



The Dutch East Indies Government's Program for Malaria Control Among the Population of Semarang, 1910–1940

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Abstract: This research examines the Dutch East Indies government's programs for addressing malaria among the population of Semarang City from 1910 to 1940. The purpose and objectives of this research are to identify and provide an overview of the programs implemented by the Dutch East Indies government to combat malaria, including the background of the malaria outbreak, its causes, and the government's treatment strategies. The research method employed is qualitative research using a case study approach focused on the malaria endemic in the community of Semarang City from 1910 to 1940. This article was prepared using sources from government reports as well as several newspapers obtained from the Delpher platform, which is accessible online. Additional sources, such as books, were sourced from the Central Java Provincial Library and the Semarang City Archives and Library Service, which can be accessed directly on-site. The results of this research indicate that the Dutch East Indies government implemented several programs, such as collecting data on malaria victims, administering quinine, and improving village infrastructure to address the malaria epidemic in the community of Semarang City from 1910 to 1940.

Keywords: Dutch East Indies; handling; malaria; society

Abstract: Penelitian ini mengangkat permasalahan terkait program pemerintah Hindia Belanda dalam menangani malaria pada masyarakat Kota Semarang tahun 1910-1940. Tujuan dan manfaat penelitian ini adalah guna mengetahui sekaligus mendapatkan gambaran mengenai program-program yang diterapkan pemerintah Hindia Belanda dalam menangani malaria, yang meliputi latar belakang munculnya malaria, penyebab, dan penanganan oleh pemerintah Hindia Belanda. Metode yang digunakan dalam penelitian ini adalah penelitian kualitatif dengan pendekatan studi kasus pada endemi malaria pada masyarakat di Kota Semarang tahun 1910-1940. Penyusunan artikel ini menggunakan sumber dari laporan pemerintah serta beberapa surat kabar yang didapatkan pada laman Delpher yang diakses secara daring. Sumber lain seperti buku dapat ditemukan pada Perpustakaan Provinsi Jawa Tengah dan Dinas Kearsipan dan Perpustakaan Kota Semarang yang diakses langsung di tempat. Hasil penelitian ini menunjukkan bahwa pemerintah Hindia Belanda membuat beberapa program seperti pendataan korban malaria, pemberian obat kina, serta perbaikan kampung untuk menangani endemi malaria pada masyarakat di Kota Semarang tahun 1910-1940.

Kata Kunci: Hindia Belanda; malaria, masyarakat; penanganan; program



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Introduction

Semarang is a city located on the North Coast of Central Java (Kasmadi & Wiyono, 1985). Semarang has long been a bustling commercial hub since the Dutch East Indies era. By the

early 20th century, Semarang had become a destination for migrants seeking livelihoods, not only from the Javanese ethnic group but also from various other ethnicities such as Chinese, Arab, Malay, Indian, and European. By the early 20th century, Semarang had become a hub for merchants. In 1905, Semarang possessed all the necessary elements, including industry, agriculture, trade, and transportation. Records from 1905 indicate that the population of Semarang City numbered 96,000 people. This figure was composed of 5,100 Europeans, 14,000 Chinese, 700 Arabs, while the remainder consisted of indigenous residents and other foreign Easterners; overall, this number continued to rise over time (Dinas Kebudayaan dan Pariwisata Kota Semarang, 2023). On April 1, 1906, under the leadership of L.R. Prister, the city of Semarang officially changed its status to *a municipality*.

In the early years after Semarang was established as *a municipality*, it did not yet have a mayor. This was because regulations regarding the appointment of a mayor were not enacted until 1916. However, even as the city's system transitioned to *that of a municipality*, it still had a leader known as *the Gemeentrad*; at that time, *the Gemeentrad* was chaired by *the Hoofd Van Plaatselijke Bestuur* until 1915. In 1916, the city of Semarang officially had mayors, held by Ir. D. De Jongh (1916–1927), A. Bagchus (1927–1936), and H.R. Boissevain (1936–1942). *The municipal* government system was successfully implemented in the city of Semarang and also extended to local villages and hamlets, allowing the Dutch East Indies government to effectively resolve issues concerning the city, villages, and hamlets in Semarang.

Since the transformation of the City of Semarang into *a Gemeente*, new problems emerged, such as a surge in the population of the City of Semarang. The book “Social History of the City of Semarang 1900–1950” explains that in 1915, the population of the City of Semarang was 248,000 people, with the breakdown as follows: 1,500 were East Asian foreigners, 11,000 were Europeans, 17,000 were Chinese, and the indigenous population numbered 218,500 (Kasmadi & Wiyono, 1985). This population growth is due to the fact that Semarang has become a destination for people seeking employment in various fields (Dinas Kebudayaan dan Pariwisata Kota Semarang, 2023).

The influx of migrants from outside the city of Semarang created several new problems for the Dutch East Indies government, one of which was that residential areas became overcrowded. This was evidenced by the displacement of the indigenous population to the areas of Bulu, Pandean, Ambean, Karang Sari, Karangturi, and Jomblang. The Pandean and Bojong areas, which at that time were home to the indigenous population, were eventually purchased by foreigners, forcing them to relocate to other areas. These areas became densely populated settlements, and the situation was further compounded by immigrants arriving from outside the city of Semarang.

The 20th century was a difficult period for the Dutch East Indies Government, particularly regarding public health. A thesis titled “*The History of Pandemic Disasters in 20th-Century Java*” by Kholidah Sunni explains how the early 20th century witnessed numerous famines and the spread of diseases in Java (Nafisah, 2022).

The Dutch East Indies government was taken aback by the emergence of several diseases in the city of Semarang that claimed numerous lives; this naturally caused significant anxiety among the people of Semarang amidst a rapidly surging population. The Dutch East Indies government's presence in Semarang was not solely focused on livelihoods and the economy but also on the social life of the Dutch East Indies community, including public health. Public health in Semarang began to receive serious attention after the emergence of infectious diseases began to disrupt the economic activities of the Dutch East Indies government. When the spread of these diseases began to affect the indigenous population, the Dutch East Indies government appeared to take the situation less seriously (Saputra et al., 2021).

A serious health issue faced by the Dutch East Indies government was the spread of malaria among the population of Semarang. Malaria is a disease caused by the Plasmodium parasite, which is transmitted by *Anopheles* mosquitoes. Those infected with malaria typically experience symptoms such as chills, shivering, high fever, sweating, headache, vomiting, and weakness. *Anopheles* mosquitoes usually breed in water that is in direct contact with the ground, such as rice fields, swampy settlements, swamps, springs, and slow-flowing rivers. Generally, *Anopheles* mosquitoes breed in tropical and subtropical regions. The term "malaria" is derived from the Italian words "*mal*," meaning bad, and "*aria*," meaning air; this suggests that malaria arises due to unpleasant odors caused by swamps and other sources of such odors (Apriliani, 2021).

The emergence of malaria is not solely due to dirty and cramped living conditions. Problems such as poor sanitation occur in several areas of Semarang City. Many indigenous residents have not yet been able to adopt clean living habits. The lack of proper waste disposal sites forces indigenous residents to dispose of trash and waste improperly; they often discard food scraps into drainage channels and open areas (Agustono et al., 2025).

These actions have led to several potential problems, one of which is the blockage of waterways in various areas. Waterways that should flow smoothly and remain clean have instead become clogged and unable to circulate properly, which has a significant impact on mosquito breeding in stagnant, non-flowing water. H.F. Tillema also explains in his book titled "Kampongwee" that indigenous settlements were filled with pools of mud characterized by a black color and a foul odor (Tillema, 1919). Feces, human urine, and animal waste were not disposed of properly. Yet this feces and urine came into direct contact with the soil they inhabited and the water they used daily. The squalid and muddy conditions of these settlements allowed mosquitoes to breed rapidly.

Addressing the malaria epidemic in the city of Semarang became the primary focus of the Dutch East Indies Government in preventing the death toll from rising even higher. The *Rotterdamsche Courant* of 1924 reported that the death toll in Semarang due to malaria was steadily increasing (Rotterdamsche Courant, 1924). The Dutch East Indies Government's efforts to address health issues in the city of Semarang involved implementing health propaganda. This health propaganda initiative began in 1920 with the appointment of a health propaganda advisor, although it was temporarily suspended in 1923 due to budget cuts implemented by the Dutch East Indies Government.

The Dutch East Indies government established an organization called *Kampongverbetering* in 1924. This organization renovated villages, built roads, and provided access to clean water for the indigenous population of Semarang. In addition to establishing *Kampongverbetering* as part of its efforts to combat the malaria epidemic, the Dutch East Indies government also introduced quinine as a herbal remedy for malaria. Cinchona was first imported directly from the Americas and brought into the Dutch East Indies in 1854; however, doctors and public health officials in Semarang did not discover and study cinchona as a potential medicine until 1918.

There are several articles discussing the Dutch East Indies government's program to address the malaria epidemic in Semarang. The first article, Amalia et al. (2016), discusses the outbreak of diseases spreading in the city of Semarang, one of which was malaria. This article also explains *Kampongverbetering* as one of the solutions to address the disease outbreak. The second article, Widyakinasih & Tangkilisan (2025), reviews hygiene campaigns in villages and schools in Semarang that were directly affected by disease outbreaks, including malaria. The third article, Amalia (2024), discusses the spread and management of disease outbreaks affecting cities in Java, including malaria. The fourth article, Achan et al. (2011), discusses the

cinchona plant, which is used as an alternative medicine for several diseases, including malaria.

Based on the above discussion, the author identified a research gap that has not been extensively addressed: the detailed spread of malaria in the city of Semarang during the years 1910–1940. The author also found no research that comprehensively and in detail examines the Dutch East Indies government's program for managing the malaria endemic in the city of Semarang. Therefore, the novelty of this study lies in explaining the spread of malaria and the role of the Dutch East Indies government in addressing the malaria epidemic in Semarang City from 1910 to 1940. This article focuses on two aspects: First, to identify the initial patterns and causes of malaria transmission in Semarang City. Second, to examine the role of the Dutch East Indies government in implementing programs to address the malaria epidemic in Semarang City.

Research Methods

This study employs a historical qualitative research approach using document analysis and descriptive analysis. This study employs four historical research methods: *heuristics*, source criticism, interpretation, and historiography. During the data collection phase (*heuristics*), primary sources such as the 1933 *Jaaverslag* and *the Gedenkboek der gemeente Semarang 1906–1931* were obtained from the Provincial Archives and Library Service. Several newspapers, magazines, and photographs detailing malaria, such as “*De Locomotief*”, “*Het nieuws van den dag voor Nederlandsch*”, “*Algemeen vakblad van Nederlandsch-Indie*”, “*Bataviaasch nieuwsblad*”, “*Verslag van de Toestand der Gemeente*”, and “*Nieuwe Rotterdamse Courant*”, were obtained from the *Dhelper* website via online access. As for the secondary sources the author obtained, such as books and articles, they were found at the Central Java Provincial Library and the Semarang City Archives and Library, which were accessed directly on-site. During the source criticism phase, the author compared several government reports with written sources, such as contemporary books and newspapers; this was done to prevent the author's subjectivity in determining the content of the writing. The author needed to synthesize an understanding of the sources that had been collected. The sources obtained would serve as facts capable of reconstructing the malaria epidemic in Semarang City during the years 1910–1940. At this stage, the author also interprets the sources obtained to facilitate historical writing. This historiographical stage is expected to produce historical writing based on the collected sources, so that the resulting historiography can reconstruct the malaria epidemic in Semarang City from 1910 to 1940 as a historical fact.

Research Findings

Causes and Spread of Malaria in the Community of Semarang City, 1910–1940

Semarang City holds a strategic position as a port city on the northern coast of Java. Since the early 20th century, it has played a crucial role in the colonial trade network of the Dutch East Indies. The Port of Semarang served as one of the primary gateways for distributing agricultural products from the inland regions of Central Java—such as sugar, coffee, and other plantation goods—to international markets. This position established Semarang as a hub for economic activity, transportation, and high population mobility. The influx and outflow of ships, goods, and labor from various regions accelerated the city's growth; however, this simultaneously placed significant pressure on urban planning and infrastructure, particularly in coastal and low-lying areas. Furthermore, Semarang's status as an active economic hub attracted workers from outside the city, leading to a substantial population surge (Dinas Kebudayaan dan Pariwisata Kota Semarang, 2023).

Geographically, Semarang is divided into two distinct regions with significantly different

conditions: the lower region and the upper region. The lower region encompasses the area along the northern coastline extending inland up to a certain elevation limit—specifically, the zone where the land rises at a very steep gradient. The upper region is situated at the elevation boundary that extends southward, where the ground level continues to rise. Based on elevation relative to sea level, the lower region has three distinct elevation levels: 0.75 m in the coastal area; 2.75 m in the city's central business district; and 3.49 m in the city center (Simpang Lima). For the upper region (Candi), there are also three elevation levels: 90.56 m in the Upper Candi area (Candi Baru); 196.00 m in the Jatingaleh highland; and 270.00 m in the Gombel highland (Harriyadi et al., 2023).

Records from 1905 indicate that the population of Semarang City was 96,000, comprising 5,100 Europeans, 14,000 Chinese, 700 Arabs, 800 people from the East, and the remainder being indigenous residents (Kasmadi & Wiyono, 1985). Since 1906, following the change in Semarang's municipal governance system to a "*gemeente*," social stratification began to emerge based on economic class, as exemplified by the Dutch official class. Generally, they occupied more desirable locations in the city center, specifically around the Pandrikan, Seteran, Mlaten, and Sompok areas. Dutch homes at that time mostly tended to feature European architectural styles, although not entirely; they also retained elements of their original structures.

The social strata of Semarang's population during the colonial era were defined based on racial or ethnic classifications established by the Dutch East Indies government. The population was categorized into several groups: Europeans, Chinese, other Foreign Easterners, and indigenous people. This classification was not merely social in nature but was also tangibly reflected in the city's spatial planning and settlement patterns. The European group generally resided in areas considered the most strategic and comfortable, such as Bojong, Candi Baru, Paradeplein (Seteran), Sompok, Pendrikan, as well as military complexes in the Kaliwiru and Kenarilaan areas (Kasmadi & Wiyono, 1985). In these areas, many facilities supporting the lives of Europeans were built, including shops, trading offices, hotels, government offices, and military barracks. Meanwhile, the Chinese community was concentrated in areas such as Wotgandul, Pekojan, Gang Pinggir, Gang Warung, Gang Lombok, and the surrounding areas, characterized by the presence of Chinese-owned shops, temples, inns, and Chinese restaurants (Wijono, 2013).

As for other groups of Eastern foreigners, such as Arabs, Indians, and Pakistanis, they generally settled in the Kauman area, Kampung Arab (around Pekojan), Kampung Batik, and areas near the Port. Some of these groups later assimilated into the indigenous community. The indigenous population itself largely resided in the Lamper, Krakatau, Mrican, Halmahera, and surrounding areas, as well as Mlaten, Sompok, Tanah Putih, or Candi Lama, and other village areas. This settlement pattern indicates a spatial segregation based on race that significantly influenced social life and access to urban facilities during the colonial period.

The contrast in settlement patterns between the European and indigenous groups is striking when viewed in terms of the conditions of their settlements. Initially, the indigenous population occupied areas with relatively good road access. At that time, the indigenous groups lived directly across from fairly wide roads. It didn't take long before they were forced to move to areas with narrow, muddy roads because the land had been purchased by European groups. The relocation of indigenous groups to the areas of Bulu, Pandean, Ambean, and Karang Sari, Karangturi, and Jomblang caused several serious problems. The indigenous groups were forced to live in inadequate settlements with narrow road access. Many of them did not have proper housing. Their dwellings were characterized by foundations that used bamboo as supports for

their homes. Road access that was dusty during the dry season and muddy when it rained made their settlements prone to flooding.

Henry Freek Tillema, a philanthropist and pharmacist in Semarang, conducted a study in 1913. He researched and photographed the physical conditions of the villages and the health of the settlements in Semarang. The results of Tillema's study showed that many of the community's homes did not meet the requirements for decent housing. Many houses were built using bamboo as a foundation, with earthen floors, and lacked ventilation as a means for air circulation. Access to clean water was also inadequate in these villages. Tillema also noted that the population density per hectare reached 400–1,000 people.



Figure 1. Conditions of Residential Settlements in Semarang City in the 20th Century

Source: Verslaag Gemeente Semarang, 1917

Issues related to clean water facilities were a serious concern for the indigenous population at that time. They still used public wells whose cleanliness could not be guaranteed. The distance between toilets and wells was relatively close, so it cannot be denied that sometimes the villagers also used these wells as their source of drinking water (Amalia et al., 2016). Drinking water sources from wells were sometimes also located near sewage channels (Cipta, 2020). This, of course, posed new challenges for the Dutch East Indies government when observing the inadequate living conditions and lifestyle of the indigenous population. Health-related issues faced by the indigenous population in the city of Semarang began to become clearly evident. Many of them were afflicted by various diseases caused by poor environmental conditions, one of which was malaria.

Malaria is a disease caused by the *Plasmodium* parasite, which is transmitted by *Anopheles* mosquitoes. People infected with malaria typically experience symptoms such as chills, high fever, sweating, headache, vomiting, and weakness. The name “malaria” is derived from the Italian words “mal,” meaning “bad,” and “aria,” meaning “air” (Apriliani, 2021). When considered together, malaria arises due to the presence of foul odors caused by standing water resulting from rain and poor village drainage. *Anopheles* mosquitoes typically breed in water in direct contact with the ground, such as rice paddies, muddy settlements, swamps, springs, and slow-flowing rivers.

Based on an investigative report on living conditions and housing in East and North Semarang conducted by the Semarang Voters' Association Council in 1910, it was recorded that in the East Semarang area, malaria had been the leading cause of death over the past five years (*Algemeen Handelsblad voor Nederlandsch-Indie*, 1930). The report stated that there were 22 deaths due to malaria, while the exact cause of death for 12 others remained unknown. However, the Semarang Voters' Association Council suspected that these 12 deaths were also caused by malaria. This was corroborated by a statement from Dr. C. van der Meer, who noted

that during his medical practice in the East Semarang region, malaria was one of the most frequently encountered diseases among the local population. He also reported that the number of malaria-related deaths was extremely high and exceeded the total number of all other disease cases combined (Bestuur der Semarangse Kiesvereniging, 1910).

The average mortality rate in 1913, as recorded by the Civil Medical Service (BGD), was 53% in East Semarang, 44% in West Semarang, and approximately 44% in Central Semarang. It was also recorded in 1914 that in the Dadapsari and Poewogondo areas, the mortality rate due to malaria was around 28%, while in the Banjarsari, Pedalangan, and Manisrejo areas, it ranged from 70%. The widespread deaths from malaria forced the Dutch East Indies government to take action. The Semarang City Association, together with a local doctor, conducted autopsies on every victim who died. It took until 1917 for these autopsies to become mandatory for the residents of Semarang (Dagblad De Locomotief, 1931).

In the same year, along major roads, some indigenous residents complained about stagnant water and neglected ponds. These ponds were found around Kalibaru Barat and Pengapon streets, in a state of abandonment. The condition of the ponds and stagnant water discovered by the residents was deeply concerning; they were found to be teeming with algae and *Anopheles* mosquito larvae (*i*). The indigenous residents feared that these ponds and puddles would become a new source of malaria (Dagblad De Locomotief, 1931).

The Head of Health Services in Semarang (*hoofd van de gezondheidszorg*) submitted a report to the Mayor regarding comprehensive inspection data on mortality rates among Semarang's residents. It was recorded that in the second quarter of 1929, 6 Chinese residents died from malaria. The same report noted that in the second quarter of 1930, 22 Chinese residents died and were diagnosed with malaria (Algemeen vakblad van Nederlands-Indie, 1930). In 1935, it was also reported that malaria had caused a surge in casualties in the Tengeles and Kudu regions, with nearly 40% of the population suffering from malaria (*Breda Courant*, 1936). In another report, the Dutch East Indies Government also proposed to the Civil Health Department that efforts be initiated to eradicate malaria in regions with high mortality rates (De Locomotief, 1929).

The malaria epidemic in the city of Semarang had a devastating impact on the lives of its residents. Substandard housing and living conditions, as well as a lack of attention to hygiene and health, were among the factors contributing to the spread of this epidemic, which became a serious concern for the Dutch East Indies government in addressing the malaria outbreak. The impact of this malaria epidemic severely disrupted the daily activities of the people of Semarang at that time. It became extremely difficult to carry out various economic, social, and political activities. The Dutch East Indies government prioritized health and sanitation initiatives as part of its efforts to reduce the number of victims of the malaria epidemic.

The Dutch East Indies Health Department's Program for Malaria Control in Semarang, 1910–1940

The spread of the malaria epidemic in Semarang forced the Dutch East Indies government to implement policies tailored to the conditions of Semarang's community. In 1910, H.F. Tillema was appointed to the Semarang City Council. Upon his appointment to the Semarang City Council, Tillema brought a number of concerns regarding health issues in Semarang to the forefront. As someone with a background in observing the environmental conditions of villages in Semarang, Tillema was dismayed when his proposal to support improved village planning in the city was rejected by the Dutch East Indies government. The Dutch East Indies government's reason for rejecting Tillema's proposal was fairly standard; this was because issues related to villages fell outside Tillema's scope (Nurhajarini & Fibiona, 2019).

Tillema, a pharmacist, and Thomas Karsten, an engineer, organized reforms related to housing issues. According to Tillema and Karsten, two factors influenced the health of settlements in the city of Semarang: the disorganized nature of Semarang's villages and the primitive construction techniques used by the village communities. The focus on housing development that consumed large amounts of land led to the creation of numerous substandard settlements. Another contributing factor was the decentralization system, which caused urbanization in the Semarang region to surge, thereby increasing the demand for housing. This, in turn, resulted in the creation of substandard housing settlements (Nurhajarini & Fibiona, 2019).

In 1912, two years after malaria struck the population in 1910, the Dutch East Indies Government established a special agency to oversee and inspect sanitation and health conditions in the city of Semarang. R. Ngamdani served as the first doctor directly assigned by the City Association to assist in this agency (Kurniarini et al., 2014). After conducting several rounds of monitoring and inspections of the Semarang community, it became evident that a significant number of residents were affected by this epidemic. The health and sanitation agency, together with Dr. R. Ngamdani, urged the Dutch East Indies government to establish a City Hospital and a City Health Department as one of the initial steps to combat the malaria epidemic in Semarang (Dagblad De Locomotief, 1931).

The rapid spread of the malaria epidemic cannot be separated from the still very limited environmental sanitation conditions in Semarang. The city sanitation department noted in 1914 that services for collecting household, garden, and livestock waste were only accessible through a subscription. Only about 269 people were registered as customers for these sanitation department services. Some residents complained that this figure demonstrated that waste management had not yet become a service available to the entire community. In 1916, the city sanitation department began gradually implementing several policies aligned with the conditions of Semarang's community, one of which pertained to waste management. As part of its plan to address the malaria epidemic, the sanitation department will undertake the dredging and draining of several swamps in North Semarang. The draining of these swamps aims to eliminate breeding grounds for *Anopheles* mosquitoes in various locations (Dagblad De Locomotief, 1931).

Rapid population growth and the continuing loss of lives forced the Dutch East Indies government to expand the city limits of Semarang. Thomas Karsten was tasked with redesigning the Candi Baru area, which had previously been planned by Ir. A. Plate, Director of the Supervision and Construction Service. By 1917, Thomas Karsten's design for the Candi Baru area was complete. Karsten collaborated with Ir. JJ G.E. Rucket on the construction of Candi Baru (Brommer et al., 1995). The development of the Candi Baru hillside area was driven by Semarang's high population growth. Additionally, the development of the Candi Baru area served as a solution to the declining quality of the living environment for Semarang's residents. The Dutch East Indies government believed that the spread of malaria in Semarang was caused by poor housing conditions (Harriyadi et al., 2023).

In 1918, Dr. G. F. H. Verspijck Mijassen, who had worked for several years in Lampung, was appointed by the Inspector of the Civil Health Service (*Burgerlijke Geneeskundige Dienst*) to collect data regarding the malaria epidemic in Semarang. Verspijck Mijassen was also tasked with establishing a specialized laboratory for malaria control (Het nieuws van vandaag voor Nederlands-Indie, 1918). In the third quarter of the same year, the mortality rate among Semarang's population surged sharply. A slight disagreement arose regarding the policy for handling this malaria epidemic. The Civil Health Service and Dr. De Vogel argued that dredging fish ponds was necessary to eradicate *Anopheles* mosquito breeding grounds (Batavia

Courant, 1920). Mayor De Longh, along with Dr. Leopold, argued that draining the fish ponds could not be done arbitrarily. Dr. Leopold contended that maintaining the cleanliness of the fish ponds would be highly significant for malaria control, as well-maintained ponds would have a positive impact on the environment. Well-maintained fish ponds can provide a solution to the abundance of *Anopheles* mosquito breeding sites. Dr. Leopold suggested improving and expanding sewage drainage systems as a measure to reduce *Anopheles* mosquito breeding sites, rather than dredging the fish ponds. Dr. Leopold recommended that the sewage disposal system in the villages of Semarang be implemented using septic tanks; this was done to meet the sanitation needs and provide facilities for the residents of Semarang regarding bathing, washing, and toilet facilities (MCK).

The Dutch East Indies government felt that the measures taken were insufficient to address the malaria epidemic in Semarang. In the third quarter of 1918, deaths from malaria continued to rise. During that quarter, at least 40 to 60 people died each day (*Dagblad De Locomotief*, 1931: 192). The Dutch East Indies government continued to implement targeted policies to reduce malaria-related fatalities. The government planned to treat malaria using an alternative medication: quinine. Quinine is the bark of the *Cinchona* tree, which was brought from the Americas to the Netherlands and subsequently introduced to the Dutch East Indies by Hasskarl in 1854 (Zakaria, 2012). Before it could be consumed as medicine, the cinchona bark was ground into a fine powder, then mixed and dissolved in water, so that it could subsequently be distributed to the public as an alternative malaria treatment (Achan et al., 2011). The Dutch East Indies government began distributing cinchona to the residents of Semarang in 1918. Villages that suffered heavy casualties from malaria became the primary focus of the quinine distribution. Dr. Swellengrebel intensively distributed quinine to villages near coastal areas and in foothill regions.

Efforts to reduce the malaria epidemic cannot rely solely on medical treatment. Education and knowledge regarding health and hygiene issues also have a significant impact on the clean and healthy lifestyle behaviors of Semarang's residents. The lack of public awareness regarding hygiene and health is a major contributing factor to the spread of the malaria epidemic in Semarang. Littering and relieving oneself in public places demonstrate a lack of consideration for personal hygiene and health. The Civil Health Service (*Burgerlijke Geneeskundige Dienst*), in collaboration with the Rockefeller Foundation, established a health program in 1924 called *the Medisch Hygienische Propaganda* (MHP). The establishment of *Medisch Hygienische Propaganda* was one solution to educate the people of Semarang about clean and healthy living. MHP educated the public through theoretical instruction, health practices, and the dissemination of information regarding medications. Furthermore, MHP provided instruction on environmental hygiene and health to students in Semarang's schools (Widyakinasih & Tangkilisan, 2025).

In the early stages of this program's establishment, MHP first carried out its mission in 1929 at schools in Semarang. Dr. Thierfelder Thillot was a physician directly appointed by the Dutch East Indies government to serve as the executive director of this program. Before carrying out his duties, Dr. Thillot held open discussions with the regent, the assistant resident, and local doctors regarding the programs to be implemented. They analyzed the needs and issues in each village in Semarang, so that clear solutions could be found to address the problems in each village. After conducting several medical programs in schools and villages in Semarang, the health workers discovered a similar pattern in carrying out their duties. The health educators found that some elderly residents and parents were actually less receptive to the program compared to teenagers and children. By 1930, health education in Semarang was first conducted through large-screen demonstrations, which proved to have a significant impact

on all segments of Semarang's population. In schools across Semarang, this program was not limited to students; teachers also received hygiene and disease prevention education from health educators and health workers. Consequently, by 1933, the residents of Semarang were already reaping the benefits of the MHP program. Teachers in Semarang's schools were also able to teach and implement these practices with their students, so the frequency of MHP program visits was slightly reduced that year (Widyakinasih & Tangkilisan, 2025).

The poor condition of Semarang's residential areas was also a major concern for the Dutch East Indies government. The poor condition of Semarang's residential areas directly contributed to the emergence of a malaria epidemic. In accordance with government decision No. 30 dated May 25, 1938, a commission was formed consisting of a chairperson and three members tasked with improving villages in Semarang (Landsdrukkerij, 1939). In 1907, the Dutch East Indies government initiated a program called *Kampongverbetering*. *Kampongverbetering* was created with the aim of improving substandard settlements in the city of Semarang. This program focused on improvements to drainage systems, waste management, bathing and washing facilities, as well as several poorly maintained roads in residential areas. In implementing this program, the Dutch East Indies government received financial assistance from the central government amounting to f. 56,350 (Amalia et al., 2016). This funding was intended to be used for improvements in the settlements with the worst conditions first. The program was officially launched in 1927, with improvements beginning in the areas of Karangasem, Rejosari, Kebonsari, Pederesan, and Kebonagung. By 1929, several housing improvements had been completed, with approximately 44 hectares of housing areas fully renovated. In the following year, the *Kampongverbetering* program completed improvements on 26 hectares of settlements (Mulyanto, 2023). By 1938, the *Kampongverbetering* program was still ongoing, and settlement improvements were proceeding smoothly (Landsdrukkerij, 1939).

The efforts to address the malaria epidemic undertaken by the Dutch East Indies government faced numerous obstacles. It is evident that many of the programs implemented did not proceed smoothly or as intended; this is evidenced by the *Kampongverbetering* program, which encountered several challenges, one of which was funding issues. The collaboration between the Dutch East Indies government and all elements of society—such as the Civil Health Department, health officers, and local doctors—had a significant impact on the health conditions of the residents of Semarang. By 1940, the malaria epidemic had been brought under control to a considerable extent. Several substandard settlements had been improved, and the cleaning of drainage channels was also successfully completed. Residents still infected with malaria could be properly treated at and were given quinine as a cure for the disease. The policies and interventions implemented by the Dutch East Indies government significantly reduced the death toll from the malaria epidemic. Improvements to health and sanitation facilities continued to be made to prevent the malaria epidemic from spreading again.

Conclusion

The efforts to manage the malaria epidemic undertaken by the Dutch East Indies government faced numerous obstacles. It is evident that many of the programs implemented did not proceed smoothly or as intended. This is evidenced by the *Kampongverbetering* program, which encountered several challenges, one of which was a funding issue. The collaboration between the Dutch East Indies government and all elements of society—such as the Civil Health Department, health officers, and local doctors—had a significant impact on the health conditions of the residents of Semarang. By 1940, the malaria epidemic had been brought under control to a considerable extent. Several substandard settlements had been improved, and

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References

- Achan, J., Talisuna, A. O., Erhart, A., Yeka, A., Tibenderana, J. K., Baliraine, F. N., Rosenthal, P. J., & Alessandro, U. D. (2011). Quinine, an old anti-malarial drug in a modern world : role in the treatment of malaria. *Malaria Journal*, *10*, 144. <https://doi.org/10.1186/1475-2875-10-144>.
- Algemeen handelsblad voor Nederlandsch-Indië. (1930, January 15). *De Gezondheid van Semarang*. Algemeen handelsblad voor Nederlandsch-Indië.
- Algemeen vakblad van Nerdelands-Indie. (1930, April 11). *Onder Chinezen*. Algemeen vakblad van Nerdelands-Indie.
- Agustono, B., Affandi, K. M., & Rasyidin, M. (2025). Malaria eradication and colonial sanitation projects in Semarang in the early 20 th century. *Journal Medicina Historica* *9*(1), 1–13. <https://doi.org/10.69124/mh.v9i1-2.17297>.
- Amalia, R., Purnomo, A., & Shokheh, M. (2016). Kampongverbetering dan Perubahan Sosial Masyarakat Gemeente Semarang Tahun 1906-1942. *Journal of Indonesian History*, *5*(1), 43–51. <https://journal.unnes.ac.id/sju/jih/article/view/19724>.
- Amalia, F. A. (2024). Kampanye higienitas di kota-kota Jawa, 1900-1942. *Histma*, *9*(2), 68–88. <https://journal.ugm.ac.id/v3/histma/article/view/14041>.
- Apriliani. (2021). *Analisis Faktor Risiko Kejadian Malaria di Indonesia (Analisis Data Riskeddas 2018)*. Skripsi. Universitas Islam Negeri Sumatera Utara.
- Batavia Courant. (1920, June 22). *Ter Bestrijding van de Malaria*. Batavia Courant.
- Breda Courant. (1936, March 6). *Malaria te Tengeles*. Breda Courant.
- Brommer, B., Budihardjo, E., Montens, A. B., Setiadi, S., Sidharta, A., & Siswanto, A. (1995). *Semarang Beeld van een stad*. Asia Major
- Cipta, S. E. (2020). Upaya Penanganan Pemerintah Hindia Belanda dalam Menghadapi Berbagai Wabah Penyakit di Jawa 1911-1943. *Equilibrium: Jurnal Pendidikan*, *8*(2), 162-169.
- Dagblad De Locomotief, N.V. (1931). *Gemeente Semarang 1906-1931*. Dagblad De Locomotief.
- De Locomotief. (1929, February 14). *Het voorstel tot difinitieve assaineering van de malaria-gevaarlijke terreinen*. De Locomotief.
- De Locomotief. (1929, May 2). *Malaria-Bestrijding*. De Locomotief.
- Dinas Kebudayaan dan Pariwisata Kota Semarang. (2023). *Laporan Akhir Kajian Sejarah Kampung Bustaman*. Dinas Kebudayaan dan Pariwisata Kota Semarang.
- Harriyadi, Jauharatna, K., Nugroho, D., Bismoko, D. S., Syofiadisna, P., & Mahardian, D. E. (2023). *Latar belakang sejarah dan pertimbangan lokasi permukiman Candi Baru di Semarang*. AMERTA: Jurnal Penelitian dan Pengembangan Arkeologi *41*(1), 3–4.

<https://doi.org/10.55981/amt.2023>.

Het nieuws van vandaag voor Nederlands-Indie. (1918, January 31). *Malaria-Bestrijding. Het nieuws van vandaag voor Nederlands-Indie*

Kasmadi, H., & Wiyono, M. A. (1985). *Sejarah Sosial Kota Semarang (1900-1950)*. Departemen Pendidikan dan Kebudayaan Direktorat Sejarah dan Nilai Tradisional Proyek Inventarisasi dan Dokumentasi Sejarah Nasional

Kurniarini, D. D., Darini, R., & Dewi, I. M. (2014). Pelayanan dan sarana kesehatan di Jawa abad XX. *Mozaik: Jurnal Ilmu-Ilmu Sosial dan Humaniora*, 7(1), 1–15. <https://doi.org/10.21831/moz.v7i1.6186>

Landsdrukkerij. (1939). *Eerste Verslag Van De Kampongverbeteringscommissie Ingesteld Bij Het Gouvernementsbesluit Van 25 Mei 1938*, No. 30.

Mulyanto, H. (2023). *Gemeente Semarang 1906-1942: Sebuah Riwayat Tata Kota Kolonial*. *Jurnal Arsitektur TERRACOTTA*, 5(1), 54–65. <https://doi.org/10.26760/terraccotta.v5i1.10135>.

Nafisah, K. S. (2022). *Sejarah Bencana Pandemi di Jawa Abad Ke-20*. Skripsi. Universitas Islam Negeri Sunan Ampel Surabaya

Nurhajarini, D. R., & Fibiona, I. (2019). *Kota Pelabuhan Semarang dalam Kuasa Kolonial: Implikasi Sosial Budaya Kebijakan Maritim, Tahun 1800an-1940an*. Balai Pelestarian Nilai Budaya

Rotterdamsche Courant. (1924, August 14). *Het sterftcijfer te Semarang*. Rotterdamsche Courant

Tillema, H. F. (1919). *Kampongwee*. H. F. Tillema

Saputra, F. V., Damayanti, F., & Pramudita, K. B. S. (2021). *Pengaruh Kebersihan Lingkungan dan Sanitasi terhadap Epidemik Kolera di Semarang (1910-1913)*. *Histma*, 9(2), 38–48. <https://journal.ugm.ac.id/v3/histma/article/view/17817>.

Bestuur der Semarangse Kiesvereeninging. (1910). *Verslag van een onderzoek naar de levens- en woningtoestanden in Noord-Oost-Semarang gedaan door het bestuur der Semarangse Kiesvereeninging*. G. C. T. Van Dorp & Co.

Widyakinasih, R. R., & Tangkilisan, Y. B. (2025). Kampanye Higienitas di Sekolah Desa dan Politik Kesehatan Kolonial di Keresidenan Semarang Tahun 1929-1933. *HISTORIA: Jurnal Pendidik dan Peneliti Sejarah*, 8(1), 39–52. <https://doi.org/10.17509/historia.v8i1.83022>.

Wijono, R. S. (2013). *Modernitas dalam Kampung*. LIPI Press

Zakaria, M. M. (2012). Bibliografi Sejarah Kesehatan pada Masa Pemerintahan Hindia Belanda. *Paramita: Historical Studies Journal*, 22(2), 186-197. <https://doi.org/10.15294/paramita.v22i2.2119>.