Sanitationists, Sewers, and Shoe-Leather: Political and Social Subtexts in British Cholera Epidemiology, 1848-1855

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Sanitationists, Sewers, and Shoe-Leather:
Political and Social Subtexts in British Cholera Epidemiology, 1848-1855

Among the nineteenth-century physician John Snow’s best-known achievements were his theories regarding the origin and transmission of cholera. In ‘shoe-leather’ epidemiological investigations of the 1848 and 1854 London outbreaks, Snow personally interviewed cholera victims, their families, and others in areas affected by cholera. In On the Mode of Communication of Cholera, Snow proposed that the disease killed through diarrhea-induced dehydration; its spread came through the contact of water, hands, or other items tainted by cholera evacuations with the digestive system.\(^1\) Using a map depicting the homes of cholera victims in the 1854 London Golden Square outbreak, Snow deduced the cholera came from the supposedly infected Broad Street water pump. In removing its handle, he seemingly ended the spread of cholera in the area.\(^2\) The General Board of Health—the government body tasked with controlling epidemics—rejected his theory, as did many other prominent physicians.

Despite contemporary opposition, Snow is regarded today as an icon of public health for how he managed to infer the existence and pathology of vibrio cholerae—the bacterium present in cholera evacuations, which infects through exposure to the digestive tract—without knowledge of modern germ theory. The American Public Health Association and the Royal College of Anaesthetists jointly sponsor a lectureship bearing his name—Snow also made advancements in the use of chloroform and ether as anesthetics. Employees at the Centers for

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Disease Control ask for the location of “the handle of this Broad Street pump” when seeking quick solutions. Wade Hampton Frost, the first professor of epidemiology at the Johns Hopkins School of Public Health, discussing Snow’s significance in the development of modern epidemiology, calls Snow’s investigation “a nearly perfect model,” a “lesson in epidemiology” as well as a “story of exploration.” Thus, in the conventional view, Snow is an innovator in epidemiological methods and the understanding of the transmission of disease, faced by opponents, many of whom adhered to anticontagionist beliefs, who did not care to understand his brilliant techniques.

Such treatment of Snow’s discovery, though, tends to overlook discussion of the contemporary medical debate concerning the transmission of cholera into which he entered. Contrary to conventional historiography, though, this controversy cannot be characterized as a purely scientific conflict. Rather, Snow faced opposition from the anticontagionist wing of the medical community for his refutation of their medical means to achieving their social and political ideals concerning the lives of the poor. This philanthropic ideology, not science, mostly drove the beliefs of many anticontagionists; many saw Snow, despite his own somewhat sanitationist views, as representing social regression. In examining their response to Snow’s theory, we must begin with the original schism of the medical community surrounding cholera.

Although endemic to India for centuries, cholera began its global conquest in 1817, eventually reaching all of Europe by 1832. These outbreaks presented Eurasia with a disease rivalling the bubonic plague: cholera struck the young and the old indiscriminately, leading to

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death within hours; it appeared to have no traceable spread and to cross quarantine barriers.\(^6\)

With many infected seemingly at random, cholera’s unpredictability was a major challenge to the traditional strain of epidemiological thought known as contagionism. Established through studies of smallpox in the eighteenth century, the theory held that disease disseminated gradually via human contact, making quarantines the most useful tool in ending epidemics.\(^7\)

Yet, puzzled by cholera’s often nonexistent pattern of transmission, many began to renounce contagionism to search for another source of cholera, according to Leon Colin:

> This rapid walk through Europe during the first epidemic of cholera, at the time when we had the most hope in the prophylactic influence of the sanitary cordons, the preservation of so many countries, which, in the contrary, had remained free to communicate with touched regions, thus lowered the public confidence in the measures of quarantine. We thus know we started to absolutely doubt the transmissibility of the disease, from man to man […]\(^8\)

With quarantine, a contagionist measure, proving ineffective with cholera, doubt was cast on the communicability of cholera. Anticontagionists, instead, attributed its seemingly random spread to environmental factors. Causes of cholera given by anticontagionists largely focused on the foul odors and gases of miasmatic physicians, blamed by sanitationists on general uncleanness. Many even connected the two theories: in preventing the buildup of filth in sewers and on the streets, inhalation of the cholera-causing vapors known as miasmas would be greatly reduced.\(^9\)

With its ever-spreading gases, miasma theory challenged the seemingly failing model of direct contact espoused by contagionists. In this way, it provided reassurance as to doctors’ understanding of cholera’s inability to be quarantined. By the cholera epidemic of 1832, much of

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\(^7\) Peter Vinten-Johansen et al., *Cholera, Chloroform, and the Science of Medicine: A Life of John Snow* (New York: Oxford University, 2003), 178.


England’s medical community had turned anticontagionist; by 1848, the theory was backed by the English government in its General Board of Health, which controlled the government’s response to epidemics. This schism between contagionists and anti-contagionists had been driven largely by fear of cholera’s unpredictability, not exact science; anti-contagionists seemingly developed miasma theory simply in order to justify the puzzling nature of transmission of the disease.

Yet, one epidemiological quirk of cholera caused a split in the social and political views of the contagionists and anticontagionists. The poor, according to John Snow, were especially more vulnerable to cholera than the upper classes:

It is amongst the poor, where a family live, sleep, cook, eat, and wash all in a single room, that cholera has been found to spread once introduced, and still more in those places termed common lodging-houses, in which several families were crowded into a single room…When, on the other hand, cholera is introduced into the better kind of houses, as it often is,…it hardly ever spreads from one family member to another.

This major difference in outcomes from cholera bred social and economic discontent among the poor, and with the lower classes’ additional “unemployment, poverty, hunger, and unmet expectations” lay fear of uprising. The beginnings of the Chartist Movement in the United Kingdom, which aimed to gain political privileges for the middle to lower classes, as well as a wave of revolutions in mainland Europe, coincided with the 1832 cholera outbreak. The next wave of cholera, affecting Europe from around 1848-1849, also occurred during a surge in revolutions, but this coincidence is merely a conjecture. Hence, for the upper classes, disease

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became closely tied to fear of social and political uprising. Some, however, had a solution: reform as a means of treating disease.

In ending disease, many liberals, even “moderate Whigs and Tory Democrats” began to see an opportunity for fixing such societal problems. For instance, one physician, James Phillips Kay-Shuttleworth, described his work in the epidemic as a way to achieve social change:

[He would] follow the footsteps of this messenger death [into] the abodes of poverty…the close alleys, the crowded courts, the overpeopled habitations of wretchedness, where pauperism and disease congregate round the source of social discontent and political disorder in the centre of our large towns, and behold with alarm, in the hot-bed of pestilence, ills that fester in secret, at the very heart of society.

With these “meliorist” attitudes, social reform became a “central plank” in the sect of anticontagionism known as sanitationism. Sanitationists, motivated by a desire to reduce miasmas by eliminating waste from streets, sewers, and homes, viewed societal change as the ultimate solution to disease and other sicknesses—political, economic, and social unrest—plaguing society. In general, this meant removing the marks of poverty from the streets and from homes. To reduce overcrowding, they supported housing reform; to encourage cleanliness, they advocated for proper waste removal and the availability of potable water. By improving general public health, sanitationists believed they would improve the poor’s ability to earn wages and thus decrease poverty rates, with the sanitationist belief in cholera’s incommunicability, trade-crushing quarantines that often proved deadly to the poor were deemed unnecessary. In this

14 Peter Vinten-Johansen et al., Cholera, Chloroform, and the Science of Medicine: A Life of John Snow (New York: Oxford University, 2003), 172.
16 Peter Vinten-Johansen et al., Cholera, Chloroform, and the Science of Medicine: A Life of John Snow (New York: Oxford University, 2003), 172.
17 Peter Baldwin, Contagion and the State in Europe, 1830-1930 (Cambridge: Cambridge University, 1999), 129.
18 Peter Baldwin, Contagion and the State in Europe, 1830-1930 (Cambridge: Cambridge University, 1999), 129.
way, anticontagionism aimed to end social unrest among the poor and particularly attracted social reformers and philanthropists; it was a “vision that combined social reform and public hygiene in a seamless whole” for which the scientific reasoning—miasma theory—was merely tangential. In contrast, contagionists placed emphasis upon the exact mechanisms of transmission of disease, while dismissing social reform.²⁰

Snow, in his criticisms of sanitationist policy in On the Mode of Communication of Cholera, targets its blind social and political ideals. According to Snow, their supposedly beneficial practices backfired, spreading cholera further:

In 1849, for instance, the sewers of London were frequently flushed with water, - a measure which was calculated to increase the disease…by driving the cholera evacuations into the river before there was time for the poison to be rendered inert by decomposition.[]²¹

Snow thus asserts that the “measures which are intended to prevent disease should be founded on a correct knowledge of its causes”—in this case, his proposed theory of the waterborne spread of cholera.²² Possible mechanisms of cholera’s transmission were ignored in attempts to target uncleanliness—a noble pursuit, but such a measure hurt more than it helped. In effect, Snow was disproving sanitationists’ claims of treating disease through their reforms. In his words, “the persons who have been more instrumental in causing the increase in cholera”—the sanitationists—“are precisely those who have made the greatest efforts to check it, and who have been loudest in blaming the supineness of others.”²³

²⁰ Peter Baldwin, Contagion and the State in Europe, 1830-1930 (Cambridge: Cambridge University, 1999), 128.
Snow’s argument, though, is not entirely anti-sanitationist: in arguing that cholera is spread through consumption of polluted water, he reaffirms certain sanitationist beliefs in cleanliness and social reform as key solutions to cholera outbreaks. Sanitationists may base their policies on the prevention of miasmas through the removal of filth, but Snow’s idea is nearly the same: attacking disease at the source, rather than attempting to break chains of transmission as contagionists recommend. In *On the Mode of Communication of Cholera*, Snow even includes a series of recommended reforms, echoing the sanitationists:

8th. To effect good and perfect drainage.
9th. To provide an ample supply of water quite free from contamination…
10th. To provide…sufficient house room for the poor generally…

Despite these concessions, however, anticontagionists still refused to accept Snow’s argument. One article in the *Lancet* claimed Snow was “joining forces with filth and disease and abandoning the sanitary cause;” another blamed Snow for impeding the aims of medicine “to promote the welfare of society” and the “free progress of science.” Snow’s proposals for social reform were perhaps not as all-encompassing as those of the sanitationists, but they were certainly not as regressive as his opponents suggest. It is perhaps important, then, to remember that Snow’s theory evoked the epidemiological ideas of contagionists—who, unlike the anticontagionists, saw social reform as irrelevant to treating disease. In this way, anticontagionists saw Snow’s theory as a reactionary impediment to their ideals, despite Snow’s sanitationist assertions. Confirming sanitationist opinions of him, Snow, giving testimony before the highly

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anticontagionist General Board of Health against an amendment to a health bill, admits he was asked to do so by businessmen facing possible restrictions on their miasma-producing industries:

I received a request… I was asked if I would give evidence on behalf of the manufacturers whose interests are threatened by the Nuisances Removal Act… measures necessary to protect the public health would not interfere with useful trades…

As such, Snow actually represented those who would attempt to undo the reforms of the sanitationists. The *Lancet* ridiculed Snow as under the sway of “vested interests”—businessmen with “the misfortune to grow rich”—eager to pollute the air with “putrid grease,” “stinking bones,” and “steaming dungheaps.” Snow, not only an impediment to general public welfare, is also named a promoter of “sudden death amongst our children.” In the eyes of sanitationists, Snow represented the interests of the rich, all at the expense of lives of children, the poor, and all of helpless. In doing so, anticontagionists saw Snow as a champion of social regression.

Thus, the controversy surrounding John Snow’s theory on the transmission of cholera was not entirely scientifically motivated; in truth, Snow’s ideas, despite including suggestions for social reform, were seen as representative of reactionary contagionist policy that largely ignored public welfare in its solutions. Snow himself was painted as an advocate for the rich, bent upon hindering social progress; whether he was is unknown. Nevertheless, the conflict concerning his theory provides insight into the persuasive power of ideology that continues to shape our thoughts today.

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Bibliography


