The 1918 Smallpox Outbreak: Logistical Challenges Faced by the American Inoculation Campaign in Manila

John David CASTRO
Ateneo de Manila University
john.castro@student.ateneo.edu
https://orcid.org/0009-0008-6907-0871

ABSTRACT

This article discusses characteristics and causes of the reemergence of the smallpox epidemic in 1918, Manila. After the introduction of systematic vaccination by the American government in 1905, mortality and morbidity rates caused by smallpox were greatly reduced in Manila. However, in 1918, a surge in mortality and morbidity caused by smallpox was experienced by the city of Manila. This resurgence revealed problems in the bureaucracy's inoculation campaigns, resulting from logistical issues concerning vaccine supplies and manpower. The article examines the logistical problems regarding vaccination campaigns conducted before and during 1918. These problems involved a lack of vaccine supplies which failed to cover the entire population of Manila, which was crucial for a city whose immunity against smallpox began to wane. Manpower was another major issue in the execution of vaccination campaigns. The low wages given to officers and workers of the health bureaucracy led to unfulfilled vacancies. The bureaucracy's manpower was overstretched when the smallpox outbreak occurred coinciding with a fire in the San Lazaro district. Vaccination efforts by the bureau were interrupted because the bureaucracy's healthcare workers needed to attend to fire victims and thus were unable to perform vaccination. The combination of these logistical factors resulted in a weak revaccination effort by the health bureaucracy prior and during 1918 which failed to proactively prevent the outbreak of smallpox in that year.

Keywords: *Smallpox, 1918, Manila, Bureau of Health, Vaccination*

Introduction

Epidemics in the Philippines often reveal weaknesses and vulnerabilities in the health bureaucracy. The Spanish Influenza in 1918, for example, revealed the unpreparedness of the American colonial government in dealing with the disease. Scholars like Gealogo pointed out the high mortality rates the country experienced when the disease struck coupled with the inability of the bureaucracy to mobilize enough health officers to deal with the disease were

evidence of a weak colonial bureaucracy.[1] Prior to the outbreak of Spanish influenza, smallpox as a disease also revealed vulnerabilities in the Spanish colonial bureaucracy in the 19th century, as well as the American health bureaucracy and its inoculation efforts in 1918 as what the article focuses on. The article investigates how the smallpox outbreak in 1918 revealed the shortcomings of the American vaccination campaign, caused by logistical challenges the bureaucracy faced in its inoculation efforts.

Frank Fenner and Ken De Bevoise authored two articles that are informative with regards to smallpox and its characteristics. Smallpox as a disease is epidermal in its symptoms and its method of spread. The symptoms of smallpox are epidermal in nature, with the emergence of pustular rash among its victims as the main symptom of the disease.[2] The patient becomes infectious only upon the emergence of this rash.[3] Transmission of the disease is done through close contact with the person experiencing the rash. Contact through skin or touch is a common transmission method.[4] Transmission via cough droplets is also possible, as well as the reusing of linens of infected patients.[5] The communicability of smallpox through close contact transmission makes it an infectious disease in cities and densely populated areas. Although smallpox has a high mortality rate and is infectious, vaccination programs can stifle the spread and mortality rates of smallpox, unlike other diseases in the 19th and early 20th centuries.

In 1805, the Spanish court physician Francisco de Balmes brought the smallpox vaccine to Manila, while the Spanish colonial government created a board of vaccination to implement a systematic vaccination campaign across Spanish controlled territories in the Philippines.[6] This campaign to eradicate smallpox, however, revealed the vulnerabilities and logistical challenges the Spanish colonial government faced in its inoculation campaign. De Bevois' article noted that the board was understaffed and "chronically short of funds" to effectively implement widespread vaccination.[7] When an outbreak struck Abra in 1887, Dr. Llanera, who was a *medico titulares*, discovered the lack of any vaccination campaign done in the province for the past 6 years. Although vaccines from Manila finally arrived 3 years

[1] Francis Gealogo, "The Philippines in the World of the Influenza Pandemic of 1918-1919," *Philippine Studies* 57, no. 2 (June 2009): 281-282, https://www.jstor.org/stable/42634010.

[2] Frank Fenner, "Smallpox: Emergence, Global Spread, and Eradication," *History and Philosophy of the Life Sciences* 15, no. 3 (1993): 398, https://www.jstor.org/stable/pdf/23331731.

[3] Frank Fenner, "Smallpox: Emergence, Global Spread, and Eradication," 400.

[4] Frank Fenner, "Smallpox: Emergence, Global Spread, and Eradication," 401.

[5] Ken De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," 160; Frank Fenner, "Smallpox: Emergence, Global Spread, and Eradication," 403.

[6] Ken De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," 155-156.

[7] Ken De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," 161.

ISSN 2651-7108

after 1887, he discovered them to be inert and wrote that the dangerous situation in Abra would continue "until God knows when".[8] The aftermath of natural disasters can also stretch the health bureaucracy and result in the emergence of new outbreaks. Manila in 1871 experienced an outbreak of smallpox in the aftermath of typhoons that struck the city.[9]

Presenting themselves as more effective and benevolent than the Spanish, the colonial government of the United States sought to be more efficient when it came to handling epidemics and diseases. Warwick Anderson elaborated on the capacity of the American health bureaucracy to reshape the Filipino body through health reforms that intrude on the private space of hygiene.[10] Meanwhile, Moralina highlighted the active steps the American health bureaucracy undertook in combating Tuberculosis, through the use of education campaigns and segregation of people with symptoms.[11] Smallpox also allowed the Americans the opportunity to showcase a more efficient and robust vaccination campaign, in contrast to the efforts of the Spanish.

By 1905 the American colonial government began a systematic vaccination of native Filipinos to curb the spread of smallpox. In Manila, it was reported that 213,000 were inoculated against the disease within the year 1905, covering more than 90% of the city's 220,000 population.[12] While nationwide, vaccination campaigns reached a million who were inoculated covering 15% of the archipelago's 6,500,000 population by 1906.[13] These figures were lauded by Victor Heiser, arguing that the high vaccination rates were a "justification needed for the American occupation" of the Philippines.[14] The high rates of vaccination in Manila and in the provinces led to the lowering of mortality rates brought about by smallpox,[15] and by 1909 mortality rates in Manila reached 0 and remained consistently in the single digits until 1917.[16]

[8] Ken De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," 165.
[9] Ken De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," 156.
[10] Warwick Anderson, *Colonial Pathologies : American Tropical Medicine, Race, and Hygiene in the Philippines* (Quezon City: Ateneo de Manila University, 2007), 4-5.
[11] Aaron Rom Moralina, "State, Society, and Sickness: Tuberculosis Control in the American Philippines, 1910- 1918," 181.
[12] Victor Heiser, *Annual Report of the Bureau of Health September 1904- August 1905* (Manila: Bureau of Public Printing, 1905), 22.
[13] Victor Heiser, *Annual Report of the Bureau of Health for the Philippine Islands July 1905 to June 1906* (Manila: Bureau of Public Printing, 1906), 3.
[14] Victor Heiser, *Annual report of the Bureau of Health for the Philippine Islands For the Fiscal Year Ended June 30, 1907* (Manila: Bureau of Public Printing, 1907), 21.
[15] Vicente De Jesus, *Report of the Philippine Health Service, 1918* (Manila: Bureau of Printing, 1919), 7.
[16] De Jesus, *Report of the Philippine Health Service, 1918*, 61.

ISSN 2651-7108

8 years of near 0 mortality rates and cases would be interrupted, however, when a resurgence in smallpox cases and mortality rates occurred in 1918. During that particular year, the city of Manila experienced its highest mortality and morbidity rate in smallpox, with the disease being the second leading cause of death for the year.[17] Vicente De Jesus, the director of the bureau of health, lamented at the bureau's resources being "heavily taxed" in the year due to the occurrence of two epidemics - smallpox and influenza, remarking that this difficulty was something that the bureau hasn't encountered in its entire history.[18] The San Lazaro hospital reported that smallpox was its most prevalent disease among its confined patients for the year.[19] The year 1918 proved to be a difficult year for the Bureau of Health, partly due to the reemergence of smallpox after more than 8 years of low single digit mortality figures.

The smallpox outbreak in 1918 revealed logistical issues and shortcomings of the vaccination campaign of the American colonial government. The previous vaccination campaigns, though laudable, failed to fully prevent an outbreak of the disease due to the lackluster implementation of inoculations after 1906. Logistical problems involving supplies of vaccination were inadequate to conduct city wide revaccination campaigns prior to 1918, resulting in the waning immunity of the majority of the populace. The outbreak of smallpox revealed the inadequacy of the vaccination campaigns conducted by the Bureau of Health in previous years. Compounding the issue of the population's waning immunity were challenges concerning manpower in the Bureau. The outbreak of smallpox was paralleled by the San Lazaro fire, resulting in the health bureaucracy's manpower being overstretched, needing to attend to victims of the fire and conduct inoculation campaigns on the population. The overstretched manpower of the Bureau resulted in instances of the vaccination campaign being postponed as well as instances of Filipinos wishing to be vaccinated being turned away.

Related literature surrounding the reemergence of smallpox in 1918 would usually blame the Filipino for refusing vaccination,[20] or for the waning immunity that previously vaccinated individuals experienced.[21] Fenner briefly mentioned the increase in smallpox cases in the Philippines during the latter years of the first world war, and ascribes it to "a variety of

[17] Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1414–1415

[18] Vicente De Jesus, "Report of the Philippine Health Service, 1918" (Manila: Bureau of Printing, 1919), 3, 6.

[19] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 54.

[20] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 8.

[21] Ken De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," *Pacific Historical Review* 59, no. 2 (May 1990): 185, https://www.jstor.org/stable/pdf/3640055.

ISSN 2651-7108

inefficiencies and deceitful practices" by colonial health officials.[22] Although Fenner gave a quick explanation to the increase of smallpox cases in the Philippines in 1918, he did not expound on what those "inefficient" and "deceitful practices" constitute. Ken De Bevoise also had a section in his article that covers the outbreak of smallpox in 1918, which dealt in a cursory manner the possible causes for the outbreak. De Bevois quotes two medical officials: John C. McVail and Victor Heiser, pointing out the "inefficient and inert vaccines" at fault as well as the "falsification of health records that medical officers did when reporting vaccination rates".[23] Although the reasons mentioned by De Bevois are relevant to the topic of the article, they only repeat the explanations given by the medical establishment in the immediate aftermath of the epidemic. What De Bevois failed to consider were issues reported by health officials concerning vaccination campaigns before and during 1918.

Fenner and De Bevois failed to account sources and medical reports prior to 1918. This article will focus in particular on the logistical issues concerning vaccination that De Bevoise and Fenner failed to tackle. While Fenner mentions in general terms the inefficient practices of vaccination, he provided no explanation did not explain what those practices constitute. De Bevoise, on the other hand, mentions inert and inefficient vaccines, but provided no explicit discussion of the challenges in vaccination efforts undertaken before and during 1918. This article will expound on the claims of De Bevoise and Fenner for the failures of the colonial government, focusing on the logistical challenges and issues encountered in the colonial government's vaccination efforts.

The article discusses first the reported mortality and case rates of smallpox during and prior to 1918. This is to give the reader a contrast to the mortality and morbidity rate of smallpox in 1918 in comparison to the preceding years wherein the city enjoyed immunity conferred by the systematic 1905 vaccination. Characteristics of the 1918 smallpox epidemic will then be discussed, detailing the severity of the smallpox disease of the year in comparison to other prevailing diseases as well as age groups and months most affected by smallpox. To explain the resurgence of the smallpox outbreak, the article discusses the waning immunity of the population caused by an inconsistent revaccination campaign on the city. Logistical challenges concerning vaccine supplies as well as manpower challenges are discussed in the article, revealing the shortcomings of the American colonial bureaucracy when it conducted its inoculation campaigns.

[22] Frank Fenner, "Smallpox in Southeast Asia," 44.
[23] De Bevoise, "Until God Knows When: Smallpox in the Late-Colonial Philippines," 184–185.

TALA Vol 8: No. 2 (December 2025)
ISSN 2651-7108

The Spread of Smallpox in the Philippines During the Early 20th century Until 1918

The American colonial government introduced a city-wide systematic vaccination campaign in 1905. In the Bureau of Health report, Heiser lauded the accomplishment of the bureaucracy for successfully conducting its vaccination campaign in the city that covered more than 90% of its population.[24] A similar remark in 1918 would be made by Vicente de Jesus, emphasizing the success of the 1905 vaccination campaign in lowering the mortality rate of smallpox.[25] The success of this vaccination campaign would be supported by the data from table 1 as well.

Table 1: Reported Deaths and Cases from Smallpox in Manila, 1906-1918

Year	Deaths	Cases
1906-1907	1	76
1907-1908	76	213
1908-1909	71	243
1909-1910	0	5
1910-1911	0	0
1911-1912	0	0
1913	0	0
1914	1	1
1915	0	3
1916	1	1
1917	2	3
1918	869	10326

Source: Data from Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1906-1907*, 120; Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1907-1908*, 146; Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1908-1909*, 151; Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1909-1910*, 165; Fox, *Annual Report of the Bureau of Health 1910-1911*, 104; Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year from July 1 1912 to June 30 1913*, 197; Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From January 1 to December 31 1914*, 285; Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From January 1 to December 31 1914*, 214; Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1915*, 32-

[24] Heiser, *Annual Report of the Bureau of Health September 1904- August 1905*, 22.
[25] De Jesus, "Report of the Philippine Health Service, 1918," 7.

33;Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1916*, 214; Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1917*, 216; Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1414–1415

Besides the actual reported death rates caused by smallpox, the reported infections also show low numbers prior to 1918. The last column of Table 1 shows the cases reported for smallpox from 1906 to 1918. From 1906 to 1909, reported cases of smallpox exceeded no more than 300. From 1909 to 1917, reported cases decreased even further, with numbers remaining within single digits. The low number of reported cases contrasts with that of 1918, when smallpox cases exceeded 10,000, yielding a morbidity rate of 36.19 per thousand. Although instances of underreporting of cases can be made to account for the small number of smallpox in the years prior to 1918, the sudden increase of reported cases in 1918 is an indication of the widespread proliferation of smallpox that made it difficult to deliberately hide cases.

The Smallpox Epidemic in 1918

By 1918, the widespread immunity that Manila had from smallpox began to wane and a smallpox outbreak occurred. The Bureau of Health director Vicente De Jesus reported that the "smallpox situation, while grave, was under control".[26] Although the report's introduction assures its reader that the American colonial bureaucracy was able to manage the epidemic, the same report presented a picture of a difficult year for the health bureau. "The year 1918 turned out as an especially bad year from the standpoint of epidemiology and never in the history of the service… had its resources been so heavily taxed" writes the Bureau of Health director.[27] The exhausted Bureau of Health was caused by the occurrence of two epidemics in the same year. Vicente De Jesus writes:

> The occurrence of two extensive epidemics - influenza and smallpox - constituted the salient epidemiological features of the year [1918]. Almost coincident at the time of appearance, both caused heavy tolls in life, smallpox throughout the year, while influenza did its worst during the last quarter.[28]

Smallpox was not the only disease prevalent in 1918. The influenza epidemic and its rise was also a cause for worry for the Bureau of Health.

[26] Vicente De Jesus, "Report of the Philippine Health Service, 1918" (Manila: Bureau of Printing, 1919), 8.

[27] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 3.

[28] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 6.

ISSN 2651-7108

Other diseases such as tuberculosis and dysentery were also of concern. Table 2 shows the top five causes of death prevalent in Manila during 1918. From the table, one can observe that the top disease of concern was tuberculosis, with a crude death rate of 7.02 per thousand. Smallpox became the second leading cause of death in terms of disease by 1918, with a crude death rate of 3.48 per thousand. This piece of data shows the gravity and significance of the smallpox disease in 1918 Manila.

Table 2: Top 5 Diseases in Terms of Deaths, 1918 Manila

Disease	Deaths	CDR
Tuberculosis	2003	7.02
Smallpox	994	3.48
Dysentery	760	2.66
Influenza	627	2.19
Infantile Beriberi	623	2.18

Source: Data from Philippine Islands Census Office, Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918, 1414–1415.

The San Lazaro hospital became the site of confinement for severe cases of smallpox. The San Lazaro hospital, an institution that deals with communicable diseases in Manila, had a total of 4,083 patients in 1918.[29] Table 3 shows the top 5 diseases that patients had in the hospital. Smallpox carried the largest number of confinement cases in San Lazaro hospital, occupying 26.43% of confinement cases, followed by varioloid with a percentage of 21.6%. Furthermore, smallpox cases in San Lazaro hospital had the highest mortality rate in the hospital, with total deaths amounting to 528 which comprised 44.75% of deaths. In comparison, tuberculosis which came in second in terms of number of deaths had a share of 21.78% of deaths in the hospital, half that of smallpox. From the 1918 report of the Bureau of Health, one can observe the resurgence of smallpox cases and its high mortality rate among confirmed cases in the hospital.

[29] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 54.

ISSN 2651-7108

Table 3: Top 5 Diseases in Confinement Numbers, 1918 San Lazaro Hospital

Department	Confined Cases	Deaths
Smallpox	1,079	528
Varioloid	860	11
Tuberculosis	650	257
Measles	460	6
Cholera	401	107

Source: Data from De Jesus, *Report of the Philippine Health Service, 1918*, 54.

The age group most affected by the 1918 smallpox outbreak were children under 9 years of age. The 1918 census remarked that smallpox was a "disease of the childhood.[30] Table 4 indicated that deaths under 9 years of age covered more than 85% of total deaths. Smallpox being a disease of the childhood was caused by a number of factors, in particular because children being born after systemic vaccination campaigns would not be covered by immunity conferred by vaccination.[31] The problem of infants being born after vaccination campaigns were usually noted by reports, indicating the need to focus future vaccination campaigns on newborns.[32] Heiser also noted that adults who survived the disease were less likely to contract it due to their previous exposure to smallpox during their childhood which trained their immunity, unlike children who did not have any prior exposure to smallpox.[33] In the case of 1918, children below 9 years of age were the largest age group to succumb to smallpox since they were already born after the 1905 systemic vaccination in Manila and the 1906 succeeding nationwide vaccination campaign.

Besides age specific death rates, the months that garnered the most deaths caused by smallpox would also have particular characteristics. Figure 1 shows that the summer months were the most severely affected by smallpox, rising in April and peaking by May, then its fall started by June. One can observe that these months also happen to be summer where children no

[30] Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, vol. 2 (Manila: Bureau of Printing, 1921), 1039.

[31] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 91.

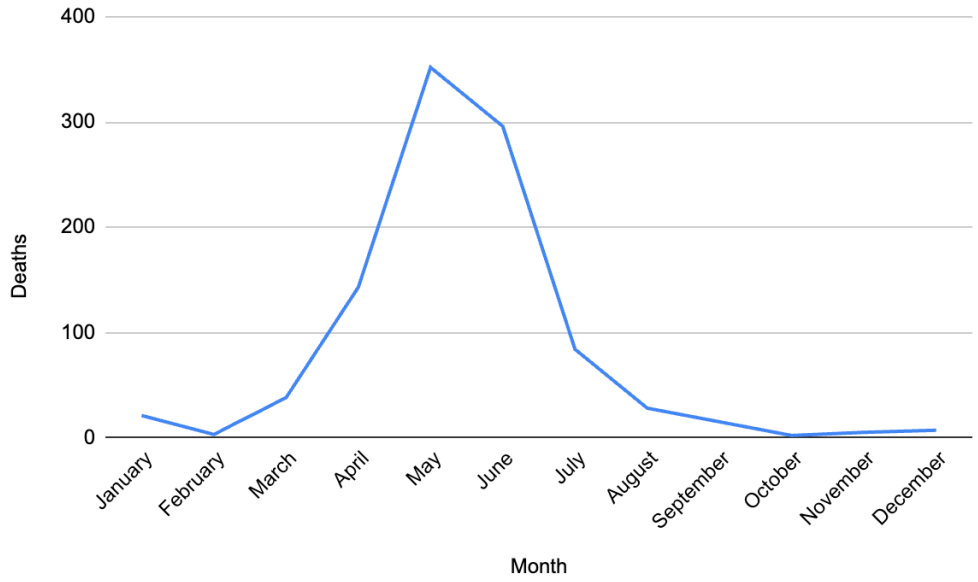
[32] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 91.

[33] Victor Heiser, *Annual Report of the Bureau of Health September 1904-August 1905* (Manila: Bureau of Public Printing, 1905), 21.

ISSN 2651-7108

longer attend school. While one may argue that the school environment could have caused the disease's spread due to the close proximity of students, the lack of a school environment might have contributed to the aggravation of the disease's spread. The Bureau of Health has routinely called on teachers in public schools to inspect children for communicable diseases.[34] A Teacher's manual on physical education explicitly states there potential diseases to look out for and to send the child home if that child possessed symptoms of communicable disease.[35] The absence of schooling would contribute to the spread of smallpox, since teachers often acted as a layer of inspection on school children that might have symptoms of smallpox. With Manila children no longer being in school, the colonial health bureaucracy loses its ability to perform routine inspections on children.

Figure 1: Smallpox Deaths Disaggregated by Month, 1918 Manila



Source: Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1709.

Smallpox in 1918 was both a disease of childhood as well as a disease of the dry season. With the majority of those infected being children under 9 years of age, the outbreak of smallpox revealed a lackluster vaccination campaign in Manila that failed to consistently cover those who were born after the city wide vaccination campaign of 1905. Furthermore, smallpox peaking in the summer months would also stretch the manpower of the health bureaucracy. The occurrence of a fire in April in San Lazaro coincided with the peak of cases in smallpox, resulting in the stretched bureau needing to tend to victims and conduct vaccinations at the same time.

[34] John Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1916* (Manila: Bureau of Printing, 1917), 79.

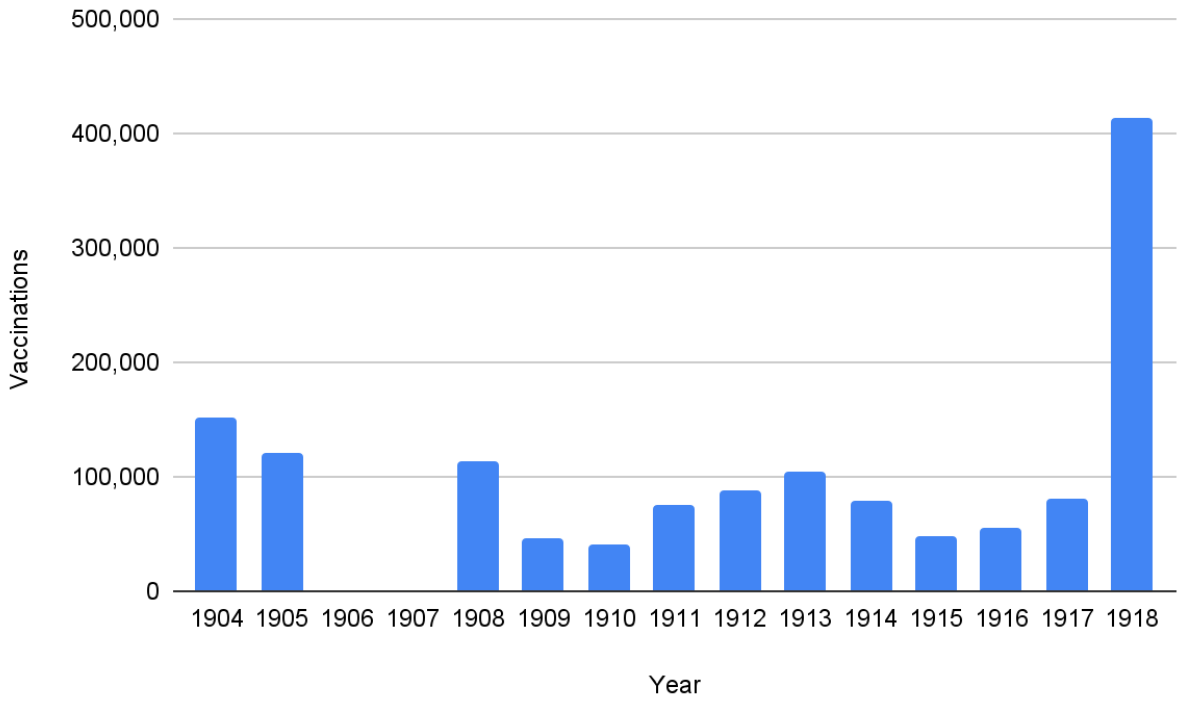
[35] Frederick England, *Physical Education* (Manila: Bureau of Printing, 1922), 8.

ISSN 2651-7108

Logistical Issues and Shortcomings of the Smallpox Vaccination Campaign

The lackluster vaccination campaign in Manila in the years prior to 1918 was caused by a shortage of vaccination supplies in the city. After the systematic vaccination of 1905, the city of Manila conducted inconsistent vaccination campaigns that failed to consistently cover the city's population with immunization. In Figure 2, it can be observed that prior to 1918, the highest number of vaccinations occurred in 1904 and 1905, 14 years prior to 1918. Reports unfortunately show no vaccination data for 1906 and 1907. The years 1908 to 1918 all show some efforts done on vaccination, but the efforts were never consistent. Some years like 1909, 1910, and 1915 show less than 50,000 vaccinations done on Manila's population. These inconsistent numbers reflect a growing sense of ease of vaccination on the part of the health bureaucracy after the widespread vaccination campaigns of 1905 had been done in Manila.

Figure 2: **Smallpox Vaccinations in Manila, 1904-1918**



Source: Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1041

.

The importance of a consistent vaccination campaign is reflected on the health bureaucracy's regulations on how often a person must be revaccinated in order for the community to acquire consistent immunity. The compulsory

ISSN 2651-7108

vaccination clause in the bureau's health ordinance indicated that it is the "duty of every person in Manila to be successfully vaccinated at intervals of one year."[36] The same emphasis on consistent revaccination was echoed in the Bureau's 1918 report, asserting the need for that "persistent and repeated" vaccination in order for the community to have "complete immunity".[37] Finally, as early as a report in 1916, alarm bells were being rung by the Bureau of Health, indicating the need for revaccination.[38] In the same report, the director of health explicitly mentioned that the immunity conferred by vaccinations in the years prior were "beginning to wear out, suggesting the need to "revaccinate the entire community".

Unfortunately the bureau of health failed to conduct a consistent revaccination campaign which could have prevented the outbreak of smallpox in 1918. In spite of health regulations and previous knowledge on the community's waning immunity, the bureau failed to acquire vaccine supplies that could consistently cover the city's population. Table 5 compares the supplies of vaccines with the city's entire population. Unfortunately the Bureau did not do a yearly count of the city's population, therefore no updated data in terms of population were acquired in select years. Nonetheless, in most of the years between 1906 to 1917, the supply of vaccines failed to cover the entire population of Manila, preventing the occurrence of a successful yearly revaccination campaign of the entire city. Vaccine supplies did not match the normal 200,000 population of the city. It was only in 1918, upon the outbreak of smallpox, that the health bureaucracy managed to procure enough supplies of more than 500,000 vaccines to cover the entire city's population.

[36] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands July 1905 to June 1906*, 6.

[37] De Jesus, "Report of the Philippine Health Service, 1918," 8.

[38] John Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1916* (Manila: Bureau of Printing, 1917), 9.

ISSN 2651-7108

Table 5: Smallpox vaccine supplied in Manila and Population, 1906-1918

Year	Vaccine Supplies	Population
1906-1907	107,450	223,542
1907-1908	91,562	No Data
1908-1909	173,400	No Data
1909-1910	73,600	234,409
1910-1911	151,050	No Data
1911-1912	165,000	No Data
1912-1913	136,800	246,778
1914	168,000	266,943
1915	86,550	No Data
1916	80,350	No Data
1917	102,500	283,613
1918	599,610	285,306

Source: Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1906-1907*, 148, 119; Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1907-1908*, 145, 117; Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1908-1909*, 150, 119; Heiser, *Annual Report of the Bureau of Health for the Philippine Islands 1909-1910*, 164, 119; Fox, *Annual Report of the Bureau of Health 1910-1911*, 103, 60; Heiser Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 196, 124; Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From July 1 1912 to June 30 1913*, 253, 205; Heiser, *Report of the Bureau of Health for the Philippine Islands 1913*, 302, 254; Heiser 1915, 151, 100; Long 1916, 128, 74; Long 1917, 226, 178; Long 1918, 228, 180

The inconsistencies in vaccination efforts and supplies was caused by a number of factors, including the bureau prioritizing sanitation and vaccination outside of Manila as well as problems regarding shipping of vaccines. By 1912, the Bureau began to shift its focus on vaccinating the inhabitants of Manila to other concerns. The reported cases and mortality rates from smallpox reached 0 in Manila as shown in Table 1. Furthermore, no other epidemics occurred in the city, which prompted the Bureau of Health to focus on other matters besides routine revaccination.[39] Healthcare workers were tasked to focus on sanitary efforts and mosquito extermination

[39] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 9.

ISSN 2651-7108

campaigns, while some inspectors were sent to the provinces to conduct vaccination outside of the city.[40] A senior official was even sent to Marikina in order to oversee the board of health there in order to help stamp out a smallpox outbreak.[41] The priority of the Bureau shifted, from conducting vaccination campaigns in the city, to other efforts such as sanitation or vaccination in the provinces. The absence of epidemics as well as a low mortality rate from smallpox prompted the health bureaucracy to be more relaxed in its vaccination efforts in Manila and focus its efforts elsewhere.

Shipping problems also contributed to challenges regarding supplies in vaccines. In 1914, for instance, the Bureau was approached by the MK Mulford Company that offered powdered vaccines.[42] This brand of vaccine was found to be effective even if stored in room temperature, thus enabling the bureau to conduct more successful vaccinations without the need to refrigerate the vaccines.[43] Unfortunately, due to circumstances outside the control of the health bureaucracy, two successive large shipments of the vaccine failed to arrive and deliver.[44] The failure on the part of MK Mulford resulted in vaccine supplies being lower than the expected target.

The outbreak of smallpox revealed the shortcomings of the colonial government's efforts in their vaccination campaigns prior to 1918. The failure of the government to conduct consistent revaccination campaigns after 1905 was due to a lack of vaccine supplies to cover the entire population. This logistical shortcoming concerning supplies is in stark contrast to the tendency of the health bureaucracy to blame Filipino hesitation towards vaccination. The 1918 report of the Bureau of Health mentioned the need for the Filipino people to "learn by repeated experience" that "complete immunity" can only be done through "persistent and repeated" vaccination.[45] Victor Heiser echoes the same sentiment in his report during the year 1907-1908, mentioning that Filipinos "delude themselves" with the thought that "one successful vaccination" is sufficient.[46] Fox indicated in the 1911 Bureau of Health report that Filipinos have "strong fatalistic tendencies" that led

[40] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 9-10.

[41] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 10.

[42] Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From January 1 to December 31 1914*, 32.

[43] Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From January 1 to December 31 1914*, 32

[44] Heiser, *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From January 1 to December 31 1914*, 32

[45] De Jesus, "Report of the Philippine Health Service, 1918," 8.

[46] Victor Heiser, "Annual Report of the Bureau of Health 1907-1908" (Manila: Bureau of Public Printing, 1908), 41.

ISSN 2651-7108

them to take chances with being unvaccinated.[47] These reports are telling of a bureaucracy having a culture of blaming Filipinos for the difficulties they encounter in vaccination. The blame is often centered on native hesitation on vaccination or revaccination. This is in contrast to the logistical issues and challenges that the vaccination campaign faced, which centered around supplies not necessarily caused by native hesitation on vaccination.

The colonial government's failure in conducting a consistent revaccination campaign could have been rectified, however, as early as 1916 when cases of smallpox were still low but started to alarm health officials about the waning immunity of the city. John Long who was director of health at that time observed a "steady increase in the cases of varioloid in the year" which gave him a "suspicion that the strength of the immunity conferred by the systematic and extensive vaccinations carried out over ten years ago is beginning to wear out".[48] Long suggested that a "thorough revaccination" of the "whole community" must be done.[49] This thorough revaccination of the city's population was unfortunately not carried out in the succeeding year of 1917.

Table 6 shows the vaccinations done from 1916 to 1918, the population of the city in those years, as well as the vaccine supplied in the city covered in those crucial years. One can observe that in 1917, the health service only managed to perform 81,390 vaccinations, 28.7% of the entire population, which was more than 70% short of what was recommended by Long. The supplies given were also inadequate. The 102,500 vaccine supplies in 1917 would only account for 36.14% of Manila's entire population. The shortness of vaccine supplies is an indication that the goal of revaccinating the entire city would have been impossible given that the supplies were woefully inadequate to cover the entire population of Manila.

[47] Carroll Fox, "Annual Report of the Bureau of Health 1910-1911" (Manila: Bureau of Public Printing, 1910), 50.

[48] Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1916*, 68.

[49] Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1916*, 68.

ISSN 2651-7108

Table 6: Population, Smallpox vaccine supplies, and actual vaccinations in Manila, 1916-1918

Year	Population	Vaccine Supplies	Vaccination
1916	266,943	80,350	55,973
1917	283,613	102,500	81,390
1918	285,306	599,610	414,410

Source: Data from Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1916*, 177, 226, 68; Long, *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31 1917*, 425, 228, 5;Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 20, 1041; De Jesus, *Report of the Philippine Health Service, 1918*, 297.

The lack of vaccine supplies to revaccinate the entire population of Manila in 1917 showed that the health bureaucracy was not proactive in preventing the outbreak of smallpox. The bureau could have had the chance of preventing the outbreak in 1918, given the alarm bells of rising cases and waning immunity that were indicated as early as 1916. In spite of this, the city was only able to conduct a wide mass vaccination program by 1918. The logistical challenge of vaccine supply was in contrast to the idea that Filipino hesitancy towards vaccination was the sole cause of the outbreak.

Besides the issue of vaccination supplies, another issue related to logistics was the lack of manpower to confer vaccination. This problem was caused by low wages given to Bureau of Health officials as well as concurrent problems that occurred in the summer months that stretched the bureau's manpower. This was particularly seen during the San Lazaro fire that occurred in April 1918. The fire occurred near the San Lazaro Hospital, straining the Bureau of Health's manpower and hampering the momentum of ongoing vaccination efforts at the time. As a result, although several Filipino mothers sought vaccination for their children after the fire, healthcare workers were unable to accommodate them because they were occupied with assisting fire victims.

ISSN 2651-7108

The Lack of Manpower & the San Lazaro Fire of 1918

The issue of manpower in the inoculation campaigns of the Americans was reported as early as 1905. The problem at that time was "not to get the people to be vaccinated but to get the vaccinators".[50] Finances was reported as the cause of this problem, with a treasury of the insular government being "depleted" and thus being unable to provide for the requested 350 vaccinators.[51] Lack of funding in provincial governments also caused vaccinators in Manila being reassigned to these areas, since these local governments could not afford to hire their own vaccinators.[52] Financial challenges resulted in slower vaccination campaigns prior to 1918, and would again cause difficulties in the vaccination campaign of 1918.

The issue of manpower and low salary was noted in De Jesus' report in 1918. He repeated a cause that led to issues regarding the lack of manpower in the bureaucracy: low salary.[53] The issue of low wages was apparent when he described the failure of the bureaucracy to fill in positions of "lower grades".[54] It did not help that Heiser in 1907 implemented that vaccinators be given an initial salary that was lower than the authorized amount and only increased when vaccinators showed efficiency in their work.[55] This further demotivated people in enlisting as vaccinators. Furthermore, the issue of salary was also apparent in the resignations of officers in the higher ranks of the bureaucracy at that time. De Jesus pointed out a law which prevented these higher officers from doing private practice while serving in the Bureaucracy, resulting in lessening the annual incomes of these officers by 3000 pesos or more.[56] These low salaries led to the resignation of higher officials as well as difficulty of the health Bureaucracy to fill in positions of lower ranks. The bureaucracy in 1918 already had a manpower shortage, which was further amplified by the occurrence of two simultaneous epidemics.

The shortage of manpower of the Bureau of Health would be apparent when its resources were tested in the San Lazaro fire of 1918. Beginning in late March 1918, the Bureau of Health already began systematic vaccinations across the city. Unfortunately, the manpower of the Bureau of Health would

[50] Heiser, *Annual Report of the Bureau of Health September 1904- August 1905*, 23.
[51] Heiser, *Annual Report of the Bureau of Health September 1904- August 1905*, 20.
[52] Heiser, *Annual Report of the Bureau of Health for the Philippine Islands for the Fiscal Year Ended June 30 1912*, 10.
[53] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 4-5.
[54] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 5.
[55] Victor Heiser, *Annual report of the Bureau of Health for the Philippine Islands For the Fiscal Year Ended June 30, 1907* (Manila: Bureau of Public Printing, 1907), 25.
[56] Vicente De Jesus, "Report of the Philippine Health Service, 1918," 4.

ISSN 2651-7108

be stretched to its limits during the San Lazaro fire in April 1918. The Manila Times on April 8, 1918 reported that a fire occurred in San Lazaro the day before, with damages amounting to Php 400,000 with an estimated 750 homes being burnt.[57] The effect of the San Lazaro fire resulted in relief work being done, particularly the usage of the San Lazaro race track to create makeshift pavilions and medical tents for fire victims.[58] Relief operations conducted in the aftermath of the San Lazaro fire would unfortunately result in the manpower of the Health Bureau being diverted from attending to smallpox vaccination towards relief efforts to help the victims of the fire. Nine days later, on April 17, the Manila Times reported women at the San Lazaro fire station asking to be vaccinated, yet were refused daily since doctors from the Bureau of Health were not available.[59] The nurses in charge of the area were busy attending to the fire victims, but did promise to request for doctors and vaccine supplies.[60] This particular instance shows Filipinos willing to be vaccinated, in this case Filipino women who turned up at the San Lazaro hospital, yet the logistical issue of manpower prevented them from being vaccinated.

The logistical issue of the lack of manpower goes against the impression of colonial health officials on Filipino hesitancy in vaccination. In spite of Filipino willingness to be vaccinated in San Lazaro, they had to be turned away due to the unavailability of doctors. Nurses in the area were also busy attending to victims of the fire, resulting in the momentum of the vaccination program being interrupted. The lack of manpower was caused by the low wages given to healthcare workers and officers of the health bureaucracy, resulting in the difficulty of the bureaucracy to fill in vacant positions. It was therefore not necessarily the fault of Filipino hesitation towards vaccination that caused the reemergence of smallpox in 1918, but rather the overstretched and low manpower of the health bureaucracy that had to deal with fire victims when cases were beginning to peak in the dry season of the year.

[57] "Loss in San Lazaro Fire Close to P400,000," *The Manila Times*, April 8, 1918, 1.
[58] "Relief Work Is Going On," *The Manila Times*, April 11, 1918, 1.
[59] "Beg to Be Vaccinated: San Lazaro Fire Victims Turned Away," *The Manila Times*, April 17, 1918, 2.
[60] "Beg to Be Vaccinated: San Lazaro Fire Victims Turned Away," *The Manila Times*, 2.

ISSN 2651-7108

Decline of Smallpox in Manila and the Philippines

By late May of 1918, the Bureau of Health began to take more active measures in curbing the spread of smallpox in Manila. The Manila Times in May 19 of that year reported that the Bureau of Health was conducting "detailed house to house inspection" in order to discover cases of smallpox.[61] Mortality caused by smallpox began to be reduced after May while systematic vaccinations also increased. Vaccinations that were first reported in late March eventually increased to more than 400,000 by the end of the year, covering more than the entire population of Manila.[62] By June, reported deaths from smallpox would experience a decline from 352 reported in May to 296 in June in the city.[63] After June, the reported deaths brought about by smallpox would decrease, eventually reaching single digits starting in October.[64]

Table 7: Nationwide Deaths from Smallpox by Month, 1918

Month	Deaths
January	138
February	125
March	233
April	369
May	1266
June	1978
July	2110
August	2012
September	1654
October	1898
November	2449
December	3170

Source: Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1005.

[61] "Smallpox Is Being Reported," *The Manila Times*, May 19, 1918.

[62] Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, vol. 2, 1041.

[63] Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1079.

[64] Philippine Islands Census Office, *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*, 1079.

ISSN 2651-7108

Nationwide, however, reported deaths by smallpox experienced no consistent decrease throughout the year. Table 7 shows that smallpox deaths persisted nationwide until the end of 1918, although the city of Manila experienced a consistent decline. Unfortunately, in spite of the wide vaccination campaign that was started in March in Manila, smallpox still persisted in causing deaths nationwide.

Conclusion

The 1918 smallpox epidemic was marked by a stark increase in mortality and morbidity rates in the city of Manila, in comparison to the years prior. The reemergence of the disease in 1918 resulted from a combination of factors centered on logistical challenges in vaccination and revaccination efforts. Although the tendency of official reports in 1918 is to blame Filipino hesitancy for vaccination, other sources and reports indicated a more nuanced picture to the cause for smallpox reemergence. Logistical issues surrounding vaccine supplies and manpower contributed to the reemergence of smallpox in 1918.

The lack of vaccine supplies led to the Bureau failing to conduct a city-wide revaccination campaign prior to 1918. Although health reports in 1918 indicated the waning effects of vaccinations as a cause of the epidemic, earlier reports as early as 1906 indicated a policy of yearly revaccination campaigns for the city while a report in 1908 already indicated the need for revaccination. Vaccination efforts after 1905 were more inconsistent and lackluster, while vaccine supplies failed to match the city's population, resulting in the failure of yearly revaccination campaigns as previously recommended. This was caused by a bureaucracy that focused its efforts on sanitation and provincial vaccination due to the city's low mortality rate in smallpox, as well as vaccine suppliers failing to deliver their shipment of vaccines.

1916 marked the year where the Bureau of Health noticed an increase in varioloid cases and recommended a city-wide revaccination campaign. The Bureau, however, failed to conduct such a vaccination campaign in the years between 1916 to 1918. Looking at data from the Bureau of Health reports, one can see that vaccine supplies from 1916 to early 1918 did not match the population of Manila. This indicated a failure on the part of the colonial government in conducting a city-wide revaccination, a failure that was not caused by Filipino hesitancy in vaccination but was caused by a lack of vaccine supplies.

Lastly, the lack of manpower was also a logistical challenge when it came to smallpox vaccination in 1918. Manpower was lacking in the bureaucracy due to the low wages the workers and officers receive. The 1918 fire in San

ISSN 2651-7108

Lazaro was evidence of the Bureau of Health's inability to supply sufficient manpower in conducting vaccination. The fire halted the ongoing momentum of vaccination that was already occurring in Manila since healthcare workers were preoccupied with attending to the victims of the San Lazaro fire. Women and mothers who wanted to be vaccinated in the San Lazaro fire station were refused service, since doctors could not accommodate them. The combination of these two logistical issues led to the reemergence of the epidemic in 1918. By presenting these logistical factors, a more nuanced picture to the issues of smallpox vaccination was presented, moving away from the idea of vaccine hesitancy as the sole reason for smallpox's reemergence. ✷

TALA Vol 8: No. 2 (December 2025)
ISSN 2651-7108

REFERENCES

Primary Sources

De Jesus, Vicente. Report of the Philippine Health Service, 1918. Manila: Bureau of Printing, 1919.

———. *Report of the Philippine Health Service, 1919*. Manila: Bureau of Printing, 1920.

England, Frederick. *Physical Education*. Manila: Bureau of Printing, 1922.

Fox, Carroll. *Annual Report of the Bureau of Health 1910-1911*. Manila: Bureau of Public Printing, 1911.

Heiser, Victor. *Annual Report of the Bureau of Health September 1904- August 1905*. Manila: Bureau of Public Printing, 1905.

———. *Annual Report of the Bureau of Health for the Philippine Islands July 1905 to June 1906*. Manila: Bureau of Public Printing, 1906.

———. *Annual Report of the Bureau of Health for the Philippine Islands 1906-1907*. Manila: Bureau of Public Printing, 1907.

———. *Annual report of the Bureau of Health for the Philippine Islands For the Fiscal Year Ended June 30, 1907*. Manila: Bureau of Public Printing, 1907.

———. *Annual Report of the Bureau of Health for the Philippine Islands 1907-1908*. Manila: Bureau of Public Printing, 1908.

———. *Annual Report of the Bureau of Health for the Philippine Islands 1908-1909*. Manila: Bureau of Public Printing, 1909.

———. *Annual Report of the Bureau of Health for the Philippine Islands 1909-1910*. Manila: Bureau of Public Printing, 1910.

———. *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From July 1, 1911 to June 30, 1912*. Manila: Bureau of Printing, 1913.

———. *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From July 1, 1912 to June 30, 1913*. Manila: Bureau of Public Printing, 1913.

ISSN 2651-7108

———. *Report of the Bureau of Health for the Philippine Islands 1913*. Manila: Bureau of Printing, 1913.

———. *Report of the Bureau of Health for the Philippine Islands for the Fiscal Year From January 1 to December 31, 1914*. Manila: Bureau of Printing, 1915.

Long, John. *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31, 1915*. Manila: Bureau of Printing, 1916.

———. *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31, 1916*. Manila: Bureau of Printing, 1917.

———. *Report of the Philippine Health Service for the Fiscal Year From January 1 to December 31, 1917*. Manila: Bureau of Printing, 1918.

McVail, John. "Small-Pox and Vaccination in the Philippines." *The British Medical Journal* 1, no. 3239 (January 23, 1923). https://www.jstor.org/stable/20422367.

Philippine Islands Census Office. *Census of the Philippine Islands Taken Under the Direction of the Philippine Legislature in the Year 1918*. Vol. 2. Manila: Bureau of Printing, 1921.

The Manila Times. "Relief Work Is Going On," April 11, 1918.

———. "Smallpox Is Being Reported," May 19, 1918.

———. "Smallpox Is in Pampanga: Cases Smuggled Out of Manila," April 1, 1918.

———. "Smallpox Not Manila Peril," March 27, 1918.

———. "Beg to Be Vaccinated: San Lazaro Fire Victims Turned Away," April 17, 1918.

———. "Loss in San Lazaro Fire Close to P400,000," April 8, 1918.

United States, Bureau of Census. *Census of the Philippine Islands, Taken Under the Direction of the Philippine Commission in the Year 1903*. Washington: United States Bureau of Census, 1905.

TALA Vol 8: No. 2 (December 2025)
ISSN 2651-7108

Secondary Sources

Anderson, Warwick. Colonial Pathologies : American Tropical Medicine, Race, and Hygiene in the Philippines. Quezon City: Ateneo de Manila University, 2007.

De Bevoise, Ken. "Until God Knows When: Smallpox in the Late-Colonial Philippines." Pacific Historical Review 59, no. 2 (May 1990): 149–85. https://www.jstor.org/stable/pdf/3640055.

Fenner, Frank. "Smallpox: Emergence, Global Spread, and Eradication." History and Philosophy of the Life Sciences 15, no. 3 (1993): 397–420. https://www.jstor.org/stable/pdf/23331731.

———. "Smallpox in Southeast Asia." Crossroads: An Interdisciplinary Journal of Southeast Asian Studies 3, no. 2/3 (1987): 34–48. https://www.jstor.org/stable/40860242.

Gealogo, Francis. "The Philippines in the World of the Influenza Pandemic of 1918-1919." Philippine Studies 57, no. 2 (June 2009): 261–92. https://www.jstor.org/stable/42634010.

Moralina, Aaron Rom. "State, Society, and Sickness: Tuberculosis Control in the American Philippines, 1910- 1918." Philippine Studies 57, no. 2 (June 2009): 179–218. https://www.jstor.org/stable/42634008.

ISSN 2651-7108