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Urban Health in the US and UK

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URBAN HEALTH IN THE US AND UK

The Long 19th Century

Susan Craddock and Tim Brown

Introduction

Much has been written on urban histories of health, ranging from the apocalyptic devastations of 14th century plague, to triumphs of biomedicine such as the discovery of germs at the very end of the 19th century. The more remarkable episodes certainly lead to important questions about the impacts of diseases or discoveries, and the often significant social, scientific, and political changes they mobilize. In other words, the diseases or the medical advances themselves are often the most important objects of scrutiny. We have chosen to focus on urban health in the US and UK in the 19th century if not for the opposite reason, then for a more complicated mix of reasons. We ask instead the question of what happened when industrialization—that is, new configurations of political, social, regional, occupational, and economic relations—changed cities in ways that were unprecedented in the US and UK? And from that emerge further questions. What role did the relatively subtle new scientific advance of statistical application, rather than more remarkable scientific advances like germ theory, play in increasing understandings of health or the lack of it? What role did sanitation and public health regulations play in managing disease and promoting health, and for whom?

We are not arguing that these questions are in any way new. However, the period we cover is one that the historian Christopher Hamlin describes as involving the kind of “revolutionary change that obliterates an earlier landscape” (1998, p. 18). The preceding years were ones marked by population growth; death rates, especially amongst infants, were high, but so too were birth rates. Morbidity and mortality were routinely the result of infection by microorganisms passed through contaminated food and water or which resulted from overcrowded and unsanitary living conditions. Sexually transmitted diseases were commonplace. Yet in the 19th century such challenges were at their most intense as the expansionist tendencies of industrial capitalism contributed to the rapid growth of urban centers and the forging of even greater and more extensive international ties, in the case of the UK primarily colonial ones. As contemporary commentators noted, life expectancies actually went down in the 19th century as an outcome of industrialization, intensified as well from epidemic cholera and frequent outbreaks of influenza in addition to endemic smallpox, pulmonary consumption, the “fevers,” and a host of childhood diseases.

We are suggesting then that there is much to be learned in looking at a century where not one disease but many diseases and ailments together caused significant morbidity and mortality, and where there were no so-called magic bullet technologies to rely upon in responding quickly and effectively to those health conditions. That situation, then, means spotlighting the political will, ideological
underpinnings, and intellectual disagreements in negotiating how, and how much, to intervene with the lesser technologies available. It means highlighting the discussions of the public health authorities over how culpable the poor were for their ill health and in so doing illuminating the role of medical expertise as well as a growing army of domestic sanitarians in shaping class relations, but more poignantly in revealing how much less the lives of the poor were worth.

We argue that focusing on the experience of the US and UK is a useful device for illustrating the scope and scale of the problems encountered by newly industrializing nations during this period. While we outline the extent of these issues as they affected different places and people within these two nations, a core concern for us is to simultaneously highlight the ways in which understanding of and responses to disease were interwoven with ideas about identity, belonging, and difference. In this sense, it is important to acknowledge that infectious diseases as well as the socio-cultural practices imagined as being responsible for them not only cross spatial boundaries but also cross social ones, and the heightened anxiety and threat associated with them often resulted in the emergence of a pejorative discourse of responsibility and blame. Although the precise contours of such discourse were contingent upon place and time—for example, Irish immigrants were the most likely to be blamed for cholera in the UK, in contrast to the US, where the blame was shared equally amongst the Irish and African Americans in northern cities but where cholera was considered a “race disease” in the South—what remained constant throughout this period was a tendency to locate the responsibility for disease in the bodies and practices of the poor and other socially marginalized groups as well as in the homes and wider urban environments that they inhabited.

As we discuss, the environmental explanations for health and disease of sanitarians took precedence over those of medical men that tended to place emphasis on the importance of the individual constitution and the debilitating effects on human vitality of material circumstance; and, while the authority of miasmatic theories waned towards the end of our period, the idea that disease intersected with class, race, and sex arguably did not. Here, it is also important to acknowledge that much of what we discuss took place amidst a period of colonization and the continued practice of slavery and that industrialization and urbanization happened at the barbaric expense of the lives of millions across the globe and not only of those within the US and UK.

As a final note on our decision to focus on this period, it is worth our highlighting that we find troubling parallels now with happenings in the 19th century. Explosive urban growth, grossly inadequate sanitation systems or fresh water supplies, massive inequalities, heavy burdens of chronic and infectious diseases particularly among the poor, discourses of blame against poor and immigrant populations—these are all currently happening in cities across the globe including within the UK and US. And just as in the 19th century, life expectancies have actually declined today for the first time in many decades. While the 19th century is unlikely to offer any answers, it might remind us that complacency, bigotry, and blame played then the same regressive roles they play now in multiplying rather than ameliorating urban health dilemmas.

**Health and Disease in 19th Century Britain**

The repeated visitations of cholera, typhus, small-pox, and other epidemics have shown the British bourgeois the urgent necessity of sanitation in his towns and cities, if he wishes to save himself and family from falling victims to such diseases.

*(Engels [1845] 1943, p. ix)*

Friedrich Engels, the German socialist philosopher, was one of the most strident critics of industrial society and of the conditions in which the industrial working classes lived and died. Engels’s account is that of a political radical who along with Karl Marx was committed to promoting the cause of revolutionary socialism. His commentary is rightly described by Anne-Emanuelle Birn as “incendiary”
(2009, p. 170), as it offered a devastating critique of the inequitable social forces unleashed by industrial capitalism in Britain and of their profound effect on the life chances of a rapidly expanding urban proletariat. Yet his account was not unique, as in many ways it mirrored those produced by a host of his contemporaries, including those closely aligned with Edwin Chadwick’s nascent sanitary reform movement. Where Engels differed, however, was in his explanation. Although sanitarians such as Chadwick argued that the risks posed by epidemic diseases were collective ones (Kearns 1991), it was in the overcrowded, insanitary, and what were regarded as morally degenerate environments of the urban poor that they found their answers. At their most extreme, it was the putrefying spaces of the courts and alleyways of urban slums that were believed to produce intense miasmas: clouds of gas infected by corrupting matter emanating from rotting corpses, animal and human waste, and decomposing vegetable matter (Halliday 2001). It was these miasmatic gases that threatened rich and poor alike, and although poverty played its part in their production it was the environment and not poverty per se that was to become the focus for sanitary intervention. In contrast, Engels, while drawing upon this environmentalist logic, placed his critical focus on the influence of industrial capitalism, which he suggested placed “hundreds of proletarians in such a position that they [would] inevitably meet a too early and an unnatural death” (Engels [1845] 1943, p. 25).

While Engels’s rhetoric differed from most, he was not alone in diverging somewhat from the environmentalist explanations promoted by sanitarians under the influence of Chadwick. As Hamlin (1998) documents, other figures, such as the Edinburgh-based dispensary physician Dr. William Alison, argued against an emerging environmental orthodoxy. As Alison remarked to Chadwick’s sanitary inquiry:

> the belief that the original cause of typhus or contagious fever . . . [arises] from putrescent animal and vegetable matters, and from excretions from the human body, accumulated and corrupting . . . is not merely a speculative one, but one which ample experience entitles us to regard as erroneous.

*(Chadwick 1842a, p. 13)*

For Alison, and for many others providing evidence to the inquiry, it was not rotting matter that caused fevers and early death but poverty and destitution. Such a response did not reflect a denial of the appalling state of the nation’s poorest districts; Alison was quick to acknowledge this and to offer his support to interventions that removed filth and other nuisances on the grounds of improving the “health of the city” (Chadwick 1842a, p. 23). Rather, it was built upon a well-established physiological conceptualization of health that regarded human vitality as a “positive and powerful safeguard against disease” (Hamlin 1992, p. 54; see also Haley 1978). Under this understanding it was lack of employment, insufficient supply of food, inadequate clothing, and poor-quality, overcrowded housing that were the predisposing factors rendering the poor more vulnerable to disease and early death. Returning to Hamlin, “the chief causes of disease were the absence of the causes of health” (1998, p. 19).

Such a physiological understanding of health and vulnerability to disease prompted medical men such as Alison to comment on social factors that they argued were correctable. Its importance here is that, when placed alongside the more radical commentary of Engels, it helps to puncture the progressive narrative of empiricist accounts of sanitary reform during this period of the 19th century. As Hamlin argues, scholarship which emphasizes the role of sanitarians tends to focus on their involvement in purging nations of filth and other social nuisances as well as introducing a recognizably modern system of public health. While we go on to document in more detail how the sanitary reform movement on both sides of the Atlantic did ameliorate aspects of urban life, we also cast a critical eye over the movement and the ways in which its environmentalist discourse limited the focus of work done in the name of improving health. Moreover, we consider the association between filth, disease,
and death that was constructed in this discourse. This is a key feature of the entire movement and resulted in particular types of people (often differentiated by their class, sex, and race), living in specific types of places rendered as alien or, in the words of Dorothy Potter (1991), as a “race apart.” Of course, this framing of disease affected not only nations such as Britain and the US, but other territories as well, including those connected to these nations through imperial and colonial ties. Moreover, the effects of this transnational sanitary discourse on urban health were oftentimes disastrous.

Rapid Urbanization and the State of the Nation’s Health

In order to understand urban health it is necessary to consider some of the wider social forces that were shaping society. At the beginning of the century only about one-third of the British population lived in towns and cities; however, by 1851 this figure had increased to over half, marking for many the nation’s transition from a rural and agricultural society to an urban one (Waller 1983). Putting questions over how one conceptualizes the urban to one side (cf. Gunn 2004), this was also a period shaped by significant growth in the urban population. As C. Williams (2004) notes, the population grew from an estimated 10.5 million in 1801 to over 37 million at the century’s end. As might be expected, London was the exception by any international standards, beginning the century as a city of over 1 million inhabitants and ending it with almost six times as many. Perhaps the real story though was the growth of Britain’s major provincial cities—for example, Birmingham, Glasgow, Liverpool, and Manchester—as well as of other much smaller towns across Lancashire, Yorkshire, and the West Midlands that were closely associated with textile and metal manufacture and were growing at around 10% a year (Morris 1993). Urbanization was influenced not only by industrial manufacture; the mining towns of South Wales grew sharply in the second half of the century, and a booming leisure and retirement industry in England resulted in considerable growth in seaside towns such as Bournemouth, Brighton, Hastings, and Torquay (Morris 1993; Gunn 2004).

This image of urban growth is further complicated if we consider how processes operating at a range of spatial scales impacted on those urban inhabitants who found themselves living in the most precarious of circumstances. Here, it is not only the significant numbers of people involved in migration to, between, and within Britain’s towns and cities that matter but the social and cultural characteristics of the migrants themselves. With regard to the former, it is worth noting that migration played an almost equal role to natural population increase in the growth of the nation’s largest cities (Wohl 1977); for example, the 1851 census revealed that long-distance migrants accounted for 38.3% of London’s population and for 54.6% in Manchester, 55.9% in Glasgow, and 57.5% in Liverpool (Whyte 2004). Many of these migrants were born in other areas of Britain. However, there were also a considerable number of Irish-born and other overseas immigrants concentrated in the aforementioned cities as well as often spatially segregated within them, a pattern that was intensified following the Irish famine of 1845–49. This kind of segregation acted as a form of social support through the maintenance of cultural, social, and often familial ties; however, it also helped to reinforce extreme overcrowding and the concentration of poverty in what were often already very deprived environments. This was a period shaped by unstable employment, and newcomers to Britain’s cities tended to add to an already very large pool of surplus labor upon which employers relied on a casual and piecemeal basis (Jones [1971] 2002).

It was not only rapid urban growth and precarious employment that shaped urban health at this time. As Szreter (1999) notes, many of the towns that were to experience a catastrophic reduction in the health of their citizens had grown significantly in the preceding century. Instead, Szreter argues that inequality in income and wealth grew significantly during this period. Indeed, as Gilbert (2004, p. 310) remarks, urbanization, industrialization, and trade linked to British imperialism resulted in great increases in personal wealth, but this wealth was concentrated rather than shared.
Secondly, Britain’s towns and cities were being re-shaped by capitalist and other social forces that saw a commercial bourgeoisie as well as a rapidly growing middle class including lawyers, doctors, and civil servants moving to a more salubrious urban periphery. Parallel with this flight to the suburbs was an influx of vast numbers of migrants into the low-rent, poor-quality central district housing of many towns and cities. Although suburbanization was not a uniform process (Dyos and Reeder 1973; Gunn 2004), the subsequent spatial segregation also resulted in increased ignorance of the appalling conditions under which many of Britain’s urban poor were living.

Szreter (1999, p. 148) further argues that these forces were not alone in forging the circumstances under which “deprivation, disease and death” would become synonymous with many 19th century cities. Regarding England and Wales, he points to a significant change to urban governance implemented under the Municipal Corporation Act of 1835. Under the terms of this legislation, a system of ratepayer-elected councils was instituted which steadily gathered the responsibilities associated with local government. According to Szreter, it was this “new political force” that was the “major source of obstruction to municipal improvements over the ensuing three decades” (ibid.). Put differently, Britain’s rapid urban growth coincided with a system of liberal political economy in which individualism and noninterventionism reigned; and the results were often catastrophic. This was a period that was marked by a stagnation in the average life expectancy, which had been growing steadily over the course of the previous century (Hamlin 1998; Rosen [1958] 2015). More dramatically, Szreter (1999) demonstrates that life expectancy in provincial cities of over 100,000 inhabitants dropped significantly below 35 years of age in the late 1820s and did not rise above it until the 1870s. As would be expected, this figure was in large part shaped by very significant levels of infant mortality, with the under-fives accounting for almost half of all deaths from the 1840s onwards. Although low relative to much of continental Europe, the conditions into which infants were born left them vulnerable to diarrheal diseases, whooping cough, scarlet fever, measles, diphtheria, and smallpox—all of which were associated with significant rates of mortality. Those fortunate enough to make it to adulthood faced a host of other endemic and epidemic diseases and other life-limiting conditions including four cholera epidemics, relapsing fever, typhoid, typhus, bronchitis, and pulmonary tuberculosis.

It is, of course, important to note that the conditions of existence varied considerably and so too did people’s life chances. N. Williams and Mooney (1994) for example consider the extent to which infant mortality rates varied across English towns and cities. As they note, while towns such as Preston and Leicester consistently had infant mortality rates (IMRs) over 200 per 1,000 live births in the second half of the 19th century, others were more aligned with the rates found in the worst-performing rural districts (e.g., Bath 135, Bristol 148, and Southampton 142). In addition to revealing this variation between towns, N. Williams and Mooney (1994) highlight the relatively low rates that existed across London. While there was considerable variation—for example, the average IMR for the period ranged from 178 for St. George-in-the-East to 129 for Hampstead—they note that most districts recorded average IMRs that were well below those experienced in Preston and Leicester. Similar differences in IMR existed in Scotland, with Glasgow averaging 171 for the period 1869–73 and its near neighbor Edinburgh 151 (Watt and Ecob 1992).

Although some of the explanation for these differences in IMR are to be found in the disruptive influences associated with rapid urbanization, N. Williams and Mooney (1994) argue that this local variation was also shaped by a host of other factors often occurring within the home and surrounding community. For example, they point to possible differences in mothers’ breast-feeding practices which have the potential to explain why some infants more than others were prone to diarrheal infection. Related to this they highlight exposure to contaminated milk products, whether used as a substitute for breast-milk or as a dietary supplement for older infants, which were associated with a variety of gastroenteric conditions and infectious diseases such as scarlet fever, bovine tuberculosis, and typhoid fever (Atkins 1992). Additionally, they highlight the influence of voluntary health
visitors from the mid-19th century forwards. While it is very difficult to determine the extent to which these domestic sanitarians impacted the health of the poor, it is certainly the case that they played a very considerable part in promoting the sanitary gospel, especially as it related to hygiene and temperance (Wohl 1983).

While infant mortality rates are a sensitive measure of population health, they also provide some indication of the state of women’s health. As Wohl (1983) notes, the health of the mother was and is one important influence on a child’s health and on the chances of the child’s survival into adulthood. The very high rates of infant mortality witnessed during this period were in some regards matched by high rates of maternal mortality. Although notoriously difficult to measure, in part because all concerned with maternal care and childbirth had an interest in underreporting deaths, figures for the latter half of the century reveal significant rates of maternal mortality well into the 20th century (Smith 1979; Loudon 1992). In England and Wales, for example, the death rate for women in childbirth averaged over 4 per 1,000 births until the 1940s, when a sharp decline was witnessed here as elsewhere. As Loudon reveals, social class played an important role, although not in a manner one might anticipate. Class position was in some senses protective of mothers from semi-skilled and unskilled households, largely because they were protected from unnecessary and life-threatening interventions by physicians.

Of course, maternal death does not present anything like a complete picture of women’s health, and even if we accept that working-class women were to an extent protected from the worst excesses of a male-dominated medical profession it certainly does not mean they enjoyed better health overall. Returning to Wohl (1983), a considerable class divide existed that left women from working-class backgrounds undernourished, overworked, poorly housed, and more exposed to precarious employment in part as an unintended consequence of Factory Act reforms in the 1870s. Often compounded by gender power dynamics within the home, which tended to be reflected in the uneven distribution of food with men and boys receiving larger portions and more protein, the result was working-class women and girls who were of smaller stature and lower weight than their middle-class counterparts (Wohl 1983).

The Sanitary Gospel: Fetishizing Filth

Health and disease are not only materially experienced or embodied, but are socially constructed; thus, understanding of the socio-spatial patterning of disease and to a lesser extent health in this mid-19th century period was shaped by a powerful sanitary discourse on filth. In Britain, this discourse was closely aligned with figures such as Edwin Chadwick, Thomas Southwood Smith, and William Farr, who individually and collectively played a crucial role in promoting the “sanitary idea” (Melosi 2008). Framed by a commitment to miasmatic theory, an early illustration of the influence of the sanitary idea comes from a pioneering study of Manchester factory workers conducted by Dr. James Phillips Kay during the first cholera epidemic to strike Britain in 1831–32. Alongside tabular evidence reproduced from the reports of sanitary investigators who inspected working-class districts street by street, house by house, Kay produced a vivid account of the squalid environmental and domestic conditions in which workers were living. In addition to the plentiful observations made regarding the quality of the poorly built housing with “only one outlet, no yard, no privy,” and the many unsewered alleys and streets which were “receptacles of offal and ordure” (1832, p. 25), Kay’s report contained detailed commentary on the overcrowded and insanitary nature of housing. Here, Kay described houses where “two or more families [were] crowded” together or cellars that contained “only one room, in whose pestilential atmosphere from twelve to sixteen persons were crowded” (ibid.).

This prioritization or even fetishization of filth was a central feature of Chadwick’s sanitary idea and was mirrored in large swathes of Victorian writing. Scholars such as Wohl (1983) and
more recently Gilbert (2004) and Allen (2008) have drawn attention to Kay’s contemporaries—for example, Hector Gavin, who used his position as a physician working amongst the poor in the working-class borough of Bethnal Green in east London to trace both textually and cartographically the association between poverty, filth, and disease. As Gavin commented, “wherever such filthy streets are found, so likewise are fever and the other zymotic diseases” (1848, p. 46; see Figure 2.1). To Gavin’s account we might add that of George Godwin, whose *Town Swamps and Social Bridges* (1859), Allen suggests, is typical for its aligning of human beings with such terms as “drainage,” “cesspool,” and “refuse”: “where human beings are crowded together in ill-arranged dwellings; where the drainage is bad and the cesspool lurks; where refuse rots, the air is vitiated, or the water impure and scanty, . . . there cholera and fever . . . reign and slay” (1859, p. 49, cited in Allen 2008, p. 11).

This framing was, perhaps, at its most intense when the bodies and spaces inhabited by the poor intersected with other markers of social difference. In Kay’s report, his account of the pathological effects of the unsanitary environments he encountered were often overlaid, for example, with a pernicious discourse relating to the Irish presence in Manchester. The worst instances of filth and moral corruption are generally attributed either directly to the Irish or to their “corrupting” influence on the indigenous working classes: as he states, “[t]he contagious example which the Irish have exhibited of barbarous habits and savage want of economy, united with the necessarily debasing consequences of uninterrupted toil, have demoralized the people” (1832, p. 12). As this suggests, not only were the sanitarians concerned with the influence of filth on the physical health of the poor, but the overcrowded and unsanitary conditions they observed raised considerable anxieties over their moral health too (Mort 1987).

Undoubtedly the sanitary discourse reflected the reality of everyday life for Irish immigrants to cities such as Manchester, which was well documented in parliamentary reports, novels, and

![Image: Map of Bethnal Green 1847](https://example.com/map_bethnal_green_1847.png)

**Figure 2.1** The disease mist overhanging Bethnal Green in the year 1847 (Gavin 1848).

*Source: Wellcome Collection.*
accounts such as Engels's *The Condition of the Working Class in England*. The Irish did live in the worst of conditions; more of the streets in their districts were unpaved, they had fewer privies per head of population than other working-class districts, and their homes, which were either back-to-back cottages or cellar dwellings, were "polluted by the stench" and "darkened by the thick smoke" of nearby factories and by two heavily polluted rivers—the Irk and the Medlock (Engels [1845] 1943, p. 71).

While the Irish were often the subject of the worst of moralizing sanitary discourses, it was not limited to them. As Hamlin (1998) demonstrates in his almost forensic analysis of Chadwick's *Report on the Sanitary Condition of the Labouring Population of Great Britain*, concern over the moral as well as physical condition of the urban poor extended well beyond the supposedly corrupting influence of Irish immigrants. Outside of the general anxiety prompted by overcrowding, which the report concluded was "destructive to the morality as well as the health of large classes of both sexes" (Chadwick 1842b, p. 370), perhaps the best illustration of this wider anxiety comes from the focus on the common lodging house (see Figure 2.2). The report dealt with these spaces separately, not only because they were regarded as "foci of contagious disease within the district" but also because their occupants—variously described as "trampers," "mendicants" (beggars), or more generally the "lowest class of person"—were regarded as the source of "moral depravation" (1842b, p. 357). Throughout the report, as well as across the entire sanitary discourse of the period, lodging houses were the focus of considerable attention because these overcrowded and filthy places challenged middle-class norms as much as they promoted disease and poor health amongst their itinerant and

![Figure 2.2](https://wellcomecollection.org/images/8054a/TheSourceOfKingCholera.jpg)

*Figure 2.2*  "A court for King Cholera"—illustration by John Leech, 1852 (published in *Punch*, 23, July–December 1852, p. 139).

*Source:* Wellcome Collection.
destitute occupants. These were spaces where beds were “filled promiscuously with men, women, and children” and where debauchery and licentiousness were at their worst (Mort 1987; see also Koven 2004). As Hamlin notes, though they were disgusted by such spaces, Chadwick and his fellow sanitarians were also mesmerized by them. These “receptacles” of filth and moral degeneracy were the “sanitarian sublime” (Hamlin 1998, p. 166).

There’s Something in the Air? Challenging Miasma Theory

Understanding urban health and disease was shaped not only by this powerful sanitary discourse on filth; this was a period that was also marked by the increasingly widespread deployment of social and vital statistics (Driver 1988). As Foucault ([1976] 2003) has outlined, the period from the mid-18th century forwards saw the health and vitality of populations emerge as a principal object of the state in many European nations—what Foucault referred to as a form of biopolitics. While decennial population censuses were conducted from 1801 forwards in England and Wales, it was the Registration of Births and Deaths Act of 1836 that allowed for a more comprehensive picture of the health of the nation to emerge. The significance of the Act, which resulted in establishing the General Register Office (GRO) in 1837, was not lost on individuals such as Chadwick, who saw it as an opportunity to gain important comparative insights into a range of social phenomena. Famously, Chadwick employed such data to document with painstaking detail the extent of the social and spatial inequalities in mortality that existed between different classes of populations living in rural and urban districts in England. Recorded in his 1842 Sanitary Report, the statistics revealed that, where the average age of death for the professional classes and gentry was 52 years of age in rural Rutlandshire, it was only 35, 38, and 45 for Liverpool, Manchester, and the east London borough of Bethnal Green, respectively. This rural–urban inequality was mirrored for the so-called lower classes, with the average age of death for “mechanics and labourers” recorded as 38 for Rutlandshire but 15, 17, and 16 in Liverpool, Manchester, and Bethnal Green (see Table 2.1).

Chadwick was not alone in making use of the new-found power of vital statistics to promote the sanitary cause; William Farr in his role as chief statistician at the GRO also deployed them to great effect (Eyler 1973). As Szreter (1991) documents, under Farr’s guidance the GRO began what amounted to a propaganda campaign aiming to promote public health activism in towns and cities across the country. For example, Farr sought to ensure that the mass of registration data flowing into the GRO was processed ever more quickly, with quarterly reports on general mortality in the

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Source: Adapted from Bambra (2016).
country’s 112 most populous districts added to annual reports as early as 1842. Similarly to Chadwick, Farr employed the data to promote the sanitarian cause: for example, he deployed mortality league tables as a device for shaming local authorities into action. An earlier illustration came in 1843 when Farr used evidence from the registration data and the 1841 census to reveal that almost half of the population born in Liverpool died before their sixth birthday. As Szreter (1991) remarks, almost overnight the city was transformed in the popular imagination from one of the healthiest spots in the nation to one of its sickest, prompting city authorities into action: Liverpool was the first city to appoint a medical officer of health, in 1846. Of course, there was already plenty of evidence damning Liverpool’s sanitary state; submissions to Chadwick’s sanitary inquiry revealed that by the 1840s the city’s 8,000-plus cellar dwellings were occupied by some 40,000 people, many of whom were Irish immigrants, and that “[fever] has been almost as constant as the surrounding physical circumstances of bad ventilation, filth, and damp” (1842b, p. 149). Yet it was the combination of social reportage, detailed public inquiry, and mounting statistical evidence that helped to ensure political action.

While Chadwick and his counterpart Farr made use of statistics to highlight inequalities, the explanation for them lay with exposure to the exciting properties of miasmatic gases rather than with the material differences that class position afforded. An illustration of this comes from Chadwick’s discussion of the corrupting effects of the atmosphere on the drinking and eating habits of the poor. As he recorded, the “close pent up air” in the houses of the poor depressed the “nervous energies” of their inhabitants and acted as a “strong and often irresistible provocative to the use of fermented liquors and ardent spirits” (Chadwick 1842b, p. 129). In a similar vein, when discussing diet and the poor condition of workers living in Whitechapel, London, Chadwick recounted the words of the district’s medical officer, Mr. Liddle:

Meat sold on a Saturday night, in hot weather, to poor people, who have only one close room, in which they sleep, and live, and cook, will certainly turn before the Sunday morning; when, if it were kept in the butcher’s shop, or in a well-ventilated place, it would be in as good a condition on the Monday morning. There is a great deal of loss of meat in consequence of the want of ventilation and bad condition of the dwellings of the poorer classes. The butter kept in such places sooner becomes rancid, and the bread dry and disagreeable.

(Chadwick 1842b, p. 129)

Chadwick’s interpretation of Liddle’s account, which compared the plight of the working poor in this overcrowded and extremely deprived district on the edges of the City of London to that of similarly placed rural folk, was to emphasize the role of the atmosphere:

Here, then, we have from the one agent, a close and polluted atmosphere, two different sets of effects; the one set here noticed engendering improvidence, expense, and waste, the other, the depressing effects of external and internal miasma on the nervous system, tending to incite the habitual use of ardent spirits; both tending to precipitate this population into disease and misery.

(Chadwick 1842b, p. 130)

Where Chadwick used the opportunity to accuse the poor, and especially here working-class women, of improvidence and waste, recent accounts recognize the considerable challenges that many faced with regard to food security. It was not until later in the century that this situation improved significantly, although the diets of the poorest sectors of urban society continued to be marked by the paucity of protein and foods rich in a variety of essential vitamins. As Oddy (1970) notes, bread and potatoes were still the staple foods in many such families. Milk consumption did offer a readily available source of calcium, protein, and other essential nutrients. Yet, to provide milk
that was at least reasonably fresh at the point of purchase, it was produced in what Atkins (1992) describes as overcrowded cowsheds whose presence in the urban landscape was to become the focus of sanitary regulation. Not only did the cows produce large quantities of manure—Atkins estimates that in London some quarter of a million tonnes was produced by the 1860s—but they were also prone to a host of infectious diseases, some of which, like bovine tuberculosis, were transmittable to humans. It is not possible to provide detailed figures on the scale of this problem; however, an investigation by London County Council revealed that the tubercle bacillus was present in over 10% of milk samples in London in the 1910s, which provides at least some indication of what the situation might have looked like in the previous century (Atkins 1992).

Putting concern over the sheer volume of ordure produced by the cattle to one side, the issue of milk contamination was recognized as a serious threat to human health even as early as the 1850s. Here, the kinds of environmental explanations put forward by sanitarians are important ones. Hygiene matters in the food production industry, and urban authorities were alert to the issue of accidental as well as deliberate food contamination, including of milk. As Atkins (1992) notes, the diseases that can be transmitted through milk include many of those that were endemic during the 19th century and which were responsible for significant morbidity and mortality. The association between milk consumption and specific disease outbreaks was beginning to be made by the 1850s, and the work of medical officers of health in making these associations was especially important here. For example, an investigation by Dr. Michael Taylor in Penrith in 1857 associated typhoid fever with milk consumption, and in 1870 several studies linked scarlet fever to the consumption of milk produced by single dairies (Atkins 1992). However, as Atkins (1992) remarks, the explanation for the outbreaks was to remain a miasmic one, because the role of bacteria in producing disease was not yet understood (see Worboys 2000).

Perhaps the most famous illustration of this mid-century challenge to miasmatic explanations of disease came from John Snow’s analysis of the second (1848–49) and third (1852–53) cholera epidemics. Snow’s cartographic representation of cholera mortality did more than identify the disease with specific towns or districts, or even in relation to the identifiable characteristics of individual victims. Rather, Snow drew on his expertise as a practicing clinician to more precisely locate the disease regarding both its pathological effects on the body and its mode of transmission. Specifically, he argued that miasmatic theories which suggested that cholera was an airborne disease were misguided, famously observing that a “bad smell cannot, simply because it is a bad smell, give rise to a specific disease” (Snow 1855, cited in Gilbert 2004, p. 56). Moreover, his map of the cholera outbreak in London’s Soho district as well as the text supporting it highlighted the proximity of its victims to a specific source of water: the Broad Street pump (see Figure 2.3).

Snow’s “grand experiment” hypothesized mortality would be lower in homes supplied by the Lambeth Waterworks Company than by the Southwark and Vauxhall Company: the former had moved its water supply upstream of its original pumping station in the heart of the city, where the latter had not. The results were incontrovertible proof of his thesis; as Eyler (1973) reports, mortality from cholera increased for the latter but diminished significantly for the former. Despite this evidence, it was not until 1866 that sanitarians such as William Farr accepted Snow’s waterborne thesis (Eyler 1973). As the examples of both infected milk and contaminated water supply reveal, understanding of the relationship between poverty, disease, and the environment was, in Gandy’s terms, a “confused arena in the pre-bacteriological era” (2006, p. 15).

Questioning Sanitary Intervention in Britain and Beyond

As already suggested, while urban poverty was almost obsessively documented by a range of social actors, the question of its relationship to health remained a moot point in the minds of sanitarians. This is not to argue that such influential figures as Chadwick, Southwood Smith, and Farr did not
accept that there was a relationship; the former is well known for suggesting that disease was a cause of poverty and poverty of pauperism (Rosen [1958] 2015). However, their ideological, and in the case of Southwood Smith theological, commitment to the sanitary idea and its emphasis on the removal of filth was triumphant in that it dominated the so-called golden age of Victorian public health (Hamlin 1998; Brown, M. 2008). Indeed, even though Chadwick failed to secure a position on the Royal Commission on the Health of Towns established in response to the findings of his 1842 report, it was his sanitary idea that was promoted by the Commission and it was its commitment to flushing filth from towns and cities that was reflected in the Public Health Act of 1848. The Act was not passed easily through Parliament, nor did it contain all the powers that sanitarians had hoped for, but it did for the first time ensure that all towns but London had the authority to implement sanitary reform. Specifically, the General Board of Health established by this legislation had the authority to instruct districts to appoint a local board with responsibilities for a wide range of sanitary issues including water supply, sewerage, control of offensive trades, the provision of open spaces for municipal parks, and the regulation of municipal cemeteries.

Figure 2.3 John Snow’s map of the distribution of cholera cases in Soho, London. Source: Snow (1855).
The boards were also instructed to appoint an inspector of nuisances, a surveyor, and, should they wish, a medical officer of health (MOH).

There is a much more detailed story to be told here; indeed, it should be noted that the influence of the sanitary idea on the health of towns was more extensive than the above suggests. While male sanitarians such as those already mentioned tended to focus on the justification for and implementation of large-scale, technological solutions to urban public health problems, there was by the mid-to-late century an extensive network of female sanitarians. Indeed, as Ellen Ross (2007) suggests, towards the end of the century there were over 900,000 women involved in some form or other of philanthropic work, and the majority of these worked as volunteers in the nation’s urban slums. Deriving mostly from the educated middle classes, these women were engaged in a host of activities, many of which came under the banner of sanitary work. In addition to providing immediate relief to working-class households, the women were involved in monitoring the behavior and habits of the poor—especially mothers—and providing advice on cleanliness and hygiene, clothing, diet, education, and more. Such women were labelled “domestic health reformers” (Ward-Richardson 1880, p. 670), and the significant role that they played in shaping urban public health agendas up to the fin de siècle is now widely recognized (see Prochaska 1980; Koven and Michel 1993).

However, though there was “much for public health officials and social reformers to reflect on with satisfaction” (Wohl 1983, p. 329), it is also fair to say that health improvements reflected a deep class divide. As Kearns states, despite the imperfect data available, it is possible to argue that it was the “poor and unskilled who bore the brunt of the urban penalty” (1991, p. 15). These inequalities in health marked the 19th century and the 20th century and continue to shape the 21st (Bambra 2016). Moreover, the tension between amelioration and its impact on the poorest and most vulnerable was not lost on contemporaries. The harmful effects of large-scale slum clearance and other interventions are just one example. As Wohl (1977) records, from the 1860s periodicals and daily newspapers were heavily critical of such improvement works, especially their tendency to increase overcrowding in the already crowded housing stock that remained. Indeed, in conjunction with the protests of medical officers of health and medical journals such as the *Lancet*, the Royal College of Physicians petitioned the government in 1874, arguing that “the wholesale demolition of the houses inhabited by the poor . . . while it has been serviceable in removing many very bad streets and dwellings, has incidentally caused much distress to the persons displaced” (cited in Wohl 1977, p. 34).

There are many other examples we could draw on here; however, in keeping with the earlier discussion of Snow’s work on the waterborne characteristics of cholera it is to this aspect of sanitary reform that we shall briefly turn. As Hardy (1991) suggests, the provision of piped water was one of the foremost objectives of the public health movement from the 1840s forward, and for many was regarded as a sign of a civilized society. So too was the swift removal of human waste to the outskirts of the city, rather than have it lingering in overflowing cesspools, which up until this point was the norm. In what, of course, can only be regarded as a considerable irony, the desire for the latter in part was responsible for the corruption of the former in the early years of sanitary reform. For example, in cities such as London the impulse to cleanse the urban environment of accumulated filth resulted in vast quantities of human and animal waste being flushed into the river; it is estimated that some 30,000 cesspools were filled in with their contents flushed into the River Thames during the period 1848 to 1855 (Allen 2008). The result in this case was not only to turn an already polluted river into a filthy and unpleasantly odorous one, but also to turn it into a major source of cholera infection, evidenced by Snow’s investigative work (see Figure 2.4).

Apart from this example, we might turn to that of colonial Bombay (Mumbai). Although it sits outside of the immediate focus for the chapter up until this point, it is important that we acknowledge the spatial extent of sanitary reformers’ influence. As Arnold (1993) remarks, by the 1860s and 1870s many of the largest cities in India had begun to undertake the kinds of sanitary reform witnessed in Britain. In cities such as Calcutta (Kolkata) and Madras (Chennai), improvements to the
sewage and water supply system respectively resulted in sharp reductions in mortality from cholera, which had ravaged the cities in the preceding decades. As for Bombay, in the 19th century it was a city riven by inequalities that were both socially and spatially patterned. Similarly to towns and cities across Britain, Bombay experienced rapid urbanization from the mid-century onwards, and many of the city’s incoming rural migrants concentrated in chawls, described by Klein as “crowded, insanitary, ill-ventilated slums” (1986, p. 732). Those living in these overcrowded and unsanitary conditions suffered many of the health-related issues faced by their British counterparts, including significant mortality from cholera in the 1860s—an estimated 15,000 people between 1860 and 1865. In response to this, the city’s public health authorities sought to modernize the water supply by introducing reservoirs, pumping stations, public taps, and storage tanks. As Gandy (2008) records, the construction of the Vehar reservoir brought some 32 million liters of water per day into the city, and this more than doubled towards the end of the century with introduction of the Tulsi reservoir.
This significant increase in the supply of water was mirrored by a dramatic reduction in cholera mortality from 5,000 deaths in 1864 to a few hundred by 1866 (Klein 1986, p. 737).

While this is an impressive illustration of the capacity of sanitary reform to prevent disease, from the 1870s forwards national mortality rates rose to 48.6 per 1,000, and much of this increase was the result of increased exposure to a host of infectious diseases including cholera, malaria, influenza, plague, tuberculosis, and dysentery. For many, including Klein (1986), the rise was caused by deteriorating economic, social, and environmental conditions. More specifically, for Bombay the massive increase in the supply of water was not matched by a strategy to remove it, and the failure to adequately drain the city created the ideal ecological conditions in which diseases such as malaria and bubonic plague thrived.

Klein’s conclusions are damning: India’s modernization under British rule “did not result in better housing, nutrition, or other environmental improvements that would have separated rodents and fleas from humans and restrained plague transmission.” This did not, however, apply to the nation’s ruling elites, who like their Western counterparts were largely protected from harm by their social and spatial segregation from the slums (Klein 1986, pp. 745–746).

Health and Disease in 19th Century US

Colonization and Decimation in 17th and 18th Century US

In his classic text on cholera, Charles Rosenberg asserts that, by the early 1830s, cities in the US had become “undesirable excrescences” in what many believed otherwise to be a relatively healthy country (1962, p. 6). Cities in the US and especially the Eastern Seaboard, as in the UK, were gaining reputations as bastions of sickness, filth, and disease. Before getting further into the geographical imaginaries and realities of urban areas in the early and mid-19th century, however, it is worth intervening in our exact parallels between the UK and US to acknowledge the very different histories of urbanization just before the 19th century.

First, what constitutes urban history in the US too often focuses solely on those cities that developed as a result of British colonization and European migration and settlement. While these cities are the main focus of our analysis, it is important to acknowledge that their location and subsequent development were enabled by forced displacements of native populations. What urban settlements thrived before the advent of settler colonization clearly were destroyed through targeted violence, laws of forced resettlement, or disease. This leads to the second reason for including a very brief overview of pre-19th century US urban history, which is that it is worth acknowledging the role of disease in depopulating indigenous towns and villages, a repeated pattern of epidemic decimation from the beginning of European contact that goes a long way to explain the availability of land for British urban expansion even before subsequent policies of native displacement. Finally, it is worth noting the different circumstances of US cities leading into the 19th century: namely, that they had a much shorter pre-1800s history and among other things were thus considerably smaller than most cities in the UK, and that the US had a history of European exploration, British colonization, and slave importation that shaped the diseases plaguing cities.

As Alfred Crosby (1986) argued, ecological imperialism played significant roles in helping the British and Europeans achieve their agendas in the Americas. Whether through settler colonialism, resource extraction, or colonization and conversion, infectious diseases inadvertently brought first by Spanish expeditions, and later by other Europeans and British people, decimated huge numbers of indigenous populations, left cities and villages largely empty, and consequently enabled resettlement by Europeans. Though exact numbers felled and by which precise diseases are debated, estimates for total numbers of indigenous groups killed by disease in the Americas are in the millions. Describing the spread of disease by Spanish colonials in 16th century Mexico, Rebecca Earle contends not only
that the extent of demographic collapse was catastrophic but that, as one estimate suggests, disease reduced populations of around 25 million to 1 million—enough still to "provide a vital labor force for colonizers" (Earle 2012, pp. 13–14). North American Indian numbers before European contact are estimated at around 5 million or 6 million, with 50–90% dead from smallpox, measles, typhus, diphtheria, influenza, dysentery, whooping cough, and other diseases brought along with European colonization (Kraut 1994). Despite a robust pharmacopeia of treatments for ailments with which they were familiar (Kraut 1994; Nash 2006), indigenous populations could not overcome their lack of immunities to these new diseases.

Lemuel Shattuck in his 1850 report on the sanitary conditions of Massachusetts notes from archival sources that an epidemic hit indigenous populations in 1618 in the area of Plymouth even before colonists arrived. A report from 1621 noted that once thriving and populous American Indian villages were deserted because of epidemic outbreaks (Mass Hist Collection; Hutchinson's Hist Mass, quoted in Shattuck 1850, p. 61). What the epidemic was and where it originated continue to be debated, but theories over time have included plague, smallpox, yellow fever, chickenpox, and trichinosis, spread by any of the Basque whalers, Spanish and Portuguese fishermen, French fur traders, and English codders along the North Atlantic coast. The number of members of the Wampanoag Nation living between what is now eastern Rhode Island and southeastern Maine is estimated at 21,000–24,000, and their death rate from the epidemic ranged from 30 to 90% (Marr and Cathey 2010).

The role of syphilis in the debate over New and Old World diseases continues, but Linda Nash argues that it was Spanish colonizers who brought the syphilis and gonorrhea that subsequently became rampant among mission Indians and those of central California. A measles epidemic ripped through the missions in 1806; a smallpox epidemic started in 1837 at Fort Ross and headed south, and another began in 1844 in central California. Both of these killed thousands of people, particularly Native American populations (Nash 2006, p. 19). Even higher mortality rates in the 1830s came from what is assumed to have been malaria brought most likely by a Hudson’s Bay trapping expedition that infected native as well as white populations from the Northwest down through California. The demographer Sherburne Cook estimated that up to one-half of the Native American population of central California, or about 50,000 individuals, died. As Nash notes, “it is clear from contemporary accounts that the epidemic radically disorganized California Indian societies, leaving Indian peoples ill prepared to resist or adapt to the dramatic invasion of their territory that came a decade and a half later with the discovery of gold” and the subsequent growth of San Francisco (2006, p. 23).

Though it was brought to North America by Europeans, smallpox’s devastations did not end with native communities. It was one of the most common epidemic outbreaks to hit East Coast cities during much of the 18th century and beyond, often causing significant mortality and morbidity and causing fear among urban populations. Smallpox was the disease that drove most earlier public health interventions, namely quarantine. Boston led the way in this, with a comprehensive quarantine law in place by 1699, and a permanent pesthouse by 1717 (Duffy 1990). Other cities followed, but the effects, as Duffy notes, were uneven given that in between outbreaks most regulations were only minimally followed (ibid.; Rosenberg 1962).

By the early 18th century the practice of smallpox inoculation had become known to colonists. One particular physician, Zabdiel Boylston, thought it worth a try against the protests of most other physicians, and in 1721 first inoculated his own and Cotton Mather’s children, and when they survived inoculated close to 300 more people. Of the inoculated, only about 2% died; of those not inoculated, it was more like 14% (Shattuck 1850; Duffy 1990). It was the beginning of a slow spread of this practice, stalled undoubtedly by the fact that at times it actually spread the disease rather than the opposite. By the time of the Revolution, however, it was widely accepted as an effective deterrent to a terrifying disease (Duffy 1990).

Yellow fever was another regular visitor to the early colonies, but southern cities suffered more, with warm climates and marshy lands providing perfect breeding environments for mosquitoes. As
noted by a 1946 report of the Charleston, South Carolina Department of Health, being a port city brought trade but also “infected people and insect vectors.” Since yellow fever was endemic to many areas of Africa, ships coming in with slaves probably introduced and reintroduced yellow fever into Charleston. Indeed, Charleston suffered repeated outbreaks of yellow fever whether from incoming ships or from internal sources, which inspired several quarantine laws and a pesthouse; like the public health regulations for smallpox, however, these were only weakly enforced (Charleston County, SC, Department of Health 1946; Duffy 1990). Reports of yellow fever in urban areas could also produce informal quarantines: a particularly bad outbreak in 1798 caused farmers to stop bringing food into the city, “so hunger added to the misery of the victims of a disease which doctors could not treat” (Charleston County, SC, Department of Health 1946, p. 17). The same yellow fever outbreak hit New York City, killing nearly 800 people out of approximately 33,500. Philadelphia lost 4,000 in a 1793 yellow fever epidemic, or about 14% of its population (Condran 1995, p. 27). As Alan Kraut notes, in these earlier epidemics reactions noted more frequently for 19th century disease were already present: debates over religious versus environmental associations of disease, and blame for the cause of outbreaks focused sometimes on new immigrants (1994).

The disease probably doing the most damage in the 18th century, however, was malaria. Because malaria is not as violent and frightening as smallpox and yellow fever, it was noted less frequently in records. Fevers were also not often distinguished when they were reported, making conclusive determinations of malaria versus other fever-causing diseases more difficult. Nevertheless, historians have managed to conclude that malaria in its epidemic and endemic forms, and its multiple varieties, had a more consistently debilitating effect than other diseases on early urban life in the American colonies. According to Margaret Humphreys, vivax malaria was endemic in many European countries and was thus probably imported by Europeans into middle and northern colonies before 1700. As she notes, given the tendency to settle near sources of water at that time, it was inevitable that it would take hold (2001). The more virulent form of malaria, falciparum, probably came in with African slaves to Charleston in the 1680s and immediately had an impact on white settlers. Indeed, largely because of falciparum malaria Charleston’s death rate was so high that it did not begin to sustain itself through birth rates instead of immigration until the 1770s. The historian Peter Coclanis found one parish record, for example, noting that 86% of white babies born died before reaching the age of 20, while another parish noted 2,883 burials against only 863 baptisms amongst white inhabitants (cited in Humphreys 2001, p. 25).

19th Century Industrialization and Disease

Despite insalubrity from their very beginnings, cities in the US grew increasingly unhealthy in multiple ways in the first decades of the 19th century. Like Britain, the US in public perception and in reality was more rural than urban throughout the 19th century. But though the 1920 census was the first to record more people in urban areas than rural in the US, it became increasingly difficult to ignore rapid growth in the number of cities, and in the populations within those cities, in the early to mid-1800s. Manufacturing steadily increased its presence in many cities particularly in the North and East, while steam ships, telegraphs, and railroads made communication and transportation among urban nodes much easier. Industrial capitalism brought attendant demands for jobs, bringing more people from rural areas into urban areas, at the same time as immigrants began arriving in American cities primarily from Ireland and Germany.

As a document that encapsulates much about social changes as elucidated by the new science of statistics, it is worth focusing in some detail on Lemuel Shattuck’s 1850 Report of the Sanitary Commission of Massachusetts. As Shattuck himself observed when writing the report, Boston over the first decades of the 19th century displayed ever increasing mortality rates according to statistics from municipal registration reports. From an infectious disease death rate of 15.85% in 1810–20,
Shattuck reports an increase to 31.59% of all deaths from infectious diseases in 1840–49. While he bemoans the fact that records of mortality and their causes steadily declined over this time period, he nevertheless discerns that dysentery, typhus fever, scarlatina (scarlet fever), and consumption were common. Indeed, he goes on to argue as a way of explaining the paucity of accurate data that, in nearly all points of Massachusetts, these diseases were so common and familiar that people “cease to excite notice or alarm” over them. “An amount of sickness which formerly would have thrown the whole community into a state of consternation, may now occur as an ordinary event, and elicit no special attention” (1850, p. 81). A few pages later, he suggests that infectious outbreaks, or what he calls “zymotic diseases,” are “the index of public health” given the degree to which they prevail.

The disease not included in the zymotic category is tuberculosis (consumption). Shattuck has little to say about its causes, except to stand firm against any ameliorative effects of mild and sunny climates, an attitude that was to change among most physicians within a few decades. He does point out the grim statistics that tuberculosis claims: 1 person for every 317 living persons in Boston for 1830–1840, compared to 1 in 194 for New York City, 1 in 284 in Philadelphia, and 1 in 205 in London for a similar time period. Against these mortality rates, Shattuck asks the question since echoed by many historians of medicine:

The occasional visit of the cholera, or some other epidemic disease, creates alarm, and precautionary measures are adopted for prevention. But where is the alarm and precaution against a more inexorable disease, which, in this State, in every day in every year, deprives more than seven human beings of their lives?

(Shattuck 1850, p. 98, italics in original)

Tuberculosis, perhaps more than any other disease, was the direct embodiment and symbol of a particular kind of poverty inhering in 19th century industrial cities. All people in cities to a greater or lesser extent were vulnerable to infectious disease outbreaks, especially those like cholera that spread through water; rates were still uneven across classes, but less uneven than for diseases like tuberculosis. Middle- and upper-class families also had burdens of tuberculosis, but their adequate diets and ability to live in larger houses with ample windows and far less crowding meant they were at considerably less risk. Intense crowding coupled with lack of ventilation and chronically poor diets made for much higher risk among the poor: to the point that tuberculosis was a debilitating presence in increasing numbers of poor families’ lives.

A question much more difficult to answer is how tuberculosis played out across gender. The answer in short is that it played out differently across cities and periods of time. Sometimes men suffered considerably higher rates; at other times, women did. For women the usual explanations are the tendency to spend a great deal of time in environments optimal for spreading the tuberculosis bacillus—that is, in cramped and ill-ventilated homes and workplaces. Men’s tuberculosis is usually explained through workplace conditions, including mines and factories. As stated by Philip Brown, turn-of-the-century director of the San Francisco Polyclinic, while men did suffer poor working conditions,

the opportunities that are open to women are distinctly against them, not only being conducive to the acquiring of tuberculosis, but offering a minimum of opportunity for recovery . . . As dressmakers, stenographers, clerks, factory workers, etc. they are often where the most unsanitary conditions in business life are found. The outdoor occupations, which are plentiful for men in California, are hardly open to them at all.

(Brown, P. 1911)
Shattuck’s final statistical persuasion was to “take the mean duration of life” as his guide from the collective sources he had at his disposal, and to calculate the average age of all people who died in Boston and other major cities in the US from 1810–20 up to the 1840s. The numbers are dismal, but Shattuck’s main point is to show that they were getting more dismal with time, as Table 2.2 illustrates.

Of course, a primary reason behind these remarkably low averages was high infant and child mortality rates, as Shattuck’s graph shows (Figure 2.5). Only 50% of children in Boston lived to see age ten, versus more than 80% for all of England, and only 13% made it to age 50, versus 55% in

Table 2.2 Average age of death in the 1810s versus the 1840s

<table>
<thead>
<tr>
<th></th>
<th>1810s</th>
<th>1840s</th>
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<tbody>
<tr>
<td>Boston</td>
<td>27.85</td>
<td>21.43</td>
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<tr>
<td>New York</td>
<td>26.15</td>
<td>19.69</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>26.25</td>
<td>22.01</td>
</tr>
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</table>

Source: Shattuck (1850).

Figure 2.5 Infant and child mortality rates for Boston (dotted) and England (shaded), by age and percentage. Source: Shattuck (1850, p. 102).
England (Shattuck 1850, pp. 102–103). Yet, as staggering as infant and child mortality rates were, they were not the only explanation for these appalling statistics. Playing an equally significant role were the deleterious effects of industrialization, as families not only succumbed at high rates to infectious diseases, but also suffered from the slow violence (Nixon 2013) of chronic poverty. As Shattuck (1850) makes clear with this comparison, not just the micro-places of home and work mattered but so too did individual cities in the determinations of health.

Shattuck (1850) used statistics to argue forcefully, and skillfully, for the recommendations he lays out in his report. Those recommendations brought together as inextricably related the dual prongs of better sanitation throughout the city, and better statistics enumerating with heightened precision exactly who died and why. To accomplish these dual tasks he insisted on a Board of Health that would be permanent, not just act when epidemics arrived, and which would be constituted by a combination of physicians, engineers, chemists, and others who could assist in implementing the right forms of survey and sanitation. In Boston, a Committee on Internal and External Health would be responsible for monitoring streets and sewers, food quality, ports, water quality, and nuisances. Information to be gathered was similarly encompassing and ahead of its time: everything including age, sex, “domestic situation” (married, widowed, etc.), occupation, place of birth, level of education, accommodation (number of people and level of crowding in each abode), and demographics—that is, “color and freedom” (whites, Indians, and blacks, and among blacks whether free or slave) (ibid., pp. 128–129). Diseases were to be standardized, and recorded for every individual.

If Shattuck did not entirely escape the thinking of his day—for example, he found some association between poverty and immorality—he was nevertheless a thinker well ahead of his time. He derided the laws placing those with mental illness in jail, instead recommending their care be pastoral rather than punitive. He insisted that children and tuberculosis receive particularly rigorous investigation given the especially high mortality rates of the population and the disease. His focus on occupation, marital status, housing, and other demographic characteristics in his desire to pinpoint exact causes of disease and death suggests a complexity of thinking about what today we would call the social determinants of health that did not extend to many sanitarians of the day. Clearly for Shattuck it was not just fetid air or dirt that shaped the mortality rates he railed against. It was rather a broader interplay of spatial, occupational, environmental, and social facets that explained why married men lived longer than unmarried, twice as many women died of tuberculosis in Boston but twice as many men died of it in New York, or clergymen lived significantly longer than printers. Had Shattuck’s recommendations been fastidiously carried out, we would have available a more comprehensive look at how and why health status differed across the demographic, social, and spatial mosaic of mid-19th century Boston, and Boston might have also escaped some of the most deadly epidemics of the day.

Shattuck clearly believed in the necessity of city and state taking heavy responsibility for maintaining the health of citizens; nevertheless he was typical in stopping short of directly addressing the conditions of the poor in his recommendations for improving public health. As in the UK, that step was rare, even when those conditions were noted in detail in public health reports.

Understanding health in US cities in the early decades of the 19th century, much as in the UK, meant understanding changing political economies of urban life, moralistic as well as environmental theories of disease, and persistently ambivalent understandings of poverty. In his classic examination of American poverty in the 19th and early 20th centuries, Robert Bremner points out that industrialization produced as early as the 1820s a new kind of poverty, one which steadily intensified as the century wore on. Instead of modest but usually livable wages brought by skilled crafts as in earlier decades, factories brought high demands for lower-skilled (i.e., easily replaceable) labor and very low wages. Industrialization in the US, like everywhere else, brought inequalities of wealth unprecedented within European-American society (Bremner 1969; Fee and Porter 1992). While factory owners and merchants accumulated fabulous wealth, increasing numbers of men, women, and children in cities were forced to work long hours often in onerous if not outright dangerous conditions,
for wages that were not enough to live by. With as yet no laws protecting the length of the work
day or workplace conditions, both were geared toward the greatest labor efficiency at the lowest cost
rather than to maintaining the health and wellbeing of workers. Children, of course, were no more
protected than adults from the hazards of factory work.

Housing was equally problematic. As Elizabeth Blackmar (1995) points out for New York, the
rise of a middle class meant vacating homes in the center of the city for domiciles further away
from zones of industrialization. Health more than ever before drove particular—and particularly
classed—patterns of urban development. Middle-class homes became spaces architecturally designed
to enhance health, morality, and gendered domestic care. Women increasingly carried the mantle
of maintaining family health. In the meantime, the move to less industrial urban areas created the
means by which landlords could take over vacated homes and subdivide them for poor families. As
in British cities, one-family homes began holding three and more families. The economic downturn
culminating in the Panic of 1837 made crowding even worse as house building stopped for a time,
poverty worsened, but the poor kept coming into the city: exactly the right ingredients for building
owners to further subdivide and create more financial gain from poor families’ desperation (Blackmar
1995). Owners also built wooden additions onto the rear of houses, and rented cellars to the very
poorest. John Duffy adds to this that population growth largely outstripped the few extant public
health regulations in the first third of the 19th century, for example restricting burials, street cleaning,
and garbage collection. New tenements had inadequate or no privies, leading to problems with waste disposal, on top of which “the public had a tendency to toss everything out onto the streets, including dead animals” (Duffy 1990, p. 77). As Blackmar summarizes this pattern, the years from 1800 to 1840 “established the connection between one group’s pursuit of healthy living conditions and the deterioration of the living conditions of others” (Blackmar 1995, p. 50).

Charles Rosenberg’s descriptions of New York at this period of time round out the picture Blackmar and Duffy paint of deteriorating urban conditions. As Rosenberg describes, “thousands of swine” roamed freely in the streets, waste was omnipresent, no zoning meant poor people living next to pig sties and slaughterhouses, and clean water was an item purchased privately by the upper classes and shipped in from rural areas. As Rosenberg summarizes,

The most miserable and degraded lived in unfinished cellars, their walls a mat of slime, sewage, and moisture after every rain. Houses adjoined stable, abattoirs, and soap factories; their front yards were the meeting place of dogs, swine, chickens, and horses. (1962, p. 18)
Though Rosenberg and other historians specify that New York in the mid-19th century was not just the largest but the dirtiest city in the US, most cities were not immune to the descriptions just presented. For most northern and western cities, the basic material and economic architectures of industrial capitalism were the same, even if they developed a few years or a decade later. Along with such urban degradation came smallpox, typhoid, typhus, dysentery, diphtheria, and, starting in 1832, cholera, wreaking havoc in cities across the US and explaining the drastic rise in morbidity and mortality rates evidenced by Shattuck (1850) for Boston. And, though mentioned less often, tuberculosis killed more than any of these, topping the list of death rates especially among the poor.

And yet, as in the UK, responses to a poverty that affected more people and at intensified levels did not focus on apprehending the highly unequal class and material relations producing this poverty, or in driving sympathetic campaigns against disease. As many historians of medicine have suggested, a combination of religious belief, moralism, environmentalism, and personal responsibility largely described responses to disease. Statistics clearly evidencing higher rates of disease in poor neighborhoods made possible a more exact spatialization of disease for targeting interventions, but also for targeting blame. By mid-century, for example, robust geographical imaginaries made it all but impossible to disentangle fetid urban spaces from their diseases or their equally degraded inhabitants. Many physicians subscribed to theories of disease recognizing the common medical understanding that huge burdens of waste and sewage produced foul air causing diseases, but still retained a conviction that moral turpitude played a role in determining greater vulnerability (Rosenberg 1962; Duffy 1990). As stated by New York physician and city inspector John Griscom in his 1842 report,

The over-crowded state of many tenements, and the want of separate apartments, are prolific sources of moral degradation, and physical suffering . . . [producing] an indifference to the common decencies of life, and a disregard of the sacred obligations of moral propriety, which result in a depressing effect upon the physiological energies, and powerfully heighten the susceptibility to, aggravate the type, and render more difficult the cure, of diseases among them.

(Quoted in Blackmar 1995, p. 54)

As Blackmar (1995) is quick to point out, emphasis on the effects of suboptimal housing on disease susceptibilities of the poor meant eventually mobilizing greater traction for housing regulations rather than the wage structures underlying so many people’s inability to afford anything better than the unventilated hovels they inhabited. Public health in the mid-19th century was no less political than it is now. For New York, it was easier to target landlords and require implementation of better ventilation, lighting, sanitation, and space in tenement buildings than to antagonize the factory owners whose wealth and political influence public health appointees depended on (Blackmar 1995).

Immigrants were another facet by the 1840s in skewing attitudes to the poor away from sympathy or economic analysis, and towards blame and personal responsibility. Though far more immigrants would arrive in the United States towards the end of the century, between 1820 and 1830 92,884 immigrants arrived in New York, the majority of them Irish. Between 1840 and 1860 the Irish famine would send 1.8 million more Irish to North America, including to Boston, Providence, and New York. By 1860, one in four New Yorkers were born in Ireland (Kraut 1994, p. 32). As is so often the case in history, poor populations who are reviled even in the best of times become pathologized in the event of infectious disease outbreaks. Evidencing imbrications of better statistics with xenophobia, the Irish in New York and in other US cities died at higher rates from the 1832 and 1849 cholera epidemic, but this was explained largely by their intemperance, filth, and general “difference” rather than their acute poverty (ibid.; Rosenberg 1962). Scapegoating only intensified with an increase in poor European immigrants between 1880 and 1920 (Kraut 1994), Chinese
laborers settling into West Coast cities after completion of the transcontinental railroad in 1869 (Craddock 2000; Shah 2001), and recently freed African slaves migrating to southern cities after 1865 (Wailoo 2001; Savitt 2007).

More than pathologization, medical theories focusing on diseases among marginalized populations often signaled changes in political and social relations unsettling to the white majority, in turn both supporting and generating racialized ideologies and rationalizing harsh policies. As Wailoo (2001) notes of newly emancipated blacks, their skyrocketing disease rates produced theories among southern physicians about the pathogenic nature of freedom and the inabilities of blacks to live on their own. Later, those theories accompanied black migrants to northern cities as physicians warned counterparts in the North about the “double menace” of black migration—race pollution plus higher rates of syphilis, tuberculosis, and cholera. As Wailoo points out, “disease patterns revealed the face of changing social relations and economic arrangements” that threatened many and disrupted long-embraced norms (2001, pp. 14–15). In San Francisco, smallpox epidemics blamed on the Chinese community not only cemented their intractable difference but rationalized strident purgings, razings, and reconfigurations of Chinatown in the name of public health (Craddock 2000). While race was at the forefront in most narratives of disease, in the example of syphilis women were blamed, and in particular women engaged in commercial sex. For some cities like San Francisco, race, gender, and place converging around sexually transmitted diseases drove not only urban reconfigurations but migration policies. Though white sex workers were plentiful in San Francisco, Chinese sex workers were overwhelmingly blamed for high rates of syphilis and gonorrhea among

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**Figure 2.8** Privies installed outside a tenement, New York City.

men in a city with comparatively few women. The condemnation of Chinese prostitutes from the medical community and beyond played a critical role in the Chinese Exclusion Act of 1882, where Chinese women of the laboring classes were barred entry into the United States even if they were married to a Chinese worker (ibid.).

Occasionally but not always, illuminating disease etiologies resulted in more positive responses. Cholera is one of those. With Snow’s clarification and confirmation of water’s role in disseminating this frightening disease, it not only became far less plausible to blame the disease on particular populations, but also became far more difficult to resist relevant interventions. Rosenberg (1962) convincingly argues that it was the 1866 cholera epidemic that finally convinced a reluctant public health constabulary to act. Indeed, he argues that cholera did more than any other disease to drive urban public health reform, and calls the 1866 Act establishing a strong and permanent Metropolitan Board of Health one of the most significant dates in the history of US public health (Rosenberg 1962, p. 193). Finally, New York’s filth was tackled, sanitation was improved, and most importantly waste disposal was addressed. The salubrious effect confirmed to everyone that Snow’s scientific elucidation was in fact accurate.

More than anything, the 1866 Act is important because it set a precedent for maintaining strong, well-functioning boards of health not just during epidemics but at all times. It also established the importance of better sanitation and sources of clean drinking water. It is important to note two things, however: that the establishment of permanent boards of health did not necessarily lead rapidly to robust sanitary interventions; and that there is significant variation on both when boards of health were established, and when significant milestones of urban public health like clean drinking water and sewers were established. Both of these milestones were increasingly achieved across US cities as the 1800s advanced, and they did in fact make a big difference. Yet achieving these two important facets of public health was not always the end of the story. As Duffy notes (1990), East Coast cities often built sewers earlier when civic engineering was less advanced and cities were smaller; subsequent rapid growth meant sewers that were grossly inadequate but too expensive to repair. This was not just a problem of East Coast cities, however. San Francisco’s sewers were built before its explosive growth in the 1860s and 1870s, after which sewers turned from interventions to public health nightmares capable of carrying “many a strong man, many a fair woman, in the bloom of health, and still a larger proportion of young children, to a premature grave” according to a prominent San Francisco physician (Stout 1868, p. 85).

Yellow fever, not cholera, drove the establishment of boards of health in most cities in the southern US, in 1800 for Norfolk, 1808 in Charleston, 1841 for Natchez and Mobile (Runge 2013, p. 572), and 1853 for New Orleans (Forbes 2017). Despite its relatively early board of health, Charleston did not start laying sewers until 1894, or construct a clean water supply until 1903 (Charleston County, SC, Department of Health 1946, p. 18). In the meantime, most citizens had cisterns or shallow wells for their drinking water, and these frequently had direct connection to privy vaults. Diseases such as typhoid fever and dysentery were therefore common, with a bacteriologist hired by the city in 1898 finding half of domestic wells infected with bacilli. Those diseases decreased significantly after the deployment of filtered water at the turn of the century (ibid., pp. 18–19).

Even more multi-faceted arenas such as infant and maternal mortality rates (IMR and MMR, respectively) showed significant decline after environmental interventions. As in the UK, infant and maternal mortality rates remained high during the 19th century, declining only from an average of 218 white infant deaths for every 1,000 births in 1850, to 151 in 1890. For black infants, records are insufficient to show averages until 1900, when the infant mortality rate was 170 for every 1,000 births (Haines 2008). After 1900, however, both white and black rates began a steady decline, though the significant gap between white and black rates did not. MMR and IMR from Charleston over the time period 1880–1940 show a similar decline after 1910, but also a persistence of highly divergent rates between whites and blacks. What is noteworthy is the astoundingly high rates of
Figure 2.9  Maternal mortality rates, Charleston, South Carolina 1880–1940.  
*Source*: Charleston, SC, Department of Health (1946).

Figure 2.10  Infant mortality rates, Charleston, South Carolina 1880–1940.  
*Source*: Charleston, SC, Department of Health (1946).
death for both black mothers and babies—22 per 1,000 live births for MMR at its peak around 1912, and an even more staggering IMR of around 550 per 1,000 births in 1888.

The Charleston example illustrates not only the uneven application of improved sanitation across and within cities, but the limits of its success. Declines in infant and maternal mortality rates also depend on factors such as better nutrition, access to health care including pre-natal and post-natal, and better housing—factors largely lacking among black populations then as now.

**The Role of Nutrition**

As suggested above, it is recognized today that adequate and appropriate nutrition plays a significant role in health, including a healthy immune system. So what was the role of nutrition in 19th century US urban health? Scott Carson (2015) used height and weight measurements of male prisoners over most of the 19th and early 20th centuries as one way to assess nutritional status. Prisons were one of the few institutions in the 19th century taking careful height and weight measurements of (incarcerated) individuals, thus making for a more thorough data set at least for men during this time period. What he found was that both height and weight declined from the 1840s through the 1920s for both white and black prisoners representing skilled and unskilled laborers, white collar workers, and farmers. Apart from this overall pattern, he found that farmers maintained higher weights than did their urban counterparts; those from southern and western states fared better than those from northeastern states; and blacks slightly outweighed whites. Southern whites, however, had a net nutritional advantage over southern blacks, and also had the most varied and nutritious diets. According to Carson (2015), lower agricultural productivity and a greater separation of food production and food consumption in northeastern states explain the lower overall nutritional status in that region. Though it is difficult with this generalized data to make firm deductions about the association of better diets with better health (in fact Carson points out that the South had higher disease rates despite better diets), it does raise the question of whether diets, including fluctuations in their quantity and quality, might explain some of the mortality and morbidity variances evidenced among US cities.

More certain is that, perhaps even more than disease, nutritional status embodied the wide discrepancies between classes in 19th century urban America. While the middle and upper classes were beginning from mid-century to enjoy a wider variety of foods as a result of factors including expanded trade, rail networks, refrigeration, and agricultural development in California, nutritional deficiencies were common among the poor (Fee and Porter 1992). Fluctuating prices dictated what foods families could afford, but so did many facets of working-class urban life in the 19th century: long work hours meant little time to access food even when it was affordable, and cramped quarters and lack of facilities meant difficulties with proper preparation. Items such as eggs and milk were rarely available, and spoiled rapidly without refrigeration, especially in the summer months. Before regulation and pasteurization, milk also potentially harbored harmful bacteria like bovine tuberculosis and typhoid. Fresh fruits were expensive for much of the century. When railroads brought possibilities for more distant fruit growers, orchards expanded further down the East Coast and in the South, only to collapse economically from overproduction and high rates of damage during shipping (Freidberg 2009). Not until later in the century did more, and more nutritious, foods start becoming increasingly available to poor populations with food processing technologies, and the development at the end of the century of refrigerated train cars able to bring a new abundance of fresh fruits and vegetables from California, and other goods like meat from the Midwest at more affordable prices to cities across the US (ibid.). Before then, however, chronic undernutrition increased disease susceptibility and undermined health for millions of poor people across the United States.
The Long Arm of Urbanization

Urban histories typically stop at city margins or their immediate surroundings. Yet the health effects cities have on populations reach well beyond the urban fringe if one considers the numerous economies vital to supporting urban life and growth. For southern US cities, of course, those included the slave and plantation economies. Commodities harvested from farm and plantation were a large part of what drove urban economies in cities like Memphis, Richmond, and New Orleans at mid-century, and until the Civil War those commodities were harvested overwhelmingly by slaves, whose numbers totaled around 14 million by 1860 (Savitt 2007, p. 53). It is therefore relevant to briefly examine the health of slave populations, however generalized that picture is, given wide variability of conditions across plantations.

As might be expected, life started out precarious for children born to slavery. Recent work based on height data and numerous other approaches has placed IMR at 350 per 1,000 births and deaths by the end of the first year at nearly 50% (Steckel 1986, p. 427). If children survived to adulthood, they were candidates for a legion of conditions. Yellow fever and malaria were two of the more common infectious diseases of the South, but the close quarters and crowded conditions in which most slaves lived—conditions, Savitt argues, very similar to those experienced by the urban poor—also meant high rates of typhus, worm infestation, upper respiratory infections, measles, diphteria, whooping cough, influenza, scarlet fever, and tuberculosis. Miliary TB—tuberculosis that has spread throughout the entire body—was common, and fatal (Savitt 2007). Though some slaves were allowed if not encouraged to grow vegetables in plots of land near their quarters, diets were generally poor, consisting of corn meal and pork. Lack of nutrients would have likely depressed their immune systems, enhancing susceptibility especially to infections, rickets, and intestinal diseases (Kiple and King 1981). Affecting most slaves, of course, was relentless and physically taxing work often in intense heat and humidity; added to this, the persistent element of brutality and, for women, pregnancy meant further immune-depressing impacts on already deeply taxed systems.

Against this backdrop of dismal health, it is a sad irony that African slaves’ observed resilience to malaria became a rationalization early on for continued use of slaves rather than other forms of labor in agricultural fields (Humphreys 2001; Savitt 2007). Today we know that, to the extent this was true, it is because many Africans had immunity to falciparum malaria in particular given its endemcity in African countries where slaves were from. As Humphreys (2001) points out, however, there were multiple kinds of malaria in the South during this time, not just the dominant varieties vivax and falciparum, but variations within these types that differed from region to region. A slave immune to malaria on one plantation but then sold to another thus might be as susceptible as anyone else. This, however, did not shake racial theories supporting well-established economies (Humphreys 2001; Savitt 2007).

Food production in all parts of the US and UK of course was essential in supporting urban populations, and the labor involved in maintaining agricultural productivity spanned surprisingly expansive parts of the globe. Already by the 1840s, industrial practices had exhausted soil nutrients, threatening to reduce productivity. Advances in soil science determined nitrate to be the key element in reviving the soil, which subsequently drove a search for the best nitrate sources. What followed was 40 years of very entangled networks of labor, resource extraction, war, debt, and imperialism when it was discovered that nitrate-rich Peruvian bird guano would make the best fertilizer. Ships from both countries, and others, began sailing to the small island off the coast of Peru that had centuries’ worth of guano piled multiple feet thick on an otherwise uninhabited rock. For the purposes of this chapter, the facet most relevant to this story is the fact that, between 1849 and 1874, over 90,000 Chinese indentured laborers were shipped to Peru, of whom at least 9,700 died from appalling conditions during the five-month boat trip.
Those who survived and were put to work shoveling guano into the hulls of hundreds of ships encountered another version of violent and debilitating hell from which there was no escape (Clark and Foster 2009). Conditions were horrific: hot sun, back-breaking work, insufficient food, brutal punishments if they underperformed, and minimal if any pay. Mortality from overwork, guano dust, heat exposure, starvation, and suicide was staggering (Clark and Foster 2009, p. 323). As one contemporary commentator remarked,

> few are probably aware that the acquisition of [guano], which enriches our lands and fills the purses of our traders, entails an amount of misery and suffering on a portion of our fellow creatures, the relation of which, if not respectfully attested, would be treated as fiction. (Nautical Magazine and Naval Chronicle [1856], quoted in Clark and Foster 2009, p. 324)

Only when guano supplies inevitably ran out did this particular, and horribly inhumane, chapter of urban support end.

Other examples could be raised, but the point to make here is that cities in the US, as in Britain, were (and are still) built and maintained on the backs of oppressed and colonized populations. Limiting examinations of urban health to the people actually living in cities is to erase whole populations whose labor was as critical to maintaining the wellbeing of city dwellers as that of any sanitarian.

### The End of the Century

Accounts of what changes occurred after the advent of germ theory at the end of the 19th century often mention an increased focus on the individual rather than populations, and more specifically on the body rather than the body in its larger environment. To some extent this is true of course, yet the difference can be easily overstated until later in the 20th century. Public health reports in the 19th century might discuss the poor as one amalgamated population, but they also remained focused on individuals as bearing significant responsibility for their own health. Likewise in the late 19th and early 20th centuries, sanitary interventions continued even as further pathogens were discovered to cause particular diseases. Indeed, across the US at the end of the 19th century the state was much more present in addressing the health of populations, with increasingly robust state boards of health and their expanding parameters of responsibility including maintenance of vital statistics, waste disposal, and water and food quality. As Linda Nash notes, more environmental interventions were actually implemented in cities after the germ theory than before (2006). In addition, some of the most tenacious diseases, such as malaria and yellow fever, were discovered by the turn of the 20th century to be caused by pathogens but spread by mosquitoes, a discovery that meant pathogenic containment required sustained focus on altering the environment. The role germ theory played in the late 19th century is thus subtle compared to the situation in the mid-20th century with the advent of antibiotics and other pharmaceuticals able to treat infectious diseases with remarkable efficiency.

Despite the paradigm shift, germ theory in the 19th and early 20th centuries also did not do much to alter negative associations of disease with immigrant and black populations. Pathogens might drive the physical symptoms of disease, but responsibility for acquiring it often remained rooted in morality, ignorance, or vaguely defined ideologies of racial susceptibility. Neither did bacteriology do much, if anything, to diminish higher rates of disease among these primarily poor populations. Though tuberculosis began to decline overall in the US in the early decades of the 20th century, large if not remarkable gaps between white and nonwhite rates showed the same tenacity as those of infant and maternal mortality. Indeed as Wailoo argues for Memphis, despite the development of
public health departments, better sewer systems, and the rise of black medical schools and hospitals in the South, death rates in the late 19th and early 20th centuries continued to rise rather than diminish for blacks (2001, pp. 16–17).

The first extensive survey of tuberculosis in San Francisco, conducted between 1912 and 1914, revealed rates of tuberculosis that—as in many cities—acted as statistical summaries of the symbolic and physical racial politics of urban poverty. While white populations averaged 174 cases per 100,000, Chinese populations averaged 622, and African-American populations averaged 651. White rates are high, but the latter two are staggering even for the time (San Francisco Association for the Study and Prevention of Tuberculosis 1915, pp. 6–7, 20). For both Chinese and black populations, neglect and discrimination played important roles in sustaining high rates of tuberculosis. Despite recognizing that tuberculosis was contagious, Department of Health ministers simply left residents of Chinatown to take care of themselves. For blacks, few jobs were available given strong white unions that excluded blacks, while decent housing was unavailable given the discriminatory practices of landlords (Craddock 2000). New medical understandings, in other words, did nothing to erode the racialized practices supporting the particular architectures of poverty and disease in American cities.

Recognition that tuberculosis was contagious did, however, enter the political realm in the South, with segregationists pointing to high tuberculosis rates among blacks as a rationalization for segregation, while moderates argued keeping blacks healthy was good for the economy (Wailoo 2001, p. 30). Either way, those blacks who did gain access to new municipal hospitals in southern
cities often by the 1920s became subjects for medical research and teaching, a new pattern where, as Wailoo puts it, sick black bodies became “valuable educational commodities” (Wailoo 2001, p. 17). Such longstanding histories of use and abuse among black patients in medical care settings are important even today in explaining lower rates of health care access and continued gaps in black versus white burdens of disease.

**Conclusion**

What, then, constituted perceptions of health in the 19th century? As the century went on, sanitation became more encompassing and more precise: through regulations and policies came urban infrastructures like sewers, privies, and water systems, plus changed practices around food preparation and livestock handling. In engineering solutions to universal needs and practices, sanitation by philosophy and design held populations as an amalgamated locus. By the end of the century health had improved among urban populations in UK and US cities. Nonetheless, the individual never disappeared. Even within the sanitary paradigm the moral imperative remained for individuals to take responsibility for improving their own wellbeing.

From our perspective, health in the 19th century seemed relatively bleak. Epidemics remained prominent, diets for the majority of urban dwellers were substandard, and so was housing. Infant mortality rates were exceedingly high, and medical care—such as it was at the time—was typically unavailable to any but the upper and middle classes. It is hard to see much silver lining for the large numbers of poor in the industrial cities of the 1800s. It is not surprising that life expectancies were grim, but only with the advent of statistics and statistical mapping during this time was it revealed just how uneven the burdens of suffering were.

The middle and upper classes, then, had it better—better diets, homes, opportunities, and resources. They often were able to escape from cities during the worst of the outbreaks, and return when they were over. Many had servants to handle the most arduous domestic work. Having children, however, though certainly safer than for poor women, was nonetheless a dangerous undertaking for all women during the whole of the century. Diseases were also certainly not unknown: epidemics did encompass middle- and upper-class neighborhoods, as did tuberculosis, albeit at far lower rates than in poor sectors. Even for these classes, life expectancies were not what they are today.

The obvious question of what made for the differences in morbidity and mortality rates across cities is one that cannot be entirely answered given the lack of information on, for example, everyday practices within the home. The answers we know more about involve variability among boards of health in efficiency, breadth of operations, and strength of enforcement, housing stock, state of sewers and sanitation systems, access to clean drinking water, where animals were housed, and whether mosquitoes thrived. Interventions in the name of public health were sometimes misguided, as in the destruction of housing for the poor with no concomitant provision of alternatives as described for Britain, or proved a mixed bag, as when livestock removal outside city limits diminished some diseases even while causing hardship to many who relied on their animals for extra cash or nutritional supplement. Nevertheless, towards the end of the century, improvements in sanitation, water quality, food regulations, nutrition, and housing combined to make noticeable improvements in disease rates and life expectancies across most cities of the US and UK.

Could more have been done? Undoubtedly. Sanitation was not the only mode of understanding and responding to disease. Though religion receded from discussion as the century wore on, blaming the poor did not. This latter point is worth noting, both because it was not universal outside the UK and US and also because it played an important role in shaping life and health for the poor. Fee and Porter (1992) point out movements in France and Germany happening during the 19th century claiming medicine as a tool for social change, as a means to uplift the poor and thus society as a whole. Rudolf Virchow was a critically important voice in this campaign, his writings serving even
today as an eloquent elaboration of why the poor were poor, and why medicine could and needed to help address their poverty in order to mend their health (1985 [1848]).

Yet Virchow and the social medicine movement did not find much traction in the UK or the US. In these countries, the poor largely remained culpable, their surroundings a reflection of their characters rather than their circumstances; and public health interventions did not and would not impinge upon those imperatives of capitalism requiring brutal exploitation of the many for the benefit of the few. Then, as now, capacious gaps in life expectancies and disease burdens between the wealthy and the poor, and between whites and nonwhites, remained intractable. Borrowing a concept from Lauren Berlant (2007), lives of the poor throughout the 19th century were characterized by slow death. That is, even if individuals managed to survive numerous infectious diseases, the typical details of everyday life led inexorably to early death: the hours and conditions of work, numerous pregnancies, chronic undernutrition, domestic labor, stress, and, for many, discrimination combined to wear down over the years a body’s ability to function. It was less a matter of thinking about health than trying to survive.

Unfortunately there are troubling parallels today to this bleak scenario. We have vast pharmaceutical armaments but, especially in the US, highly uneven abilities to access them, challenges in accessing adequate and appropriate health care, the growth of low-paying service jobs, stagnant wages among the lowest earners, and economic inequalities that widen rather than diminish. The end result is the same capacious gap in health status between the wealthy and the increasing numbers of poor, and between whites and nonwhites as were seen throughout the 19th century. Life expectancies have actually gone down, and infant mortality ranks 41st and 56th in the world for the UK and US, respectively—well below that of other high-income countries and many other countries with lower per capita incomes (CIA n.d.). Though history never repeats itself precisely, we would do well to remember those 19th century interventions and ideologies that enhanced the slow death rather than the wellbeing of the worst off.

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Urban Health in the US and UK


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