholera at the national level though would reveal stark differences in provincial approaches that raise questions about the limitations of the national Central Council for Public Health in Rio in determining how cholera prevention should be conducted.

The different approaches to cholera prevention in Brazil demonstrated that local decisions often superseded national ones. The yellow fever epidemic of 1849-1850 that led to the creation of the Central Council for Public Health raised questions about the vulnerability of Brazil to foreign diseases like cholera and led to official debates on prevention in 1852 when it hit England once again.[302] On November 8, 1852, central council members advised the minister of imperial affairs and secretary of state Francisco Gonçalves Martins about a series of measures that ranged from

preventative to "occasional" against cholera, ranking quarantines as the "most urgent" of them.[303] Those members also considered Pernambuco the priority for national actions because "it seems to be the first place through which it can invade us."[304] Notwithstanding the central council promotion of quarantines as a matter of national importance, when cholera hit Brazil in 1855-1856 their maintenance in Pernambuco contrasted with the lack of support to quarantines in other provinces. In Pernambuco, physicians in the press against quarantines showed they interpreted this choice as health officials ceding to popular expectations, not as following a central government procedure.[305] Their use of quarantine was seen as anti-scientific because of contemporary anticontagionist arguments against it.[306] In contrast, the public health commissions of Bahia, along with the vice-president of Sergipe and the provincial president of Rio Grande do Norte, for instance, were not supportive of quarantines or were miasmatists, and downplayed their overall importance for cholera prevention.[307] This shows that despite recommendations from the central council, provinces ultimately decided how to prepare for the epidemic locally likely because officials did not have clear answers about cholera transmission. In Sergipe, for example, its vice-president abolished quarantines in 1855 and was accused of letting cholera "devastate the *Sergipenses* (province natives)" after seven-hundred people had succumbed within eleven days.[308] Public engagement also created opportunities for officials to find answers against cholera among the popular sectors that could benefit its goals toward social stability.

Engaging popular healing in official experiments indicated it to be a valid way to contain both cholera and anxieties amid the epidemic. An indigenous man from Amazonas attested to that reality as he gained great notoriety with his healing practices. In November, 1855 the bishop of the archdiocese of Pará, D. José Affonso de Moraes Torres, contacted the president of the public hygiene commission from that province, after returning from his trip to different parishes under his jurisdiction in Amazonas, to talk about the substantially low mortality rate in the municipality of

Villa-Franca.[309] According to the president of that commission, Dr. Francisco da Silva Castro, the bishop had learned from a parish dweller that mortality was low because they were using lime juice to treat cholera.[310] This discovery was attributed to an indigenous man who had gone fishing with his indigenous friends when one of them was suddenly attacked by cholera symptoms. In seeking to help his friend, he "squeezed [some limes] and offered the patient to drink [the juice]" after he was "taken to their small canoe and conducted back to the shore."[311] Expressing surprise over the discovery through an yet unsurprising prejudiced frame against those native men, Dr. Castro claimed that "these semi-savage men were shocked to see their friend speak, sit and finally get healed without any other treatment" after a few days. Excited with the news, Dr. Castro soon began experimenting with his own patients, claiming that using lime juice either by itself or along with other treatments proved to be highly successful. News of this treatment were quickly published in newspapers from different provinces as physicians tinkered with portion amounts, mixed and matched the juice with other ingredients, and studied personalized use for better effects based on sex and age.[312]

Experiments with lime juice reinforced the presence of public engagement in initiatives against cholera. Indeed, in trying to push for a medical angle of lime juice usage against cholera, Dr. Castro mentioned that it had been previously administered by a chemist and by a physician named Sérres in the 1832 cholera epidemic in Paris, but that for some reason the treatment had been discontinued and forgotten with time.[313] Yet, regardless of this attempt to undermine the originality of the indigenous' man discovery, the lime juice treatment was solidly advertised as of popular origin while it became scientifically viable after Dr. Castro's successful trials with about thirty patients.[314] According to him, his experiments on children and adults illustrated its efficacy on "destroying most of the effects and symptoms" of cholera, such as vomiting, thirst and diarrhea. Victims under trial were in their vast majority of color, such as *tapuias* (general term for natives

who were not of Tupi origin), *mamelucos* (mixed European and indigenous), blacks and *mulatos* (mixed of African descent). Despite not using lime juice as the sole practice for cholera healing like the indigenous man and the dwellers in the village did, Dr. Castro confirmed that there were situations in which patients could have been treated with the juice only. [315] Still, he preferred to use it along with other official healing methods, such as bloodletting and cactus syrup, as a precaution. Based on Dr. Castro's report on the victims, his decision to treat a person solely with lime juice did not seem to be based on race or legal status, but rather on whether he classified the infection as grave or not. In Pernambuco, Dr. Fonseca became a strong advocate of the lime juice treatment, and experiments with it enforced the medical attempt to assert relevance over it.

Medical promotion of lime juice in Pernambuco exhibited the networks of healing that characterized public health at the time. Soon after the original publication of Dr. Castro's study on lime juice, Dr. Fonseca published a piece with high praises and hopes for it, claiming it was "infallible" on healing cholera.[316] He recommended a large spoonful of lime juice every half hour whether symptoms were serious or not, which usually stopped between the fifth and eighth spoonful. Along with that, those making use of lime juice could incorporate other healing practices, such as rubbing the sick's legs in case they start feeling cramps and pain in legs and stomach.[317] By teaching the ways in which one could use lime juice along with other allopathic treatments to cure cholera, Dr. Fonseca demonstrated the possibility of joining allopathic and popular practices in moments of great scientific uncertainty regarding cholera pathology. Even though it was allegedly already being used in an indigenous community in northern Brazil, Dr. Fonseca's publication also sought to emphasize that non-specialists could deal with the disease successfully if they followed medical advice on the administration of the juice.

In incorporating lime juice to guidelines against cholera, medical authorities transformed it into an official practice for health protection. For example, on February 5, 1856, surgeon Manoel Pereira Teixeira, in charge of inspecting "the homes of the most impoverished families" during the epidemic between Manguinho and the Madalena bridge in Recife wrote about his successful healing of a slave man using lime juice.[318] Teixeira explained that Vicente, a *pardo* slave between thirty-five and forty years of age, suffered such a strong cholera attack that "the sick man had no pulse, no heat [in his body], no ability to see" and felt a strong pressure in his chest and heart.[319] Vicente also described great thirst, pain in his arms, back and legs; he said he was "very scared and asked for people to not leave him alone."[320] For Teixeira, "except for his ability to think and talk, it was as if we were looking at a dead person."[321] Thanks to the lime juice treatment, however, Vicente felt much better after taking one ounce of the juice every five minutes. Yet, those in the popular sectors who did not follow the common prescription of small doses of lime juice at a time were accused of hurting themselves. For instance, in the municipality of Victoria, individuals from the popular sectors were blamed for dying after "drinking an entire cup of lime [juice] at once when the prescriptions advise one spoonful at a time until the disease disappears."[322] This and other examples showed that for the population experimenting with healing methods was a matter of survival, and they would use any means available to guarantee it.

Public engagement in experiments with healing practices during the cholera epidemic showed that the populace considered varied alternatives to protect their health. Those included experimenting with allopathic medicine and expecting governmental support in times of epidemics. Consequently this analysis departs from scholarly arguments that look either at the poor as constantly resisting official medicine or the state as constantly exercising its power over the population because they tend to prioritize the analysis of public health goals to the country without regarding instances of negotiation.[323] For instance, whereas in Garanhuns in December, 1855, forty

people were reported to survive cholera through official practices, such using macella tea, on January 31, 1856, a dweller from the parish of Pão d'Assucar in Pernambuco explained how the high death toll among the population led many to seek out their own alternatives against cholera.[324] According to this citizen, common allopathic uses of vinegar, garlic, macela tea and ginebra beverage were "poison" to the people because of the weather in the region. He explained that "the population, seeing the uselessness of these theories recurred to their imagination and abandoned *suadores* (substances that caused profuse sweating recommended by physicians) because they caused certain death, and instead invented" multiple beverages to deal with cholera.[325] These included mixtures of sugarcane spirits with water, sugar and hume stone to stop diarrhea, and enemas made of egg whites, hume stone and starch. According to him, the population considered these procedures successful. The population also realized that offering unlimited water to the sick, even if they kept evacuating it, helped many survive cholera. The citizen himself claimed he managed to save a son after his three others died because the general recommendation was to not offer victims a lot of water.[326] Ultimately, the population was forced to find responses because "many physicians arrived thirty days later with medications and aid, but that was already too late" for the number of victims the parish had already lost.[327] Even though the population often decided for themselves when and how to treat victims, they still expected some type of governmental support, be those in the forms of medical practitioners (allopathic or homeopathic), medications or food.[328] Yet, when the state understood popular interpretations of health protection to be detrimental to the management of the epidemic, it resorted to manipulation tactics.

Part 2: Manipulating Epidemic Outcomes

This second part explores the role of statal manipulation in state relations with the populace for the maintenance of social stability amid the epidemic. It examines how the state pursued ways to get the population to adhere to its methods of health protection. In particular, I look at the issue

of contagion, fear and popular healing in local and national strategies against cholera. For state and public health officials it was imperative that the population believed that cholera was not contagious, that fear and misconduct (sexual or foodwise) could increase one's vulnerability to it, and that official methods of healing were the only ones the population should utilize to prevent or treat cholera. The use of deception to educate the populace on the non-contagious nature of cholera and to get them to discredit popular healers indicated statal attempts to secure the legitimacy of their claims and promote social order.[329]

To protect social stability, the state believed it needed to convince the population that cholera was not contagious. Further, they wanted to impart greater responsibility on the people regarding prevention. Contagionists and anticontagionists in the Atlantic world competed for decision-making supremacy in response to epidemics.[330] For the former, microscopic animals or *animalculae* were the possible agents of infectious diseases, and overall they believed that the bodies of a sick person produced seeds that could cause the same disease in a healthy individual.[331] Yet, for anticontagionists in general disease was caused by "filth" and should be dealt with through sanitation and removal of foul odors.[332] Brazilian state officials then decided to emphasize the anticontagionist theory among the populace because it placed the responsibility of preventing cholera not only on the state, but mostly on the people. For example, the October 23, 1854 ordinary session of Recife's municipal council exhibited its members adherence to anticontagionist rhetoric to deal with the popular sectors. The council had received an ordinance from the provincial presidency for the council to fulfill the measures the commission of public hygiene had established to "prevent the development of any infection or contagion that might be fatal to the inhabitants of this municipality."[333] Yet, they also decided to develop their own as suggestions for the provincial government:

to publish in the most read publications of this capital, and demand to be read in the different parishes of the province, the medications and hygienic measures sanctioned by reason and experience that can disable the disease; and inculcate in the population the idea that it does not seem to be contagious, but rather, that all deviations of hygiene and morality, fear and hopelessness are the main reason that attract this terrible scourge.[334]

As the municipal council planned to convince the population of the "real" causes of cholera, it transformed health protection into a matter of social order because it turned cholera into a disease stemming from "misbehavior" and lack of emotional control.

For the state it was important that the population believed that controlling one's fear of it could prevent cholera for social stability. In November, 1854, by seeking to address the "fear that has been gaining some spirits" in Pernambuco due to the growing threat of cholera in Brazil, Dr. Fonseca published his translation of a Parisian magazine article about cholera treatments.[335] In sharing information about varied healing methods to the different stages of cholera- from mild (known as cholerine) to grave (algid or fulminant cholera)- the article sought to better prepare the population to deal with the disease and tackle the likelihood of fear that could overtake them. Fear should also be prevented during the recovery period, indicating the possibility of trauma among the convalescent who could indulge in "excessive care" by changing their habits, a detrimental reality that "weaken the organism and consequently reduce the degree of resistance one needs to have to overcome the effects of the epidemic disease."[336] Even those who caught cholera more than once should not "fear it too much," especially in its mild form. Instead, as the recurrent victim healed, he or she should "set aside all superfluous precautions and return to their habitual life with confidence and tranquility."[337] Indeed, the *Annals of Brazilian Medicine*, a journal published by the Imperial Academy of Medicine from Rio de Janeiro, shared debates from Europe regarding the role of strong emotions in causing predisposition to cholera in 1854.[338] The general belief was that emotions like fear contributed to "a moral prostration that predispose to the disease," meaning that to be concerned with cholera could increase one's predisposition to it. The best prevention thus involved finding a

balance between serious and leisure activities while avoiding "any form of immoderate excitement."[339] This way, along with physical precautions, such as diet, individuals would be less likely to contract cholera. At the same time, national preventative measures reinforced that the anticontagionist argument was not about evidence per se, but about stability.

Official attempt to undermine the popular belief in cholera contagion contrasted with the uncertainties and measures taken nationally showed how the politics of prevention were intertwined with governmental anxieties. Indeed, when the central council of public hygiene recommended preventatives measures against cholera to the minister of imperial affairs, Francisco Gonçalves Martins, in 1852, it acknowledged that despite "the controversy between the scientific minds regarding the transmission or not of the disease," the state should "consider it as contagious […] and this way, take the necessary measures" based on this conclusion.[340] The council explained that doubt over the transmission of cholera required precaution, suggesting the need for a hybrid system of prevention that regarded both contagionist and anticontagionist measures. Similarly in Recife in 1854, the municipal council also supported and provided suggestions regarding quarantine measures, which were considered contagionist.[341] Further, the uneven spread of cholera from the northern province of Grão-Pará to Bahia and Rio de Janeiro in 1855, made physicians in Pernambuco reconsider theories of disease that mainly focused on its spontaneous development or atmospheric conditions. In recounting the "pathway of the disease" through sick people or vessels with victims that arrived in different port cities, the then president of the interim public health commission, Dr. Cosme de Sá Pereira, who was a self-proclaimed anticontagionist, demonstrated his change of heart about cholera transmission: "contagion is, to me, the form of [cholera] transmission."[342] Meanwhile in 1855 São Paulo, Dr. Joaquim Floriano de Godoy Junior, despite also reflecting on the uncertainty regarding cholera transmission, co-signed the central council's opinion on contagion by claiming that "persuading the people regarding the non-contagiousness of

the scourge is a duty of the authorities, but they must act [against cholera] as if convinced of the opposite."[343] Regardless of the way contagion was considered among officials in contrast with what the population should believe, medical considerations about fear sought to hinder negative social outcomes during the epidemic.

Preventing popular fear for social stability meant preventing added difficulties in the management of the epidemic. On January 22, 1856, Dr. Carolino Francisco de Lima Santos lamented the role of popular fear in shaping poor decision-making among some physicians and health officials amid the epidemic in Pernambuco.[344] An anticontagionist, Dr. Santos criticized the medical sector for being "weak" after complying with popular expectations over quarantines as they gave into the "children of fear" while "sacrificing" scientific principles for "these rebel decisions originating from the ignorance of the populace."[345] Dr. Santos also commented on the consequences of popular terror in different northern cities caused by the ostensible false understanding of contagion, seeking to convince the provincial government of Pernambuco of the threats the disease could cause to its social stability.[346] These included the abandonment of victims to fend for themselves, of bodies on streets, and the denial of burial grounds to the dead in Pará and Bahia that signaled times of great lack of cooperation and social disorder.[347] However, fear was a manifestation of popular awareness of their vulnerability, and made them seek alternatives to protect their health and lives.

When the death rates in Recife drastically increased between February and March of 1856, the rise of a slave healer to prominence exemplified how popular fear reflected their pursuit of answers to protect their health.[348] Yet,the success of a slave man's popular healing methods was something officials were not willing to support.[349] Hence, some reflections come to mind when comparing the acceptance of the indigenous man's lime juice cure in 1855 Amazonas to the manipulative tactics of Pernambuco's government to have the slave healer Pai Manoel's method

disregarded.[350] Scholars who have examined the rise of Pai Manoel in Pernambuco for claiming he had a cure for cholera, and the crisis that ensued, have framed it as a conflict between official and popular healing methods.[351] The healer's rise and fall from prominence however exhibits the different interpretive frames over health protection that led to governmental attempts to manipulate popular opinions about him.

Pai Manoel symbolized the instability that the state was trying to avoid. A comparison between him and the indigenous man from Amazonas reveals that the state welcomed the latter's healing practice because he did not threaten the sociopolitical hierarchy like Pai Manoel did. First, knowledge of the lime juice treatment, even though being allegedly and independently performed in a village in Amazonas, passed through a state triage before being incorporated as a valid way to cure cholera. Second, it took a clergy member to visit the village to find out about it and report to the president of the public hygiene commission of Pará, demonstrating that there was no popular motivation to make him known as a discoverer of a cure for cholera. In Pai Manoel's case however, his rise to prominence came after the population and some members of the elite pressured the government into acknowledging his method.[352] Pai Manoel's concoction, despite being readily available for purchase and even published in newspapers, also never experienced any trials by Pernambuco's commission of public hygiene.[353] Lastly, differently from the indigenous man who was not invited to perform treatments in official institutions, Pai Manoel was officially invited as a healer at the navy hospital which made physicians of the public hygiene commission interpret this provincial decision to be demoralizing to allopathic medicine.[354] This caused an unsurmountable chasm between the commission and the provincial presidency, leading the commission members to abandon their positions *en masse* while leaving the province without a central institution of health during the worst period of the epidemic.[355] Consequently, health officials and the press saw Pai

Manoel's popularity as a problem because it reflected the state's lack of control over how the administration of the epidemic should take place.

Pai Manoel's meteoric ascendance in February 1856 reflected how the general disbelief in allopathic medicine fueled both the population's desire to find their own responses to cholera and their potential impact on the political hierarchical structure of public health in Recife. On March 1, 1856, an article from the *Liberal Pernambucano* daily in Recife associated Pai Manoel's popularity to the provincial abandonment of its duties to the poor, and demonstrated the great criticism to which the provincial government was subjected when permitting him to perform his healing in the city.[356] When "terror and hesitation gained ground among the scared the population" and physicians "confessed that they did not know how to fight this scourge," the article confirmed that Pai Manoel surged "with some beverages that were quickly claimed to be remarkable" against cholera. These beverages, amid that moment of terror and despair, made the *povo* "hopeful […] by believing [Pai Manoel] would save them from the [cholera] danger."[357] In trying to justify the ascendance of Pai Manoel among the population as an emotional decision, the then president of the public hygiene commission, Dr. Fonseca, also argued that it happened because Pai Manoel managed to save a person who was actually suffering more from fear of cholera than from the disease itself, consequently making him "shift from a door keeper (…) into a doctor overnight."[358] The prioritization of popular choices to protect their health was perceived to be irresponsible and deadly, especially because there was no investigation regarding the utility of his concoction.

Because he affected official claims to health protection, Pai Manoel not only represented threats to social stability but also to the relationships among authorities themselves. Indeed, Dr. Fonseca denounced the provincial president, Mr. José Bento da Cunha e Figueiredo, to the Central Council of Public Health regarding what he considered to be a violation of national health laws that prohibited the practice of medicine without a license.[359] Further, he also sought to prevent the

demoralization of the commission members among the population and "the blacks" whom he argued had begun to behave disrespectfully against physicians on the streets by trying to protect Pai Manoel as he "went from home to home" healing cholera victims in Recife.[360] As Mr. Figueiredo justified his actions to the minister of the empire, however, he demonstrated that his intention was to convince the population that Pai Manoel was a fraud while pretending to accept his healing methods publicly to prevent social disorder.

Figueiredo's covert plans illustrated that engagement in health matters were also made of tensions over legitimacy. Pai Manoel's rise to prominence represented the racial and class disparities that made the free poor and the enslaved substantially more prone to dying of cholera than the elites, a reality that put the provincial government and physicians on the spot as the populace increasingly discredited allopathic medicine to fight the disease.[361] Mr. Figueiredo's decision to plot the downfall of Pai Manoel, rather than directly confront potential popular uprisings in case he disregarded that healer, displayed how uncertainties about cholera made the government perform compliance, even if manipulatively, to the popular sectors' wishes. In seeking to avoid direct confrontation, Mr. Figueiredo demonstrated that the state was indeed very aware of how the poor were experiencing cholera and demanding solutions that, if not addressed, could turn into a threat to social order.[362] He explained to the minister of imperial affairs that when arranging a meeting with the healer he did so "because I wanted to avoid a popular mutiny, not because I believed in his healing powers," indicating his willingness to feign negotiation over blunt discreditation of the healer.[363]

Deception could guarantee the supremacy of official goals toward health protection. In this case, Pai Manoel needed to fail so that health officials, who also were failing in their treatments, would not be totally demoralized and delegitimized, especially because they were the main representatives of the government during the epidemic among the population. By making Pai

Manoel fail by himself, Figueiredo could better guarantee that the population would discredit the healer too.[364] Mr. Figueiredo's plot successfully manipulated the outcomes of Pai Manoel's treatment after he told the inspector of the navy hospital to give Manoel only patients who "were diagnosed as incurable."[365] Further, Figueiredo had also arranged an agreement for that director to call the police as soon as his patients, three African men, died to prohibit Manoel from continuing performing his treatments on anyone else. This happened between February 20 and 22. Later, because Pai Manoel violated that order, he was arrested on March 12 and released five days later with no sign of popular protest being discussed in the press, which indicates that the discrediting of his healing methods probably succeeded.[366] According to Dr. Fonseca, Pai Manoel was illegally arrested because the charges of "administering medications to cure cholera and going to the house of patients to treat them without authorization, [thus] infringing municipal legislations," besides the "explicit demand for him to not administer medications he invented" did not demand arrest under the law.[367] The municipal legislation simply required the infringer to be fined 100$000 for the first incidence, and 200$000 plus fifteen days of jail if caught a second time.[368] Consequently, by manipulating the outcomes of Pai Manoel's healing authorities sought to make the population believe official narratives over best practices to protect their health and lives during the epidemic. Yet, the population would prove governmental expectations wrong. Even if they eventually moved on from Pai Manoel, fear of cholera would make them avoid exposure at all costs. That decision represented two things: the failure of the anticontagionist rhetoric, and the rise of social instability based on the disruption they caused to the maintenance of basic services.

Part 3: Labor and the Protection of Popular Health

This final part examines the consequences of different interpretations over health protection between the state and the people. The coalescing of ideas over health protection not only contributed to official decisions over preventative methods (such as quarantines), a potential cure for cholera

(such as lime juice), and manipulative tactics regarding healing, but also displayed the intrinsic role of public engagement in the outcomes of the epidemic administration in Pernambuco. On one hand, there was the state idea that to protect health one needed to control their emotions, improve their habits and follow governmental guidelines. Public sanitation was also critical for epidemic management. On the other hand, there was the population looking for alternatives to lower their chances of catching cholera. In both viewpoints there was the critical aspect of labor. To maintain sanitation and contain the epidemic, the state needed people in charge of burial works and transportation services for goods, physicians, and medication, for example. Yet, these same occupations represented the risk of contracting cholera because they made the population more exposed to the disease. The impact of mortality among the poor thus directly affected the official administration of the epidemic because the state relied on the population, the very potential victims, to provide basic services during the crisis.[369]

The population's fear of cholera greatly influenced the local outcomes of the epidemic. As the disease invaded the interior of the province through land after seven months of the invasion in Bahia, it shook the certainty of public health officials and other authorities regarding the vulnerability of Pernambuco to cholera through the port.[370] Because its presence in the interior caught officials by surprise, it left the population having to make decisions that directly affected the outcomes of the epidemic. These included their decision to flee their towns and parishes *en masse* and to not provide work like burying the bodies of cholera victims or transporting food when they felt unsafe. Fear of cholera worked as a preventative measure. Its consequences for the management of the epidemic then made the government seek solutions that ranged from providing direct support to places outside Recife to resorting to coercion when the population stood firm in their decisions to do what they felt was best for them.

Ironically, though, fear was a byproduct of governmental plans that prioritized the capital for prevention and containment of the disease. Indeed, the sole attention to the coast came from officials, health and otherwise, understanding patterns of transmissibility via maritime route in Brazil that also represented the national public health coastal focus on disease prevention and control. In Pernambuco, provincial authorities had thoroughly prepared for a potential cholera invasion through Recife's port that prioritized health services to its popular sectors. According to the public hygiene commission, the provincial president José Bento da Cunha e Figueiredo had initiated a task force six months prior to the arrival of cholera in December 1855 that included four physicians, one per parish in Recife, who would be responsible for "administering clinical services and treatment of indigent people struck by cholera."[371] Along with the commission, the task force decided that Recife would be divided into twenty-six districts; that each parish would have a provisory hospital with a crew made of doctors, servants and nurses; and that basic services, such as food transportation and access to medications should also be facilitated by governmental regulation.[372] The city was already under quarantine, while the government "activated" its cleaning services, and put in place home inspections and publications containing treatment advice both at the official and public levels.[373] Yet, none of the public health plans health officials reported contemplated the administration of the epidemic outside the capital.[374] By greatly overlooking the interior from where cholera originated in Pernambuco, the provincial government contributed to much despair in the administration of the epidemic both outside and inside Recife.

In trying to protect their lives, the populace impacted the administration of the epidemic as their fear led to mass flight in the interior, which swiftly spread the disease throughout the province. When cholera invaded a parish in Garanhuns county on December 18, 1855 and spread to nearby parishes and counties the population "horrified, migrated to the city of Victoria" because of the "frightening mortality rates in that place."[375] Soon, migrants in Victoria began to die with cholera

symptoms by mid-January, 1856, leading to another mass migration throughout the entire province, including to Recife.[376] The situation in Victoria was so dire that physicians whom the provincial government requested to go there to provide services declined to do so.[377] Further, because all efforts were placed in preventing cholera from entering Recife, the commission acknowledged the impossibility of reverting the plan to the interior, leading to last-minute decisions and subpar health support to the poor outside the capital.[378] Criticisms to the provincial government abounded in the press because of its performance during the worst epidemic independent Brazil had faced until then.

Press reports about popular fear of cholera demonstrated social expectations toward the government that were directly related to the destitution of most of the population. For instance, in January, 1856 critics of the government attributed the provincial president's inaction to his lack of dignity as "the terrible enemy slowly approaches" the province, which had not been prepared to deal with cholera.[379] They criticized the lack of measures at the provincial level that left the majority of its population unprotected because all efforts were focused on Recife.[380] In March 1856, the priest Antonio Marques de Castilho from the countryside parish of Rio Formoso begged the government to help his parishioners because of the "desolation and abandonment" in which they were found by requesting the provincial president to send them physicians and medication.[381] Meanwhile, a resident from the town of Brejo published the consternation of the population in a daily because of the inaction of their municipal council towards cholera preventative measures.[382] According to that resident, the population was terrified "because cholera, for a long time, has been surrounding us through Garanhuns, Buique, Papacaça, Altinho and Raposa" with no apparent measures taken to prevent it at the local level.[383] The destitution in Brejo municipality provided a glimpse to the reasons that made the population need governmental support amid the epidemic. In January, another resident explained that the medication lot the government had sent there was not enough to maintain their health because of the extreme poverty among the people who had "not

even one *real* to buy what was necessary" for them.[384] He indicated that the residents could not feed themselves during the epidemic and requested provincial help that included not only doctors but also money, since "these people live in complete nudity, [or] only have the clothes covering their bodies."[385] Yet, because municipal councils were subordinated to the provincial government, they held limited autonomy regarding public health decisions locally.[386] The poor then often resorted to their own means of protection, which included not working on services that could expose them to cholera.

By overlooking cholera in the interior, the government increased its dependence on civilian laborers and its challenges with burial works and sanitation outside Recife. A meeting among the doctors of Recife's task force held between August and September, 1855 to set up the crews of free laborers and the enslaved who would be responsible for both the transportation of the sick and burials of cadavers only considered services in that city.[387] These services should follow adequate protocols of hygiene that were not implemented in the interior.[388] For this reason, when cholera hit Victoria in January 1856 and most of the people in charge of burials began to die, the population "quickly manifested great repugnance against that job" since they equated the handling of corpses with the risk of contagion.[389] Consequently, cadavers "in different degrees of putrefaction" remained exposed for days in people's homes and the cemetery. Similar circumstances happened in other provinces, such as in the village of Itabaianinha, Sergipe.[390] As the population fled to different parts of their respective provinces, they would leave bodies of victims unburied on their pathway. By February in the municipality of Goiana, Pernambuco, to where migrants from Nossa Senhora do Ó fled, burials had to be suspended due to the popular consternation with the death of multiple workers after they had buried two victims of cholera.[391]Among them there were six brick layers and the cemetery servants who had built a catacomb near another that contained the cadaver of a cholera victim.[392] This situation led the municipal judge Dr. Caetano Estelita Cavalcante Pessoa to demand

the catacombs to be set on fire.[393] Food supplies were also directly impacted in Pernambuco when those responsible for transportation and supply stopped providing services.

When food shortages began to occur the poor displayed their importance for the local markets as the they tried to prevent exposure to cholera by avoiding traveling as carriers. Indeed, citizens began worrying about the possibility of food shortages even before the epidemic began because of their awareness of cholera's proclivity to attacking the poor and their presence in the food economy. Using pejorative terms, on December 7, 1855, a man wondered about the likelihood of many dying of "the plague and hunger" in Recife with the potential vanishing of "those bumpkins that bring food" to the city.[394] By February, 1856, the effects of labor shortage began to show in places like Victoria as the "populace from the country began to run away" after finding out that "the plague is contagious" probably because they saw the high death rates in the area.[395] According to the citizen, Victoria's public market was practically empty, with only twelve livestock and three cargoes of flour available on a Saturday of February that were "split by the people who lived in that city."[396] Even to send out news of the food shortage to Recife was difficult because "there is not one person who wishes to deliver [the letter] because of the fear of dying on the way" to the capital.[397] The same problem happened with the transportation of food from Recife to the interior since there had been "an absence of carriers to take foodstuffs and other objects."[398] This situation also required the province of Alagoas to send food, livestock and money to the Pernambuco's parishes of Garanhuns and Papacaça in March likely because of the proximity of Alagoas capital to those cities in comparison to Recife.[399] Between February and March, the shortage of livestock in Recife caused a rise in meat prices and finally the actual absence of the product for many days in the city's butcher shops because, even though the interior was allegedly full of livestock, "the country people, terrified with the plague, do not come down [to Recife], and graziers maintain the cattle in their farms."[400] This made Mr. Figueiredo contact plantation owners near Recife to sell

some of their cattle "for a reasonable price" to alleviate some of the shortages caused by carriers who were not willing to bring meat from Pernambuco's interior graziers to the city.[401] Growing frustrated with the outcomes of the epidemic, the province began demanding rather than requesting the populace to provide services.

The statal use of force to get the poor to provide services reflected the social clashes caused by different interpretations of health protection amid the epidemic. Besides providing burial services or food transportation, members of the popular classes worked as servants in hospitals, such as washers of choleric patients' clothes, and were also responsible for the transportation of physicians and medicinal drugs to places affected by cholera.[402] However, the refusal of many to go to places where cholera was ravaging, or to bury cadavers, often led the police to force them (or at least try to force them) to work. For example, on February 17 three individuals, who had left the Santa Rita sugarcane plantation (located a mile away from the coastal parish of Igarassu) to go to Recife after three people had died of cholera there, were "forced by [Recife's] police to take medications and foodstuffs to Paudalho" which was suffering with the epidemic.[403] On their way to Paudalho, however, two of them abandoned the goods and "went in hiding while they awaited their other friend" to return to Igarassu.[404] After their return, two of them soon died of cholera. Because no one wanted to do the burial of cholera victims in that parish, "the police demanded an elderly man to do it, whom a few days later also contracted [cholera]."[405] Similarly in Bahia, soldiers from the imperial marine corps were having to perform burials because of a shortage of people willing to work.[406] When forcing people became too complicated, the state found ways to have transportation services restored by seizing property from muleteers themselves. The ultimate decision to seize private property showed the escalation of conflicts over health. At the center of the issue was fear, both a preventative reaction to the epidemic and a problem for its management.

Governmental seizure of private property showed how health intersected with politics and the economic instability of the country. In February, the press denounced the governmental decision to authorize the police to seize the horses from muleteers coming to Recife "due to the urgent necessity of the transportation of livestock and medicinal ambulances to the interior."[407] Aware of such problems, as soon as they saw a cavalry soldier, many of these muleteers from the interior would "take off running," which turned into an issue because it scared away those willing to transport food and medicinal drugs to and from the capital.[408] A young muleteer was even spanked by a soldier in front of several witnesses on February 11 at the Jail Street because he "did not want to give away his horse without the presence of his father."[409] It is possible that the government resorted to seizing horses to have people from Recife ride them because they would have to return to the capital and report on their service, thus avoiding people skipping the coerced labor, like the men who escaped back to Igarassu. Indeed, the shortage of food in Pernambuco reflected the consequences of cholera throughout the empire. Trying to understand what was happening, on October 9, 1857, the emperor sent out a notice to provinces requesting information about the food shortage, the rise in foodstuff prices that were affecting the population and general information about the diet of the poor.[410] Among other reasons, presidents from Sergipe, Ceará, Bahia and Paraná, for example, directly associated cholera with the populational losses among the free and enslaved that were affecting the national production of foodstuffs.[411] Pernambuco and Bahia were even mentioned as the biggest purchasers of Ceará and Piauí's meat products during that time because of their local shortages.[412] Considering that between 18,000 and 35,000 people were reported to have died of cholera in Pernambuco, it is clear that public health crises held a clear impact on the health of the state.[413] Thus, their decisions to work or not during such crises, to demand preventative methods and to experiment with healing practices directly influenced the outcomes of the epidemic administration and their subsequent consequences to the empire.

Conclusion

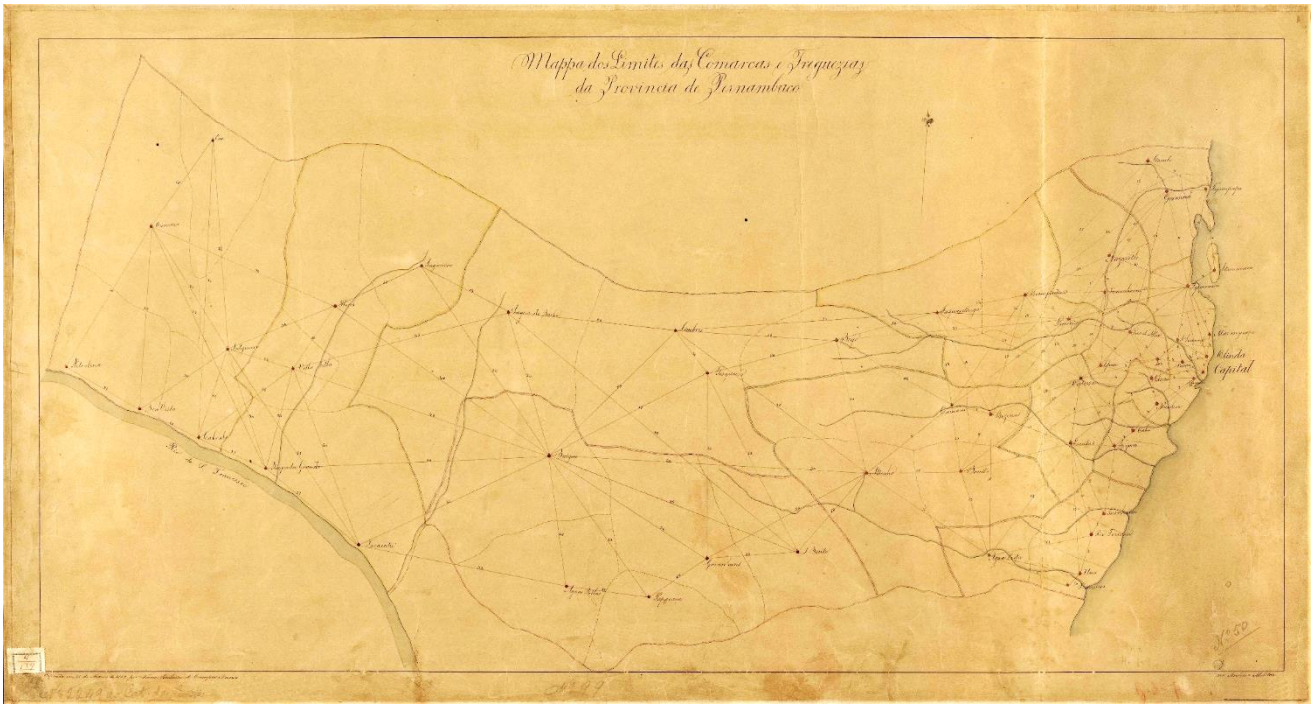
Public engagement played a critical role in the politics of health during the cholera epidemic. It brought together varied interpretations of health protection and demonstrated that the management of the epidemic was imbued in political matters. The networks of interdependence between the state, health officials and the population shaped how official decisions related to processes of negotiation, manipulation and outright use of force used to benefit state goals toward social stability. Yet, the uncertainty about the disease created an array of opportunities for actors from varied backgrounds to interact and pursue responses against cholera, and in the case of the state, against what it could cause to the social fabric. This is because epidemics could lead to great social destabilization caused by popular fear and the consequent actions coming from their attempts to protect their lives.

Epidemic management was intertwined with questions of political legitimacy. To ensure that social stability would not be affected, the population needed to follow the guidelines from the government. To do that, health officials' tactics to incorporate what they believed to be popular expectations into cholera prevention served as a compromise that could increase popular support to official practices of prevention. Incorporating popular healing methods and manipulating understanding of the contagiousness of the disease also worked toward the goal of keeping popular fear and panic at bay. It is interesting to notice though that the populace did not automatically resist official practices, but rather made use of them if they believed it could protect their lives. Even with the failure of manipulative tactics and the consequences to the health services in Pernambuco, the cholera epidemic showed that the population maintained and expected a relationship with the government if they believed it could serve their interests. The politics of health during the epidemic was thus marked by public engagement. After that, changes in economic patterns and scientific

investigations would shift the empire's purpose toward public health, creating divisions between state and health officials and transforming public engagement into the answer for its survival.[414]

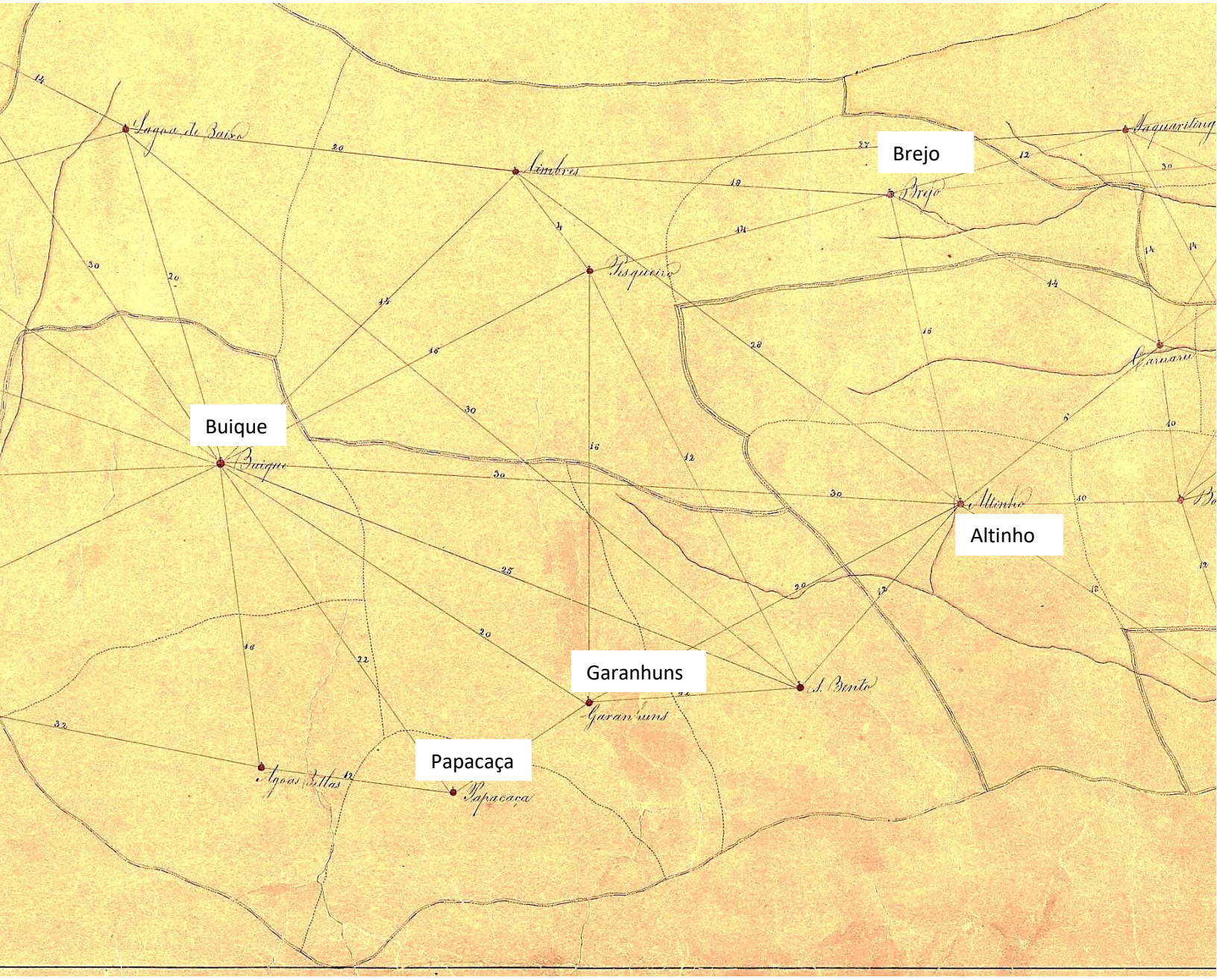
Appendix

1. *Figure 2: Mappa dos Limites das Comarcas e Freguezias da Provincia de Pernambuco, Archivo Militar, 1859 (Biblioteca Nacional Digital). (Zoomed-in Versions below)*



Parishes or Municipalities Mentioned in Sources During Cholera Epidemic- 1

Parishes or Municipalities Mentioned in Sources During Cholera Epidemic – 2



CHAPTER 3

"Who Must Care for Public Health?"[415] The Local Economy in a Nationalized Public Health System

There are public lazarettos,
And hospitals of charity
But in the streets of the city
Our brothers, in disgrace
Die abandoned!
...
We have public hygiene,
The vaccine they inoculate
But the plague ruins us
Through the woods it wanders
And the people it decimates![416]
-Marcello Zeribanda

Introduction

In 1854, a poem published in the *Liberal Pernambucano* illustrated popular frustrations with Brazilian politics of health. Written as a conversation between two friends, the interlocutor's name referenced his proclivity to punishing, at least through words, since "zeribanda" was a type of whip.[417] The issue at hand was the inadequacy of public health works both in terms of treatment and disease prevention. The failure to prevent the deaths of citizens on the city streets and from "the plague," meaning smallpox, coincided with a period of nationalization of public health. It was in the 1850s that the empire created the first office in charge of regulating public health services in the country.[418] These regulations and their reforms throughout the 1850s came to show that the meaning of health protection for the central government did not necessarily coincide with local health needs.[419] Zeribanda's complaints attested to that. There were offices in charge of public health works, but their services seemed inexistent. Smallpox vaccination also showed little effectiveness

against the disease, which heightened popular distrust in it.[420] These issues represented transformations stemming from the nationalization process in which the public health focus on health protection via disease prevention was replaced by a statal focus on disease treatment.

This chapter examines the new dimensions of public engagement in health politics that stemmed from the economic impact of the nationalization of public health between 1857 and 1870. It explores how the different interpretations in health protection from the central government and local public health affected the institution and the community in which it was immersed.[421] In particular, I focus on the disparate viewpoints of disease treatment vs disease prevention that defined the challenges of public health during that time.[422] As explored in chapter one, the public health tenet of health protection to provide healthier laborers for the economy was based on preventing diseases. This should happen via public hygiene works, smallpox vaccination and medical instilling of good habits that not only would prevent illnesses but also generate a moral society. With the creation of a central, or national, office however we see a shift in focus to disease treatment, especially after the cholera epidemic. For disease treatment, I mean the government's concern with healing by sending out medicinal drugs to places affected by outbreaks while it did not create any policies to improve health or prevent those outbreaks from happening. Cuts in funding, in staff members in provinces, and the focus on foreign diseases to the detriment of endemic ones represented a new perspective of health dominated by statal decisions that went against the expectations of public health officials.[423] This reality resulted in local public health scrambling to fulfill any work and looking at the population as possible service providers.[424] Further, their bodies and the enslaved's also became important for the maintenance of vaccination services when the local vaccination office began to struggle to receive vaccine supplies from the national government.[425] Finally, the populational state of unhealthiness and the constant disease outbreaks during that period guaranteed a good stream of revenue for the pharmaceutical market.[426] This

indicates a shift in national economic priorities that spoke to the scientific and economic contexts of the 1860s.

The economic and scientific context of the time suggest that the government came to see disease treatment as economically more beneficial than disease prevention. Neglect toward public health coincided with two transformations: the growing anxieties with the national racial composition and with the boosting of private pharmaceutical enterprises that began to take place in the 1850s.[427] In regards to race, by the 1860s officials, physicians and intellectuals were already debating alternatives to the looming end of slavery in Brazil.[428] Within the debates toward a transition to wage labor, concerns with racial origins and racial degeneracy shaped opinions about the lack of good quality citizens among Brazil's poor black and brown population to satisfy national growth. The most dramatic solution to this puzzle involved a plan to replace the country's slaves and working class with immigrants.[429] This shows that the idea of investing on health protection for labor was no longer the priority of the state. The main focus of the time was with the health of the port, which clearly indicated a concern with the export economy.[430] Ironically, by not investing on the growing population's health the state benefitted the rise of the pharmaceutical market. This belonged to a process of economic diversification initiated in the 1850s because of the end of the slave trade that released merchant capital for investment in other areas.[431] These economic changes lead to questions about the extent to which popular illnesses served broader national economic goals, even if unintentionally. So, rather than look at public health problems as an issue of state capacity, the public health challenges of the 1860s and 1870s show they were a product of concerted decisions that saw greater economic gains outside the realm of disease prevention.

What was the impact of turning health protection into disease treatment? I argue that it directly affected public health because it expanded the possibilities of engagement between the state and the people. The sick populace became coveted clients of the pharmacists (small business

owners) because the provincial government purchased the medications to heal them when outbreaks took place. At the same time, members of the popular sectors – who in this chapter are made of workers in transportation services, nurses and vaccinators without degrees – were also targeted for health-related services or as sources of smallpox vaccine fluids to alleviate the neglect toward disease prevention.[432] I divide this analysis in two parts: part one focuses on the local attempts to keep disease prevention afloat. Part two examines the transition to disease treatment and its socioeconomic implications.

Part 1: Engagement in Public Health: Labor and Smallpox Prevention

This first part examines the consequences of the public health nationalization for the maintenance of disease prevention as a public health tenet. It examines the impact of legislative changes that made public health practices of disease prevention heavily reliant on public engagement. This happened in two fronts: first, through the need for members of the popular sectors to provide short-term contract labor, and in smallpox vaccination services. Contract work usually involved transportation services, and the need for such services gave laborers some leeway in negotiations. In regards to vaccination, public engagement took place in the form of public health officials' creating greater opportunities to have non-experts in that line of work, creating training for lay people, and depending on the bodies of the vaccinated for fluids used in vaccines.[433] Problems with disease prevention spoke to great financial and personnel impediments originating from the centralization of public health, particularly if we consider that by 1857 it only counted on three people per province – the inspector of health, the provincial vaccinator and the health inspector for the port.[434]

Limitations in staff made public health officials count on public engagement to secure the prevention of disease threats coming from the sea. Because the public health inspectorate only had one employee (the inspector of health) any necessary services in terms of epidemic control and

healing required the state to hire private workers under short-term contracts. For example, during an outbreak of yellow fever in Recife's port between May and September, 1858, the need for employees to cook, heal, and transport sick seamen to the Pina island hospital was fulfilled by poor men.[435] The hospital itself was a provisory lazaretto that was activated when epidemic threats appeared and deactivated shortly after a public health official declared the epidemic or the threat of a disease to arrive by sea to be over.[436] During that outbreak, the hospital counted on nurses, an administrator, a physician, a cook, and transportation laborers such as rowers and their boat master.[437] This reality put them in more direct contact with officials and increase their chances for labor negotiations.

The difficulties public health faced permitted heightened success in negotiations between officials and poor laborers during moments of health threats.[438] On May 1858, the health inspector Dr. João José Ramos submitted a successful request from the nurses to the provincial presidency to receive their payments every ten days "because, since they are poor they need means to provide to their families."[439] Their poverty was attested in the hospital administration's responsibility to feed them and potential problems to do so because of the shortage of goods that had increased prices.[440] Nurses in Brazil have been amply studied through the charity-based institutions from the Holy House of Mercy via the French organization of the Sisters of Charity who began arriving in the country around the late-1840s.[441] Outside health assistance however it was more common to find male nurses working in military and provisory hospitals who were usually trained on the job, and sometimes were chosen "randomly" to do so since formal education in nursing did not begin in Brazil until the 1920s.[442] Their importance in public health also concerned their multiple duties besides nursing, such as cooking or bookkeeping.[443] Yet, nurses were not the only ones needed at the lazaretto. During the yellow fever outbreak of 1862, the only whaleboat available to transport the physician to the vessels for inspection of the sick, and back to the hospital with victims of the

disease drastically increased the workload of the lazaretto's physician and boat crew.[444] The rowers explained it was fine for them to work more as long as they were paid more. Further, they also demanded to be paid every fifteen days.[445] Finding the requests to be reasonable and cheaper than having to find funds for a second whaleboat, Dr. Ramos suggested the presidency for the rowers (there were four of them) to be paid 2$500 per day instead of the 1$500 they were making.[446] The boat master would also receive a raise, from 3$000 to 4$000 per day of work.[447] This was a substantial amount if we compare it with the salary of the health inspector, which was about 8$333 per week.[448] By May 19 the presidency had approved the requests from all the employees and decided to raise the charges for treatment of yellow fever victims to 2$500 per day per person from the original 2$000 and this way build resources for the new expenses with food and labor.[449] Similar circumstances took place inland.

Prevention services that required the analysis and containment of outbreaks depended on successful negotiations with providers from the popular sectors.[450] During epidemics and sporadic outbreaks the inspectorate offered suggestions to the presidency about physicians who could be nominated to travel to affected areas.[451] However, the lower pay the presidency offered often made physicians decline the requests, forcing the inspector himself to travel, which required him to hire coachmen and follow these workers' preferences on pay or travel time.[452] For example, on January 7, 1862 the health inspector Dr. Ignacio Firmo Xavier communicated with the presidency about his delay in leaving Recife to the parish of Nossa Senhora da Luz during a smallpox outbreak only at 4:30pm "because no coachman wanted to travel before that time."[453] At times the inspector failed to find transportation because riders were not willing to get paid less than their asked price to travel. For instance, attempting to rush to Victoria in March, 1866 due to an unknown outbreak, Dr. Xavier was unable to do so because "car renters are charging a very high price," and his inability to find anyone who charged less forced him to "try to keep looking for ways to get transported" to that

city.[454] Despite a higher level of autonomy in establishing how they would work for the government, sometimes coachmen found difficulties in being paid. For instance, even though the inspector had agreed with the asked price, in 1868 coachman Francisco Torres da Costa had to submit his request to the presidency for 25$000 for "taking and bringing the inspector to and from Afogados, Giguiá, Barros and Pires" at least twice in order to get paid for a service he had done a month prior.[455] Vaccination services would also require the presence of regular people.

Public health increasing reliance on public engagement involved the bureaucracy that brought difficulties to manage vaccination in Pernambuco and the northern region.[456] Before centralization happened, health officials responsible for vaccination had a much quicker access to the vaccination pus (the fluid used to vaccinate) because they not only counted on that from the Vaccination Institute, but also had direct contact with providers in England or Paris as it relied on provincial coffers for its purchase.[457] After that though, whenever Recife's vaccination office found itself low or out of vaccination pus, it not only had to request the Vaccination Institute in Rio or the vaccination office in Bahia for more material, but also depended on the central government to approve its expenses.[458] This was a much more complicated way to get ahold of the product due to issues with communication likely because of the increased bureaucracy that placed the entire country's needs for vaccine in the hands of one inspector, Dr. Antonio Felix Martins, at the court.[459] Further, because several northern provinces demonstrated their dependence on Pernambuco's pus to vaccinate their own populations, such as Rio Grande do Norte, Alagoas, Paraíba, Maranhão, Ceará and Pará, it likely made the province critical for supplying the north with it, and thus under more pressure to maintain pus stocks.[460] Also, the maintenance of the office was drastically hindered because, prior to the centralization, the provincial coffers ensured that all the objects and staff necessary to make it work were provided, such as pens, paper, needles, and assistants like a doorman and a messenger.[461] With the dissolution of the council and the transition of the vaccination office

to the central government's funding the only expense covered was with the provincial vaccinator salary of 400$000 réis. [462]

The worsening of communication between local and higher governance also contributed to the later shifts in public engagement for smallpox prevention. Between 1856 and 1864 Dr. João Nepomuceno Dias Fernandes, the vaccinator commissary, exhibited the difficulties in receiving responses from Rio concerning access to vaccination fluids, and even to get a copy of the national vaccine legislation he should follow.[463] For example, on March 18, 1859, Dr. Fernandes requested the provincial president Antonio José Saraiva to contact the imperial minister regarding the absence of vaccine fluid in the office because none of the multiple requests he had submitted to the Vaccination Institute "on January 12, and February 17 and 26" had prompted a response.[464] As early as December 6, 1856 requests for pus from the commissary to the Vaccination Institute often went unfulfilled.[465] Further, the shipping of fluids coming from Paris and England, which, according to the commissary, used to be "frequent", began suffering constant and unexplainable delays. For example, on March 11, 1863 Dr. Fernandes asked the provincial government to "request from the Brazilian ministers in Paris and London" vaccine pus to be delivered "through a steam ship at least every month" after three months had passed since its last arrival in Recife.[466] Dr. Fernandes's attempt to contact those ministers was his final option after he had "made a similar request to the Inspector of the Vaccination Institute on the 6th of last month" whom had not responded nor fulfilled his request by then.[467] On April 17, 1863 the "vaccination in this capital has been interrupted" because neither the Brazilian ministers in Europe, nor the Vaccination Institute had provided Recife's office with vaccination pus, or a response about the commissary's requests.[468] Similar problems took place again in January 1864 due to interruptions in the provision of pus from Europe.[469]

The centralization impact greatly contrasted with vaccination in the province during the existence of the public health council between 1845 and 1851. Despite problems with spreading the vaccine outside Recife, reports from the council showed not only the regularity of vaccination in the capital throughout those years, but also the distribution of vaccination pus to different provinces without interruption.[470] This reality made Dr. Fonseca claim in 1849 that "the council aids all those who request the vaccination fluid. More than eight hundred tubes [with pus], and not fewer than two thousand plates have been distributed annually" both inside and outside Pernambuco.[471] This reality would be very different after 1857.

Attempts to remove barriers to vaccination services spoke to public health interdependence with the public. The 1846 law that created the Vaccination Institute did not permit non-experts to perform vaccination in places where physicians or surgeons were found.[472] If a parish or village had none, then the law allowed "intelligent people" to take over vaccination duties.[473] It also determined that no one in charge of vaccination, besides the provincial vaccinator, would be paid for at least ten years, which limited interest from experts.[474] Health officials in Pernambuco and other provinces considered these financial and professional limitations highly problematic.[475] For this reason, they attempted to overcome these limitations by succeeding in passing a provincial law that ensured the payment for provincial delegates – individuals who oversaw vaccination and kept the province updated on public health problems in their locations. They also tried to change provincial restrictions. The 1843 provincial law stipulated that the health services in the province should only happen through a practitioner, which added to the financial challenges imposed by the law of 1846. Surgeons and physicians were the only ones allowed to vaccinate according to the province, a decision that was sustained even though the 1846 law allowed non-experts to vaccinate because the provincial law placed vaccination as one of many duties under the position of council delegate.[476] Under the 143 law, health practitioners who vaccinated were known as council delegates, and were

also tasked with *corpus delicti* work and reporting on public health conditions in their respective locations.[477] Challenges to spread the vaccine in Pernambuco did not consist necessarily of the absence of health practitioners to do the job outside Recife, but mainly of practitioners' willingness to accept their official nomination for these positions.[478] These problems indicated that local laws were favored to the detriment of the national 1846 law.

The need for vaccinators thus became a reality as the state struggled to attract and keep health practitioners working under delegate roles in the interior. For example, as provincial deputy Mr. Cordeiro engaged in debates about the law that sought to permit lay people to take over public health roles in his July 21, 1848 speech at the provincial assembly, he stressed how practitioners often declined or left their positions to go "to other cities or parishes where they could secure better profits, and thus abandoned the center [of the province]."[479] The official debates initiated by the public health council to make the 143 provincial law more flexible toward non-experts in delegate roles, notwithstanding concerns with the extent to which a "curious person" or lay healer could adequately fulfill this position, revealed how public health measures attempted to include members of the populace in its apparatus.[480]

The development of training materials for non-experts enforced the importance of public engagement in public health. They expected to train those people to fulfill the 1846 law requirement to have someone in charge of vaccination in every village, parish and municipality where there were no practitioners.[481] Until 1852, the council published three manuals – one on vaccination techniques, another about anatomy and a last one on first aid – to provide the government with trained health workers without a medical degree.[482] Those interested in becoming delegates should study these manuals and take an exam developed by the council.[483] By announcing on newspapers about this opportunity in October 1848, the council showed the local efforts to increase the scope of vaccination, the willingness of the provincial government to follow suit and the limitations in public

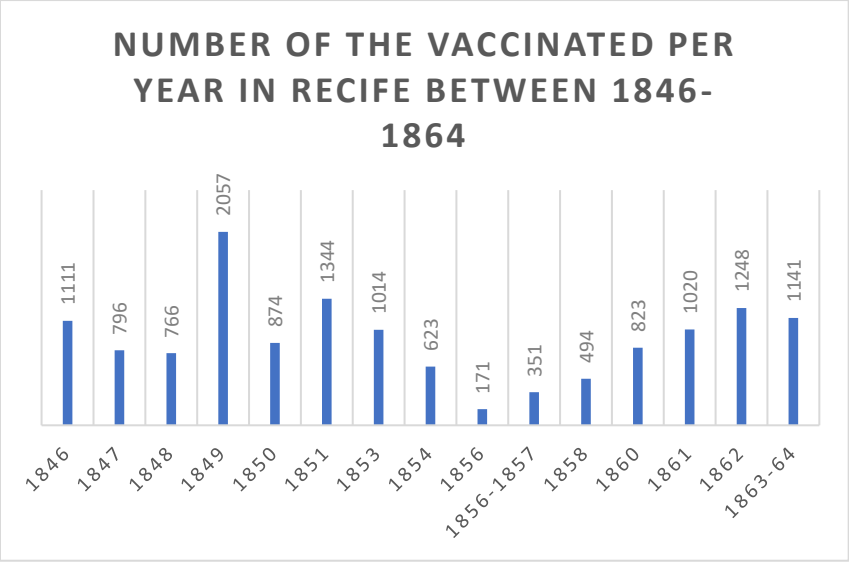
health services if they were provided only by health experts.[484] With centralization, the goal to train and convince non-experts to take over vaccination services became more distant.

Regulatory changes with nationalization set the tone for public health pursuit of greater public engagement for its maintenance. Differently from the vaccination increase Dr. Fonseca celebrated in 1851, he complained in 1854 as the provincial vaccinator about the interruptions caused "in all the municipalities of the province because no one wants to work for free, especially when considering individuals who receive great sums and provide very little to the state, and in a country where the means of subsistence are very costly."[485] Challenges to have vaccinators fulfill their duties after the public health nationalization demonstrated that the incipient provincial attempts to pay for their services came to a halt when the council was dissolved that year. The reports that commissary Fernandes wrote throughout the years 1857-1866 exhibit his growing frustrations with the government as he constantly had to repeat himself about the main reason why no one accepted official nominations to vaccinate outside Recife, and the consequences it entailed.[486] For example, in his January, 1864 report on the state of vaccination in Pernambuco he reinstated the issues with the maintenance of vaccination fluids that were directly related with the absence of vaccination offices outside the capital. He explained that "if no other vaccination locations are established, if municipal chambers do not take responsibility for its propagation and if those in charge of vaccination are not compensated, we will see the cessation of this fluid."[487] Fernandes clearly pointed to the governmental flaws that made his job harder to fulfill as he vehemently asked a question regarding the constant problems with smallpox epidemics found in Pernambuco and the virtual impossibility of preventing them through vaccine services: "who must care for public health? The government through its nominations!!"[488] Attempts to have state employees fulfill the role of vaccinators also proved unfruitful, pushing Fernandes to consider non-experts once again.

The financial constraints of the contemporary vaccination system forced officials to pursue alternatives among state employees and the population to fulfill provincial vaccination needs. Indeed, the process of nationalization that dissolved the council, and with it its ability to pay for delegates, saw that attempts to have state employees take over the role of vaccinators failed despite the expansion to include people such as colonels, soldiers and primary teachers.[489] In fact, the only moment when these state employees actively requested to either become vaccinators or for vaccination fluids in the 1860s was when there was an epidemic taking place in their locations, or to vaccinate their own family.[490] Between 1856 and 1866 citizen and former prisoner Bento José Nunes do Valle (who had been arrested in 1854 after breaking into a home in Paudalho) seemed to have been the only person who was not already a state employee when he requested to be a vaccinator for Caruaru in 1857 because he believed he was going to get paid.[491] Because vaccination stagnation was so dire, in February 1861 the commissary suggested that women could easily become vaccinators as well. Utilizing a patronizing language, Fernandes maintained that "vaccinating (…) is such an easy task that anyone, even those of the female sex, as it happened to be the case in some countries, could be in charge of it."[492] For Fernandes, training lay people to understand "the nature of the pustules [and] discriminate between the real from the false ones," meaning, distinguishing a successful from an unsuccessful vaccination, was at the reach of anyone who "could not only read some pamphlets I have, but also of those who have observed [smallpox] progression, regularity and symptoms. [493]

Public engagement in vaccination services was also dependent on the willingness of the people to participate in them. Whereas it is easier to pinpoint why physicians or surgeons declined the role of delegates, since they could make more money outside this position, understanding why the population showed little interest in it requires some inferring. When thinking about healers or "curious people" we can consider that the generalized fear of the vaccine and the need to take a test

could be reasons for their uninterest in becoming council delegates, especially if we take into consideration the pay that was offered. The law no. 233 of 1848 that authorized the provincial president to nominate any person as a delegate, if they passed the necessary exams, offered them 100$000 to fulfill the same responsibilities expected from health practitioners who were offered four times that amount.[494] Despite publishing in newspapers about this opportunity, the council was surprised that only three men had demonstrated interest in becoming delegates by 1849.[495] Two of them, Ivo Pinto de Miranda and José Maria Brayner, passed the exam and were nominated as delegates in Água Preta and Bonito respectively, whereas Vicente Ferreira Faria failed the anatomy portion.[496] Yet, by 1851 the council celebrated that "for the first time since its founding we begin to receive responses from our delegates" and reports that helped them both understand the sanitary conditions outside Recife and the vaccination initiatives taking place in Brejo, Victoria, Água Preta and Sirinhaém.[497] Despite the challenges to attract vaccinators or delegates throughout the period between the 1840s and the 1860s, the autonomy of the province to establish payments for delegates did render better results in vaccination than after the dissolution of the council in 1853.



Public engagement could determine the success or failure of vaccination services. The change in the administration of resources from provincial to national in the 1850s greatly affected vaccination initiatives in Recife because it also reduced the number of vaccinators the city had from two to one.[498] Even though we can notice a steady increase in the number of the vaccinated between 1858 and 1864, the average number in Pernambuco during the six years of the council's existence (between 1846 and 1851) was 1158 people per year, whereas the average number of the available data from six years after its dissolution (between 1853 and 1860) was of 579 individuals.[499] This means that prior to the centralization of public health, vaccinations took place at a fifty percent higher rate in Pernambuco than after that. These numbers do not even consider vaccination outside Recife between both periods. Even if we exclude 1849 of the analysis because its rate was unusually high in comparison to other years, vaccination prior to centralization was still higher because 1309 people had been registered as vaccinated outside the capital.[500] The fact that the number of the vaccinated in Pernambuco was 377 in 1868 demonstrate the perennial stagnation of vaccination services, a reality the central government was already aware of in the 1850s, but clearly had not addressed by the late 1860s likely because of the country's focus on the Paraguayan war.[501] Providing labor to the state however constituted just one of the roles expected from the population to keep smallpox prevention afloat.

The networks of interdependence between the population and public health were exacerbated by the latter's need for vaccination fluids. This was because to maintain the supply of the material used for vaccination public health counted on the arm-to-arm method of the vaccinated. This method was the most common practice physicians used to spread the vaccine by pricking one's skin a few times. Health officials received plates or tubes from Europe with cowpox pus that was diluted with water (saliva was also recommended for dilution) for use and application with a needle known as Husson's, which was slightly flat on its tip.[502] Rather than using cowpox, vaccinated

individuals were expected to return after seven days to have the vaccine site analyzed.[503] If the vaccination was successful, the pustule in their arm would produce the material physicians collected to vaccinate others.[504] The higher the number of successful vaccines, the least they had to use the cowpox pus, which ensured the supply of vaccines for a longer period of time.[505] In fact, when provinces requested vaccination pus often, such as the presidency of Rio Grande do Norte, health officials in Recife complained that vaccination in those places was probably not frequent, and that the collection of materials from pustules was not happening as often as it should have been.[506] Further, if the cowpox coming from Europe did not produce results, vaccinators often ran the risk of not having enough material to keep the office open, or to send out plates and tubes to other provinces.[507] Finally, even the best material from pustules eventually lost their effectiveness after four or more rounds of vaccination with it, which required officials' constant access to different pustules.[508] Due to these reasons, the maintenance of vaccination heavily relied on the people willing to get the shot, especially as changes in the legislation during the 1850s showed that depending on the government for a steady supply of vaccination pus proved untenable.

Similar to the issues with labor, access to vaccination fluid also depended on people's willingness to get vaccinated. Fear of vaccination played a critical role in this matter. Yet, complaints from delegates and vaccinators regarding the low number of people willing to receive inoculation in the interior surprisingly explained that fear of death from the disease itself was not the only issue. By believing that the vaccine could cause smallpox, those unwilling to take it were trying to not die through abandonment by their families because it was common knowledge that smallpox victims were often taken away into the woods and left alone where they often died of deprivation.[509] The numerous requests to have the government create local laws that forced parents to have their children vaccinated clearly demonstrated no action was seriously taken to enforce vaccination.[510] Vaccination itself was not the final issue, since those who were vaccinated also

needed to have their pustules checked, which was a regulatory requirement that many did not follow.[511] Finally, people who were fined in Recife for not returning to the vaccination office would appeal to the municipal council and were almost always pardoned, which deeply upset health officials. [512] In trying to improve these numbers, the provincial vaccinator sought an alternative that brought the vaccines closer to the population.

Local attempts to facilitate smallpox vaccination spoke to the processes of interdependence between the population and public health for its survival.[513] The reports from the vaccination commissary, Dr. João Nepomuceno Dias Fernandes, between October 1856 and 1866, demonstrated how his concerns with spreading the vaccine were intrinsically connected with people's ability to determine the maintenance of vaccination services.[514] For example, Dr. Fernandes's communication to the presidency that "no one has come on the last few days to receive the benefit of the vaccine" on November 4, 1856 exhibited potential risks with vaccination interruptions.[515] According to the doctor, the location of the vaccination office at the Torreão da Alfândega – closer to the city port – was too distant from the city center, and thus not easily accessible to the population.[516] Not counting on the government to change this reality, on January 8, 1858 Dr. Fernandes informed the presidency that he "had decided to add another day for vaccination at my house on Saturdays" because it was located in Santo Antonio, the most populated and central parish of Recife.[517] The doctor emphasized: "I am extremely convinced that if I had not taken this measure, I would have seen the vaccination seed become extinct more than once" due to the almost complete absence of people going to the office on Thursdays and Sundays, the days it was open.[518] Regardless of his constant requests to move the office to Santo Antonio, and even his suggestions of empty buildings or less than ideal spaces to put his office, Dr. Fernandes's requests were often ignored.[519] For example, on February 1860, he once again emphasized the importance of his extra, and free of charge, shift on Saturdays at his house, "where a great number of people often show up," to maintain the provincial

access to the vaccination pus.[520] A detailed look at who actually was vaccinated though exhibit how the maintenance of services greatly relied on the bodies of the enslaved.

Slaves represented a great part of the council's success in maintaining vaccination without interruption and symbolized the silenced strategy of local health authorities who could not get the free poor to follow their requirements. In Recife, the high rate of the vaccinated in 1849 reflected a trend physicians explained happened whenever a smallpox epidemic took place, since the population tended to flock the vaccination office more often during these moments.[521] The numbers on the vaccinated between 1846 and 1850 however reveal that even though slaves often constituted half of them in absolute terms, they represented the majority of the vaccinated among non-whites and whites.[522] Among the free, the majority of those who got vaccinated were white even though most of the population was not.[523] On average 720 blacks, *pardos* and, to a small extent, *caboclos,* and 396 whites were vaccinated yearly in Recife until 1851. From the 720 people of color, slaves usually comprehended 516 of them on average. When discriminating these numbers based on race and legal status, we notice the reliance on the bodies of the enslaved to maintain the pus. This is because slaves constituted 47% of the vaccinated, whites 35%, and free blacks, *pardos* and *caboclos* only 18%, which shows the overall reluctance of the free of color toward vaccination.[524] Yet, the overlooked politics of disease prevention that led to the public health dependence on the bodies of the poor and mostly of those in bondage received renewed attention when Brazil faced the biggest environmental crisis of the nineteenth century in late-1870s. [525]

Part 2: Transforming Unhealthiness into a Business

This final part examines how the centralization of public health created opportunities for the transformation of disease treatment into a business. It looks at how it transformed engagement between the people, the private sector and the state as disease prevention was placed in the backburner of state priorities. I investigate how unhealthiness came to represent a profitable element

in the rise of the pharmaceutical market that had the provincial government as its main client to heal the sick poor in Pernambuco. I do this by examining the legislative transformations of the late-1850s that spoke to changes in state priorities regarding disease prevention. By 1857, prevention and treatment became attributes that symbolized the importance of a disease to the central government.[526] Cholera and yellow fever were given the preventative status, meaning that most of the public health efforts from 1856 onwards would be about tracking them and making sure they did not return to Brazil as an epidemic.[527] All the other diseases were placed in the treatment status, meaning that they would only be dealt with as they appeared, and no substantial efforts would be made to prevent them. As the population grew, so did health problems. Treating them became the first response from the government, which indicated that the public health plans to create a stronger population through disease prevention was not its priority.

The nationalization of public health led to a focus on imported illnesses that would affect services to the poor. It hindered local health efforts because it placed most of its focus on imported illnesses. This is because as the 1850s went by the central government increasingly came to prioritize prevention of imported diseases by sea and their epidemic capabilities to the detriment of public health efforts in land.[528] Differently from initiatives from the public health council of Pernambuco with respect to trimestral inspection of public institutions, public markets and distribution of the smallpox vaccine throughout the province (even though not perfectly), the nationalization of public health greatly decreased the already small local maintenance of its services.[529] Legislation changes between 1857 and 1861 that focused on the health of the ports clearly showed the country's priorities targeted epidemic threats from the Atlantic, not from within its borders.[530] The creation of the Central Council of Public Hygiene in 1851 based on the yellow fever epidemic of 1849-50 represented the first hint to the national priorities in public health that would not change at least until 1873 when a yellow fever epidemic forced the government to start

looking for reasons inland that led to its development.[531] The traumas of yellow fever and cholera by mid-1850 enforced this critical transition in local public health that ultimately came to focus on potential imported epidemics.[532] The reduction in the number of expected employees in charge of provincial public health in Pernambuco from seven during the 1840s, to three when the cholera epidemic hit in 1855-56, and finally to one in 1857 exemplifies the central government's decision to not focus on health in land.[533]

The process of centralization established categories of importance among diseases that did not reflect local health challenges. Reports from Pernambuco's inspector of health clearly demonstrated that the local transition to focusing on diseases of national concern received most of the governmental and funding attention in comparison to illnesses that were not considered imported. Between 1857 and 1870 cholera and yellow fever constituted the main points of concern in local public health.[534] Smallpox was the only non-imported disease of the 1850s that seemed of equal importance to be continually tracked in Pernambuco.[535] In contrast, tuberculosis, intermittent fevers and other respiratory illnesses that yearly killed more children and adults in Pernambuco than all the other three during the 1860s were often classified as "non-epidemic" or "other" types of diseases.[536] This language enforced the lack of prioritization and limited investments to improve sanitation that could prevent their resurgences.[537] Indeed, the national public health system attached the term "epidemic" to diseases that were worth preventing. This means that even if the main-three diseases (cholera, smallpox and yellow fever) were considered non-epidemic during a particular year, their potential to becoming one automatically gave them an epidemic prone status that made them more deserving of monitoring.[538] For example, whereas smallpox made 323 victims in Recife between 1861-1862 and tuberculosis 438 during the same period, the former was considered an epidemic while the latter was not.[539] Considered the "plague of the poor," tuberculosis only gained more attention in 1876 in Rio de Janeiro while the central government reformed its public health

regulations that sought to deal with popular housing sanitation challenges due to overpopulation and overall lack of urban hygiene.[540] The meaning of epidemic thus reflected this national categorization of threats to the state that did not necessarily correspond to perennial health problems among the population.

The structure of governance that led to problems in public health would shape the nature of public engagement in health the 1860s. Notwithstanding the willful provincial complacency regarding their poor public health conditions, the stagnant reality of municipalities to deal with their problems indicate the inability of those seeking public health improvements to do so because of the national financial and decision-making constraints imposed on local governance.[541] Further, the excessive rotation at the presidential level in which presidents were shifted almost on a yearly basis might have contributed to the almost absent efforts in local public health improvements because unacquainted presidents simply tended to keep the health administrative decisions as closely as possible to their predecessor's.[542] The health inspector's constant repetition of problems already referenced in previous reports whenever a new president took office also attest to the absence of solutions and local efforts to approve funding on public health matters.[543] Removing health responsibilities from the provincial government precluded health investments and the analysis of local sanitary challenges observed in the 1840s because provincial officials after 1851 showed no desire to use the province's funds to finance an office that they considered a responsibility of the central government.[544] As the population grew and with them the number of the sick, their state of poor health opened opportunities for private financial gains.

Competition to open pharmacies illustrated how the growing number of sick people transformed the public's illnesses into a source of profit. The 1860s in Pernambuco witnessed competition between existing providers, requests from people without the necessary degrees to maintain their pharmacies, denouncing of competitors from people who also held no right to become

drug store owners, and non-experts seeking compliance with the government to keep their pharmacies open.[545] All of this however was framed in the name of helping the destitute, victims of endless epidemics and outbreaks that ensured a constant stream of revenue for suppliers.[546] The absence of politics of prevention, improved public sanitation and the overall state of defunding in public health post-centralization enabled the growth of unhealthiness and with it private interest in the drug sales business that counted on the provincial government as its main client.[547] It was also in the 1850s that the pharmaceutical market experienced substantial growth in Rio de Janeiro. These were exemplified by the construction of large pharmacies that supplied charity-based institutions at the court, the development of associations intended to push for more regulations and improvements in the pharmaceutical profession, and an increased import of medicinal drugs.[548] The reduction in public health funding by 1857 and the constant endemics and epidemics that ravaged the poor secured the pharmaceutical market with a constant stream of revenues via their contracts to supply the government with the specific medicinal drugs used to treat victims of fevers, smallpox, cholera or yellow fever in the empire.[549] In the case of Pernambuco, even during moments when the government caused headaches, such as breaching contract agreements, drug store owners' or pharmacists' attempts to find a middle ground demonstrated these to be minimal setbacks in comparison with the potential profit they could make from the state of unhealthiness in which the provincial population lived.[550]

Growing interest in the pharmaceutical arena showed disease as a core element of engagement in public health. This was noticed as experts and non-experts alike competed to fill the gaps in public health investments through the supply of medications whenever the population faced endemic problems. By the 1870s, health officials themselves considered that diseases like cholera, yellow fever and smallpox could eventually break out without being imported since they had already been introduced and constantly found the necessary unhygienic environment through which they

could thrive almost every year.[551] Even though the empire demonstrated a clear interest in the appropriate development of medications, considering that one third of the Council for Public Hygiene legislation of 1851 focused on this topic, the regulations put in place often served as guides for best practices locally when conditions were ideal.[552] For example, because Recife and other capitals usually had higher numbers of physicians and pharmacists and because public health officials were located in these capitals the regulations were more strictly implemented.[553] Outside Recife however the lack of overall medical support opened opportunities for lay people to work on the supply and development of medicinal drugs.[554] Legislative changes to accommodate non-experts indicated the growing importance of the industry in the country during the 1850s. The decree of 1851 that created the Central Council and stipulated that pharmacies should be operated by a licensed pharmacist (also known as an apothecary) was altered in 1857 to authorize non-experts as well, as long as they applied for a license.[555] Physicians also could own pharmacies if in their area of operation there was no available pharmacist to do the job. Yet, actors in Pernambuco with and without degrees often approached the government to secure authorization to operate their shops and illustrated the promising future of the pharmaceutical market based on public health financial and infrastructural constraints.[556]

By transforming illnesses into a business, disease treatment revealed the economic gains of that nascent market. On July, 1859 the apothecary and supplier for the navy ward Luiz Pedro das Neves submitted a complaint to the provincial presidency against José Rocha Paranhos by claiming he "did not have legal titles to have an active pharmacy."[557] He justified it by saying that he had been the main supplier for the navy ward for twenty years during which he had dispensed good quality service regarding the "manipulation and prompt delivery" of the medications. Neves thus indicated his attempt to undermine a potential competitor to his client, the provincial government. [558] The revenue he extracted from the ward illustrates his concerns. In 1860, the bill the province

needed to pay him was of 831$000, which corresponded to a bit more of the entire yearly budget for the public health inspectorate and the vaccination office combined.[559] Expenses served to treat minors (probably apprentices at Pernambuco's navy arsenal) and lower rank officers from outbreaks including rubella, smallpox or diarrhea as the ward received an average of seventy-five patients per month that year.[560] Potential profits also made some pharmacists attempt to take over their competitors' contracts with the government.

The competitiveness in the pharmaceutical market demonstrated a critical change in health politics by the 1860s, one based on the development of private businesses at the expense of public illnesses. In April, 1862 pharmacist Braz Marcelino do Sacramento sought to take over a contract the government had already signed with pharmacist Joaquim de Almeida Pinto to provide medications "for the healing of the destitute" during a cholera epidemic in the province.[561] Even though the public health inspector, Dr. Joaquim Firmo Xavier, claimed that there was no reason to switch suppliers, Sacramento's prices made the government reassess its contract with Pinto and ask him if he would consider changing his prices. [562] Not trying to lose that opportunity, Pinto agreed to offer a ten percent discount per item Sacramento had listed to the government, which guaranteed Pinto's role as a supplier during the outbreak.[563] Such events exemplified the reliance of the government on the private sector, and the latter's interest in maintaining this economic relationship with the province. Further, the government's successful pressure on Pinto, and in the case of Paranhos, Dr Xavier's attempt to overlook the fact that he did not have a license, illustrate the other side of this supply and demand chain in which public health issues turned the government into a critical client for the pharmaceutical market. The government used this knowledge to its favor.

As a critical player in the market of healing, the state's abuse of power demonstrated the imbalances of engagement in the health arena. In this case, even if the contract had already been accepted by both parties, governmental attempts to breach them indicated the vulnerable position

of pharmacists and pharmacy owners who were dealing with a client that both defined the rules for supply contracts and public health regulations for medicinal manipulation and sales.[564] When put in a position of contract violation, they were limited to complaining to the government against its own unfair trades. For example, as an epidemic of cholera made its way from the interior to Recife through 1862 pharmacists competed for the market for the "healing of the indigent" and against challenges to their contracts with the government.[565] In January, the pharmacist Braz Marcelino do Sacramento submitted his whopping bill of 32:960$000 for the ambulance (a set of medications) he had prepared to send to Goianna for the treatment of cholera victims.[566] On the 13 of February the accountant for the provincial treasury decided to challenge that amount as he compared the costs of Sacramento's products to those of other pharmacists who provided medicine in the province of Rio Grande do Norte, and advised him to "update his prices and offer more reasonable costs on his medications" to prevent admonishment.[567] The head of the provincial treasury also agreed with the need for change on the total cost of the ambulance "to treat the destitute in Goianna" as he compared the cost with those of another pharmacist, Joaquim de Almeida Pinto, who had been in charge of ambulances to places like Nazareth and Igarassu, and explained that "the treasury should not be obligated to pay for the costs demanded by the supplier."[568] However, conflicts Pinto himself faced with the government disproved the claim from the head of treasury and showed the government's advantage as a sought out client on the pharmaceutical business.

Public engagement via their need for health assistance served pharmacists' continual relationships with the government based on thriving business dependent on popular unhealthiness. Because the treasury also attempted to force a discount on his final price for ambulances during the epidemic, Pinto wrote a counterargument in June to the provincial presidency reminding it that "bilateral contracts require both in regulations and principles that the agreed prices of goods and objects based on sales and purchases cannot be changed on the will of any of the parts."[569]

Pharmacist José Pereira Jacintho Jr. also protested the treasury's attempt to place a discount on his final bill in June because "we have not charged any exorbitant prices;" on the contrary, "we did it as if we were charging the poor based on how much the poor make" and claimed it was impossible to accept such terms.[570] Yet, when we consider how much Sacramento could have made even with discounts to his final bill, and the fact that Pinto continued to hold contracts with the government by 1870, we are able to better grasp how lucrative the pharmaceutical business could be when it had the provincial poor as its main target via local public health demands.[571]

Successful requests from non-experts to keep pharmacies open exhibited the opportunities the unhealthiness of the population and the limited reach of public health created for those attempting to evade the law. To function, pharmacies needed to follow regulations that required them to be clean and constantly stocked, which involved investments from people with resources.[572] The fact that pharmacists were subjected to yearly inspections in Recife, and that non-experts outside the capital sought authorization to open or maintain their own shops suggest both a certain degree of governmental oversight and the need of pharmacy owners to have governmental validation to be worth owning their shops.[573] This happened especially if requests came from regions with little to no public health infrastructure. For example, on June 6, 1864 Dr. Xavier showed his support to a request from Leocadio José de Figueiredo who wanted to keep his ten-year pharmacy open in the village of Goianna even though he was neither a pharmacist nor a doctor.[574] Xavier explained to the provincial president that Figueiredo "not only has extensive practice and theoretical knowledge of the pharmaceutical occupation" but already held an authorization from the municipal chamber of Goianna to administer his pharmacy. [575] Figueiredo's request for authorization indicated that he did not hold an imperial license because a municipal authorization did not replace the one issued by the Central Council in Rio.[576] The fact that Xavier considered the municipal authorization valid, which in practice was not, attest to the rearranging of legal terms to

fit the reality of public health in the interior where he believed Figueiredo should continue to have a shop "for the benefit of the population of Goianna, since medical aid is so difficult" in the region. [577] Similarly, he defended the maintenance of Manoel Joaquim das Trevas Marinho's pharmacy and Benjamin Sá Pereira's in Victoria in 1863.[578] Xavier requested the government to pardon both men for not having titles because they had "practical knowledge in the healing arts" that were particularly necessary in Victoria because the city was "completely out of resources." [579] Because the demand was so high, public health officials could be pickier with whom they permitted to enter the business.

Competition among medical systems created limits for participation in the pharmaceutical arena. For example, Xavier decided to fine the "doctor of medicine" Olegario Ludgero Pinho for opening a homeopathic shop "without authorization" in 1862 because he did not have anyone working there with the appropriate titles to run it.[580] According to Xavier, Dr. Pinho attempted to evade the law by calling his shop a clinic of "pure homeopathy" where he offered prescriptions in Santo Antonio, Recife. By focusing solely on Pinho's lack of authorization to manipulate medicinal drugs, Xavier's complaint suggests a double standard in who should be pardoned for not following the law. In this case, because allopathic physicians exhibited a clear animosity against homeopaths, Dr. Pinho was deserving of punishment for opening a homeopathic type of pharmacy, even though he was considered a doctor by the inspector himself.[581] This way, it was better for the inspector that someone with no medical degree but who followed allopathic medicine owned a pharmacy than someone with a homeopathic degree. Xavier's vouching for Julio Augusto Torres's pharmacy in Olinda in 1868 as the "petitioner is experienced and knowledgeable" in the field even though he did not hold a degree exemplified his attempts to limit participation of those who did not follow allopathic practices.[582]

The shift in priority to disease treatment re-signified engagement between multiple actors in public health during the 1860s. These actors however were immersed in a context of political and

scientific transformations that showed the empire had departed from the 1840s claims over protecting health for the economy. As a consequence, public health became even more dependent on the people it originally targeted for services.

Conclusion

Public engagement revealed that the constraints of public health in Pernambuco in the 1860s were not about state capacity, but about shifts in state priorities. After the cholera epidemic, what mattered received attention, such as the health of the port. What didn't matter, in this case local public health, was dealt with through the frame of disease treatment. Analyzing those struggles and the role of the populace in being considered for public health services show the importance of looking at the politics of health to understand larger state building projects. Neglect toward public health referenced a focus on the export economy and changes in how the state was approaching the expected issues with labor, particularly after the end of the slave trade in 1850. These included debates about the extent to which the poor of color were fit to partake in the future of labor for national growth in the 1860s, and the country initial planning on immigration as a solution to its future labor needs. It is thus safe to say that the meaning of public health to develop a healthier national free labor force had lost its strength.

The state of neglect of public health in the 1860s was grounded on political decisions about labor and the economy, and shaped the types of engagement that constituted contemporary health politics. To look at public health gives us a greater comprehension of how the state no longer considered health protection through disease prevention a viable economic alternative. What this shows is that the haphazard investment on public health was about choice and economic prioritization of the export economy, one that mostly employed enslaved labor. This was a moment of growing demand for labor as coffee became a strong commodity in the country's south.[583] Public health thus offers an important angle to understand the economic scenario of the time in which lack

of investments on health produced opportunities for the private economy. It makes one wonder how health demands opened spaces for private endeavors that may have influenced the distancing from the political ideology of the empire by the 1870s. That's because that decade was marked by a great destabilization of the monarchical supremacy in which a growing number of urban professionals and intellectuals began to challenge the economic limitations of a rural, slave-based and export driven economy.[584] By the end of it, the drought of 1877-79 would push the limits of an already underfunded public health system, making health officials attempt to bring the state's focus toward health prevention once again.

CHAPTER 4

Reclaiming Prevention and Rethinking Public Relief During the Drought of 1877-1879

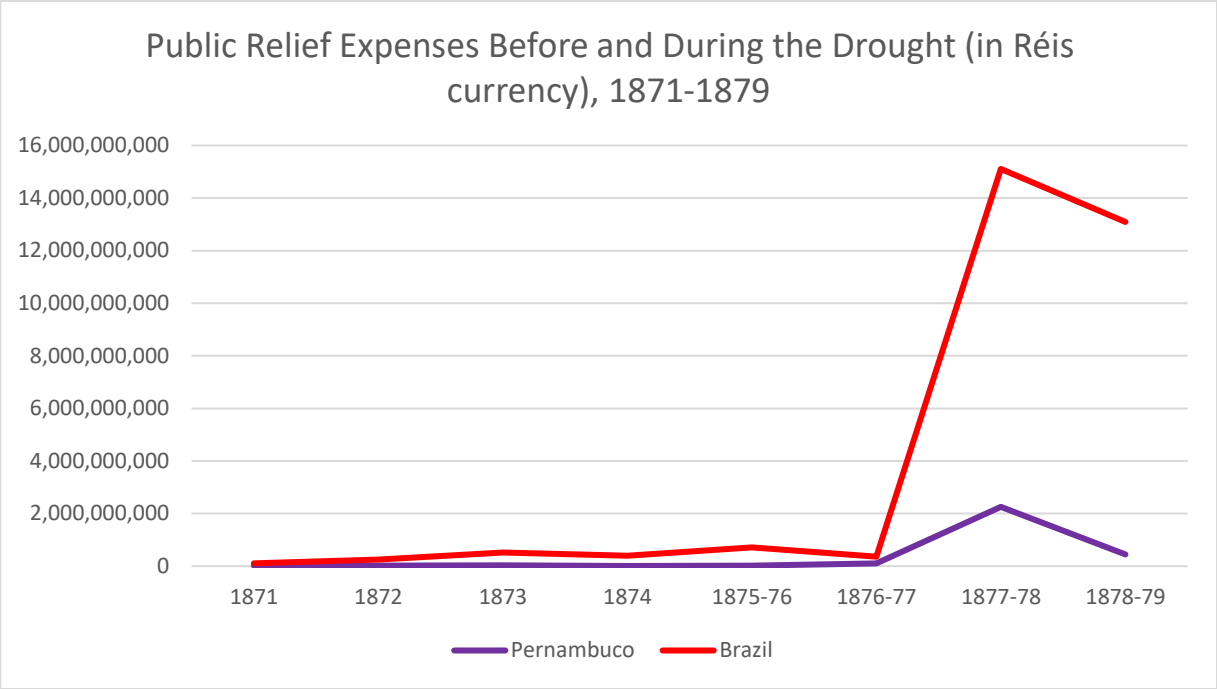
Introduction

This final chapter examines how difficulties in assistance during the drought of 1877-79 informed health officials' terms of engagement with the migrants from affected regions in Pernambuco. It explores how health officials created negative narratives about the government system of public relief used to alleviate subsistence and health needs during the drought. In this case, the government's established and reactive *modus operandi* to social and health crises proved highly unsuccessful to mitigate the spread of diseases across different provinces and to control costs with relief for victims.[585] Public relief reflected the central government's focus on treating problems as they came, while not focusing on prevention. Further, it meant the loss of official control over its terms of engagement with the migrants. In this case, public relief in Pernambuco was a system implemented because of the influx of migration that drastically increased the responsibility of health officials and practitioners in general during the drought, meaning, it escaped their control over how and when to provide health services. In trying to gain that control back they framed it as a problem that could only be fixed through investments in disease prevention. Disease prevention reflected progress and order because it required the existence of an infrastructure, regulations and inspections over which health officials held greater control than disease treatment, which was harder to predict and plan for. Pernambuco works as an important site for this analysis because it received the third most relief funds from the central government, which shows its critical role as a destination for migrants.[586]

Because engagement depended on the influx of migrants to Recife and Pernambuco and not on the choice of health officials, they sought to convince the state that public relief was a waste of resources and a social hazard. The constitutional right to "public aids," in which the central government provided funds for health assistance and foods during environmental or epidemic situations, could not support the gravity and dimension of help necessary during the drought.[587] Considering the decades of overall neglect with public health services, it is understandable that the estimated influx of 40,000 migrants from northern provinces like Ceará, for example, to Pernambuco overwhelmed the already understaffed and underfunded health system.[588] Recife alone was supposed to have received half of those people, contributing to its existing sanitary and destitution issues, and reinforcing health officials' viewpoint over the importance of politics of prevention that represented the statal higher control over how the politics of health should take place.

Why did public health officials and health practitioners push for a reclaiming of politics of prevention in public health during the drought of 1877-79 against the system of public relief? I argue that they did it because public relief removed from them the ability to choose how, when and whether to engage with the sick poor. The volume of migrants overwhelmed those practitioners and the limited health apparatus of Recife because it forced interaction and service provision at unprecedented levels. I explore this situation in two parts: part one looks at how public health and health practitioners demonstrated bias toward the urban poor as they attempted to show the limits of public relief in Recife. Part two explores how they attempted to show that public relief was detrimental to social order because it fomented negative habits, such as corruption and laziness. They thus tried to make it clear that public relief could in fact generate greater sociopolitical problems. A public health analysis of the drought is a segue to larger questions over the extent to which it led the government to reconsider disease prevention, especially if we consider that the

empire spent about twenty-eight times more in public relief between 1877-79 than during all of the preceding years in the 1870s combined.[589] This is because of different reforms taking place as soon as 1879 that indicated greater concerns with it.[590]



Public health provides an important perspective to understand its role in social stability during a moment of great challenge to the monarchical regime. When we look at the public health experience during the drought, we notice how public health officials framed public relief as a potential catalyzer of problems with social stability. This could easily add to the political challenges the regime was already facing, including the creation of a republican party (that would take over the government in 1889), the tensions toward the abolition of slavery and the arrival of positivism that questioned the ability of a monarchy to handle the modernization of Brazil.[591] At a symbolic level, to look at the drought using a public health perspective thus opens a space to questions about how officials used their experience with migrants to play on existing governmental fears and attract attention to their agenda of health protection via disease prevention. Further, it leads to reckonings

in regards to what the public health reform (a long awaited request from frustrated health officials) of 1882 represented in terms of imperial attempts to show its ability to modernize its own political system.[592]

Part 1: Exposing the Limits of Public Relief

This part examines the public health and medical attempts in general to reclaim prevention as a way to retain the terms of engagement with the sick migrants by showing the limits of public relief in Recife. It observes how the public health inspector and practitioners in health assistance prioritized the health of the city's population and exposed the limitations in public relief when it did not ensure the safety of urban residents.[593] In this case, migrants' well-being mattered insofar as it did not come at the cost of those of the urban poor, particularly because the drought had drastically affected urban life as well, including access to work and food.[594] Migration to Recife thus added to existing public health and social issues that financial support from the government, namely public relief, could not overcome because it only intended to address the immediate needs of migrants, not the infrastructural problems that stimulated migration from other provinces, like Ceará and Paraíba.

This drought and its catastrophes belonged to a global-scale phenomenon. Brazil was one of many other affected countries between 1877 and 1879 like India, the east African country of Malawi, and China, for example.[595] According to scholars, the nineteenth-century droughts and their subsequent famine killed tens of millions of people worldwide. In Brazil, even though the statistics about the number of migrants were likely flawed, it was believed that from Ceará alone over 100,000 people migrated to its capital, Fortaleza, during those years.[596] From there, many embarked to the south of Brazil to work in coffee plantations, to the Amazon region to be employed in the rubber economy, and to southern Bahia where cacao had begun to gain steam.[597] Indeed, the literature sees this drought as a moment of great depopulation of the arid zone. By the 1920s, the

droughts in this particular area of Brazil began to transform it into its own region, the Brazilian northeast, whose identity would be reimagined in juxtaposition with the thriving Brazilian south.[598]

Public engagement served to show public relief as a symbol of the inefficiencies of a political system under crisis. Turbulence defined this moment in Brazilian history. The drought happened when the values of imperial patronage and plantation-based ties were being questioned in a myriad of ways. Positivism and republicanism, enforced by the founding of the republican party in 1870, signaled a rupture with the monarchical ideological supremacy that limited the economic and political influence of a growing class of urban intellectuals and professionals. The passing of the emancipation law of 1871 that liberated children born of enslaved mothers led to political tensions pro and against abolitionism and constituted critical transformations and challenges to the imperial hegemony.[599] Such political challenges likely contributed to the continuous state of neglect toward the public health system. The president of the central council of public hygiene, the Baron of Lavradio, himself expressed his frustration with the lack of statal care toward public health in 1882. He lamented the governmental procrastination toward health matters based on the conflicts between liberals and conservatives that communicated "the lack of coherence and unity of principles among the parties that dispute the honors of" the government, which consequently "ruin the country" by delaying its "growth and progress."[600] He belonged to a group of professionals that during the drought was committed to convincing the state of public relief flaws.

The organization of public relief to migrants in Pernambuco followed national patterns. Public relief consisted of food, clothes and healthcare during the drought.[601] The province received relief from the central government and passed it to a central commission of public relief from where they were distributed to local commissions.[602] The central commission in Pernambuco was made of three people: the *bacharel* (law graduate) and public servant Joaquim Gonçalves Lima, the merchant Viscount of Livramento, and merchant and commander João Ignacio de Medeiros Rego.[603] Local

commissions could be made of priests, regular citizens and judges for example and were in charge of distributing goods to the populations.[604] In total, the province had thirty-two local commissions. Recife had two commissions, one that likely served the whole city, and another that focused on the parish of São Pedro Gonçalves where the port was located.[605] They aimed at serving migrant families from its own interior and that of other northern provinces that the drought had affected most severely, such as Ceará, Rio Grande do Norte and Paraiba.[606] In Pernambuco, migrants were usually classified as a family unit, with a husband, wife and children being listed together, or based on marital status if no children were involved, such as single people or widows. This did not necessarily mean that all family members traveled together because there were instances in which they looked for each other when arriving in Pernambuco, for example. Most were poor laborers in agriculture or pastoral activities while some owned some cattle and slaves that they had to sell in order to eat.[607] Health relief for them, maintained on a per request basis, represented health officials' attempts to hinder their movement to Recife.[608]

Public health goals to prevent migration to Recife led to greater flexibility in providing migrants with their preferred types of medication outside the capital. For example, on November 14, 1877 Pernambuco's health inspector, Dr. Pedro d'Atthayde Lobo Moscoso, submitted a bill of 300$000 reis to the provincial government regarding three homeopathic ambulances that had been sent to the interior villages of Bom Jardim and Canhotinho in the previous month.[609] A week later, the inspector responded to inquiries from the commission of public relief about requests for homeopathic medicines that the judge from the town of Limoeiro had submitted to Pernambuco's health inspectorate. According to the inspector, it was necessary to send out homeopathic medications because "they are the preferred ones by the people in the provincial center."[610] Because of the growing number of migrants from Pernambuco and neighboring provinces to different locations of its interior, the inspector believed that epidemics could become a possibility due to the

debilitating conditions in which migrants arrived. For this reason, it was important to prevent epidemics via homeopathic medicines because Dr. Moscoso did not "think these people trust physicians since they are used to homemade medicines."[611] His added suggestion for the government to send out physicians to other parts of the province indicated an understanding that in having them go to migrants to treat them via homeopathic methods the province could limit migrants' movements and, consequently, agglomeration that could lead to epidemics. Considering the underfunded state of public health even before the drought, the inspector also agreed on relying on popular healers or non-experts to do similar jobs.

The thousands of migrants that arrived in the interior of Pernambuco between 1877 and 1879 coupled with an already understaffed public health system increased anxieties toward migration to Recife and informed the presence of public engagement in healing services. For this reason, Dr. Moscoso not only recognized the importance of homeopathy as an accepted source of treatment among the sick, but also the presence of lay healers to administer them. When asked about the request from the Limoeiro judge, Dr. Moscoso also alluded to his official authorization for the administration of such medicines by non-experts. Even though his primary choice was to send physicians "to all locations where there are epidemics if there is an abundance of means to do so," his understanding of the reality of public health in Pernambuco made him behave similarly to previous public health officials in regards to the presence of non-experts in official healing activities.[612] Not only was he aware of it being virtually impossible for a small number of physicians to "aid multiple sick people" when these lived sparsely from each other in the interior, but also Dr. Moscoso had been sending out homeopathic and allopathic (according to him, when the population wanted it) ambulances with directions on how to heal "for those strange to the [medical] profession" to use at the locations to where migrants were fleeing.[613] His request to print out directions for healing intermittent fevers and yellow fever on November 29, 1877 because the province had been

constantly asking him about guidelines to send to different places also shows that the inspector was eventually not alone in the acceptance of non-experts in health assistance work during the drought.[614] On May 29, 1878 despite the disapproval from the central relief commission toward the inspector because he had been sending allopathic medications for use in locations without physicians, Dr. Moscoso simply explained that "it is clear that everywhere people cure and apply medications, even without the presence of doctors."[615] Keeping the sick migrants contained in the interior related not only to anxieties about their potential for contributing to epidemic problems, but also social ones.[616]

Not being able to prevent their eventual arrival in the city, sick migrants quickly came to represent a burden in Recife. Because migrants reached the interior of Pernambuco first, the central relief commission and the public health inspector's main job consisted of sending out medications to those locations and keeping the provincial government aware of the development of epidemics among those populations.[617] As they approached the capital, however, the understanding of state responsibility over migrants' health progressively began to shift. Despite demonstrations of shock and pity at the flocking of the city's public buildings, streets and charity institutions, their presence came to add to the city's existing health problems.[618] For example, on April 3, 1878, the public health inspector sent a note to the director of the Holy House of Mercy "to call his attention to the excessive agglomeration of sick people at the Pedro II hospital and the nefarious consequences that can originate from it."[619] Yet, as he reminded the provincial president of this situation since the president himself had visited the hospital and witnessed its overpopulated rooms with twice as many patients as their capacity permitted, Dr. Moscoso pointed to potential greater calamities in a city already dealing with poverty and sanitary issues.[620] This is because with the drought came a shortage of goods that was already affecting prices, destitution, and the access of the urban poor to food and means of survival.[621] Seeking ways to feed themselves, the unemployed urban poor "go to the

hospital not necessarily to heal their ailments, because they live in spite of them, but to not die of hunger."[622] The sick migrants were thus having to compete with the urban sick and the urban poor for similar resources, which transformed them into a nuisance both for public health and health assistance, especially as they began to affect "the sanitary state of this city [which] could have been very fortunate if it weren't for the agglomeration of individuals" from varied northern provinces and Pernambuco's interior in Recife.[623]

The development of stereotypical characterizations over migrants displayed the limits of public relief and the consequences of unplanned engagement in overcoming public health problems caused by agglomeration. The arrival of migrants from different provinces through Recife's port prompted interactions with the public health inspector at the Pina lazaretto that fostered official opinions about them. Ranging from empathy to disgust, the presence of over one thousand migrants at the Lazaretto began to foment ideas about who they were, and the state limits on how to preserve their lives.[624] On June 11, 1878, the inspector visited the lazaretto and its ward to inform on the health conditions of migrants after becoming in charge of its weekly inspections. When bringing attention to their state of abandonment, the inspector exhibited his concern with the little to no medical aid the state was offering them: "[they] are only covered by the rags with which they came from their provinces, and so dirty that it causes compassion. [They] have received little to no medical treatment and die without being given any help from science."[625] Diseases like beriberi (caused by a B1-vitamin deficiency), diarrhea and tuberculosis victimized them, and "those who could be healed" did not get the medical support they needed.[626] On the other hand, Dr. Moscoso also criticized them by accusing migrants of worsening or not contributing to prevention of their own ailments. For instance, that same day he informed the presidency of the willingness of migrants to live "surrounded by fecal matter," which contributed to the rise of diarrhea among them.[627] Similarly, on May 15, the inspector explained to the provincial president that he could not submit

the bill for the necessary items for the lazaretto because "while the building is being occupied by the *retirantes*, there is nothing one can do [to repair it] because the destruction these people have caused, and the lack of hygiene in which they leave it is indescribable."[628] This way, Dr. Moscoso influenced the provincial government about the limits of state support to migrants, and anxieties about mixing them up with the urban poor strengthened those decisions.

The influx of migration and consequent interactions showed public health attempts to establish negative health traits among migrants. These served to convince the provincial government of the limits of public relief to help them. Concerned with the governmental decision to house troops from the tenth battalion at the military hospital in June, 1878 Dr. Moscoso vehemently pleaded for the presidency to reconsider it because of the migrants and their presence in that place.[629] According to the inspector, not only it was problematic to have healthy soldiers living in a hospital during regular times, but to do so during a moment of social and health calamity could seriously endanger those men due to the agglomeration at the institution and the conditions in which migrants lived.[630] In claiming that migrants chose to contribute to the spread of infections and diseases like diarrhea, beriberi and different types of fever since they "do not wash their clothes or bodies" as an argument to convince the presidency against that decision, Dr. Moscoso contributed to official understandings about the limits of public charity to improve that situation.[631] In this case, he ignored the issues with lack of water taking place throughout the city, for example, and enforced the idea that migrants' perils at the hospital represented their removal from their original locations, habits and *modus vivendi*.[632] This way, Dr. Moscoso inferred how popular choice (even if that was not the case), particularly from citizens from the backlands, imposed limits on projects of sanitation, contributed to official understandings about the character of the people and raised questions about the utility of free relief.

The poor state of urban infrastructure exacerbated perceptions of migrants as "burdensome" and "untrustworthy." For example, on December 19, 1877 the public health inspector attempted to change the provincial president's mind about sending thirty-nine migrants coming from Ceará through the steamboat *Pará* to the former navy hospital.[633] Besides referring to the unsanitary state of the building that could worsen their already likely precarious health conditions, there was the imbued anxiety of not knowing about the migrants' character and potential influence over the people at the hospital.[634] He sought to strengthen his goal to send the migrants somewhere where they could be isolated from urban residents, particularly from the minors who studied and worked as apprentices at the navy. For the inspector, keeping migrants "whose habits are unknown" away from the apprentices meant preventing the latter from learning potential bad examples that could "divert them from the necessary morality and discipline that are so needed in these organizations."[635] Keeping migrants with migrants was a better recourse, such as sending them to the brick yard where others were already living and providing services to the Pedro II hospital, and even to the Pina lazaretto, despite its highly unhygienic conditions at the time due to the state of agglomeration victims were already facing in that building. As the numbers of migrants grew and with them the state expenses, the logistics of accommodation and healing began to strengthen ideas about how to lower the burden on the state by transferring it to charity-based health assistance.[636] This was a reflection of the existing issues with lack of staff that had been a constant reality of public health.

The limits of public relief were exposed in the accumulation of public health services amid the crisis. This situation is better understood when learning that Dr. Moscoso was a medical doctor at the Pedro II's hospital and the inspector of both public health and the health of the port since 1870.[637] Assuming three important positions at that time, plus volunteering at the Pina lazaretto, his decision to have the sick sent to the Pedro II signaled the position of a likely overwhelmed employee who sought to reduce some of his multiple governmental responsibilities. His situation also

exemplified the lack of relevance public health held to the empire during that time. This was not the first drought and it was not the first time the central government had to provide relief to migrants, but it was the first time it happened in such large proportions.[638] Expenses with public relief however could not match the vacuum in health and communication infrastructure necessary to deal with calamities in the country's backlands.[639] The outpouring of tens of thousands of sick and weak victims in a matter of months in areas where governmental institutions were present, like on the coast and capitals of provinces, thus led to reactive, palliative solutions.[640] One of them was to share some of the burden with health assistance.

In trying to transfer some of the burden with migrants to health assistance, the inspector demonstrated how he became more resistant to the concept of public relief. This is because it did not consider long-term improvements, just palliative solutions. For example, on January 11, 1878, the arrival of 726 migrants from Ceará to Recife signaled to the public health system its inability and unpreparedness to moments of social instability.[641] Even though droughts and epidemics had for long been present in Brazil, and despite the multiple generations of public health officials who sought to improve the institution and the sanitary conditions of urban centers and the interior, the reality was that at the imperial level little had been done toward populational health since the 1830s, and there was no intention to improve it during the emergency of the drought.[642] Dr. Moscoso himself stated in January, 1878 to the provincial presidency that "the words of the public health inspector are worthless" to the government.[643] The decision to send over seven hundred people to a lazaretto that since its foundation had a precarious and small infrastructure exemplified the frustration of the inspector with the disconnect between those working directly in public health and those who made the decisions about it. Further, it was common knowledge that the lazaretto had serious problems with water supply even before it served as shelter during the drought, which intensified the rise of diseases in it later on.[644] Its ward could not provide the medical support for

the children, for instance, who constituted the majority of that group of migrants, and for the men and women who were described as having chronic illnesses.[645] Building another ward amid the crisis also seemed counterintuitive. Rather, it would be best to transfer the sick to the Pedro II hospital "where vigilance is much more effective and where the funding destined to the ward will be better put to use by the Holy House of Mercy."[646] This sentence exemplified state officials' understanding of the role of charity institutions during the crisis as a source of alleviation of its expenses with sick migrants.

By placing a substantial amount of the burden of healing on the holy house, the government displayed its intention to lower engagement with migrants, and consequently, responsibilities with their care. Even though the holy house received yearly financial support from the provincial government, when crises took place, the holy house expected the government to provide extra funding to deal with unusual expenses.[647] However, it took several months before the provincial presidency acted toward financing some of the expenses with migrants coming from the interior and other provinces. For example, on December 21, 1877 the interim regent Francisco Romano da Silva from the holy house requested some financial support from the government as the number of victims at the Pedro II hospital, its foundling home, school for orphans and asylum for the destitute had reached over one thousand.[648] By then, migrants who ranged from children of victims at the hospital, the sick and "elderly and malnourished" people had been seeking help for at least two months and relying on the coffers of the institution that was struggling with a deficit of 50:000$000 with no improvements in sight.[649] Despite not providing extra funding and aware of the conditions of the holy house, on January 11, 1878 the presidency still decided to send ninety-four more migrants from Ceará to the Pedro II hospital "to be treated from their infirmities," and rose the population in it to 526, almost doubling its capacity of 270.[650] The need for clothes, bedding and food supplies already compromised by the overpopulated hospital forced the holy house to once

again request the government to cover such expenses.[651] This was reinforced by the director of sanitary services in the hospital when asking the presidency to cover the cost of a building the holy house council had decided to lease to accommodate the coming migrants who had by January 12 increased the hospital population to 560.[652]

The holy house's decision to use other funds to cover its sudden spike in expenses exhibited the governmental inability, or unwillingness, to make use of resources from public relief whenever possible. On April 12, 1878 because the holy house had not received financial support from the government to cover the costs with migrants, it requested to receive the expected subsidies from the province concerning varied expenses with the urban destitute, such as with the treatment of soldiers and per diem of homeless people at the mendicancy asylum, which had been late for multiple months.[653] They did it to try to keep its finances afloat as it had to support the regular urban patients and the new influx of migrants.[654] The fact that an extra subsidy of 3:000$000 per month that the central relief commission had approved and increased to 5:000$000 in June, 1878 only was paid in September when the institution was in charge of caring for over 1500 people in its different charity facilities, from whom 670 were at the Pedro II hospital, attested to governmental overlook toward those within the criteria for public relief.[655]

The state took advantage of charity facilities to lower its own expenses. One of them related to prostitution, which had become a serious problem during the drought in difference provinces.[656] On the one hand, officials and the community in general explained it as a consequence of the extreme destitution that many families had fallen into. For this reason, the state was expected to protect those who were at risk of it and remove from that reality those already involved. However, it still counted on charity facilities to assume most of the burden. For instance, in January 1878 the holy house justified overcrowding some of its spaces in order to prevent young girls and women from "becoming victims of prostitution."[657] By 1879 it requested the maintenance of subsidies by

the provincial government to keep the remaining migrants in its facilities where they "had been removed from hunger, ignorance and prostitution," to which it was granted.[658] However, problems that began to affect the urban community showed health assistance also prioritized engaging with the city's residents.

The use of urban residents' health as a reason to remove migrants from the Pedro II hospital exhibited the negative conceptions over public relief if it did not guarantee the safety of Recife's patients. The urban sick turned into a strong reason as to why the provincial presidency should help the holy house with expenses and accommodation plans for migrants. For instance, on March 28, 1878 the manciple of the hospital wrote to the provincial presidency as a representative of employees at the wards who were complaining about the critical conditions of these spaces and how these were affecting regular patients. According to the unnamed manciple, the accumulation of the sick due to the drought was such that at night there was barely any room to walk on some wards, and "in the upper ones the floor looks like an entire bed where we have to walk carefully not to step on the hands of those laying on it."[659] This was highly discouraging to surgeons who "cannot see the glory of their work," since it was proving unfruitful due to the high number of migrants occupying the hospital. The frustrated surgeon Malaquias A. Gonçalves shared similar stories about the ward under his supervision where patients who were not migrants were suffering the consequences of the agglomeration because "they come to the hospital to find a cure to their ailments, not death."[660] Public relief to the sick and unable migrant was proving unpleasant to those involved in healthcare as well.

By transforming migrants into a nuisance and a potential threat to the city, health assistance employees enforced the discomfort found in public health concerning unprecedented influx of labor stemming from public relief. On March 28, the physician in charge of one of the wards, Dr. Augusto Trajano de Hollanda Chacon, submitted a formal complaint to the director of the hospital regarding

the agglomeration in it that could lead to an epidemic "which always bring grave consequences" in an attempt to not be blamed in case it spread from his ward.[661] Meanwhile the manciple of the hospital showed surprise that no "malign epidemic" had developed, despite a spike in diarrhea and dysentery cases that had made some victims nonetheless served to push for a solution to these problems because of surgical patients who "came to find a cure to their ailments, and in being cured were attacked by diseases proliferating here and died."[662] This way, the hospital employees demonstrated that the argument of helping sick migrants, even via the auspice of public relief, was not enough to secure the necessary means to do so. Yet, according to the regent of the hospital, the French sister Dandigné, from the nearly 600 individuals in the institution by March, only 106 of them were migrants.[663] Still, not only her but the other employees saw the migrant situation as highly problematic to the administration of the hospital particularly because "the number of these people tend to grow even more in this institution because there are no jobs for them."[664] By December 1878, fifty percent of the 975 individuals at the hospital was made of migrants.[665] In focusing on the threat to the community as a whole, they showed that the health of migrants was important insofar as it meant not hurting the health of the urban population, meaning they would rather engage the urban poor than assume the responsibility to treat an unrequested large number of patients.

The negative experience of health assistance during the drought showed health practitioners and supporting staff that public relief to migrants was insufficient to them, and detrimental to the community and themselves. The overwhelming number of patients and the lack of resources and of staff members to care for them at the Pedro II hospital overworked the existing employees and volunteers. Their attitude to what seemed to be an endless period of distraught exposed the limits of health assistance and with them those of the government regarding the role of public relief, particularly as requests for financial and infrastructural help continued because they had been barely

met.[666] For instance, on June 15, 1878 Dr. Moscoso wrote to the director of the hospital as one of its physicians to inform that Dr. Malaquias Gonçalves had refused to visit patients that day not to show "a false philanthropy."[667] In Dr. Gonçalves's mind, not visiting the sick meant to show he refused to comply with an unmanageable situation in which wards by then had over one hundred patients each when their capacity was usually of thirty; in which halls had turned into wards where the sick were subjected to the rain and the sun; in which the possibility of cure for anyone from Recife seeking the hospital had become virtually impossible and where mortality was running rampant.[668] Dr. Gonçalves was not alone in his anger and frustration, particularly as the hospital reached the whopping number of 936 patients by June 19.[669] Other members of the staff, both medical and administrative, expressed their exhaustion and hopelessness particularly as beriberi began to spread along with the existing and chronic diarrhea, to the point that the regent asked the provincial government to no longer send anyone else to the hospital, which had become a potential focus of epidemic for the entire city.[670] The fact that almost nine months into the migration doctors began to file for medical leaves, and those who had volunteered their services stopped doing so reflected an understanding that public relief symbolized the deficiencies of the contemporary system of health and assistance.[671]

Public relief became a synonym of unnecessary burden. Its reactive processes, be those in terms of governmental funding for medications, food or clothes, proved economically draining. Practitioners saw this as a waste of resources and tried to inform the government on how public relief also could worsen sociopolitical stability.[672]

Part 2: Creating Negative Interpretations of Public Relief

This final part examines how public health officials shaped public relief to be a symbol of social problems. It examines statal initiatives to shut down services for migrants based on the idea

that public relief was a waste of resources because it stimulated bad habits that went against conceptions of morality and order stemming from the unruly terms of engagement it promoted. These included the ability of relief to promote corruption, sexual misconduct and laziness not only among migrants, but the population in general.[673] These problems were thus associated with the governmental policies of treatment, rather than prevention. They lead to questions about how the social issues during the drought might have influenced different reforms in medicine and public health between 1879 and 1882.[674] Such reforms demonstrated the state's greater acceptance of prevention for health protection, a first national move closer to the public health tenet since 1850.

Public relief came to be associated with unruly interactions that led to sexual misconduct and sexual harassment in public lodgings that became an excuse to interrupt health services. On October 24, 1878 the public relief commission prohibited the admission of new patients in Olinda's wards in the Santa Thereza hospital after receiving information of sexual abuse committed against migrant women "by those from whom they should only expect help."[675] According to the commission, "some young ladies taken to the Olinda's wards have been victims of the brutal sentiments" of some of the people employed in these provisory spaces since they had become deprived of the protection of family members because of the drought. The fact that they decided to shut down the ward, transfer the remaining patients to another ward and mentioned nothing about punishment to the perpetrators indicated the construction of ideas over public relief as inefficient and prone to cause problems that needed to best be dealt with by shutting down its activities. By considering this event to be "a disappointment" to the efforts of the commission, they set a precedent that would be followed anytime something they considered unpleasant about public relief happened in wards and lodgings to the migrants.[676]

Unruly engagement associated with public relief also made officials see it as contributing to sexual promiscuity among migrants. In an attempt to formulate reasons against the maintenance of

services, on December 22, 1877 the public relief commission reported to the presidency on potential acts of "immorality" among migrants that had disembarked from Ceará a few weeks prior.[677] Requesting information from the police officer Felix Alcantara in charge of helping on the disembarking of these people on December 7, the officer did not deny that "improper scenes" might have happened between migrants, but that overall their desire was to find their family members amidst the previous disembarked groups and not "to practice indecorous acts" with daughters or wives of other migrants.[678] About a year later, concerns with sexual promiscuity contributed to the closure of the lazaretto for migrants based on accusations of sexual promiscuity involving migrant women. In one of his inspections in July 1878, Dr. Moscoso alerted the provincial presidency of sexual misconduct involving migrant women and some lazaretto employees that enforced the growing general understanding of migrants as fomenters of anarchy. According to the inspector, the great number of "loose women" at the lazaretto that had been engaging in orgies with employees and even police officers working there at night stressed a negative understanding of migrants that could justify the elimination of public relief to them. By "seducing" the "young boys (the soldiers) who have little maturity" these women were seen as a threat to the order these men represented and an excuse to shut down the provisory lodging for drought victims created at the lazaretto.[679] Aware of these news, the public relief commission decided to develop measures to have the migrants leave the lazaretto "smoothly" and "offer them the necessary resources" via tickets for them to go back home and some ration, for example.[680] Corruption also served to justify the cancellation of public relief at the lazaretto.

Construing public relief as a source of corruption worked toward the plan to reduce costs with migrants. Alleged schemes of corruption involved a man in charge of the distribution of goods among migrants, Vicente Silva, portrayed as an accomplice of the population at the lazaretto. When Dr. Moscoso began asking Silva about his duties, the inspector came to the conclusion that public

funds were being wasted because he considered the amount of food provided excessive for the number of migrants at the lazaretto and its ward. This is because he suspected that the man was lying about the total number of migrants, which automatically affected the amount of provisions sent to the lazaretto. According to Silva, there were 2,327 migrants at the lazaretto. However, as the inspector checked the updated notebook that contained information about the ones who had either died or left, Dr. Moscoso claimed there were in fact 1,800.[681] Silva also claimed that he gave the ward doctor two-hundred blankets and two-hundred pairs of clog shoes for the sick.[682] Dr. Moscoso however, said that he did not see more than "half a dozen of [blankets] over the sick (…) and one or another [pair] at the ward."[683] Finally, Silva claimed that the ward received between 300 and 320 kilos of fresh meat daily, but the inspector "saw notes indicating that it was only sixty kilos. The highest amount [received] was of 372 kilos, and others indicated at times it came to no more than two-hundred kilos [daily]."[684] As the public relief commission became aware of this situation, it sent over a commissary to oversee Silva and other goods that had been paid for but never arrived at the lazaretto, such as sugar, bread and rice.[685] The corruption involving the employee generated negative understandings about public relief. Similar accusations of food stealing took place in other warehouses in Pernambuco and other provinces, reaching the central government and enforcing a national construction of the image of public relief as enabling negative values that did not benefit the country.[686] One of them included how it was also affecting the behavior of the urban poor.

Health officials' claims that public relief was corrupting the urban poor also enforced negative connotations about it. In particular, because there were no explicit projects of relief for the urban population, poor urban citizens living near the lazaretto took on the idea of pretending to be migrants to be fed as well.[687] According to Dr. Moscoso, on June 17, 1878, "most of the dwellers at Nogueira and Pina islands present themselves to receive ration like migrants and do so in the evening to more easily blend" with the migrant population.[688] The inspector disregarded the already

known fact that food prices and other goods had been skyrocketing whereas jobs seemed to be vanishing, and were probably the reason why they did that, since they did the same at the Pedro II hospital. To spot them, Dr. Moscoso referred to the difference between their accents and that of the migrants. Using explicit prejudicial language, his explanation that people from the backlands "speak clearly and smoothly" while the urban poor in Recife "are used to listen and pronounce the corrupted language of the Africans" stressed a direct connection between the popular sectors in the city and the African diaspora.[689] Further, the fact that the main distinction between the urban poor and the migrants was the accent attest to the likely state of destitution of the populace in Recife as well. In blaming them for "tricking" the government, Dr. Moscoso sought to enforce inefficiencies in public relief, particularly because it denoted the opposite of individual gains through labor.

Besides corrupting the urban poor, public relief was also believed to be corrupting migrants. In this case, the issue involved migrants who were supposed to receive their portion of ration in Boa Viagem and were going to the lazaretto to be fed there too. They were also accused of contributing to the corruption problems at the lazaretto by "hoarding" on fresh meat and foodstuffs (automatically seen as the answer for the shortage of food for the sick) and selling them to buy *aguardente* (an alcoholic beverage) or molasses.[690] The public health inspector also accused migrants of selling clothing that should be distributed among them, which consequently left women completely naked and "unable to leave their beds."[691] Along with the officials at the public relief commission, Dr. Moscoso shaped it to be incompatible with the necessary virtues of labor and morality. It not only corrupted the poor but weakened a decades-long construction of the idea of investment on individual health to be compatible with socioeconomic growth.

By corrupting migrants, officials claimed public relief was also making them lazy. On June 12, 1878 the inspector's attempts to convince the presidency that migrants at the Pina lazaretto and other lodgings were willing to live off governmental funds indefinitely exhibited anxieties about

governmental lack of control over migrants, particularly in regards to labor.[692] This is because many of the migrants were claiming they would not leave there or other places in Recife "to go to work," or were not trying to go back home either.[693] As he explained that the capable migrants were "prone to idleness and vagrancy" the inspector himself led to a questioning of the ability of public relief to create good habits of work. In an attempt to rid the lazaretto of them, the government had decided to authorize the departure of those willing to do so via their own means or through tickets the government offered back to their places of origin.[694] When externalizing great consternation over migrants' claims that they would "not leave as long as the government does not officially require their removal and extinguish the [public relief] commission" or that they believed that "the government does not wish for them to go away and will support them for eternity," or even that "they have been doing very well [by] eating and being dressed without the need to work" he pushed for an interpretation of public relief as fomenting bad social traits.[695]

State perceptions of migrants' unwillingness to work contributed to anxieties over the transformative power of labor when it was based on palliative projects, such as public relief. In this case, labor projects could not be a positive exercise when executed in a haphazard manner. Blaming migrants for the lack of return on the investment of treating and feeding them was one of the official reactions that spoke to the social problems public relief was causing.[696] It had become clear that the expenses generated with relief were a byproduct of an outdated system that prioritized last-minute decisions, rather than prevention.[697] During the drought, the reactive responses from the government to get rid of expenses by shutting down labor colonies and blaming migrants for it would enforce the arguments of public health officials over the issues within the contemporary system of relief.

The stereotyping of migrants used to justify shutting down labor colonies spoke to the failure of public relief to make of labor a moralizing activity. In 1877, the ministry of empire Carlos Leoncio de Carvalho shared information on multiple labor colonies created in varied provinces

during the drought with the intention of both "subjecting migrants to moralizing and pacifying labor and to alleviate the public coffers."[698] Problems in making labor projects work however showed the difficulty of public relief to replace the idea of protecting health for labor through prevention.[699] For instance, when mentioning in 1878 that the dissolution of the labor colony Sinimbu in the province of Rio Grande do Norte was because of its dwellers who "further from pursuing an occupation lived waiting for the aid of the State, immersed in idleness and indolence,"[700] minister Carvalho exposed the inability of labor to bring social benefits if based on last-minute decisions to alleviate the burden of expenses.[701] In Pernambuco, public health played a critical role in exacerbating claims over migrants' unwillingness to engage in public works. For example, on April 24, 1879 the president of the central council of public hygiene, the Baron of Lavradio, repeated claims from the public health inspector Dr. Moscoso in his report that blamed migrants with "no working habits, devoted to idleness and unaware of any hygienic precepts" on the poor sanitary state of Recife during 1878.[702] For officials, migrants' unwillingness to use their health accordingly or to change their habits through labor was a reflection of a palliative system that for long had dominated state decisions toward healthcare. Eventually, as other attempts to invest on labor continued to fail in the province, officials became convinced that the investment was not worth the return. [703]

As public relief became associated with corruption of habits, the public health inspector reframed the meaning of "migrant" from a victim of an environmental problem to that of a person who took advantage of the government. In characterizing migrants as lazy and indolent, Dr. Moscoso demonstrated the statal loss of control over the consequences of the drought in the urban space. For this reason, he used the "corruptibility" of their character to try and get rid of their presence in Recife. Comments about the lack of aspiration among migrants reached the provincial government via reports from public health and the public relief commission.[704] For this reason, the final conclusion was that they would best serve the country through domestic agricultural and

pastoral occupations they were already acquainted with prior to the drought. For instance, while acknowledging that contracts with landowners had not been successful, the public relief commission celebrated that such failure had "brought the noticeable advantage to encourage the departure of a substantial number of migrants who were cluttering the capital [and] causing grave detriment to public health."[705] By July 9, the commission decided to "speed the return of migrants to their former residencies" by providing them with train tickets from Recife to the interior region of São Francisco and with food they received at different stops.

Narratives about migrants' willingness to take advantage of public funds that reached the central government represented a national construction over the detrimental aspects of public relief. In his report to the general assembly about the drought in northern Brazil, the minister of imperial affairs Carlos Leoncio de Carvalho demonstrated how different provincial governments contributed to reflections about challenges with migrant labor.[706] According to Carvalho, migrants had been inciting conflicts "having lost the habit of work due to the public aid [offered] during many months" because of the government's decision to suspend them "moderately" by October, 1878.[707] Reports from different provinces claimed migrants had been threatening private property "and even life" in places to where they had fled, and that they had been taking goods "destined to those in most need" through the use of force. Recovering the habit of labor was, according to the minister, the best way to solve these problems. Yet, such labor would not be the one supervised by the state. Sending them back to their original places became the answer, because there they could resume their occupations and not bother the state with relief of any type. [708] The drought thus came to show that the system of public relief was not compatible with health officials' plans of engagement with the populace. Prevention represented the opposite of relief politically because it placed the control of outcomes more on the hands of the state via public health officials than on chance and sociopolitical consequences of neglect. Economically, the unprecedented expenses it caused provided very

limited returns in terms of public works made by migrants, and public health officials made sure to demonstrate how a lack of attention to health could contribute to governmental waste of resources.

The deadly epidemic of smallpox that afflicted Rio between the final months of 1877 and the first months of 1878 symbolized to the central council of public hygiene that the unruliness of relief could not deal with national emergencies in health. By mentioning that smallpox attacked people of all "conditions, ages, sexes and social positions" its president, the Baron of Lavradio, indicated to the empire that public relief to care for the growing population of the free poor (considering processes of emancipation that were about to take place in 1879, for example) could not shield other social sectors from the problems of the populace. Indeed, smallpox had become a problem during the drought throughout the country, such as in Espírito Santo, Bahia, Pernambuco, Ceará and Maranhão.[709] For him, the migration of people from Ceará to Rio was not the main issue though. Rather, the sudden arrival of thousands of sick people victimized "by the horrors of famine and destitution" to an unsanitary urban space only exacerbated the spread of a disease that was already endemic.[710] When citing the imperial decision to invest in hygienic measures in the city during the spike in smallpox and other epidemics (fevers and cough among children) because "temporary and occasional measures are of little advantage and only burdens the public coffers with useless expenses," the Baron indicated his frustration in October, 1878 and the importance of perennial processes of prevention that were not being implemented and could have prevented those last-minute expenses.[711] This leads to questions about the extent to which the experience of the drought made the Brazilian government reconsider its approach to public health.

Reforms between 1879 and 1883 about public health raises reflections about the traumas of the drought in Brazilian coffers and the imperial reconsideration of its focus on treatment to deal with social crises. As soon as 1879, for example, an educational reform that sought to improve medical education (and education in general) to focus on practices of healing added public health

as one of the disciplines on its curriculum. By 1881, the new president of the central council, Dr. Antonio Correa de Souza, took on the initiative to submit a petition to the government urgently showing the flaws in the existing regulation of 1851 and the need for a public health reform.[712] He was granted the right to initiate it ten days after his nomination, and the reform passed on January 19, 1882. A brief look at this reform shows us the greater acceptance of the central government to the public health tenet of protecting health through prevention.

Even if the transformation was initially on paper, the reform represented a drastic change in state perceptions of its responsibilities with public health. Prior to it, public health was still under the regulations of the 1851 decree that had created the central council of public hygiene.[713] The decree no. 8387 of January 19, 1882 was created to "answer to the urgent need to improve the public health services and revoke" that of 1851.[714] Changes were relevant on many levels. The first concerned the number of employees in Rio and in provinces. In Rio, it expanded the number of main members at the central council of public hygiene to nine (almost doubling the original five) and included twelve others who would provide administrative support. It also added workers in other fields - such as a veterinarian, the president of the municipal chamber and even the police chief – as adjunct members which denoted its greater attempt to expand its influence in the city through adjunct services to the council.[715] At the provincial level, the empire expanded the public health council to three members (which had been shrunk to only one in 1857) in the capitals of the northern provinces of Pará, Maranhão, Pernambuco, Bahia and the southern province of Rio Grande do Sul.[716] Similar to Rio, every province was given the right to create commissions of public hygiene in parishes outside their capitals, and employees in these commissions were given the right to receive a salary via their municipal chambers.[717] A second and critical change that showed a stark contrast with the previous legislation was in regards to the focus on diseases. Whereas legislative changes in the 1850s heavily focused on cholera and yellow fever, the reform of 1882 required the

study of "epidemics, epizootics (contagious illnesses) and all prevailing diseases" at the central and provincial councils that could help find ways to prevent and combat them.[718] Finally, medical relief became a duty of public health services, which gave the institution autonomy to make decisions about it. [719]

The final decade of the empire thus experienced multiple public health changes not seen since 1850. Besides the educational and public health reforms, in 1883 the first Laboratory of Hygiene was created at the School of Medicine in Rio to focus on studies of public health. This was probably a way to address the requirement from the 1882 reform regarding the need for studies about the diseases that affected the country.[720] Four years later, another major and final public health reform took place in the empire to prepare against the threats of cholera in Europe at the time. These transformations on health leads to questions about the extent to which the state was reflecting on the economic burden of relief and seeking to modernize itself to satisfy the urges of its critics in the 1870s.

Conclusion

The drought of 1877-1879 revealed the power of public engagement in questions of imperial legitimacy toward modernity through its system of public relief. It showed how health officials used their experience with the migrant population to work the anxieties of a regime under great scrutiny. They used the problems emerging and imagined from the system of public relief as a symbol of the broader issues of legitimacy the imperial state was facing by the end of the 1870s. Public relief came to represent the questioning of the empire's ability to make Brazil a modern nation because it was framed as outdated and a hindrance to the country's social progress. This framing had to do with how health officials imagined their relationship with the sick, one in which they would be in charge of health decisions. Public relief was seen as the opposite of that because it made health officials vulnerable to external outcomes, meaning, it only targeted problems as they appeared and

did not consider prevention that could alleviate or curtail those same problems. One of them was about the terms of engagement with the sick. Because public relief during the drought was based on the influx of migration from different provinces to Pernambuco, it represented the loss of official control over engagement with the populace in Recife. Health officials and practitioners thus used their anxieties to explain to the government why disease treatment should not be prioritized in health politics, but rather, disease prevention. The subpar public health infrastructure of the city and the difficulties of assistance enforced their claims toward the limitations and threats public relief could cause to society. As these events unfolded during a moment of great transitions in Brazilian politics, we cannot but wonder whether the successful requests from health officials to reform the public health system after thirty years spoke to the empire's attempt to prove its relevance as a regime that could guide Brazil's future.

Conclusion

The making of public health in imperial Brazil was a product of public engagement in health politics. Originally, public health held the responsibility of preventing diseases and this way contribute to the Brazilian state by providing it with healthy laborers for its economy, but its initiatives and decisions evolved with the social interactions and political needs of the time. It was thus a critical political space to understand processes of state legitimacy and institution building in the 1800s.

Between the 1830s and the 1870s, public engagement shaped the directions of public health initiatives. On one hand, the state's flexibility to incorporate popular healing methods when those could serve its economic goals exemplified the state building goals toward a healthier population. Meanwhile, the populace challenged the narrow understanding of health for labor during the cholera epidemic and stirred anxieties that made officials expand the meaning of maintenance of life to preventing social disorder. Challenges with funding and the perennial state of neglect of the institution between the 1850s and the 1870s exhibited how the contrast of goals between health officials and state officials reframed engagement to maintain public health initiatives. At the same time, attempts to fill the void of prevention with the rise of the pharmaceutical market raised questions about the extent to which unhealthiness also began to serve the economy. After decades of a statal focus on treatment, the pressures from the drought of 1877-1879 in local public health led health officials to reframe public relief to its victims negatively as a way to gain control over the terms of engagement with migrants. Even though it was not possible to analyze in this research, one wonders how the economic impact of the drought might have influenced the public health reform of 1882.

Chapter one focused on how public health turned into a site for public engagement that spoke to the imperial economic interests in labor between 1833 and 1851. Labor performance became intrinsically related to individual health and served as an argument among physicians to gain greater public platform and visibility.[721] In Pernambuco, the push for public health in the late 1830s by the provincial president Francisco do Rego Barros, and the creation of a medical society in Recife in 1841(with physicians that later would incorporate the first public health council of the province in 1845) represented the nascent efforts toward an office that should serve the economic goals of the state.[722] Labor performance required able bodies, making physicians turn the free poor into targets of public health improvements.[723] The 1831 treaty to end the national slave trade came as a justification among physicians for the state to begin implementing medical suggestions to improve popular health markers in order to generate a strong population of healthy laborers.[724] The ostensible official fear of reduced access to labor during that time because of the 1831 treaty served physicians' arguments on their importance to improve the health of free laborers and demonstrated the networks between health and the economy.[725] Yet, it is important to note that such "fear", at a national scale, led to the illegal trade that brought at least 800,000 more Africans to Brazilian shores until the end of the slave trade in 1850. In Pernambuco, this came from the Society of Medicine about the need to protect health, and via research about leprosy conducted both nationally and locally by the provincial council of public health.[726]

Physicians' attempts to impart greater political influence in Pernambuco during the early 1840s shaped public health to be a source of economic gains to the province. Their studies on the sanitary state of Recife, for example, sought to show how it could affect labor performance on one hand, and the health of potential laborers on the other. Surgical experiments also reflected medical attempts to connect health with issues of economic consequences to the empire.[727] In shaping public health to be a solution to the ostensibly impending labor issues from the 1831 prohibition of the

slave trade, physicians placed themselves into critical political conversations about the future of the Brazilian economy. Through the concept of health protection they integrated the populace and the enslaved not only as targets for public health improvements but also as sources of healing knowledge when it could benefit the state.[728] Such trend would continue with the founding of the first public health council of the province.

Within a context of contemporary concerns with public hygiene in Latin America and Europe, the creation of Pernambuco's public health council in 1845 showed the importance of public engagement for the rise of scientific experiments within national public health practices.[729] The local, national and international research on leprosy, for example, that took place between 1846 and 1848, exhibited the governmental commitment to finding a cure for a disease that heavily affected the lower sectors. Economic gains were at stake. Improving the health of citizens for labor and decreasing expenses with the sick in charity-based institutions represented some of state and health officials' goals.[730] Further, considering that health officials held limited career opportunities, being associated with a successful scientific investigation would probably open more doors to achieve their professional and personal goals.[731] As health officials gained more access to the sick through visits to the Lazarus hospital in Recife, they made leprosy victims more vulnerable to state experiments. At the same time, victims critically intervened in leprosy research as holders of healing knowledge that officials came to adopt in their experiments.[732] The *guano* and *uassacú* trials brought together allopathic and popular methods to fulfill a national scientific and economic agenda toward health. The engagement of different methods of cure exemplified the sociopolitical nature of public health. The cholera epidemic reinforced the role of public health as an arena for public engagement as the populace and the government negotiated best practices for health protection.

During the cholera epidemic of 1855-1856, engagement between officials and the popular sector demonstrated how disease prevention turned into a pursuit for political legitimacy. Through the worries and terror originated from the thousands of victims in Pernambuco, protecting life amid the epidemic came to represent the maintenance of social stability.[733] This took place as officials considered the potential social problems that could result if governmental decisions to combat cholera represented the opposite of what the population seemed to expect. To protect the lives of citizens meant to protect the social order by showing flexibility to popular expectations toward quarantines, when many physicians at the time questioned the efficacy of that measure, and incorporating popular healing methods that went through processes of scientific investigation, such as the use of lime juice.[734] At the same time, officials also sought to incorporate allopathic practices in ways that would ensure social order in case the epidemic arrived. Attempts to educate the population in official forms of prevention, such as by claiming fear and "disorderly" behavior could increase one's exposure to cholera, also demonstrated how strategies to protect health were being equated to limiting the possibilities of unexpected reactions to the epidemic.[735] Attempts to manipulate the masses when they acted in ways that could threaten governmental administrative goals against cholera demonstrated the political spectrum of public health in which health threats could also threaten state legitimacy. This included popular disregarding of official methods of cure when they implemented popular healing strategies that could damage the hierarchical structures of health in which the physician should be at the top.[736] Further, the provincial manipulation of results from popular healing methods aimed at ensuring that if allopathic medicine failed, so should popular healing as well. Public engagement thus held the imbalances of power in health politics.

Tensions in health politics revealed the challenges of power during health crises. Death, fear, and the lack of answers about cholera revealed the sociopolitical nature of health as the epidemic consequences reverberated in the maintenance of basic services in Pernambuco and

Brazil. At the provincial level, the failure of the administrative tactics to prevent and contain cholera exhibited the breakdown of an intrinsic network of interdependence between the popular sectors and the state.[737] By affecting the masses in much higher numbers than the elites, cholera caused serious problems in the provision of basic services that spoke directly to statal dependence on domestic laborers and differences in how the state and the populace interpreted health protection. This was noticed particularly in transportation and burial services. For health and state officials, the maintenance of transportation services for goods, medical assistance in different parishes or villages and medicinal drugs, as well as the continuity in burial services of cholera victims was essential for the containment of the epidemic.[738] On the other hand, the population targeted to perform these services considered the risks involved for their own lives if they exposed themselves to cholera by either traveling to regions affected by it, or by handling corpses of cholera victims.[739] Popular awareness of people involved in both types of services dying amid the epidemic just enforced their fear and resistance to transportation and burial works. Statal response through coercion when food shortages began to take place and bodies began to pile up in cemeteries or private homes complicated social-government interactions, and heightened suspicion from both sides about effective strategies to protect health.[740] The impact of the populational losses that caught the attention of the emperor since it was affecting foodstuff provisions nationwide, the consequent rise in food prices and the worsening of living conditions at least one year after the epidemic demonstrates the relevance of looking at public health as a frame to understand how health politics revealed imperial attempts to political legitimacy.

Chapter three examined the impact of the shift to disease treatment on public engagement in public health between the late-1850s and 1860s. It investigates how the drastic reduction in funds for local public health in the 1850s made public health officials reconsider the role of the population in public health beyond that of targets for its services.[741] As its mission, health protection was based

on disease prevention in the form of sanitation, smallpox vaccination or improved communication between different parts of the province about local threats to health.[742] In this case, limitation in funds and in staff made health officials look at the population as potential sources of preventative labor on one hand, and their bodies and those of the enslaved as sources of smallpox prevention on the other via transportation or vaccination positions, for example.[743] Sickness, which health officials interpreted to be a consequence of the lack of national prioritization toward prevention, also played a critical role in that moment by becoming an opportunity for the strengthening of the pharmaceutical market.[744] Indeed, treatment of diseases received more attention from the empire than prevention, at least until the 1882 public health reform, which enforced health officials' pursuit of answers to mitigate threats to their institutional mission.[745] The main conflict lied on the differences in priorities between state and health officials about health protection through prevention. By the late-1850s, national goals were focused on preventing known threats, such as yellow fever and cholera, from entering the country through its ports, whereas local health officials focused on local diseases and their connections to the sanitary state in which the populations lived.[746]

National public health decisions to pay attention to "foreign" diseases exhibited concerns with the export economy.[747] This was reinforced by updates on the legislation that prioritized the health of national ports to the detriment of local public health that saw its funding and staff be drastically reduced in the 1850s. When placing these public health decisions in the economic context, it was in the 1860s that the state had begun discussing more concrete plans toward immigration for labor, particularly after the rise of European scientific investigations about the impact of populational race in the progress of nation-states.[748] The overlook of domestic problems with tuberculosis and smallpox for example, and the attention given to yellow fever and cholera exemplified the imperial focus on the coast and the Atlantic.[749] As endemic diseases spread, so did

the pharmaceutical market. In Pernambuco, pharmacists competed against each other for the market of healing that proved to be very profitable, considering the constant outbreaks in the province and the prioritization of treatment that kept the provincial government constantly purchasing medicinal drugs to heal or control outbreaks in its interior.[750] Meanwhile, health officials' attempts to balance out the focus on treatment with improvements in prevention made them look at regular citizens and their bodies as possible sources of labor and smallpox fluids.[751] Such decisions however depended not only on governmental vouching in terms of creating paid positions for national workers, but also on the people's autonomy to choose when and whether to provide services at all.[752] The transformations in public engagement during the 1860s, up until the 1870s thus reflected the disparate conceptions of health protection between national and local authorities. Prevention and treatment represented different outlooks in terms of return of investments that spoke to broader socioeconomic goals in the empire, particularly in terms of racial viewpoints about the population, the future of labor and of immigration. The drought of 1877-1879 however helped with the realization that palliative investments held little to no return to the state.

The final chapter investigated health officials' reclaiming of disease prevention during the drought of 1877-79 to regain the terms of engagement with migrants. It analyzed how they negatively shaped the system of public relief to migrants because it symbolized the loss of control over how and when health officials should provide health services to the poor. This chapter ends with a segue into questions about what the negative reframing of public relief represented to policy changes on public health in the empire and the First Republic.[753]

The backlands-coastal divide that had characterized public health and state presence throughout the empire was forcefully blurred when thousands of migrants from the affected places of Ceará, Rio Grande do Norte and Paraíba began pouring into the northern and southern capitals of the country.[754] Pernambuco figured prominently as one of the provinces to receive most funding

from the central government to help control the local outcomes of the drought. Such funding was based on the constitutional system of public relief, used when epidemics or environmental problems affected subsistence and threatened the population.[755] In a symbolic level, public relief belonged to the national prioritization toward treatment rather than prevention, in which the state dealt with problems as they occurred and did not seriously consider ways to avoid them in the future. This was exemplified by the maintenance of systems of health assistance when the public health inspectorate of Pernambuco kept sending medications to areas where migrants were gathering in the interior without greater plans to prevent the rise of epidemics.[756] However, as migrants began arriving in Recife, health practitioners shaped the negative experiences of public relief because it removed from their hands the ability to decide how to offer health services. The subpar infrastructure of the empire that made them come to the coast *en masse* and force the government to invest substantial amounts of money to house, feed and treat them created a burden on health practitioners. The visibility of the problem in urban centers of thousands of sick and hungry people represented the lack of control over the organization of health services and created anxieties about its consequences for social stability and order in areas already struggling with poverty and precarious health infrastructures. It served as an example for health officials of the importance of prevention to better manage social crises. Recife became the site for this realization as officials attempted to deal with the chaotic moment in which they were engulfed and reclaim prevention as a priority in health services.[757]

Attempts to secure the terms of engagement took place when migration exacerbated existing urban problems with destitution and sanitation, making public health look at the urban residents as its priority. This is because migrants came to compete with the urban population for similar resources.[758] The original use of relief by sending medication to the interior was not sufficient to contain victims away from Recife. As they arrived by sea and by land, on their own or with help

from their respective provinces, migrants also revealed the limitations in established protocols of crisis management.[759] Now the city had to deal with their own poor and the poor of other provinces. Covering costs with food and healing soon proved economically draining.[760] Public health officials, health practitioners in health assistance and employees at charity institutions soon felt the added pressure as the government took months to begin providing economic support. Attempts to lower the number of migrants in the city followed suit and indicated provincial anxieties with social disorder and development of epidemics as it was believed that about 20,000 migrants came to Recife during those years.[761] It did not take long for migrants to become a symbol of urban nuisance. In trying to reduce some of the costs, different provinces had begun adopting the concept of retributive relief, in which "healthy" migrants were put to work in exchange for food and clothes, for example. Attempts to put migrants to work also proved unfruitful for reasons likely connected to the hasty ways in which plans for public constructions were created to keep migrants occupied.[762] Denouncing of corruption and sexual misconduct also added to the negative interpretation of public relief.[763] Health officials greatly contributed to the negative claims about public relief and its potential damage to social order. Further, the public health reform that took place only three years later raises reflections about whether the drought made the state look at health protection as a way to prevent future expenses with relief while showcasing its commitment to modernity, and thus reclaim some legitimacy amid the political crisis of the time.

To examine public health in the empire allows us to better understand state building processes of political legitimacy and institution making. Negotiations over the politics of health revealed that public health decisions were a product of public engagement over the meaning of health among the state, health officials and the population. Public engagement thus transformed public health into a space of experiments that considered health for the economy and for the maintenance of social stability. To use health as a source of social stability in moments like the

cholera epidemic or to create clearer boundaries between health officials and the sick amid the drought demonstrated how the state made sense of its relationship with the people. Public health was thus a way to legitimize the empire's presence among the population. Even if we acknowledge the power imbalances in this relationship, we cannot deny the importance of the public in the directions that public health initiatives took from the 1840s to the 1870s. Moments of neglect also showed how the public and their illnesses served different state building purposes. The experiences of public health in the empire thus opens new reflections about how the state began to consider its responsibility over public services, particularly if we look at the public health reform of 1882 after the economic and social traumas of the drought of 1877-79. It shows us that the institutionalization of public health at the turn of the twentieth century[764] came from decades of prior trial and error over the meaning of health and life for the strengthening of the Brazilian state.

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[83] "Colleção de Leis, Decretos e Resoluçoens da Provincia de Pernambuco, Tomo VII, Anno de 1842," *Leis Provinciais*, vol. 7, art. 27, p. 9 (Arquivo Público Estadual Jordão Emerenciano); "Collecção de Leis, Decretos e Resoluções da Provincia de Pernambuco, Tomo X, Anno de 1845," *Leis Provinciais*, 1845, p. 27, 28; "Parte Official: Governo da Provincia," *O Diario Novo*, ed. 80, p.1 (Biblioteca Nacional Digital).

[84] From the 1850s onward however the number of free laborers in sugarcane plantations in the Northeast substantially grew, which still did not represent a preference over slave labor within that economy, but rather a consequence of changes in economic patterns and the official end of the slave trade in 1850. The economic growth of coffee in the Southeast along with a decline of Brazilian sugarcane export profits due to competition from other sugarcane markets led to the selling of slaves from the north to the south that contributed to the growing employment of the free poor in the northeastern plantation economy. For more see, Leandro Neves Diniz, "A Política de Mão de Obra No Império Brasileiro: da Conturbada Unificação à Precarização do Trabalho Livre," *CLIO: Revista de Pesquisa Histórica* 38 (2020): 25–52; Celso Thomas Castilho, *Slave Emancipation and Transformations in Brazilian Political Citizenship* (Pittsburgh: University of Pittsburgh Press, 2016), 13; Nathaniel H. Leff, "Economic Development in Brazil, 1822-1913," in *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and Mexico, 1800-1914* (Stanford: Stanford University Press, 1997),40, 41. Further, the enslaved participated of the economy in varied occupations, but were prioritized in export agriculture in ministerial reports. To learn more about their occupations and health risks involved see "Mortandade dos Negros," *Archivo Medico Brasileiro*, ed. 4, 1847, p. 75; Joaquim Vieira da Silva e Souza, "Relatorio do Anno de 1834 Apresentado a Assemblea Geral Legislativa na Sessão Ordinaria de 1835*," Ministério do Império*, 1834, p. 25; José Ignacio Borges, "Relatorio do Anno de 1835 Apresentado a Assemblea Geral Legislativa na Sessão Ordinaria de 1836," *Ministerio do Imperio*, 1835, p. 21, 22; Candido José de Araujo Vianna, "Relatorio do Anno de 1841 Apresentado a Assemblea Geral Legislativa na 1ª Sessão da 5ª Legislatura," *Ministério do Império*, 1841, p. 35; Sarmento, "Relatorio dos Trabalhos da Sociedade de Medicina de Pernambuco no ano de 1842 para 1843, Segundo Disposições dos Parágrafos 1º e 2º do art. 34 dos Estatutos pelo

Secretário Perpétuo, Doutor José Joaquim de Moraes Sarmento," *Annaes da Medicina Pernambucana*, ed. 5, 1843, p. 19, 20; "Discussões Academicas," Annaes de Medicina Brasiliense, ed. 2, 1846, 46, 47.

[85] Leff, "Economic Development in Brazil, 1822-1913," 40-41.

[86] Leff, 41; Manoel Pereira Teixeira, "Memoria Sobre as Causas Provaveis da Frequencia do Hydrocele nesta Cidade do Recife; Modo de as Remir ou Minorar, e Melhor forma de Curar dita Enfermidade: Contendo a Historia da Molestia nesta Mesma Cidade deste Trinta Annos a esta Parte," *Annaes da Medicina Pernambucana*, ed. 2, 1842, 63-75.

[87] Antonio Paulino Limo de Abreo, "Relatorio do Anno de 1836 Apresentado a Assemblea Geral Legislativa na Sessão Ordinaria de 1837," *Ministério do Império*, 1836, p. 21 (CRL Digital Systems).

[88] Antonio Peregrino Maciel Monteiro, "Discurso Recitado pelo Senhor Doutor Antonio Peregrino Maciel Monteiro, Presidente da Sociedade de Medicina, no Acto da Instalação da Mesma Sociedade, no Dia 4 de Abril de 1841," *Annaes da Medicina Pernambucana*, ed. 1, 1842, p. 11.

[89] Nicolao Joaquim Moreira, "Continuação da Memoria do Sr. Dr. Nicolau Joaquim Moreira, Intitulada- Considerações Geraes Sobre o Suicidio," *Annaes Brasilienses de Medicina*, ed 3, 1860, p. 56, 58, 59

[90] Monteiro, "Discurso Recitado pelo Senhor Doutor Antonio Peregrino Maciel Monteiro, Presidente da Sociedade de Medicina, no Acto da Instalação da Mesma Sociedade, no Dia 4 de Abril de 1841," *Annaes da Medicina Pernambucana*, ed. 1, 1842, p. 14.

[91] Francisco do Rego Barros, print, in "Relatorio que a Assemblea Legislativa de Pernambuco Apresentou na Sessão Ordinaria de 1839 o Exmo. Presidente da Mesma Provincia Francisco d Rego Barros," in *CRL Digital Delivery System*, (Pernambuco: Typographia de Santos & Ca., 1839), 24, http://ddsnext.crl.edu/titles/180?terms=Pernambuco&item_id=4308#?h=Pernambuco&c=0&m=1&s=0&cv=1&r=0&xywh=-520%2C-124%2C2976%2C2100.

[92] Barros, "Relatorio que a Assemblea Legislativa de Pernambuco Apresentou na Sessão Ordinaria de 1839 o Exmo. Presidente da Mesma Provincia Francisco do Rego Barros,"25.

[93] Barros, "Relatorio que a Assemblea Legislativa de Pernambuco Apresentou na Sessão Ordinaria de 1839 o Exmo. Presidente da Mesma Provincia Francisco do Rego Barros,"25.

[94] Barros, "Relatorio que a Assemblea Legislativa de Pernambuco Apresentou na Sessão Ordinaria de 1839 o Exmo. Presidente da Mesma Provincia Francisco do Rego Barros,"25, 26. Mr. Barros referred to the law of August 29, 1828 that defined the terms for construction works, navigation works, the building of roads, sidewalks and bridges as well as aqueducts. For more see, "Lei de 29 de Agosto de 1828," *Presidência da República: Casa Civil*, http://www.planalto.gov.br/ccivil_03/leis/lim/LIM-29-8-1828.htm.

[95] Barros, "Relatorio que à Assemblea Legislativa de Pernambuco Apresentou na Sessão de 840 o Excellentissimo Presidente da Mesma Provincia, Francisco do Rego Barros," 8, 9 (Pernambuco: Typographia de Santos & Companhia, 1840) (*CRL Digital Systems*)

[96] Joaquim Vieira da Silva e Sousa, "Relatorio da Repartição dos Negocios do Imperio Apresentado à Assemblea Geral Legislativa na Sessão Ordinaria de 1835, pelo Respectivo Ministro e Secretario de Estado Joaquim Vieira da Silva e Sousa," Ministerio do Imperio (Rio de Janeiro: Typographia Nacional, 1835), 24 (*CRL Digital Systems*).

[97] Silva e Sousa, "Relatorio da Repartição dos Negocios do Imperio Apresentado à Assemblea Geral Legislativa na Sessão Ordinaria de 1835, pelo Respectivo Ministro e Secretario de Estado Joaquim Vieira da Silva e Sousa," 24, 25.

[98] Antonio Pinto Chinchorro da Gama, "Relatorio do Anno de 1833 Apresentado à Assemblea Geral Legislativa na Sessão Ordinária de 1834," *Ministério do Império* in *CRL Digital Systems*, 13, 14. http://ddsnext.crl.edu/titles/100?terms=senado&item_id=1675#?h=senado&c=0&m=1&s=0&cv=12&r=0&xywh=-2611%2C903%2C6996%2C3133

[99] Joaquim Vieira da Silva e Sousa, 14. Gama, "Relatorio do Anno de 1833 Apresentado à Assemblea Geral Legislativa na Sessão Ordinária de 1834," 30. Francisco Ramiro d'Assis Coelho, "Relatorio do Anno de 1839 Apresentado a Assemblea Geral Legislativa na Sessão Ordinaria de 1840,"*Ministério do Império* in *CRL Digital Systems* (Rio de Janeiro: Typographia Nacional, 1840), p. 28.
Mamigonian, *Africanos Livres: A Abolição do Tráfico de Escravos no Brasil* (São Paulo: Companhia das Letras, 2017), 19.

[100] *Annaes da Medicina Pernambucana* (Biblioteca Nacional Digital), ed. 1, "Discussão a Cerca das Boubas," p. 33; Pedro Dornellas Pessoa, "Resposta às Sete Questões que Compõem o Programa das Boubas, Feita e Lida na Sociedade de Medicina de Pernambuco, nas Sessões de 25 de Outubro e de 6 de Dezembro de 1841, por Pedro Dornellas Pessoa, Doutor em Medicina e Membro Effectivo da Mesma Sociedade," 1842, p. 34- 46; ed. 2, Manoel Pereira Teixeira, "Memoria Sobre as Causas Provaveis da Frequencia do Hydrocele nesta Cidade do Recife; Modo de as Remir ou Minorar, e Melhor forma de Curar dita Enfermidade: Contendo a Historia da Molestia nesta Mesma Cidade deste Trinta Annos a esta Parte,"1842, 63-75; ed. 4, J. E. Gomes," Discurso Recitado pelo Senhor Doutor J.

E. Gomes, Presidente, na Sessão Solemne do Anniversario da Instalação da Sociedade, à Cerca das Epidemias de Bexigas que nesta Provincia se Desenvolverão nos Annos de 1818 a 1819, de 1825 a 1826, de 1834 a 1835," 1843, 174-178; ed. 5, Joaquim d'Aquino Fonseca, "Das Affecções Uterinas, e de Sua Frequencia em Pernambuco: Reflexões ao Relatorio do Senhor Dr. José Joaquim de Moraes Sarmento, Secretario Perpetuo da Sociedade de Medicina de Pernambuco," 1843, 244- 265; Januario Alexandrino Caneca, "Nota à Cerca de um Casal que Procreou Alternadamente Filhos Mudos e com Falla. Pelo Senhor Januario Alexandrino Caneca, Cirurgião Aprovado, e Professor no Liceu desta Provincia," 1843, 265- 266; Dr. J. J. de Moraes Sarmento, "Dous Casos de Operação de Tenotomia Apresentados à Sociedade de Medicina de Pernambuco na Sessão de 3 de Março de 1843," 1843, 266-271.

[101] Simplicio Antonio Mavignier, "Constituição Medica ou Molestias Reinantes," *Annaes da Medicina Pernambucana*, ed. 2, 1842, 50-59; ed. 3, 1843, 97-104; ed. 4, 1843, 159-174; ed. 5, 1843, 217-232.

[102] "Sociedade de Medicina de Pernambuco," Dicionário Histórico-Biográfico das Ciências da Saúde no Brasil (1832-1930), Fiocruz, http://www.dichistoriasaude.coc.fiocruz.br/iah/pt/verbetes/socmedpe.htm.

[103] Câmara Municipal da Cidade do Recife," *O Diario Novo*, April 25, 1843, ed. 91, p. 1; "Correspondencias," *Diario de Pernambuco*, May 8, 1841, ed. 99, p. 2; "Eleição para Deputados Provinciaes," *Diario de Pernambuco*, November 8, 1844, ed. 250, p. 1.

[104] "Câmara Municipal da Cidade do Recife," *O Diario Novo*, April 25, 1843, ed. 91, p. 1; "Correspondencias," *Diario de Pernambuco*, May 8, 1841, ed. 99, p. 2; "Eleição para Deputados Provinciaes," *Diario de Pernambuco*, November 8, 1844, ed. 250, p. 1.

[105] "Sociedade de Medicina de Pernambuco," Dicionário Histórico-Biográfico das Ciências da Saúde no Brasil (1832-1930).

[106] John Harley Warner, *Against the Spirit of System: The French Impulse in Nineteenth-Century American Medicine* (Baltimore: The Johns Hopkins University Press, 1998), 7.

[107] Cueto and Palmer, *Medicine and Public Health in Latin America: A History,* 58-66. Mantovani, *Modernizar a Ordem em Nome da Saúde: A São Paulo de Militares, Pobres e Escravos (1805-1840),* 29, 31*;* Francisco do Rego Barros, "Relatorio que á Assembléa Legislativa de Pernambuco Apresentou na Sessão Ordinaria de 1839, o Exmo. Presidente da Mesma Provincia, Francisco de Rego Barros,"print. March 1, 1839, p. 24.

[108] Julyan G. Peard, *Race, Place and Medicine: The Idea of the Tropics in Nineteenth-Century Brazilian Medicine* (Durham: Duke University Press, 1999), 17.

[109] Peard, *Race, Place and Medicine: The Idea of the Tropics in Nineteenth-Century Brazilian Medicine,* 16.

[110] Warner, *Against the Spirit of System: The French Impulse in Nineteenth-Century American Medicine,* 4, 7.

[111] Ibid.

[112] Dorothy Porter, *Health, Civilization and the State: A History of Public Health from Ancient to Modern Times* (New York: Routledge, 1999), 46.

[113] Porter, *Health, Civilization and the State: A History of Public Health from Ancient to Modern Times,* 49.

[114] "Proemio," *Annaes da Medicina Pernambucana*, ed. 1, 1842, 5 (Biblioteca Nacional Digital).

[115] "Proemio," *Annaes da Medicina Pernambucana*, ed. 1, 1842, 12 (Biblioteca Nacional Digital). "Titulo 8º: Das Disposições Geraes, e Garantias dos Direitos Civis, e Politicos dos Cidadãos Brazileiros," *Constituição Política do Imperio do Brazil (de 25 de Março de 1824),* art. 179, § XV (Presidencia da República: Casa Civil), http://www.planalto.gov.br/ccivil_03/constituicao/constituicao24.htm.

[116] Sarmento, "Relatório dos Trabalhos da Sociedade de Medicina de Pernambuco no Anno de 1842 para 1843, Segundo Disposições dos Parágrafos 1º e 2º do Art. 34 dos Estatutos," *Annaes da Medicina Pernambucana*, ed. 5, 1843, 232-242; José Eustaquio Gomes, "Discurso Receitado pelo Senhor Doutor José Eustaquio Gomes, Vice-Presidente da Sociedade de Medicina, na Sessão Solemne do Anniversario da Intallação da Mesma Sociedade, no Dia 4 de Abril do Corrente Anno, na Ausencia do Presidente, o Senhor Doutor A.P. Maciel Monteiro," *Annaes da Medicina Pernambucana*, ed. 2, April 4, 1842, 59-63.

[117] Gomes, "Discurso Receitado pelo Senhor Doutor José Eustaquio Gomes, Vice-Presidente da Sociedade de Medicina, na Sessão Solemne do Anniversario da Intallação da Mesma Sociedade, no Dia 4 de Abril do Corrente Anno, na Ausencia do Presidente, o Senhor Doutor A.P. Maciel Monteiro," *Annaes da Medicina Pernambucana*, ed. 2, April 4, 1842, 59-63.

[118] Mavignier, "Constituição Medica ou Molestias Reinantes," *Annaes da Medicina Pernambucana*, ed. 2, 1842, 50-59; ed. 3, 1843, 97-104; ed. 4, 1843, 159-174; ed. 5, 1843, 217-232.

[119]Mavignier, "Constituição Medica ou Molestias Reinantes," *Annaes da Medicina Pernambucana* , ed. 4, 1843, 171-174.

[120] Sarmento, "Declarações: Annuncio aos Indigentes," *Diario de Pernambuco*, ed. 123, 1842, p. 3 (Biblioteca Nacional Digital); "Annuncios Diversos: Annuncio aos Indigentes," *Diario de Pernambuco*, ed. 4, 1843, p. 4 (Biblioteca Nacional Digital).

[121] Mavignier, *Annaes da Medicina Pernambucana*, ed. 2, 1842, p. 61, 60-63; Rafael Mantovani, *Modernizar a Ordem Em Nome Da Saúde: A São Paulo de Militares, Pobres e Escravos (1805-1840)* (Rio de Janeiro: Editora FIOCRUZ, 2017),37.
[122] Mavignier, *Annaes da Medicina Pernambucana*, ed. 2, 1842, 61.
[123] Joaquim Jeronymo Serpa, "Topographia da Cidade do Recife," *Annaes da Medicina Pernambucana*, ed. 2, p. 75, 76; Mavignier, *Annaes da Medicina Pernambucana*, ed. 2, 1842, 60-63.
[124] Mavignier, *Annaes da Medicina Pernambucana*, ed. 2, 1842, 62.
[125] Rego Barros, "Relatorio que á Assemblea Legislativa de Pernambuco, Apresentou na Sessão Ordinaria de 1843 o Excellentissimo Barão da Boa Vista, Presidente da mesma Provincia," print, *CRL Digital Systems*, March 1, 1843, 17 (Recife: Typografia de M. F. de Faria).
[126] Mavignier, "Constituição Medica ou Molestias Reinantes," *Annaes da Medicina Pernambucana*, ed. 2, 52, 53; ed. 4, 1843, 159-161;
[127] Mavignier, ed. 2, 53; ed. 4, 1843, 161.
[128] Mavignier, "Constituição Medica ou Molestias Reinantes," *Annaes da Medicina Pernambucana*, ed. 5, 1843, 222-223.
[129] Mavignier, "Constituição Medica ou Molestias Reinantes," *Annaes da Medicina Pernambucana*, ed. 5, 1843, 222-223.
[130] Ibid. The Ministry of empire noticed fevers tended to attack those in the "classes that, because of their destitution, indolence or ignorance are deprived of adequate resources." For more see, Francisco Ramiro d'Assis Coelho, "Relatorio Apresentado à Assemblea Geral Legislativa, na Sessão Ordinaria de 1840, Pelo Ministro e Secretario dos Negocios da Justiça e Interinamente do Imperio," print, *CRL Digital Systems*, 1839, (Rio de Janeiro: Typografia Nacional, 1840), p. 39.
[131] "Discussão à Cerca das Boubas," print, *Annaes da Medicina Pernambucana*, ed. 1, 1842, 33- 46 (Biblioteca Nacional Digital); Mavignier, "Constituição e Moléstias Reinantes," *Annaes da Medicina Pernambucana*, ed. 3, 1843, 104 (Biblioteca Nacional Digital); Teixeira, "Memoria Sobre as Causas Provaveis da Frequencia do Hydrocele nesta Cidade do Recife; Modo de as Remir ou Minorar, e Melhor forma de Curar dita Enfermidade: Contendo a Historia da Molestia nesta Mesma Cidade deste Trinta Annos a esta Parte,"*Annaes da Medicina Pernambucana*, ed. 2, 1842, 63-75.
[132] Sarmento, "Dous Casos de Operação de Tenotomia Apresentados à Sociedade e Medicina na Sessão de 3 de Março de 1843, pelo Senhor Dr. J. J. de Moraes Sarmento," *Annaes da Medicina Pernambucana*, ed. 5, 1843, p. 266-269; Fonseca, "Nota e Observação de um Caso de Tracheotomia pela Primeira Vez Praticada nesta Cidade do Recife, no Dia 21 de Março do Corrente Anno de 1843*," Annaes da Medicina Pernambucana*, ed. 4, May, 18, 1843, 178-186.
[133] Fonseca, "Nota e Observação de um Caso de Tracheotomia pela Primeira Vez Praticada nesta Cidade do Recife, no Dia 21 de Março do Corrente Anno de 1843*,"*178; Sarmento, Dous Casos de Operação de Tenotomia Apresentados à Sociedade e Medicina na Sessão de 3 de Março de 1843, pelo Senhor Dr. J. J. de Moraes Sarmento," 267, 268,
[134] Sarmento, 267,268, 271; Fonseca, 179, 180.
[135] Sarmento, 270 ; Fonseca, 181.
[136] Sarmento, 270-71; Fonseca, 184-85.
[137] Sarmento, 266-269.
[138] Gomes, "Discurso Receitado pelo Senhor Doutor José Eustaquio Gomes, Vice-Presidente da Sociedade de Medicina, na Sessão Solemne do Anniversario da Installação da Mesma Sociedade, no Dia 4 de Abril do Corrente Anno, na Ausência do Presidente, o Senhor Doutor A.P. Maciel Monteiro," *Annaes da Medicina Pernambucana*, ed. 2, 1842, 59,60.
[139] The ambiguity between elephantiasis and leprosy had already been established by Hippocrates and Galen. For more see Samad E. J. Golzari et al, "A Brief History of Elephantiasis," in *Clinical Infectious Diseases* 55, no. 7 (2012): 1024; Hirak Behari Routh and Kazal Bhowmick, "Reminiscence: History of Elephantiasis," in *International Journal of Dermatology* 32, ed. 12 (1993): 913- 916, https://onlinelibrary-wiley-com.proxy.library.vanderbilt.edu/doi/epdf/10.1111/j.1365-4362.1993.tb01418.x.
[140] Charlotte A. Roberts, *Leprosy: Past and Present* (Gainesville: University of Florida Press,2020), 20-23.
[141] Antonio Pinto Chichorro da Gama, "Relatorio da Repartição dos Negocios do Império Apresentado Geral Legislativa na Sessão Ordinaria de 1834,"*Ministério do Império*, 1833, (*CRL Digital Systems*), 22.
[142] "Peças Academicas. Relatorio sobre Duas Memorias do Sr. Dr. João Mauricio Faivre, uma Sobre as Aguas Thermaes de Caldas Novas na Provincia de Goyaz, e Outra sobre a Morphea; Lido na Sessão Geral da Academia Imperial de Medicina em 10 de Abril de 1845," *Annaes de Medicina Brasiliense*, ed. 1, 1845, p. 11-31.

[143] Joaquim Vieira da Silva e Souza, "Relatorio da Repartição dos Negocios do Imperio Apresentado à Assembléa Geral Legislativa na Sessão Ordinaria de 1835," Ministério do Imperio, 1834, (*CRL Digital Systems*), 17.
[144] José Maria Barreto, "Carta Particular Dirigida á S. Exc. O Ministro do Imperio, á Cerca do Intitulado Methodo de Curar Elephantiasis no Maranhão," *Revista Medica Fluminense*, ed. 5, April 12, 1835, 36-41, http://memoria.bn.br/DocReader/341622/214.
[145] José Maria Barreto, "Carta Particular Dirigida á S. Exc. O Ministro do Imperio, á Cerca do Intitulado Methodo de Curar Elephantiasis no Maranhão," *Revista Medica Fluminense*, ed. 5, April 12, 1835, 36-41, http://memoria.bn.br/DocReader/341622/214; " Barreto was likely a surgeon major for the province of Maranhão. For more see, "Eleitores Nomeados pelo Exmo Snr. Grande 1º Eleitor: Proprietarios de Differentes Classes," *Chronica Maranhens*e, ed. 1, 561, http://memoria.bn.br/DocReader/749990/568.
[146] Barreto, "Carta Particular Dirigida á S. Exc. O Ministro do Imperio, á Cerca do Intitulado Methodo de Curar Elephantiasis no Maranhão," 38.
[147] Barreto, 39.
[148] Barreto, 39.
[149] Sarmento, "Relatorio dos Trabalhos da Sociedade de Medicina de Pernambuco no Anno de 1842 para 1843, Segundo as Disposições dos §1º e 2o do art. 34," *Annaes da Medicina Pernambucana*, ed. 5, 1843, 235, 236; Breno Sabino L. de Souza and Leonardo D. de Carvalho, "Bons Ares, Maus Colonos: Ambivalência Entre Raça e Ambiente Em Doenças Africanas No Brasil de Octavio de Freitas," *Hist. R.* 20, no. 3 (2015): 80–97; Beatriz Mamigonian, *Africanos Livres: A Abolição do Tráfico de Escravos no Brasil* (São Paulo: Companhia das Letras, 2017), 19.
[150] Sarmento, "Relatorio dos Trabalhos da Sociedade de Medicina de Pernambuco no Anno de 1842 para 1843, Segundo as Disposições dos §1º e 2o do art. 34," *Annaes da Medicina Pernambucana*, ed. 5, 1843, 235, 236
[151] Sarmento, "Relatorio dos Trabalhos da Sociedade de Medicina de Pernambuco no Anno de 1842 para 1843, Segundo as Disposições dos §1º e 2o do art. 34," ed. 5, 1843, 235;
[152] Sarmento, p. 236.
[153] Ibid., 236.
[154] "Para o Anno de 1845: Fazer Analyse Chimica do Succo da Gameleria, e Mostrar Quaes os Principios Activos, e os Therapeuticos Contidos Nessa Substancia. Determinar por uma Serie d'Observações Exactas a Acção e Modo d'Operar desse Medicamento Sobre os Hydronemicos; as Diversas Preparações, que Delle se Podem Fazer, e o Melhor Meio de o Administrar," *Annaes da Medicina Pernambucana*, 1844.
[155] Assemblea Provincial: Conclusão da Sessão de Abril de 1844," *Diario de Pernambuco*, ed. 88, April 15, 1844, p. 1,2, http://memoria.bn.br/docreader/DocReader.aspx?bib=029033_02&pagfis=5154.
[156] "Assemblea Provincial: Conclusão da Sessão de Abril de 1844," *Diario de Pernambuco*, ed. 88, April 15, 1844, p. 1,2.
[157] "Assemblea Provincial: Conclusão da Sessão de Abril de 1844," *Diario de Pernambuco*, ed. 88, April 15, 1844, p. 1.
[158] "Assemblea Provincial: Conclusão da Sessão de Abril de 1844," *Diario de Pernambuco*, ed. 88, April 15, 1844, p. 1,2.
[159] "N. 143: Cria Nesta Cidade um Concelho Geral de Salubridade, e em Cada Municipio da Provincia um Facultativo como Delegado do Mesmo Concelho, Marca as Obrigações Deste e Abule os Lugares de 1º e 2º Cirurgião da Vaccina," print, *Collecção de Leis e Decretos e Resoluções da Provincia de Pernambuco*, Tomo X (Pernambuco: Typographia de M. F. de Faria, 1845), 27- 30 (Jordão Emerenciano State Archive).
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[483] Conselho Geral de Salubridade -1848, "Instruções Relativas a Lei Provincial N. 233," October 9, 1848, p. 5.
[484] João José Pinto, "Editaes," *Diario de Pernambuco*, October 10, 1848, p. 2.
[485] Fonseca, "Correspondencia: Documentos," *Diario de Pernambuco*, ed. 144 June 26, 1854, p. 3, http://memoria.bn.br/docreader/029033_03/5344.
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[488] Fernandes, Report, Vacinadores Provinciais- Box I, January, 29, 1864, p. 131-133.
[489] Francisco João José Rodrigues, manuscript, Vacinadores Provinciais- Book I, November 22, 1860, p. 71; Fernandes, December 28, 1860, p. 74; José de Carvalho Araujo Cavalcante, Vacinadores Provinciais- Book I, Ocotber 5, 1862, p. 94.

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[491] Fernandes, January 27, 1857, p. 25; "Pernambuco: Comarca de Pao d'Alho," *Diario de Pernambuco*, ed. 162, July 18, 1854, p. 3, http://memoria.bn.br/docreader/029033_03/5416.
[492] Fernandes, February 4, 1861 p. 78,79.
[493] Fernandes, February 4, 1861 p. 78,79.
[494] "Lei N. 233," Collecção de Leis, Decretos e Resoluções da Provincia de Pernambuco. Tomo XIII. Anno de 1848, September 9 ,1848, p. 55, 56.
[495] Report, Conselho Geral de Salubridade Publica, January 16, 1849, p. 34.
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[497] Report, Conselho Geral de Salubridade Publica, July 10, 1851, p. 122, 123, 125.
[498] Fonseca, "Correspondencia: Documentos," *Diario de Pernambuco*, ed. 144 June 26, 1854, p. 3.
[499] "Vaccinação Praticada na Provincia de Pernambuco no 1º e 2º Semestres de 1853," *Diario de Pernambuco*, ed. 144, June 26, 1854, p. 3; "Vaccinação Praticada no Municipio do 1º de Janeiro a 24 de Junho de 1854," *Diario de Pernambuco*, ed. 144, June 26, 1854, p. 3; "Mappa da Vaccinação Praticada no Municipio do Recife em o Segundo Semestre do Anno de 1854," *Diario de Pernambuco*, ed. 57, March 30, 1855, p.3; "Mappa da Vaccinação Praticada na província de Pernambuco em o 2º Semestre do Anno de 1856," Vacinadores Provinciais- Book 1, p. 21; Mappa da Vaccinação Praticada na província de Pernambuco em o 1º de Julho de 1856 ao ultimo de Junho do Anno de 1857," Vacinadores Provinciais- Book 1, p. 41; Mappa da Vaccinação em o Ultimo Semestre de 1857," p. 51; "Mappa da Vaccinação Praticada no Municipio do Recife em o Anno de 1860," Vacinadores Provinciais- Book 1, February 4, 1861, p. 80; "Mappa da Vaccinação Praticada na província de Pernambuco em o 1º a 2º Semestre do Anno de 1861," Vacinadores Provinciais- Book 1, February 4, 1862, p. 88; "Mappa da Vaccinação Praticada na província de Pernambuco em o Anno de 1862," Vacinadores Provinciais- Book 1, February 2, 1863, p. 134; Mappa da Vaccinação Praticada na província de Pernambuco em o Anno de 1863 ao Anno de 1864," Vacinadores Provinciais- Book 1,January 31, 1864, p. 147; "Relatorio com que o Excellentissimo Senhor Conselheiro José Antonio saraiva, Abrio a Sessão Ordinaria da Assemblea Legislativa Desta Provincia no Primeiro de Março de 1859," Provincial Reports, *CRL Digital Systems*, p. 14.
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[501]"Governo da Provincia," *Diario de Pernambuco* , ed. 85, April 16, 1869, p. 1; "Interior: Rio de Janeiro- Camara dos Deputados," *Diario de Pernambuco*, ed. 175, July 31, 1855, p.2.
[502] Fonseca, *Breves Instrucções sobre a Vaccina, ou Variola Vaccinal: Destinadas aos Comissarios vacinadores Municipaes, e Parochiaes da Provincia de Pernambuco*,print, Conselho Geral de Salubridade Publica- Caixa 9, p. 50, 51.
[503] "Repartição da Vaccina," Diario de Pernambuco, ed. 175, July 31, 1855, p. 3; Even though the law required vaccinated individuals to return after seven days, Dr. Fonseca explained that sometimes individuals were requested to return up to twelve days later depending on the development of the fluid in their arms. For more see, Fonseca, *Breves Instrucções sobre a Vaccina, ou Variola Vaccinal: Destinadas aos Comissarios vacinadores Municipaes, e Parochiaes da Provincia de Pernambuco*, 43.
[504] Fonseca, "Breves Instrucções sobre a Vaccina, ou Variola Vaccinal: Destinadas aos Comissarios vacinadores Municipaes, e Parochiaes da Provincia de Pernambuco," 41.
[505] Fernandes, February 26, 1859, p. 52.
[506] Fonseca, "Collecção dos Trabalhos do Conselho Geral de Salubridade Publica da Provincia de Pernambuco- 4º Anno," print, April 9, 1849, p. 40.
[507] Fernandes, manuscript, Vacinadores Provinciais- Book I, January 8, 1858, p. 40; April 20, 1859, p. 55.
[508] Fernandes, November 27, 1857, p. 35.
[509] Fernandes, January 15, 1857, p. 24.
[510] Fonseca, 2º Anno, January 16, 1847, p. 58, 59; Fernandes, January 29, 1864, p. 131-133.
[511] Fernandes, January 13, 1857, p. 1-5 in "Relatorio que á Assemblea Legislativa Provincial de Pernambuco Apresentou no Dia da Abertura da Sessão Ordinaria de 1857 o Exm. Sr. Conselheiro Sergio Teixeira de Macedo, Presidente da Mesma Provincia", p. 287, *CRL Digital Systems*.

[512] Fonseca, "Collecção dos Trabalhos do Conselho Geral de Salubridade Publica da Provincia de Pernambuco- 4º Anno," print, November 20, 1848, p. 30.
[513] Law n. 143, 1845; João Nepomuceno Dias Fernandes, manuscript, Vacinadores Provinciais - book 1, February 4, 1861 (Jordão Emerenciano State Archive, Pernambuco), 77-79; Francisco Jeri M., manuscript, Saúde Publica- Book 1, May 21, 1859, (Jordão Emerenciano State Archive, Pernambuco), 64.
[514] Fernandes, January 26, 1866, p. 152.
[515] Fernandes, manuscript, November 4, 1856, p. 11.
[516] Ibid., manuscript, November 25, 1856, p. 12.
[517] Fernandes, January 8, 1858, p. 37.
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[519] Fernandes, February 8, 1860, p. 62.
[520] Ibid., February 8, 1860, p. 62.
[521] Fonseca, November 20, 1848, "Collecção dos Trabalhos do Conselho Geral de Salubridade Publica da Provincia de Pernambuco- 4º Anno," p.25.
[522] "Mapa Estatístico da Vaccina Durante o 1º Anno dos Trabalhos do Conselho Geral de Salubridade Publica," print, Collecção dos Trabalhos do Conselho Geral de Salubridade Publica, 1º Anno, p. 65; "Mapa Estatístico da Vaccina Durante o 1º Anno dos Trabalhos do Conselho Geral de Salubridade Publica," Collecção dos Trabalhos do Conselho Geral de Salubridade Publica, 2º Anno, p. 85; "Mapa Estatístico da Vaccina Durante o 3º Anno dos Trabalhos do Conselho Geral de Salubridade Publica," print, Collecção dos Trabalhos do Conselho Geral de Salubridade Publica, 3º Anno, p. 69; "Mapa Estatístico da Vaccina Durante o 4º Anno dos Trabalhos do Conselho Geral de Salubridade Publica," Primeiros Soccorros-1849, p. 115 ; "Mapa Estatístico Durante o Quinto Anno dos Trabalhos do Conselho Geral de Salubridade Publica," Collecção dos Trabalhos do Conselho Geral de Salubridade Publica, 5º Anno, p. 177; Fonseca, " "Mappa da Vaccinação Praticada na Provincia de Pernambuco em o Anno de 1850 a 1851," print, *Noções de Physiologia ho Homem, Extrahidas das Obras Mais Importantes, e Destinadas aos Delegados Interinos do Conselho Geral de Salubridade Publica, e a Todos Aqueles que Não Tendo Instrucção Medica, Desejarem Conhecer os Phenomenos da Vida*, Secretaria de Saude Publica- Box 9, 1852, p.125.
[523] According to a census published in 1839, Recife alone had 25,214 white men and women, and 40,758 free blacks, pardos, criolos and indigenous people of both sexes. Slaves amounted to 23,582. For more see, "Mappa Statistico da Populaçam da Provincia de Pernambuco no Anno de 1838, Provincial Reports, *CRL Digital Systems*, http://ddsnext.crl.edu/titles/180?terms=Mappa&item_id=4285#?h=Mappa&c=0&m=1&s=0&cv=67&r=0&xywh=0%2C-173%2C5279%2C2851.
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[525] Carlos Leoncio de Carvalho, "Relatorio do Anno de 1877 Apresentado a Assemblea Geral Legislativa na 1ª Sessão da 17ª Legislatura," 1878, p. 132.
[526] Barbosa e Barbosa de Rezende, *Os Serviços de Saúde Pública no Brasil, Especialmente na Cidade do Rio de Janeiro de 1808 a 1907,* 73; Francisco do Rego Barros, "Relatorio que á Assemblea Legislativa de Pernambuco Apresentou na Sessão da Mesma Provincia Francisco do Rego Barros," *Relatorios de Presidentes de Provincia*, 1839, p. 26 (*CRL Digital Systems*).
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[529] "Regimento Interno do Conselho Geral de Salubridade Publica de Pernambuco," print, Coleção dos Trabalhos do Conselho Geral de Salubridade, Secretaria de Saude Publica- Box 9, 1º Ano, 1845, 8-12; Barbosa e Barbosa de Rezende, *Os Serviços de Saúde Pública no Brasil, Especialmente na Cidade do Rio de Janeiro de 1808 a 1907,* vol. 1, p.73, 74.

[530] Barbosa e Barbosa de Rezende, *Os Serviços de Saúde Pública no Brasil, Especialmente na Cidade do Rio de Janeiro de 1808 a 1907*, 73.
[531]"Decreto n. 828, de 29 de Setembro de 1851," *Legislação- Câmara dos Deputados*, https://www2.camara.leg.br/legin/fed/decret/1824-1899/decreto-828-29-setembro-1851-549825-publicacaooriginal-81781-pe.html; Sidney Chalhoub, *Cidade Febril: Cortiços e Epidemias Na Corte Imperial* (Rio de Janeiro: Companhia das Letras, 1996), 86, 87.
[532] "Decreto no. 2052, de 12 de Dezembro de 1857," *Legislação- Câmara dos Deputados*, https://www2.camara.leg.br/legin/fed/decret/1824-1899/decreto-2052-12-dezembro-1857-558221-publicacaooriginal-79207-pe.html.
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[536] Xavier, Report, February 3, 1863, p. 254-258; Xavier, Report, February 6, 1864, p. 299.
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[543] Xavier, Report, Saude Publica- Book I, September 20, 1859, p. 80; Xavier, Report, February 6, 1864, p. 299; Report, Saude Publica- Book II, March 8, 1867, p. 45.
[544] "Pernambuco- Assemblea Provincial: Sessão em 9 de Março de 1852, Presidencia do Sr. Dr. Pedro Cavalcanti," Diario de Pernambuco no. 59, March 12, 1852.
[545] Joaquim d'Almeida Pinto, manuscript, Saude Publica- Book I, May 8, 1862, p. 215; Xavier, manuscript, June 6, 1864, p. 301; Xavier, September 28, 1870, p. 125.
[546] Pinto, manuscript, Saude Publica- Book I, May 8, 1862, p. 215; Xavier, manuscript, Saude Publica- Book II, January 11, 1868, p. 66.
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[548] Verônica Pimenta Velloso, "Assistência Farmacêutica: Discursos e Práticas na Capital do Império do Brasil (1850-1880)," *Varia Historia* 26 (December 2010): 373–94, https://doi.org/10.1590/S0104-87752010000200003.
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[552] "Decreto n. 828, de 29 de Setembro de 1851;" Xavier, Report, February 19, 1868, p. 73-76;
[553] Xavier, manuscript, Saude Publica- Book I, November 20, 1861, p. 147; Manoel João da Silva Ribeiro, manuscript, Saude Publica- Book I, November 20, 1861, p. 148; Manoel Ignacio de Oliveira Lobo, November 1861, p. 151; Tânia Salgado Pimenta and Ediná Alves Costa, "O Exercício Farmacêutico na Bahia da Segunda Metade do

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[554] Xavier, manuscript, Saude Publica- Book II, February 19, 1867, p. 43.
[555] "Decreto no. 828, de 29 de Setembro de 1851," *Câmara dos Deputados*, https://www2.camara.leg.br/legin/fed/decret/1824-1899/decreto-828-29-setembro-1851-549825-publicacaooriginal-81781-pe.html; "Decreto n. 2055, de 19 de Dezembro de 1857," *Secretaria-Geral da Mesa*, https://legis.senado.leg.br/norma/395269/publicacao/15819234.
[556] Pinto, manuscript, Saude Publica- Book I, May 8, 1862, p. 215; Xavier, February 6, 1862, p. 178; [556] Xavier, manuscript, Saude Publica- Book II, February 19, 1867, p. 43.
[557] "Governo da Provincia: Expediente do Dia 4 de Setembro," *Diario de Pernambuco*, ed. 211, September 19, 1850, p. 1, http://memoria.bn.br/DocReader/029033_03/853; Xavier, July 16, 1859, p. 72.
[558] "Governo da Provincia: Expediente do Dia 4 de Setembro," *Diario de Pernambuco*, ed. 211, September 19, 1850, p. 1, http://memoria.bn.br/DocReader/029033_03/853; Xavier, July 16, 1859, p. 72.
[559] The navy stipulated yearly contracts for the supply of medication and utensils for its ward. For more see, "Declarações: Conselho de Compras Navaes," *Diario de Pernambuco*, ed. 136, June 13, 1860, p. 4, http://memoria.bn.br/DocReader/029033_04/1692; "Parte Official: Governo da Provincia," *Diario de Pernambuco*, ed. 163, July 16, 1860, p.1, http://memoria.bn.br/DocReader/029033_04/1906; Falecido na enfermaria da marinha- http://memoria.bn.br/DocReader/029033_04/1274 comissario de segunda classe Antonio Jose do Carmo, embarcado no vapor Thetis; http://memoria.bn.br/DocReader/029033_04/2453 mais detalhes da enfermaria e pessoas atacadas de doenças 1860 ed 231 p 3.
[560] "Enfermaria de Marinha," *Diario de Pernambuco*, ed. 231, October 5, 1860, p. 3, http://memoria.bn.br/DocReader/029033_04/2453.
[561] Xavier, manuscript, Saude Publica- Book I, April 28, 1862, p. 212.
[562] Xavier, manuscript, Saude Publica- Book I, April 28, 1862, p. 212.
[563] Pinto, manuscript, Saude Publica- Book I, May 8, 1862, p. 215.
[564] The first decree post-independence concerning bidding processes, the decree no. 2,926/1862, focused primarily in construction works. In regards to pharmaceutical contracts, I was able to find that particular areas of the government advertised their pharmaceutical needs via the press and offered 1-year contracts. For more see, Ana Paula Gross Alves, "A Evolução Histórica Das Licitações e o Atual Processo de Compras Públicas Em Situação de Emergência No Brasil," *Revista de Gestão, Economia e Negócios* 1, no. 2 (2020): 40–60; "Declarações: Conselho de Compras Navaes," *Diario de Pernambuco*, ed. 136, June 13, 1860, p. 4, "Decreto no. 2052, de 12 de Dezembro de 1857."
[565] Xavier, April 28, 1862, p. 212.
[566] Xavier, April 28, 1862, p. 212.
[567] Emilio Mer. Sobreira de Mello, manuscript, Saude Publica- Book I, February 13, 1862, p. 172, 173.
[568] Jozé Francisco de Moura, February 12, 1862, p. 173.
[569] Pinto, manuscript, Saude Publica- Book I, June 22, 1862, p. 222-224.
[570] Jacintho Jr & Cia, manuscript, June 13, 1862, p. 220.
[571] Pinto, manuscript, Saude Publica- Book II, June 17, 1870, p. 124.
[572] Decreto no. 2052, de 12 de Dezembro de 1857."
[573] Xavier, March 19, 1863, p. 261.
[574] Xavier, manuscript, Saude Publica- Book 1, June 6, 1864, p. 301.
[575] Xavier, manuscript, Saude Publica- Book 1, June 6, 1864, p. 301.
[576] "Decreto no. 2055, de 19 de Dezembro de 1857," *Secretaria-Geral da Mesa.*
[577] Xavier, manuscript, Saude Publica- Book 1, June 6, 1864, p. 301.
[578] Xavier, March 19, 1863, p. 261.
[579] Xavier, March 19, 1863, p. 261.
[580] Xavier, December 6, 1862, p. 240.
[581] Xavier, December 6, 1862, p. 240; Fernanda Nascimento de Araújo, "A Homeopatia e Seus Embates Na Bahia Através Da Trajetória de Alfredo Soares Da Cunha (1913-1936)," *Anais XVI Encontro Regional de História ANPUH Rio: Saberes e Práticas Científicas*, (2014): 1-9.
[582] Xavier, manuscript, Saude Publica- Book 2, January 8, 1868, p. 63.
[583] Dale Tomich, *Slavery and Historical Capitalism During the Nineteenth Century* (Lanham: Lexington Books, 2017), 156-159.
[584] Alonso, *Ideias Em Movimento: A Geração de 1870 Na Crise Do Brasil-Império*; Kirkendall, *Class Mates: Male Student Culture and the Making of a Political Class in Nineteenth-Century Brazil*, 150,151.

[585] "Relatório da Commissão Central de Soccorros aos Indigentes Victimas da Secca," *CRL Digital Systems- Anexos ao Relatorio da Presidencia Apresentado á Assemblea Provincial a 19 de Dezembro de 1878*, December 15, 1878, p. 1-5, http://ddsnext.crl.edu/titles/180#?c=0&m=66&s=0&cv=94&r=0&xywh=21%2C-297%2C1803%2C961.
[586] "Relatorio Apresentado à Assembléa Geral Legislativa na Primeira Sessão da Décima Setima Legislatura," BN Digital, ed. 1, table no. 2, 138, http://memoria.bn.br/docreader/720968/14771
[587] Moscoso, manuscript, Saúde Pública – Book 4, June 17, 1878, p. 122-129.
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