



Universiteit
Leiden
The Netherlands

Just another crisis? Individual's experiences and the role of the local government and church during the 1866 cholera epidemic in a small Dutch town

Walhout, E.C.; Beekink, E.

Citation

Walhout, E. C., & Beekink, E. (2021). Just another crisis?: Individual's experiences and the role of the local government and church during the 1866 cholera epidemic in a small Dutch town. *Historical Social Research = Historische Sozialforschung / Supplement*, 33, 54-78.
doi:10.12759/hsr.suppl.33.2021.54-78

Version: Publisher's Version

License: [Creative Commons CC BY 4.0 license](https://creativecommons.org/licenses/by/4.0/)

Downloaded from: <https://hdl.handle.net/1887/3270892>

Note: To cite this publication please use the final published version (if applicable).

Just Another Crisis? Individual's Experiences and the Role of the Local Government and Church During the 1866 Cholera Epidemic in a Small Dutch Town

Walhout, Evelien; Beekink, Erik

Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:

GESIS - Leibniz-Institut für Sozialwissenschaften

Empfohlene Zitierung / Suggested Citation:

Walhout, E., & Beekink, E. (2021). Just Another Crisis? Individual's Experiences and the Role of the Local Government and Church During the 1866 Cholera Epidemic in a Small Dutch Town. *Historical Social Research, Supplement*, 33, 54-78. <https://doi.org/10.12759/hsr.suppl.33.2021.54-78>

Nutzungsbedingungen:

Dieser Text wird unter einer CC BY Lizenz (Namensnennung) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier: <https://creativecommons.org/licenses/by/4.0/deed.de>

Terms of use:

This document is made available under a CC BY Licence (Attribution). For more information see: <https://creativecommons.org/licenses/by/4.0>

Just Another Crisis? Individual's Experiences and the Role of the Local Government and Church During the 1866 Cholera Epidemic in a Small Dutch Town

*Evelien Walhout & Erik Beekink**

Abstract: »Nur eine Krise wie die anderen? Über individuelle Erfahrungen und die Rolle der lokalen Behörden und der Kirche während der Cholera Pandemie von 1866 in einer kleinen niederländischen Stadt«. This paper shows that the dynamics of late 19th-century cholera in a relatively small town differed from the alarming dynamics of this contagious disease in large towns and metropolises. With 1866 Woerden as case study, a town located in the heart of the Netherlands, we show that the fourth and final major cholera outbreak was framed as just another crisis, on top of other crises and soon to be replaced by other crises. The outbreak not only hit the poor but also the elites and middle-class families, most probably because most of the households relied on water supply from the same river. The needy citizens could, in times of cholera, rely on additional support, but evidence also shows that local institutions already offered a wide range of support, even to migrants.

Keywords: Cholera, life courses, morbidity, mortality, comparative analysis, institutions, support.

1. Introduction

The current COVID pandemic unleashed a revival of interest in historical research regarding epidemics in the past. This renewed interest, especially in popular media, tends to search for parallels between “our” current situation and the way historical society responded to crises, either during the 14th-century Black Death, the 19th-century cholera outbreaks, or the Spanish flu of 1918. It is suggested that the COVID-19 pandemic, from a historical point of view, is a worrying but not a new phenomenon; it is considered a variation on

* Evelien Walhout, Leiden University, Department of History, Doelensteeg 16, 2311 VL Leiden, Netherlands; e.c.walhout@hum.leidenuniv.nl.

Erik Beekink, 44 La Chasseigne, 86290 Thollet, France; ebeekink@gmail.com.

Acknowledgements: We would like to thank Mr. W.R.C. Alkemade, archivist at Regionaal Historisch Centrum Rijnstreek en Lopikerwaard in Woerden, for his support and helpful suggestions.

a theme. The popular claim that lessons might be learned from previous epidemics is encouraged by modern society's dependency on "medieval" measures such as quarantine and social distance. Although parallels are exposed in all sorts of ways, research has also revealed that diseases caused by bacteria and viruses experienced in the modern world not necessarily mirror the historical context and epidemiological experiences.

One of the historical predecessors of the COVID-19 virus, the bacteriological infection of cholera, is one such episode on which currently all eyes are fixed. At first sight, the similarities are striking: both diseases find their origin in Asia, they both concern communicable diseases that are perceived as striking quickly and randomly – it affects everyone: old and young, rich and poor – and they both show similar specific patterns of lethality in which the already vulnerable groups are the most affected: the poor, the elderly, or specific ethnic groups. In addition, the cause of the infection, now and then, is and was a matter of debate among medical practitioners and scientists. Also, governments were forced to take action by implementing measures that caused, in the past as well as in the present, resistance and was met with ignorance. Finally, during both pandemics quarantine measures were imposed (Houwaart 1991, 119).

The 19th-century global cholera pandemic with its recurrent outbreaks has attracted a lot of scholarly attention. Research focused on the role of authorities during pandemics and debates among politicians, medical practitioners, and other stakeholders about the implementation of sanitary reforms and public health interventions, and its effects and aftermath (Baldwin 1999; Briggs 1961; Cohn 2017; Evans 1987, Houwaart 1991; Van Dam 2020). These publications expose the process of thinking about and acting upon public health. On the other hand, the focus has been on reconstructions, especially in large cities such as London, Brussels, or Amsterdam, which claimed the most victims, specifically in the urban slums (Brody et al. 2000; Davenport, Satchell, and Shaw-Taylor 2018; Devos 2020). Here, cholera functions as an epidemiological laboratory of how an infectious disease behaves within a specific socioeconomic context. The impact of cholera outbreaks on the urban population and the local health scape was also studied for a number of larger Dutch towns such as Rotterdam, Leiden, and Utrecht ('t Hart 1990; Meijer 2005; Woelderink 1963). Especially the spatial turn provided mapping tools with which researchers were able to spatially analyze the historical course of events during an outbreak of cholera in a city such as Delft (Ekamper and Buzing 2013; Ekamper 2018). Current research on infectious disease in general focuses on the question whether or not epidemics in the past should be considered all-encompassing shocks or if such episodes should primarily be described in terms of resilience (Van Bavel et al. 2020) and, additionally, which social groups exposed themselves as the least resilient. In the case of cholera, various studies state that mainly the urban poor and vulnerable

people (in terms of age, the infants and elderly) were affected by the infection (for example, Boshart 2016; Ekamper and Buzing 2013; Ekamper 2018). It remains to be seen how cholera “acted” in a context other than a metropolitan region: the disease might have “behaved” differently in a small community in which social ties and bonds were closer, also in terms of distance. Did cholera in such a community target the usual suspects or do we see other patterns unfold?

In the course of time, although we should not regard this a strict linear process, the role of the local government in the Netherlands gained importance in fighting infectious disease by enforcing various rules, improving facilities such as safe water and sanitation, and providing support. Various studies have already highlighted the role of the government during the cholera epidemics. In the Netherlands, the Hygienists, a group of social reformers that included many medical practitioners, attempted to persuade local politicians to implement, for example, safe drinking water supplies and other sanitation measures like better housing and refuse disposal (Houwaart 1991). This study, by taking an individual-level approach in a semi-urban context, provides insight in the actual support provided by the local government and local churches to individual persons or households. Thus, it not so much focuses on support in terms of health measures and its reception by the citizens, but rather the type of support for those who could not afford medical costs and were in need of financial support, as they were not able to work because of a (partial) lockdown.

This study does not focus on the urban slums of big cities but on a relatively small town in Holland called Woerden, which, in 1866, experienced its fourth and final major cholera outbreak (Plomp 1980, 85). Dynamics in Woerden are put against the backdrop of cholera outbreaks in large cities that experienced periods of shock with elevated morbidity and mortality but also against the current COVID situation with its apparent parallels with historic society. Do we see the same social groups being hit hardest by this disease in terms of lethality? Do we see similarities in how local and medical authorities responded to this crisis? Was there support provided by either the local government or churches for the most vulnerable? In sum, should we speak of a similar kind of situation, highlighting the same circumstances as the world was facing in the larger metropolises or during the COVID pandemic, or do we see mainly differences, because the world was simply different, in how the crises were dealt with?

The analyses of this study are based on individual-level data. As in most Dutch municipalities, the 1866 outbreak in Woerden was a well-documented one. The authorities learned from previous episodes that making the outbreak “legible,” in terms of recording who caught the disease, who died, and who convalesced, helped in gaining understanding of the disease. For the individuals in the so-called “cholera register,” sufficient data was recorded in

order to trace them in other historical sources, such as the population register and poor relief records. This data-intensive approach might provide new insights into the (individual) experiences of this disease that caused so many victims.

The study is divided into various sections. Following the short review of evidence on cholera regarding medical and social research, we introduce the context of 1866 Woerden and the specific detailed information on the epidemic of 1866, which can be found in the municipal archive of Woerden. This is followed by the results in which we present a three-pronged approach. We first discuss some general results, followed by a section in which we present the individual experiences and a section in which we discuss the role of the local government and church during the crisis. The article concludes with a discussion.

2. Cholera: A Review of the Evidence

There is a large medical literature on cholera, an illness that was first referenced as an epidemic disease more than five hundred years ago (Speck 2008, 642). Cholera is caused by the bacterium *vibrio cholerae* and has an incubation period of just a few days. When a patient is infected, and the bacteria enter the digestive tract, the first symptoms are severe vomiting and diarrhea. This, then, causes fluid loss (dehydration) in patients and, when not treated properly, results in death. In the 19th century, many patients infected with cholera died within one or two days. The disease mainly spread by contaminated water. Besides drinking contaminated water, the germs also enter the body through touching the stool of an infected person, followed by spreading the germs to the mouth through contact with the contaminated hand.¹ The microorganisms can survive in sea water or rivers and can multiply when the water reaches higher temperatures, for example during summer.

The first cholera pandemic started in India in 1817 and then spread throughout Southeast Asia and the Middle East (Coutinho 2020, 71). In 1832, cholera reached Europe and the Netherlands for the first time. Remarkably, cholera was already mentioned in 1809 in the small village of Aarle Rixtel, situated in the south of the Netherlands, when the visiting king, Louis Napoleon, donated considerable amounts of money to support “local cholera patients” (Van den Eeden 2009). According to the official statistics, however, cholera entered Dutch territory for the first time in 1832 through the port of Scheveningen, near The Hague. This first outbreak in 1832 and 1833 claimed more than 10,000 lives. During the summer of 1849, the Netherlands was hit

¹ World Health Organization Website: https://www.who.int/health-topics/cholera#tab=tab_1 (Accessed 11 November 2021).

by a second cholera outbreak, this time causing more than 22,000 deaths. In the city of Amsterdam, about 2,300 persons died during this second wave in 1848 and 1849. The poor and overpopulated areas in the towns and cities were hit hardest. Here, hygienic standards were extremely poor: families lived in cramped single room apartments and public toilets or barrels were common practice and were emptied directly in the canals. The canals, which could be easily contaminated, were the main supply of drinking water in the towns.

In general, the major problem in dealing with cholera was the lack of knowledge. The cause of the disease was unknown, most ideas on the disease and the cause of it were based on miasma theories, dating back to antiquity. In this theory, the miasmas or bad smells being the vector of the disease were linked to street waste, polluted waterways, and the swampy Dutch subsoil that produced these vapors. This theory was accompanied with the notion of contagium in which it was believed that an unidentified and invisible infective agent could be transferred from a sick person to a healthy person (Houwaart 1991, 56-7). These ideas existed until well into the second half of the 19th century, when, finally, the German physician Robert Koch discovered the cholera bacterium. In the Netherlands, the Hygienists were convinced that if the bad smells would disappear, cholera would as well. Being the first in the country, the capital city of Amsterdam started to implement a sewage and water supply system in 1853. In the years following, more water taps were installed. Around the same time, the English medical doctor John Snow pointed to the dangers of polluted water while mapping his data on victims; through this mapping, he was able to trace the direct source of a cholera outbreak in London in 1854. In 1866, another cholera outbreak hit the Netherlands claiming more than 21,000 lives. In Amsterdam, because of the implementation of piped drinking water, fewer deaths were counted. Still, circa 1,150 persons died in this city.

Much has been written about the scale of the cholera outbreaks, especially in the context of large cities. For our study, the observations of the Dutch historian Boshart are of particular interest, more specifically his nuanced reflections on the magnitude of the number of cholera victims.² Of the listed 19th-century cholera epidemics, the outbreaks of 1848–1849 and 1866–1867, with 22,460 and 21,614 nationwide deaths respectively, are amongst the most severe (Boshart 2016, 190). The 1866 epidemic was the final outbreak; hereafter, cholera in the Netherlands still occasionally claimed victims but it never became a pandemic again. On the provincial level, cholera mostly hit the province of South Holland. Boshart suggests that both at the national and local level, cholera was, however, in terms of demography, only a small ripple (Boshart 2016, 192). Based on historical data from the larger Dutch cities,

² M. Boshart, *De Blauwe dood. Cholera in Nederland*, 2016.

Boshart also assessed the general pattern of cholera related mortality. He observed,

men seem to be more susceptible than women and more men than women die [...] Furthermore, we observe an overrepresentation of cholera cases among the age group up to five years, also with an above-average mortality. Sick elderly persons also experience high mortality rates [...] In the intermediate age groups relatively fewer victims are observed. (Boshart 2016, 189-194)

Based on aggregate and national statistics, Boshart aimed to explain the observed patterns in medical terms. According to Boshart, while quoting medical literature,

the bacteria enters through the mouth, but that in itself does not have to be harmful. Not everyone develops symptoms after infection, many carriers of bacteria have hardly any or no symptoms themselves, but can infect other human beings for weeks via [unwashed hands and faeces]. Ten to twenty percent of the infected persons actually becomes ill and forty to sixty percent of this group dies if no adequate medical assistance is provided [...] Whether or not a person develops symptoms depends on the bacterium being able to pass through the stomach. Each day the stomach of an adult person supplies one and a half up to two liters of gastric acid [...] Bacteria usually fail to resist a specific pH value. [...] The value increases when food, drink and saliva enter the stomach. When the vibrio cholera bacterium is supplied in sufficient numbers, some of it passes through the stomach into the small intestine. (Boshart 2016, 27)

Once the bacteria enter the digestive tract, vibrio cholerae produces two substances. One substance concerns a protein that provides the bacterium the opportunity to colonize the small intestine, to multiply there rapidly through cell division, and to form a mass consisting of hundreds of layers that forms a cover for the intestinal tract. The other substance is a toxin that offers the bacteria the opportunity to rapidly leave the intestinal tract and body. This toxin withdraws water in large quantities from the human body, up to six or seven liters per day, in the form of severe diarrhea. This way, hundreds of millions of new bacteria enter the direct environment of other human beings (Boshart 2016, 28). Boshart concludes that the sight of a patient must have made quite an impression on those left behind but also to the patient themselves: “one of the most horrific aspects of cholera is that the patient may remain clear and alert almost to the end, the brain is protected by the body to the last minute. As a result, symptoms are not only observed, but also processed, because they announce that death may occur within 24 hours” (Boshart 2016, 28).

If the disease is not properly treated, spontaneous healing may occur in 40 to 60% of the cases. The symptoms of vomiting and diarrhea usually disappear after three to six days. In most survivors, the bacteria have completely

disappeared from the body after two weeks, but in a number of cases, individuals may carry the bacterium for much longer.

3. Introducing the Case Study of 1866 Woerden

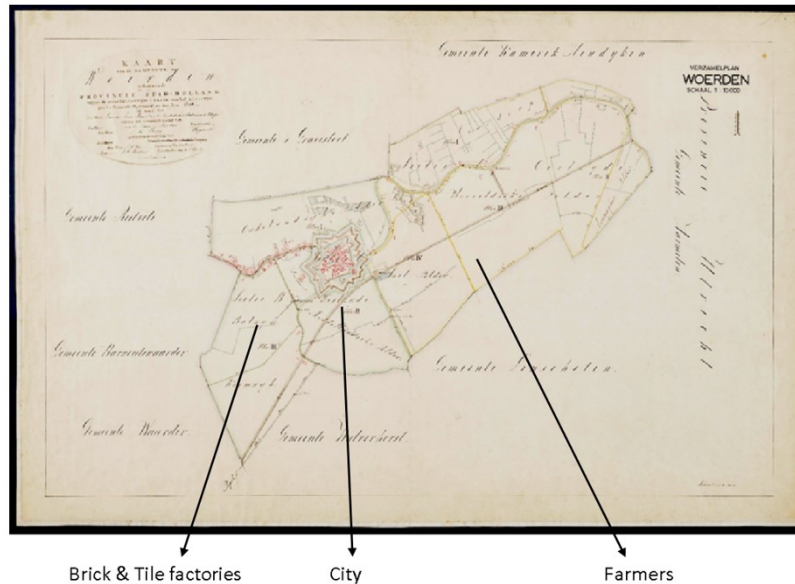
This article focuses on a relatively small urban community dealing with the cholera outbreak of 1866. All individuals included in our study resided in Woerden at the moment our observation starts, in June 1866. Although in terms of population size Woerden was a relatively small town, in some respects, given its structure and being the administrative center within the region, it might be considered a municipality with an urban character. In 1866, the population of Woerden counted only 4,150 inhabitants. In addition, the town included a garrison of 220 men and a prison detaining about 150 women. That brings the total population to about 4,500 (‘t Hart 1996). The census of 1849 shows that its population can be roughly divided into three distinct socio-economic groups: 1. the elites and middle classes, living within the city walls; 2. the farmers, mainly living in the surrounding countryside just outside the city walls; and 3. the unskilled laborers/the brick- and tile workers, living in the outskirts of the walled town along the Old Rhine river: the Pannenbakkerijen (tile works). Figure 1 shows this distinct regional layout in which the social pattern more or less fits the spatial pattern.³

The small walled town, shaped by the historical citadel, functioned as an administrative center to the surrounding region and provided services such as a market, hospital, prison, military barracks, churches, and almshouses. It also provided all sorts of social services to the area: notaries, medical doctors, and the town hall. Woerden in the 1860s was characterized by proto-industrialization with its long tradition of brick and tile factories, dating back to the 17th century. Those brick and tile works and related industries were situated just outside the walled town along the north bank of the Old Rhine river and formed a subculture (Stadhouders 2010): a separate community with its own houses, shops, cafes, and fairgrounds and even its own dialect. Life at the so-called Pannenbakkerijen (tile works), as it was called, was hard. The brick and tile workers resided in cramped factory owned houses situated between large ovens and racks with stones and tiles. This resulted in poor hygienic conditions, an important cause of infectious disease. In this industry, the entire family took part in the process of producing bricks or tiles; female as well as child labor were considered of great importance. Local studies on Woerden give a fair description of people living in “Dickensian circumstances” (Van der Laarse 1989; Stadhouders 2010). The brick and tile industry

³ To classify the occupations according to the HISCLASS classification, the occupational title was supplemented with tax data.

provided only seasonal labor. The laborers earned their wages during the production season that ran from early April until early October – at least if weather conditions made production possible, otherwise the laborers were out of work. During the winter months, the laborers were unemployed. Except when factory owners paid out so-called “winter money,” a small loan with the purpose to tie the laborers for next season to the company, they were mostly dependent on support from family, churches or the local government.

Figure 1 Map of Woerden with distinct regional and social pattern, 1867



Source: Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.

It is remarkable that although the number of laborers increased during the 19th century, we cannot detect a strong process of proletarianization. As Figure 2 shows, in 1849, Woerden still, relatively speaking, included a considerable middle class and small elite. The group of skilled and unskilled workers was smaller than in many other Dutch towns. In Woerden, agriculture also employed a substantial part of the population. Due to a developing dairy industry, in particular cheese making, the importance of agriculture in the economic structure of Woerden even increased during the 19th century (Van Drie and Van Es 1985).

Regarding the religious structure of the population, the census of 1859 provides detailed information. In the 1860s, Protestantism was the most practiced religion in Woerden: 61% of the population was registered in one of the many Protestant communities, varying from Dutch Reformed (51.7%) to

Remonstrant, Mennonite, and Lutheran. About 36% was Roman-Catholic, which was the second largest religious community in the municipality. Finally, a small group consisted of Dutch Israelites (1.5%) and non-religious persons (1.5%).

4. Sources and Method

This study is based on individual-level data and contextual data. Besides studying the temporary registrations on cholera victims in order to reconstruct local experiences in 1866, we also reconstructed the background of those who got affected by cholera during this outbreak. This way we can trace patterns of cholera lethality, mortality, and survival. We also include information on who was affected by cholera in terms of social and financial support.

To be able to do so, we combined various data sources. Our observation starts with the list of cholera victims, which includes, for each victim, information about the medical practitioner who reported the patient to the authorities, the date of reporting, the date of recovery, and the date of death. Second, we consulted population registers and vital registrations to construct life courses and gather background information on the cholera victims. In addition, we studied various municipal documents, such as the annual municipal reports, in which the medical police reported on epidemics and related issues, and the annual lists of taxpayers and lists of persons and households who were eligible for any type of financial support by the local government. We also consulted church documents like the minutes of the church councils and diaconates, where available, from the various parishes in Woerden in order to gain insight into all forms of support during the outbreak, and how the outbreak was perceived by the local community.

While the cholera outbreak of 1866 provides an interesting case of a health shock targeting a relatively small urban community, it presents several unique issues in terms of obtaining relevant data and choice of method. First, because of the relatively low number of observations – the downside of studying a small semi-urban community – we opted for presenting primarily descriptive statistics on who caught the disease, who died, who survived et cetera, according to background characteristics. Patterns do unfold and give the impression of randomness, but they cannot be properly statistically tested. Also, the censuses of 1859 and 1869 are of limited use in order to calculate populations at risk (who comes and goes is not dated) or to gain insight in the age structure of the population (not specified).

We present our analyses in the following way. First, we analyze all victims of cholera, where we distinguish between those who were able to recover and those who died in order to see whether these were two distinct groups. Second, we study all deceased in calendar year 1866, where we distinguish

between those who died of cholera and those who died because of another cause of death. To provide a complete view, we include the following (reconstructed) characteristics in the analysis. On the level of the household, we reconstructed the household composition, family composition (kin), and the location of the household (street level). On the individual level, the analysis includes information on socioeconomic status (occupation, supplemented with the level of tax duty), denomination, date and place of birth, date of recovery or date of death, and whether or not one received financial support covering medical costs. In case of a child patient, the data contains background information on the parents; in case of an adult patient, background information is provided on the spouse and their civil status.

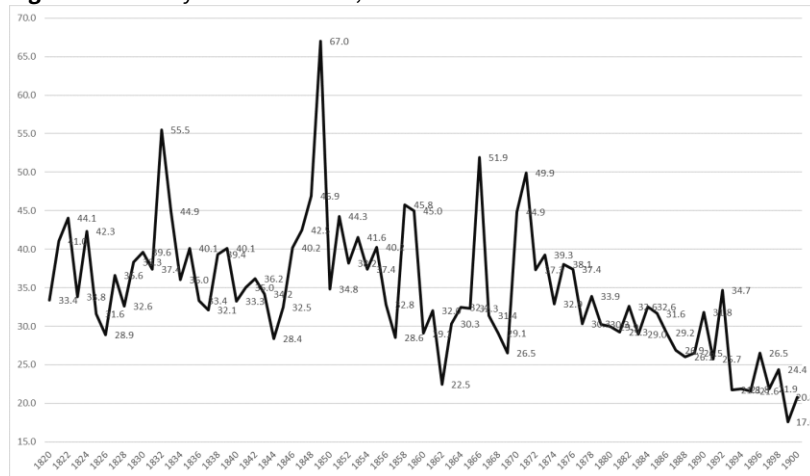
Unfortunately, most (smaller) municipalities in 1866 lack data on causes of death, neither aggregated nor at the individual level. In that respect, we only know whether a person died because of cholera or not. With regard to information on causes of death and in particular on cholera, various researchers are cautious in presenting cholera statistics (e.g., 't Hart 1990), as there is a high probability that the number of cases is either overestimated or underestimated. In his study on cholera in the city of Utrecht, historian 't Hart quotes a physician in 1866 who states that reliable figures on cholera are impossible to obtain. On the one hand, medical practitioners registered all kinds of vague digestive disorders, such as diarrhea, as (mild) cases of cholera. On the other hand, patients may have died because of cholera without the disease ever having been recognized as such. Nevertheless, 't Hart concludes that, in general, the official numbers of cholera that were recorded approach close proximity to the "correct" numbers ('t Hart 1990, 246).

5. Results: A Reconstruction of the 1866 Cholera Epidemic in Woerden

Epidemics were still commonplace in 1860s Netherlands; at least a substantial proportion of the population died because of a contagious disease, either endemic or epidemic. And albeit, in the words of historian Boshart, in hindsight those regarding cholera might be considered only demographic ripples, nevertheless the epidemiological crises affected daily life in the town of Woerden. The small town experienced various mortality crises with spikes around 1832, 1848, 1859, and 1866 as a result of either gastrointestinal disorders or infectious diseases like malaria, smallpox, and cholera asiatica (Figure 2). In the so-called "cholera year" of 1832, 181 persons died, and in 1848–1849, following the 1845–1847 crisis – known as the Potato Famine, which also affected Woerden – another 487 persons died. For the population, this may have been indeed perceived as ripples as society was used to infectious death,

always lying in wait to strike. In 1859, the year before the last cholera epidemic preceding the 1866 outbreak, a “normal” year, still 76 were infected by cholera of which 49 persons died, thus affecting many families.

Figure 2 Mortality Rates: Woerden, 1820–1900



Source: Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.

In 1866, Woerden was situated in the heart of a region that was hit the hardest by the cholera epidemics. Woerden came 17th in the list of municipalities within the province of South-Holland experiencing the highest death rate caused by cholera (Hanlo 1867, 130-131). Strikingly, the municipalities that surpassed Woerden in terms of cholera deaths were all but one rural; only the town of Leiden was more affected. Based on the cholera registration, Woerden counted an excess mortality due to cholera of 95 persons: 47 men, 47 women, and 1 unknown. In total, 221 persons died that year from various causes of death. Cholera thus accounted for 42% of all deaths in 1866. Besides those who died, another 77 individuals recovered from the disease. In other words, of all registered cholera patients, 45% was able to recover and 55% eventually died. The months of June and July accounted for most deaths with 76 and 84 persons being registered as patient, respectively, and of which 43 and 45 persons died because of cholera. The outbreak lasted from June until October.

In addition to the relatively high number of victims in the Pannenbakkerijen and the lower number of casualties in the surrounding countryside, Figure 3 maps the casualties at street level in the town’s center, within the city walls. One dark blue dot (dark grey, resp.) represents a deceased person whereas one light blue dot (light grey, resp.) represents a person who recovered from cholera. Most remarkable is the relatively low number of deaths in

potential hotspots of contagion – institutions – where the risk of spread was relatively high. In the women’s prison, situated in the western part of town, only five women died, out of a total of 153 prisoners, and two women recovered. In the barracks, seven soldiers died from cholera, out of a total population of 221 soldiers, five men recovered. Furthermore, other possible hotspots were shielded from any type of casualties. In the almshouses, where the poor elderly resided, no patients were registered. The same applies to the orphanage and boarding school, potential hotbeds for cholera.

Figure 3 Map of 1866 Woerden with Hotspots of Cholera: Deaths and Recoveries



Source: Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.

Previous studies have highlighted that cholera and geography were related. Contemporaries, like the Hygienists, therefore gathered information on this relation following a method called “medical topography” (Houwaart 1991, 64-5). Where one’s house was located in relation to sources of drinking water most likely determined the risk of catching cholera. In Woerden, the Old Rhine river functioned as the main supply of water but also for dumping waste. It flowed through the center of the walled town and left the town in the west, where it continued to the city of Leiden before it drained into the North Sea. Figure 5 does not directly show a clear pattern of elevated cholera mortality in the streets and alleys along the Old Rhine in the town. We expect that most households, including the institutions, relied on the river regarding water supply but that in institutions stricter controls were introduced. Overall, the river posed a hazard to all families, regardless of location. A modern

water supply system, such as the 1853 system of Amsterdam, was only implemented in 1906.

5.1. The Experience of Cholera at the Individual Level

In the previous section, the perceived randomness and the fact that a clear-cut pattern at street level was not observed in Woerden was discussed. It is comprehensible that the idea that cholera could just affect anyone regardless of age, gender, or class was widespread among the population. In the following, the perceived randomness of cholera is first illustrated through the life stories of various inhabitants of the town who, in one way or another, were affected by the outbreak of 1866.

The first cholera patient registered was Everardus H. Duriveau, an unskilled laborer born in the city of Rotterdam in 1805, aged 61 during the outbreak. From the population register, we know that he had settled in Woerden somewhat before 1863, where he, at the age of 58, married his 32-year-old wife with whom he lived together in the town's center, in one of the alleys. Two years later, a son was born. The family was Roman Catholic. According to the tax registers, Everardus was not liable to pay taxes. He died on June 11, 1866, only one day after he was registered, leaving behind his wife and infant son.

In June 1866, cholera also entered the household of the Boele family. From the family, consisting of father, mother, and three children, only the father, aged 49, the mother, aged 51, and a son of 21 were infected and registered as such. The mother and son died within one day after registration. The father was able to recover. The family lived in the town and the father and son were both workmen. This family was also Roman Catholic. Because of the high medical costs in this family, specifically for the father, support was provided by the municipality to cover these costs and afterwards also to clean the house, and to clear and burn the bedding of the two deceased.

The fact that the orphanage and boarding school suffered no losses does not imply that children did not become victim of the disease. In prison, the small child of Maagje Krul, named Johannes Jacob Arnold, died of cholera at the age of only three months. The mother, who was imprisoned with her child, originally came from the city of Arnhem, in the east of the Netherlands and was not registered as a cholera patient.

Another striking example is the Brohm family. Annigje and Johannes Frederik, the two youngest children of Cornelis Brohm and his wife Elisabeth Oosterom, died only three days apart from each other. They both died in June 1866: Annigje, a baby girl of only four months old, and Johannes, a toddler of two. One of the other children, not further specified in the registers, was also registered as a patient but recovered that same month. The family consisted, besides the parents, of four children, which implies that the fourth child

remained untouched, as were the parents. Cornelis was recorded as unskilled laborer and the family lived in the hamlet of Geestdorp, near the city walls, but in the countryside.

We resume the story with the experiences of Cornelia and Neeltje Bliken-daal, two elderly sisters. Cornelia, an unmarried woman, died at the age of 65 because of cholera. She had been born in the city of Utrecht. At the time of the outbreak, her address read “Pannenbakkerij.” She must have lived in a small house, somewhere between the brick and tile factories near the river. Her occupation was registered as *turftonster*, a woman who was licensed to sell peat. From the population register, we know that she lived together with her elder sister, Neeltje, 67 years old, a widow, not infected with cholera. Both sisters were of the Dutch Reformed faith. Not the church but the municipality, according to the register, offered support and contributed a small sum of money to Neeltje for “illness and death.”

Remarkable is also the case of Willem Bons. At the time of the outbreak, Willem, who was the son of Wilhelmus Bons and Elisabeth Nieuwenhuijzen, was 17 years old. He recovered from cholera in June, nine days after he had been registered as a patient. This large Roman Catholic family consisted of eight persons, including a few stepchildren. Except for Willem, none of the other family members were listed in the cholera registration. The father was a bar and guest house proprietor and, according to the tax register, not liable to pay taxes. The family lived within the city walls.

Death was not only experienced among the unskilled laborers or the non-taxable persons. On 27 June, the wife of medical practitioner Gerrit Bakker died at the age of 27. Maria Roobol had lived with her husband in the Voorstraat, a respectable street in the center of Woerden. To this list we may add other deaths of individuals living and working at respectable addresses in the town of Woerden, being tax residents. A few examples are a middle-class shoemaker and the wife of a tailor who died at the age of 27, leaving a family of four behind. Also, the daughter of a factory owner, Maartje de Knijf, single and 49 years old but living with her father at the Pannenbakkerijen, died in July 1866.

To complete this random range of experiences, we present the case of the Verweij family. Their story shows the aftermath of the cholera outbreak in great detail. The family consisted of eight persons of which the father, mother, and the two eldest children died in June 1866 in just a few days' time. The follow-up shows the type of kin and social support provided to the remaining children. The four children, between the ages of 3 and 12, were indeed orphaned during the outbreak. The population registers show that the children initially moved directly to the household of their grandparents, who had, according to the tax register, a small farm in Woerden with a small taxable income. Soon after, the youngest child was sent to the household of her aunt, but the child died soon afterward. Most probably because the other

three children were too much of a burden to the grandparents, the children were sent to the household of a neighbor: a widow with three children. This woman was a poor maid and, unlike the grandparents, was not mentioned in the tax registers. Without any doubt she received compensation or support for taking care of these orphans.

Table 1 Cholera Victims by Status, Woerden 1866 (Percentages)

	Died of cholera	Recovered
By household composition (N=132)		
Single	100.00	0.00
Nuclear family (small)	69.44	30.56
Nuclear family (big)	66.67	33.33
Extended household (small)	66.67	33.33
Extended household (big)	66.67	33.33
Institutions	62.50	37.50
Unknown	0.00	100.00
Total	66.67	33.33
By number of household members (N=118)		
0	0.00	100.00
1-4	75.00	25.00
5-9	66.67	33.33
10-13	55.56	44.44
Total	66.10	33.90
By age group (N=124)		
0	50.00	50.00
1-9	96.00	4.00
10-19	62.50	37.50
20-29	77.78	22.22
30-39	62.50	37.50
40-49	70.00	30.00
50-59	86.67	13.33
60-69	66.67	33.33
70-79	100.00	0.00
80-	0.00	100.00
Total	76.61	23.39
By location (N=119)		
City	60.00	40.00
Brick & Tile Factories	58.54	41.46
Countryside	58.33	41.67
Total	59.20	40.80
By tax group (Hoofdelijke Omslag) (N=119)		
0 (for example, brickworkers)	65.52	34.48
1 (for example, skipper)	55.56	44.44
2 (for example, house painter)	83.33	16.67
3 (for example, innkeeper)	66.67	33.33
4 (for example, teacher school)	100.00	0.00
5 (for example, shopkeeper)	50.00	50.00
6 (for example, farmer)	100.00	0.00
12 (for example, owner factory)	100.00	0.00

Total	65.55	34.45
By religious background (N=120)		
Dutch Reformed	67.78	32.22
Roman Catholic	68.97	31.03
Dutch Israelites	0.00	100.00
Total	67.50	32.50
By marital status (N=137)		
Single	68.25	31.75
Married	69.35	30.65
Widowed	75.00	25.00
Total	69.34	30.66

Source: List of cholera registrations 1866 and population register of Woerden, 1850–1940.

To study whether these individual experiences were random or not, we compared all individuals who were registered for catching cholera to those who died because of it and those who recovered. Table 1 shows these categories according to various background characteristics: household composition, number of household members (kin), age, location, tax group, religion, and marital status. To compare the groups, we present all categories in a comparative perspective. The number of observations varies according to background characteristic.

When we focus on household composition of the victims, we observe that in most households, nuclear as well as extended, about 67% of the patients eventually died and about 33% recovered. Among singles, all victims died. About 38% of the victims residing in one of the institutions were able to recover from cholera. Note that within the subcategories, the number of observations might be extremely low. The number of kin co-residents shows a somewhat counterintuitive pattern: from the larger families, consisting of 10 to 13 members, 44% were able to recover. The smaller number of kin shows lower numbers of recovery and higher numbers of deaths.

No clear age pattern can be observed in mortality versus recovery. We do observe that from the children, aged 1-9, a higher percentage die. This also applies to the age group of 50-59. Relatively more teenagers and persons in their thirties are able to recover. The elderly (80 and above) do all recover. Again, this might be based on very low absolute numbers.

A key characteristic in cholera research based on metropolises is location. In relative terms, location in Woerden did not matter. In all three locations – the walled town, the countryside, and the brick and tile factories – about 60% of the registered cholera victims died and about 40% recovered.

Socioeconomic status also does not follow a clear pattern. In some cases, the higher tax groups (4, 6, and 12) showed a relatively high percentage of deceased, and no victims recovered in these subcategories. Additionally, cultural background shows no distinct differences between Protestants and Catholics. The fact that all members from the Jewish community recovered,

after registration, should be considered in view of the low absolute numbers: the Jewish community in Woerden comprised only a few families.

Finally, marital status shows less resilience among widowed individuals. Among singles and married persons, about 69% died and 31% recovered. Among the widowed, about 75% died and 25% recovered.

Table 2 Death by Cause of Death, Woerden 1866 (Percentages)

	Cholera	Other cause of death
By household composition (N=207)		
Single	100.00	0.00
Nuclear family (small)	41.67	58.33
Nuclear family (big)	47.46	52.54
Extended household (small)	27.59	72.41
Extended household (big)	44.44	55.56
Institutions	50.00	50.00
Unknown	0.00	100.00
Total	42.99	57.01
By number of household members (N=190)		
0	0.00	100.00
1-4	34.43	65.57
5-9	43.70	56.30
10-13	71.43	28.57
Total	41.05	58.95
By age group (N=221)		
0	3.23	96.77
1-9	66.67	33.33
10-19	45.45	54.55
20-29	82.35	17.65
30-39	66.67	33.33
40-49	63.64	36.36
50-59	65.00	35.00
60-69	42.11	57.89
70-79	41.67	58.33
80-	0.00	100.00
Total	23.39	76.61
By location (N=201)		
City	30.91	69.09
Brick & Tile Factories	35.85	64.15
Countryside	9.09	90.91
Total	31.09	68.91
By tax group (Hoofdelijke Omslag) (N=184)		
0 (for example, brickworkers)	41.91	58.09
1 (for example, skipper)	62.50	37.50
2 (for example, house painter)	41.67	58.33
3 (for example, innkeeper)	40.00	60.00
4 (for example, teacher school)	25.00	75.00
5 (for example, shopkeeper)	14.29	85.71
6 (for example, farmer)	50.00	50.00
12 (for example, owner factory)	100.00	0.00

Total	42.39	57.61
By religious background (N=190)		
Dutch Reformed	45.86	54.14
Roman Catholic	35.09	64.91
Dutch Israelites	0.00	0.00
Total	42.63	57.37
By marital status (N=213)		
Single	34.68	65.32
Married	68.25	31.75
Widowed	34.62	65.38
Total	44.60	55.40

Source: List of cholera registrations 1866 and population register of Woerden, 1850–1940.

Table 2 shows the percentages of those who died because of cholera compared to those who died because of other unspecified causes. How distinct was the group dying because of cholera, and which subgroups were more affected by cholera than by other causes of death? In terms of household composition, in 1866, relatively few members of small extended households (with less than 5 members) died because of cholera (28%), whereas 72% died of other diseases. In large nuclear families 47% of its members who died in the year 1866 were victim of cholera, whereas 53% died because of other causes. Related to this, regardless of the type of household, families with up to 13 members were relatively hard hit by cholera compared to other causes of death: 71% and 29% respectively. Smaller households were relatively less struck by cholera.

Within the group of infants, only 3% of those who died in the first year of life did so because of cholera. Among the other causes were most likely many cases of diarrheal or gastrointestinal disorders, but they were diagnosed and registered neither as cholera nor during the outbreak. Individuals in their twenties were substantially more affected by cholera than by other diseases. Above the age of 60, cholera was not the main cause of death anymore.

The location did matter in terms of the proportion of cholera deaths. In the countryside, only 9% of those who died did so because of cholera, in the walled town this was 31% and among the brick and tile families this was 36%. In terms of socioeconomic class, the poor who paid no taxes were relatively hard hit by cholera (42%) as opposed to other causes of death. However, the same applied to tax groups 2 and 3, and certainly for group 1. Groups 4 and 5, represented by, for example, schoolteachers and shopkeepers, were relatively less affected by cholera. Again, these percentages are based on relatively low numbers of observations.

As for religious background, the Jewish community, albeit small in Woerden, suffered no losses in 1866. Cholera as a cause of death was somewhat more pronounced among the Dutch Reformed: 46% died because of cholera, the other 54% was related to other causes. Among the Catholics, this was 35% and 65% respectively.

Finally, marital status showed some interesting patterns. Among the married, cholera death was more distinct than other types of disorders: 68%. Among the single and widowed, about 35% of all deaths were related to cholera.

Overall, the results do confirm the notion that everyone – old and young, rich and poor – could catch cholera in Woerden. Not all subgroups were targeted in the same way, but this could also be driven by the low number of observations. The poor were indeed hit but not in the same way as in the slums of larger cities. As stated in other research, the direct cause of cholera was linked to the state of the sanitary facilities and drinking water supply. In Woerden, these were poor until well into the 20th century. That it still mainly hit the poor, although most households relied on the same water supply, seems plausible as their general living conditions were among the worst. Also, the prescribed measures and regulation to prevent contagion were, for this group, probably met with ignorance and inability (as we do see in our current pandemic). Boshart's statements about the disease progression of cholera also seem to be confirmed in the Woerden case: certainly not everyone in a household contracted cholera or died because of it.

5.2 Cholera and the Role of the Government and Churches

To answer the question how the cholera epidemic impacted local society, we also studied the municipal annual reports (*Gemeenteverlagen*) of 1865, 1866, and 1867. As an integral part of the reports, which were first published after the adoption of the Municipalities Act of 1851, the medical police reported each April on the local health situation in the preceding year. The medical police oversaw social sanitation and public health issues. Among the topics reported were epidemics, (infectious) diseases, cowpox vaccinations, and cause-specific mortality but also changes in medical staff, including veterinarians. The medical reports highlighted the most prominent facts and did not report a complete overview.

In Woerden, with a substantial number of farmers in the surrounding countryside, the health of the population and that of livestock was discussed in the same breath. In the report of 1865, the medical police stated, “the general health of the local population has been very favourable. Generally, that of the cattle has been very satisfactory as well, until the 7th of November when cattle typhus broke out: 36 heads of cattle were able to recover. Measures for the prevention and cure of diseases have not been taken, but those which have in view the promotion of health and sanitation have been continuously maintained” (*Gemeenteverlag van Woerden 1865*). No alarming news on epidemics or infectious disease was reported. The fact that most inhabitants did die because of communicable diseases was not worth mentioning, and probably considered “normal.”

In 1866, the medical police certainly highlighted the exceptional circumstances regarding cholera. On the measures that had been needed to be implemented in 1866, the medical police reported that relatively strict measures were taken “for the promotion of sanitation and for the removal of heaps of refuse present in the courtyards of private persons.” Regarding public space, it was stated that the public schools had been fumigated, and also “the fumigation of houses where cholera patients had deceased as well as the storehouses that had been used to temporarily keep corpses before they were buried.” Also, the “rinsing and disinfecting of the municipality’s public toilets twice a week” was reported (Gemeenteverslag van Woerden 1866). On the matter of communicable diseases, it was stated that “the predominant disease had been cholera asiaticus” and that the number of “extraordinary deaths” caused by that disease totaled 95.

In 1867, when the cholera epidemic reached its end, other infectious diseases replaced cholera in the annual reporting. It was mentioned that, again, “measures for the promotion of sanitation and the removal of heaps of refuse by private persons in their yards” had been implemented. The dominant disease of the reporting year, however, was whooping cough. And so we observe in the three consecutive annual municipal reports that yet another cholera outbreak, according to the medical police, was framed as “just another crisis,” soon replaced by a following epidemic of infectious disease. This way, to the authorities, a cholera outbreak fitted into a long history of infectious disease of which all generations had vivid memories. The years preceding the 1866 cholera outbreak were scarred by the memory of the cholera outbreaks of 1832–1833, 1848–1849, 1853, 1854, 1855, and 1859. The number of deaths varied in these cholera years from only 4 in 1855 to 90 in 1849. In 1857 and 1858, Woerden experienced elevated smallpox mortality, also known as “childhood disease.” In 1859, “fevers in autumn” had been the main health threat. And in 1867, as stated, whooping cough was the latest dominating disease.

Researchers have highlighted the type of measurements and regulations at the national level and the local level such as municipal Cholera Committees keeping watch and quarantine facilities like small popup hospitals. In the case of Woerden, we observe that the local authorities often complained about citizens not complying with the imposed regulations; a certain kind of ignorance and apathy among the population was experienced. The “complaints” of local medical practitioners are also significant, as ‘t Hart cited in his study on the nearby city of Utrecht, in their reports on cholera, back in 1832. According to the report, one key to cholera outbreaks was a feeling of “powerlessness in the face of a new and unknown disease, which struck with unprecedented severity” but also the “tragedy of the mourners, of those who tried in vain to avert disaster with the best of their abilities” (‘t Hart 1990, 8). In 1866, the outbreak was not new and unknown, the idea of contagion

certainly was familiar, but this did not result in a massive adhering to imposed measures.

Indeed, the most alarming reports in the municipal accounts focused on the diseases of livestock that targeted the area. Cattle plague, or the contagious typhus of cattle, which was also an infectious viral disease, broke out several times in this exact decade. Death rates during outbreaks were extremely high and caused considerable economic losses to the farmers of Woerden. While studying the municipal reports, one might argue that this economic setback and accompanying emotions prevailed over the health situation of the human population. In the municipal report of 1866, it was stated that the “general agricultural condition” was “very depressing” as a result of disease under livestock. The disease broke out at the end of 1865 and thus had raged almost continuously. In 1867, it was reported that the situation, yet again, had not improved. The loss of livestock that could not be replaced in time but also the poor condition of the fields of pastureland that resulted in the sick livestock not being able to recover all contributed to the poor general state of agriculture (Gemeenteverslag van Woerden 1867).

The content and scope of the municipal reports was also reflected in the church records, although we were not able to study all religious archives of Woerden. We specifically studied the book of minutes of the Roman Catholic parish of Woerden, starting in 1859. The meetings were held every month and discussed predominantly current affairs in the parish. The book also functioned as a ledger to which the diaconate was accountable to the Bishop of Haarlem. In the June 1866 meeting, the current outbreak was not mentioned. Instead, the diaconate discussed the poor state of the church building, which required repairs. It was decided that, because of the leakage in the church tower, the roof needed to be covered with a new layer of lead and the floor needed repairs as well. Likewise, the confession booth needed to be painted and the purchase of a black cloth for the altar was approved. The following meeting was scheduled for August: there was no need to call for an extra meeting in July. In August 1866, the annual budget was discussed and approved. Among the incoming mail there was a request of the local undertaker (*doodgraver*), Mr. De Lange, who wished additional funds regarding the exceptional high number of burials “during the prevailing cholera.” An allowance of 15 guilders was granted, without any discussion. Extra funds for helping the poor in times of cholera were not mentioned, nor the imposed measures or any references to the outbreak.

The fact that the church minutes did not discuss the cholera outbreak in great detail might be linked to the fact that in the late 19th century, the municipality or the local secular authorities transferred financial support from charitable and church institutes to themselves. Another explanation for the “silence” on cholera in the church books might be related to the fact that most Dutch churches supported their members in need almost continuously (via

diaconates) and, thus, additional support was not needed. We expect that this was certainly the case for the minor Protestant communities such as the Evangelical Lutherans; we were not able to retrieve their archives.

The supporting role of the municipality becomes evident when we study the type and extent of municipal aid during the 1866 cholera outbreak in Woerden. Support was organized twofold. First, individuals born in the municipality of Woerden were entitled to financial support and were registered annually based on their request and payment. In 1866, a column was added to this register that recorded whether or not the request was related to cholera. Second, for the needy citizens who were born outside Woerden, specific certificates of indemnification were demanded before payment. These certificates were granted by the place of origin and stated that the diaconate or municipality of origin would pay any necessary costs in case the citizen became destitute and in need of assistance. In other words, in these cases the costs were covered by the place of origin. During the outbreak, only a total of five individuals in Woerden relied on this latter type of support. The amounts paid either covered the high medical costs or were because persons became unemployed because of cholera. Note that municipal aid was provided only when church support was either not granted or impossible: church support still came before municipal support.

From the register in which the needy natural-born citizens of Woerden were recorded, we observe that in the month of June an additional 1,806 guilders was spent on cholera related support. This large sum of money was paid out to only ten applicants: three widows, four individuals, and three families. The largest sum of money, a total of 470 guilders, was paid to the widow Van Velzen. The sum was to cover the costs of cleaning the house, more specifically “to clean, wash, and whitewash the house,” and to reimburse fresh straw (bedding) and a new mattress. The widow Durivo was paid a total sum of 346 guilders. This money, among many other things, was to be spent on the washing and cleaning of a coat and cardigan. Other payments included the delivery, emptying, and cleaning of barrels (toilets). In June and July 1866, an additional three individuals received a relatively small but substantial sum of money, varying from 100 to 150 guilders, to cover the medical costs of a spouse. In two cases, a so-called “wake fee” was reimbursed; most probably a fee was paid to a person who had watched over a dying person. All these payments were on top of the 70 payments made throughout the year 1866. Most probably, all these individuals and families could not rely on the churches for (additional) benefits.

6. Conclusion

The current COVID-19 pandemic unceasingly presents us with a *déjà vu* from past episodes of infectious disease, such as cholera. Indeed, at first glance, the parallels are plentiful: a lack of knowledge about the cause of the disease, the return of old methods such as quarantine and curfew, a weak adherence to preventive measures, and the implementation of government's support packages for economic victims of the pandemic. Nevertheless, we conclude that the context of the 19th-century cholera outbreaks substantially differed from our current situation. As our case study demonstrates, crisis was considered an almost "normal" feature of society, and thus cholera was discussed in the same breath as the worrying situation regarding livestock and cattle plague. Also, the risk to die because of an infectious disease was continuously high. When the outbreak of cholera faded away, it was soon replaced by another contagious disease claiming new victims. We must also keep in mind that the first wave of panic, experienced in 1832, had disappeared by the time cholera hit the town for the fourth time in 1866.

We also demonstrate that the dynamics of late 19th-century cholera in Woerden, being a relatively small town, differed from the upsetting dynamics of cholera in large towns and metropolises such as London or Amsterdam. Cholera is very much connected to the urban context and has been framed as a poor men's or class-based disease. Studying cholera in a semi-urban context shows that the disease certainly hit the poor, but a clear spatial pattern was not observed. In Woerden, cholera also affected elite- and middle-class families. This can most probably be explained by the fact that most of the households relied on water supplied from the same source: a river that ran through the center of town. Although Woerden certainly included potential hotbeds for contagion – institutions such as a prison and a garrison as well as a semi "slum" (pannenbakkerijen) – the appalling conditions like in larger towns were not observed.

In times of cholera, the needy citizens could rely on additional support, which covered medical costs or extraordinary spending on the fumigation of houses, the burning of straw, the delivery of a toilet, or financial support because income was lost due to illness. Relatively few families applied for this type of support. Our analysis shows, however, that Woerden's local institutions already offered a wide range of support, even to migrants. Migrants, on condition of a certificate of indemnification, were entitled to benefits. Although the local authorities more and more claimed a transfer of support from the churches to the municipality, we observe that the municipality and church also collaborated in times of distress, but that the church still acted as primary granting authority.

References

- Baldwin, Peter. 1999. *Contagion and the State in Europe, 1830-1930*. Cambridge: Cambridge University Press.
- Boshart, Maurits. 2016. *De Blauwe dood. Cholera in Nederland*. Soesterberg: Uitgeverij Aspekt.
- Briggs, Asa. 1961. Cholera and society in the nineteenth century. *Past & Present* 19 (1): 79-96. doi: [10.1093/past/19.1.76](https://doi.org/10.1093/past/19.1.76).
- Brody, Howard, Michael Russell Rip, Peter Vinten-Johansen, Nigel Paneth, and Stephen Rachman. 2000. Map-making and myth-making in Broad Street: the London cholera epidemic, 1854. *The Lancet* 356: 64-68.
- Cohn Jr., Samuel K. 2017. Cholera revolts: a class struggle we may not like. *Social History* 42 (2): 162-180.
- Coutinho, Roel. 2020. *Epidemieën en pandemieën. Elementaire Deeltjes* 67. Amsterdam: Athenaeum, Polak & Van Genneep.
- Davenport, Romola Jane, Max Satchell, and Leigh Matthew William Shaw-Taylor. 2018. Cholera as a 'sanitary test' of British cities, 1831-1866. *The History of the Family*, doi: [10.1080/1081602X.2018.1525755](https://doi.org/10.1080/1081602X.2018.1525755).
- Devos, Isabelle. 2020. "The 1866 Cholera Epidemic in Brussel: A Reconstruction." Quetelet Centre.
- Ekamper, Peter, and George Buzing. 2013. Delftse blauwe dood. De gevolgen van de cholera in de negentiende eeuw. *Demos* 29 (6): 4-7.
- Ekamper, Peter. 2018. De blauwe dood in cijfers. Delftse cholera epidemieën van 1849 en 1866. *Delf, cultuurhistorisch magazine voor Delft* 20 (4): 18-21.
- Evans, Richard J. 1987. *Death in Hamburg. Society and politics in the cholera years 1830-1910*. Oxford: Oxford University Press.
- Hanlo, Jan. 1867. Statistieke opgaaft van het beloop der cholera in de verschillende gemeenten van ons Koninkrijk gedurende 1866 (8 april tot 15 december). *Nederlands Tijdschrift voor Geneeskunde* 11: 130-143.
- Hart, Piet D. 't. 1990. *Utrecht en de cholera*. Zutphen: Stichtse Historische Reeks.
- Hart, Piet D. 't. 1996. Een epidemie die voorbijging. Cholera in Woerden. *Heemtijsdinghen* 32: 1-10.
- Houwaart, Eddy S. 1991. *De hygiënisten: artsen, staat en volksgezondheid in Nederland, 1840-1890*. Groningen: Historische Uitgeverij Groningen.
- Meijer, Har A.M.M. 2005. *Het vuil, de stad en de dokter*. Leiden: Universiteit Leiden.
- Plomp, Nico. 1980. *Ziekenzorg in Woerden*. Woerden: Hofpoort Ziekenhuis.
- Speck, Reinhard S. 2008. Cholera. In *The Cambridge World History of Human Disease*, ed. Kenneth K. Kiple, 642-649. Cambridge: Cambridge University Press.
- Stadhouders, Karin. 2010. Steenkuilen en Pannebakkerijen. Een Woerdens industrielandchap. In *Door de lens van de landschapsbiografie. Een nieuwe kijk op de geschiedenis en het erfgoed van landschappen*, ed. Jan Kolen, Hanneke Ronnes, and Rita Hermans, 193-218. Leiden: Sidestone Press.
- Van Bavel, Bas, Daniel R. Curtis, Jessica Dijkman, Matthew Hannaford, Maïka de Keyzer, Eline van Onacker, and Tim Soens. 2020. *Disasters and history. The vulnerability and resilience of past societies*. Cambridge: Cambridge University Press.

- Van Dam, Petra J.E.M. 2020. The fight against cholera in Amsterdam in the nineteenth century: Clean drinking water as a new weapon against disease. *Codex Historiae* 41 (2): 50-54.
- Van den Eeden, Hans. 2009. *Leve de Koning! Lodewijk Napoleon op reis door Brabant en Zeeland*. Heusden: Brandarispers.
- Van der Laarse, Rob. 1989. *Bevoogding en bevinding: Heren en kerkvolk in een Hollandse provinciestad, Woerden 1780-1930 [Paternalism and Piety: Gentlemen and church folk in a Dutch provincial town, Woerden 1780-1930]*. Amsterdam: Stichting Historische Reeks.
- Van Drie, Rob, and Gerard Van Es. 1985. *Een eeuw kaaskop(p)en. De Woerdense kaasmarkt, 1885-1985*. Woerden: Stichts-Hollandse Bijdragen.
- Woelderink, Bernard. 1963. De cholera-epidemie van 1866 in Rotterdam. In *Rotterdams Jaarboekje*, ed. R.A.D. Renting, 302-18. Rotterdam: Historisch Genootschap Roterodamum.

List of Archives

- Bevolkingsregister 1850–1940, Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.
- Burgerlijke Stand 1811–1940, Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.
- Kohieren van hoofdelijke omslag, Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.
- Gemeenteverslagen van Woerden, 1865, 1866, 1867, Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.
- Notulen der vergaderingen van het Parochiaal Kerkbestuur van Woerden opgericht bij besluit van Monseigneur den Bisschop van Haarlem den 16e Junij 1859, Regionaal Historisch Centrum Rijnstreek en Lopikerwaard.

All articles published in HSR Supplement 33 (2021):
Epidemics and Pandemics – the Historical Perspective

Jörg Vögele, Luisa Rittershaus & Katharina Schuler

Epidemics and Pandemics – the Historical Perspective. Introduction.

doi: [10.12759/hsr.suppl.33.2021.7-33](https://doi.org/10.12759/hsr.suppl.33.2021.7-33)

Grażyna Liczbińska

Spatial and Social Inequalities in the Face of Death. Pilot Research on Cholera Epidemics in Poznań of the Second Half of the 19th Century.

doi: [10.12759/hsr.suppl.33.2021.37-53](https://doi.org/10.12759/hsr.suppl.33.2021.37-53)

Evelien Walhout & Eric Beekink

Just Another Crisis? Individual's Experiences and the Role of the Local Government and Church During the 1866 Cholera Epidemic in a Small Dutch Town.

doi: [10.12759/hsr.suppl.33.2021.54-78](https://doi.org/10.12759/hsr.suppl.33.2021.54-78)

Kristina Puljizević

Managing the Epidemics in 19th Century Dalmatia: From Fatherly Monarch to Scientific Grounds.

doi: [10.12759/hsr.suppl.33.2021.79-99](https://doi.org/10.12759/hsr.suppl.33.2021.79-99)

Julia Nebe, Enno Schwanke & Dominik Groß

The Influence of Epidemics on the Concept of the Bogeyman: Images, Ideological Origins, and Interdependencies of the Anti-Vaccination Movement; The Example of the Political Agitator Paul Arthur Förster (1844–1925).

doi: [10.12759/hsr.suppl.33.2021.100-127](https://doi.org/10.12759/hsr.suppl.33.2021.100-127)

Hannah Fuchs & Karl-Heinz Leven

AIDS & Haiti – Discourses on Origin, Stigma, and Blame.

doi: [10.12759/hsr.suppl.33.2021.128-146](https://doi.org/10.12759/hsr.suppl.33.2021.128-146)

Iris Borowy

Perspectives on the COVID-19 Vaccine: The Incredible Success versus the Incredible Failure.

doi: [10.12759/hsr.suppl.33.2021.147-172](https://doi.org/10.12759/hsr.suppl.33.2021.147-172)

Bartosz Ogórek

Quantifying Spanish Flu Mortality in the Cities of the Second Polish Republic. A Look at the Municipal Statistics.

doi: [10.12759/hsr.suppl.33.2021.173-192](https://doi.org/10.12759/hsr.suppl.33.2021.173-192)

Martin Gorsky, Bernard Harris, Patricia Marsh & Ida Milne

The 1918/19 Influenza Pandemic & COVID-19 in Ireland and the UK.

doi: [10.12759/hsr.suppl.33.2021.193-226](https://doi.org/10.12759/hsr.suppl.33.2021.193-226)

Wilfried Witte

Influenza Vaccination and Vaccine Policies in Germany, ca. 1930–1960.

doi: [10.12759/hsr.suppl.33.2021.227-250](https://doi.org/10.12759/hsr.suppl.33.2021.227-250)

Isabelle Devos, Mélanie Bourguignon, Emmanuel Debruyne, Yoann Doignon, Thierry Eggerickx, Hilde Greefs, Jord Hanus, Wouter Ronsijn, Jean-Paul Sanderson & Tim Soens

The Spanish Flu in Belgium, 1918–1919. A State of the Art.

doi: [10.12759/hsr.suppl.33.2021.251-283](https://doi.org/10.12759/hsr.suppl.33.2021.251-283)

Wataru Iijima

Jishuku as a Japanese way for anti-COVID-19. Some Basic Reflections.

doi: [10.12759/hsr.suppl.33.2021.284-301](https://doi.org/10.12759/hsr.suppl.33.2021.284-301)

Patrice Bourdelais

The COVID-19 Pandemic in Historical Perspective.

doi: [10.12759/hsr.suppl.33.2021.302-315](https://doi.org/10.12759/hsr.suppl.33.2021.302-315)

Nadine Metzger

Poisoning, Ergotism, Mass Psychosis. Writing a History of Ancient Epidemics Beyond Infectious Diseases.

doi: [10.12759/hsr.suppl.33.2021.316-329](https://doi.org/10.12759/hsr.suppl.33.2021.316-329)

Luisa Rittershaus & Kathrin Eschenberg

Black Death, Plagues, and the Danse Macabre. Depictions of Epidemics in Art.

doi: [10.12759/hsr.suppl.33.2021.330-339](https://doi.org/10.12759/hsr.suppl.33.2021.330-339)