

Chapter 2. Historical Background

Late 19th and Early 20th Century America

While archaeologists and historians have developed methods to examine past healthcare, often these health practices differed by location and through time. Thus, it is necessary to understand the larger context in which the people of the late 19th century functioned. During this time period, the United States witnessed incalculable change. Industrialization created cities overnight, researchers discovered the germ behind devastating epidemics, immigration sky-rocketed, and people fought to cope with the changes all around them. Within this context, health and hygiene developed as major issues worthy of the public attention.

Urban Growth, Industrialization and Change

During the late 19th and early 20th centuries, soaring rates of economic productivity, population growth and development fundamentally changed the United States from an agrarian country to an industrialized, urbanized nation. No longer were the fields the focus of the future, but rather, the massive factories and plants in the ever-expanding urban centers. These few years witnessed the impact of industrialism upon humanity which “was certainly as great as that of the development of agriculture” (Mrozowski 1984:44) upon which all civilizations were founded (Harlan 1995). In this age of progress, fortunes were made and lost by a prosperous few, as the working classes struggled to put food on the table.

Using machines and standardization, production of the United States increased

exponentially in the late 19th and early 20th centuries. Not only new technology, but also entirely new industries, such as steelmaking, electrical equipment, and food canning helped fuel this increase (Goldfield and Brownell 1990:191). Growth was so considerable that even in steel, a new industry, the “United States had exceeded the combined [steel production] outputs [of] its two rivals, Great Britain and Germany” (Painter 1987:xvii) by 1900.

Industrialism brought workers into an environment where they would perform singular tasks in an assembly line to make products. While assembly lines were in use before the Civil War, their use intensified afterwards. The assembly line de-skilled many trades and dehumanized workers as they “were looked upon as nothing more than parts of the machinery that they work” (Orr 1885:219). As a result, women and children were hired for work because their small dexterous hands were deemed suitable for the monotonous, tedious work, plus they could be controlled more easily and paid half the wages of men. Reduced to interchangeable employees, assembly line workers struggled to find satisfaction as “the workingman nowadays learns no complete trade, and, therefore, never becomes an independent workman, but must always seek a master” (Post 1885: 784).

Deteriorating wages and working conditions made factory work a harsh and dangerous life. Many workers were on the “borderline between subsistence and starvation” (Goldfield and Brownell 1990:204) and a “man with a family of small children to support... has a small chance of living properly” (Massachusetts Bureau of Statistics of Labor 1882:300). Working conditions were equally poor and coupled with long hours. Describing the conditions in a meat packing plant in Chicago in the early

1900s, Upton Sinclair observed that “it was to be counted as a wonder that there were not more men slaughtered than cattle” (Sinclair 1960:84). Transportation too expensive for the working wage and lengthy days led many factory workers to seek housing as close to their workplace as possible, usually in decaying, cramped tenements (Painter 1987:xxiii). There, workers were exploited by greedy landlords because of the lack of housing, and forced to deal with deteriorating and un-maintained quarters. Heavy immigration only served to drive wages down and housing prices up. Lodging issues became so pronounced that in New York’s tenement district, for example, there was a “density of 986.4 persons per acre in 1894 [which] was the highest in the world” (Goldfield and Brownell 1990:203).

Immigration during the late 19th century soared as America witnessed the “greatest migration to the United States from abroad in this country’s history” (Goldfield and Brownell 1990:208) from 1880 to 1920. Although they came to America believing that it was a classless society, immigrants found discrimination around every corner influencing wages, housing options and driving some to cultural conformity (Goldfield and Brownell 1990:220; Painter 1987:xxi). Immigrants often segregated themselves in an effort to gain security and establish community groups to hold onto traditions (Goldfield and Brownell 1990:212). Gradually immigrants were able to gain respect and even a foothold in upper classes, usually in the second generation when new immigration made them seem more native, but they faced tremendous odds (Painter 1987:xxiv). For the immigrant working class, “it is no exaggeration... that an entire generation sacrificed itself so that future generations would enjoy a better life” (Goldfield and Brownell 1990:215).

With industrialization came substantial urbanization. From the 1860s to the 1910s, “the number of [American] urban residents increased from 6.2 million to 42 million” (Goldfield and Brownell 1990:179). By 1920, more than half of Americans lived in cities (Marshall 1937:171). This tremendous population influx resulted in city development following “a helter-skelter process – haphazard, unregulated, and uncoordinated” (Peterson 1979:84). The nature of the city to concentrate humanity had an effect that was “fundamentally paradoxical, exhibiting the best and worst of American life” (Goldfield and Brownell 1990:5) as wealth and poverty were inextricably present at any given time, boom or depression. Cities became more and more segregated spatially as the income gap became more profound, opening new living opportunities for some and lessening the choices of others (Goldfield and Brownell 1990:190; Schlereth 1991:87; von Hoffman 1994:23). With this spatial separation, classes became completely unaware of each other to such an extent that Jacob Riis’ exposure of poverty in *How the Other Half Lives* (1890) “seemed new and startling” (Goldfield and Brownell 1990:201) to the isolated upper classes.

With intensified industrialism, the United States evolved into a consumer society. As families were cut off from their producing role, the “home and work grew increasingly separated” (Goldfield and Brownell 1990:201). In response, consumption developed as a main function of the household. Without the home or the wage earners producing products to exemplify the up-standing morals of the family, consumption readily entered the home as new method of display, made possible and desirable by an increase in disposable income for some, a product surplus, extensive advertising, and an increase in leisure time (Schlereth 1991:141). In fact, even when wages did rise, “earners

did not invest in either [savings-bank deposits or insurance] but spent the difference upon a higher standard of living” (Marshall 1937:175) as “the ‘good life’ came to mean the ‘goods life’” (Schlereth 1991:141).

This change in consumption brought significant changes to class relations. For the first time there were enough products on the market that anyone, regardless of class, had the opportunity to purchase them. Thus, consumer products could build bridges to other social groups, as well as fence classes out, and define an individual’s life accomplishments (Schlereth 1991:xv, 171).

Accordingly, these years also were plagued with civil unrest and strikes. The decade from 1879 to 1889 marked the “most violent in American history in terms of civil disorders and labor-capital conflicts” (Schlereth 1991:xiv). Industrialism had failed to “bring economic security” (Marshall 1937:175). In every large city, “bread lines were common” (Marshall 1937:176) as cyclical depression appeared regularly after 1873. Violence of the frustrated working class broke out in Chicago in 1877 and was “compared... with some of the worst upheavals in European cities” (Goldfield and Brownell 1990:206). These European upheavals included, in the late 19th century, “a series of spectacular bombings, senseless outrages, assassinations of heads of state,... the suppression of the workers’ movement here and there, [and] police infiltration and provocation of the anarchists” (Goldstein 1984:47). One Pittsburgh visitor described the city in the 1880s as “hell with the lid off” (Marshall 1937:177).

In most cases, “officials ignored the legitimacy of the workers’ grievances” (Goldfield and Brownell 1990:206), considering the tramp “as surely [a mark] of ‘material progress’ as are costly dwellings” (George 1929:7). Many held the belief that

“the chief cause of the impecunious condition of millions of the wage classes of this country is due to their own improvidence and misdirected efforts” (Medill 1885:959).

However, the upper classes feared the power and violence of the mob which could not be ignored, because while “The ills of urban life were present in earlier decades as well,... never before had they been so well publicized” (Goldfield and Brownell 1990:201).

Along with industrialization and urbanization, the 19th century witnessed a great communication revolution. As towns sprang up, “mechanization revolutionized the business of publishing... [with] cheaper paper and larger presses turned by steam power” (Young 1961:39). From “1800 [to] 1860, the number of newspapers in the United States increased from 200 to around 4000” (DeCorse 1984:3; see also Young 1961:39). This, combined with “illiteracy [dropping] from seventeen to eleven per cent in the last twenty years of the country” (Marshall 1937:178), allowed advertising to have far-reaching impacts.

This new level of communication paved the way for advertising as never before. Until the early 19th century, advertising as a “means of efficiently creating consumers” (Ewen 1976:33) had remained mostly localized. As industrialism increased and production exceeded traditional markets for thousands of products, “advertising played a growing role of significance in industry’s attempt to develop a continually responsive consumer market” (Ewen 1976:32). Advertising had the power of “actually shaping wants and needs” (Vinikas 1992:95) of people, and as it reached more and more Americans, it fueled the society’s transformation to a consumer society.

Doctors, Medicine and Germs

In 19th century America, medicine was “at its best... imperfect” (Haller 1981:vii). Researchers were feverishly discovering various bacteria responsible for diseases, although few of the general public or their fellow researchers alike believed them for years. Meanwhile, doctors had no standards to determine proper levels of training, education quality, or professional experience, which challenged their profession’s legitimacy in the eyes of society (Starr 1982:89). Many people turned to patent medicine, overwhelmingly popular in the 19th century, rather than doctors as the answer to their ills. The 19th century marked the end of blood letting, contracting diseases from foul odors, and doctor’s refusing to wash their hands.

In the early 1800s and before, medical research most commonly described diseases from simple observation (Shryock 1953:112). This evolved into naming and identifying of actual diseases by 1850, making it possible for medical research to “seek out the causal factors and cures of [the] now-identified diseases” (Shryock 1953:118). But during this period of transition and discovery, “the thinking about [diseases]... was extremely confused” (Young 1961:166) for doctors and patients alike, as “new theories and old habits jostled uncomfortably in the same medical handbags” (Haller 1981:vii). One poignant example is that of Ignaz Philipp Semmelweis. In 1847, he found that washing his hands prior to delivering babies resulted in significant decrease of childbed fever, a disease which had killed one out of every six women for three centuries (Wain 1970:220). However, despite the obvious value of such a discovery, Semmelweis was violently “reviled, ridiculed and persecuted by his contemporaries [and] he died broken hearted in an insane asylum at the early age of forty-seven” (Wain 1970:220). The day

before Semmelweis died, Joseph Lister “announced his principles of antiseptic surgery” (Wain 1970:226), nearly 15 years after Semmelweis came to the same conclusion.

As the century progressed, the science of medicine witnessed many unprecedented discoveries which challenged current ideas and assumptions. Doctors had scrutinized the mysteriousness of diseases and their spread for many years. At the beginning of the 19th century, the accepted theory of disease was miasma, which held that diseases originated from “noxious odors... arising from decomposing organic wastes” (Hoy1995:61). Thus, people generally understood that cleanliness helped prevent disease, although it also seemed as if it could spontaneously generate because the rich, with more stringent cleanliness and hygiene regimens than the poor, were not immune to epidemics (Duffy 1990:180; Hoy 1995:64). Miasma came under the scrutiny of Louis Pasteur in the 1860s. By 1864, Pasteur conclusively refuted the theory of miasma and “the germ theory was officially introduced” (Wain 1970:231) to the world. According to the germ theory, “infection is communicated... by particles... to other persons in full health” (Barnard 1873:72). This breakthrough ushered in the new science of bacteriology. Robert Koch, on the heels of Pasteur, demonstrated that “specific diseases were caused by specific germs” (Wain 1970:245) in 1876. Only eight years later, Koch dealt a swift blow to urban pollution, daily epidemics and squalor by investigating a city ravaged by cholera, a swift and unpredictable disease which “was a common and massive killer in the nineteenth century” (Hoy 1995:62). Koch “demonstrated its [cholera’s] manner of transmission and... cultivated it from drinking water, food and clothing” (Wain 1970:247). Not all scientific innovations were readily accepted. In fact “many genuine medical advances did not gain general acceptance until after 1900” (DeCorse 1984:2),

but the discoveries of the 19th century drastically changed the discipline of medical science and the perception of diseases for years to come.

Paralleling the medical innovations of the 19th century, the medical profession witnessed a similar level of change. These changes stemmed from internal conflicts due to education, practice and a new emerging clientele base. Previously, doctors worked in small, tight-knit communities but in urban centers, doctors faced a staggering amount of patients, many of whom they had never met before. This drastically affected their practice. Inside the profession, changing medical practices and varying levels of training left doctors mistrustful of those proclaiming to be their peers (Starr 1982:80). As doctors approached the end of the 19th century, conflicting medical practices “threatened disintegration of [their] authority” (Haller 1981:vii).

During the 19th century, the medical profession lacked standards. Although some doctors in the 19th century attended universities or entered into apprenticeships, others “simply... adopted the title” (DeCorse 1984:2). The quality of education also varied dramatically as, even by the end of the 19th century, doctors “left their apprenticeships or graduated from medical school... went into practice without observing a delivery or having used a microscope” (Haller 1981:ix) and others possessed an education that was “little, if any, above the level of their clientèle” (Starr 1982:81). As late as 1870, the Harvard Medical School did not give written exams “because a majority [of its medical students] could not write well enough” (Munsey 1970:65). One 19th century physician observed that the “medical practice is only the art of indulging the patient’s vain hopes” (Haller 1981:viii).

Legislation was slow to combat these inconsistencies. By the turn of the 19th

century, 25 states required that doctors possess a diploma, while two states required both a diploma from an adequate school and an independent state exam (Starr 1982:103-104).

The medical profession's treatment success, and thus its legitimacy, was further complicated by the urbanized setting. As cities became centers for the population, the way in which doctors practiced medicine fundamentally changed. Increasingly, medical practice involved "a relationship of stranger treating stranger" (Haller 1981:ix). Thus, where they had once relied upon their knowledge of family background and the environment to treat patients, doctors now found anonymity. This forced "the 'art' of medicine... to take a backseat to the 'science' of medicine" (Haller 1981:ix) which was not yet standing on solid ground.

Entering into the latter part of the 19th century, the medical profession included a confusing array of old practices and new. Doctors, with practices based on what they were taught and what they were learning now, took different paths with their practices. Some continued to "finish out their years of practice in the backwaters of intellectual change" (Haller 1981:x) while others "accepted innovations in theory and practice without changing their values and beliefs" (Haller 1981:x). Consequently, the field was full of "mutual hostility... intense competition, differences in economic interest, and sectarian antagonisms" (Starr 1982:80).

As a result, doctors were unable to establish their "own rules and standards" (Starr 1982:80) for their profession, and their lost "authority within the profession and in the society at large [which] profoundly affected their relationships with patients" (Starr 1982:80). People of the 19th century "seldom called the doctor, since it was considered a waste of time and money" (Hechtlinger 1970:11). Indeed often economic factors,

especially with regard to the low wages of the 19th century for most, drove potential patients to seek help elsewhere on purely economic reasons (Starr 1982:60; Young 1961:162). Others feared the “rugged regimen of regular doctors”, who sometimes “bled the ill to unconsciousness... and prescribed such tremendous doses of [medicine] that patients lost teeth or even jawbones” (Young 1961:37). In light of the state of the medical profession and the common miasma understanding of diseases during the 19th century, many sought out what seemed like magic: patent medicine.

Lee’s bilious pills, which first appeared in 1796, was the first medicine patented in the United States (Young 1974:2). Patent medicines were pre-made, prepackaged medicine and were not all patented. Purchased at drug stores or from traveling salesman and medicine shows, patent medicine offered a convenient alternative to lengthy visits to the doctor who would, in turn, instruct an apothecary on how to make the particular drug needed (McGarry and McGarry 1999).

Although fought by many trained physicians, patent medicine enjoyed an amazing popularity in the late 19th century. Patent medicine offered “health and life, hitherto associated with magic or fantasy” (Berman 1981:73) and people responded. Dr. Townsted, a maker of sarsaparilla, claimed to have “cured over 35,000 cases of severe disease” in 1840 (Young 1961:187) while a doctor in New York, after only practicing for a few years, had 900 patients that had consumed from three to fifteen bottles of Townsted’s Sarsaparilla cure (Carson 1961:10). While his estimated numbers might be a bit exaggerated, patent medicines’ celebrity supporters are a testament to their popularity. President Jackson publicly favored an ointment, Vice-President Colfax praised a throat lozenge, and another drug managed to get fifty members of Congress to support it

(Young 1961:187). Production of medicines eagerly met this popular demand. In 1810, there were approximately one hundred varieties of patent medicine. This grew to over fifty thousand by 1906 (Munsey 1970:66, 69). In San Francisco during the late 1850s, there were 39 druggists working at 18 well known pharmacies, with an uncounted number of smaller shops scattered throughout the city (Steele 1909:250-255). To 19th century Americans, patent medicine had great appeal because it was cheaper and seemed to offer more real cures than the often contradictory methods of doctors (Hetchlinger 1970:11; Young 1961:162).

Unlike any other product, medicine “operated in an economy of abundance almost from the start” (Young 1961:165). Thus, “the medicine man’s key task quickly became not production but sales” (Young 1961:166). Medicine manufacturers bombarded the public with newspaper ads, medicine shows, broadsides, and trade cards (Helfand 2003). With their first goal to simply be known, medicine purveyors advertised and advertised often. In one newspaper issue, “one pill was advertised thirty-seven times” (Young 1961:166). Medicine men also developed easily recognizable names, invented credentials for spokespersons, and wrote numerous books that gave medical advice with their particular product listed as the cure (Young 1961:167-168). Advertisements often had quotations, or misquotations, of medical authorities and satisfied patients giving support (Young 1961:169). Broadening their market, some proprietors recognized that “even when something isn’t specifically wrong [people] want vitality, beauty, appetite, and sexuality” (Berman 1981:71) and by adding clauses about health and well-being to their lengthy lists of curable ailments, patent medicines appealed to even those without a cough.

Even some doctors were not immune to the enticement of patent medicine. Later, advertisements got more sophisticated as proprietors “described complicated procedures... and exhaustive clinical tests” (Young 1961:159) involved in the production and proven success of various drugs. Sending these articles to doctors, salesmen would show in doctor offices “look[ing] the same and talk[ing] as knowingly as did the agents of reputable pharmaceutical manufacturers” (Young 1961:160). As late as the turn of the 20th century, “some ninety percent of American doctors... were prescribing proprietary preparations” (Fite 1898:431).

The contents of patent medicine were not always beneficial, and included a wide variety of ingredient combinations. Medicines often contained alcohol and habit-forming drugs, such as whisky, rum, gin, opium, cocaine (Bravate 1980:277). These medicines, which were “capable of disposing of whole laboratories of mice and a wilderness of monkeys, were readily dispensed to housewives by their neighbors” (Berman 1981:72). Some medicines were “so strong that the teaspoon was considered the maximum-sized measure [for] a tablespoon would have probably killed the patient” (Hechtlinger 1970:11). On the other hand, patent medicines could contain as little as sugar and water. Radam’s Microbe Killer, for instance, contained “nothing more than small amounts of inorganic matter, sulfuric and sulphurous acids mixed with 99.381 percent water” (DeCourse 1984:18). Amazingly, these concoctions often resulted in a cure, whether by the medicine, nature, the placebo effect (Young 1974:4), or cured simply by the patients’ delight “that the torture of the cure was over” (Hechtlinger 1970:11).

Patent medicines’ legality, however, did not remain unchallenged. Some argued that “even before... [patent medicines] could be assailed on soundly scientific grounds,

the patent medicine promoter's overblown pretentiousness could be attacked by common sense" (Young 1974:7). But government support to create regulations and enforcement was more difficult to come by. As one congressman argued, "the Federal Government was not created for the purpose of cutting your toenails and corns" (United States Congress 1906:6465). This opposition was further supported by the manipulation of the patent medicine industry on advertising and media. Whenever pharmacists or government attempted to establish formula disclosure bills which would seriously damage sales of the narcotic-laced concoctions, "it brought down on [them] all the patent medicine men... like a flock of wild pigeons" (American Pharmaceutical Association 1893:286). Patent medicine men brought lobbyists and threats to take their advertising revenue away from state newspapers (Young 1974:9).

In 1892, the first general food and drug bill containing a clause requiring all medicine to contain the ingredients advertised, failed to pass the House. For the remainder of the 19th century, the patent medicine empire made sure no other bills came before Congress (Young 1974:8). Dr. Wiley, the chief chemist of the Department of Agriculture and a staunch supporter of a food and drug bill, was appalled at the complete inaction and lamented that "pure food bills in the Senate had been regularly committed to the Committee on Manufactures, much as an infant would be left to starve in a barren room" (Young 1961:230).

While the medicine men worked vigorously to prevent another food and drug bill from going before Congress, changes were on the horizon. The public's opinion, a powerful force in social change and movements (Gallagher 2004), was being swayed (Young 1974:9). Some of the earliest muckraking journalism appeared as a series of

1905 articles titled “The Great American Fraud” in the *Collier’s*, *The National Weekly* by Samuel Hopkins Adams. In these articles, Adams drew attention to the high alcohol content of many patent medicines, which qualified them for the same restrictions as hard alcohol in prohibition states. This, combined with their drug content, Adams noted often created unknowing addicts of Americans (DeCourse 1984:21). Much of what Adams said in these articles was said previously by others, but his articles brought a significant impact in that they “reached an audience not only vastly larger than had ever before... but one enthusiastic about supporting reform” (Young 1961:205).

In 1905, the patent medicine alliance began to break down as various compromises were adopted, such as opposing medicines with a high alcohol content and regulation for narcotics (Young 1974:10). By this time Upton Sinclair had serialized his book *The Jungle*, later published in 1906, on the appalling conditions of meat packing in Chicago, so the public push for change could not be satisfied by only the select changes offered by the proprietors. On June 30, 1906, President Theodore Roosevelt signed the Food and Drugs Act (Young 1974:12). This act required that any additive or dangerous drugs present in the medicine must be listed with their quantities on the medicine container and forbade false and misleading labeling. Although these were but modest controls and proving fraud in court was often troublesome, thereafter the labeling of patent medicines began to improve as “many business men... did not like being regarded as criminals” (Young 1974:13) and gradually cleaned up their ways.

Public Health and Reform

The increasing density of cities in the mid to late 19th century America resulted in

“inadequate sewers, poor drainage, bad water, and haphazard refuse collection” (Jamieson 1977:24) threatening the health of residents, both rich and poor (Duffy 1990:180; Hoy 1995:64; Tomes 1998:5). As the garbage and rubbish piles grew higher, arguments raged as to whether city cleaning should be a municipal responsibility. Rising to action with differing intensities and success, cities began the long road to public health and sanitation.

As cities and towns grew larger, traditional methods of waste disposal, which involved deposition “in the most convenient manner possible” (Tarr, McCurley and Yosie 1980:60; see also Tarr et al. 1984:228), became less and less feasible. Through the 19th century, “accumulated piles of garbage and refuse characterized most urban areas” (Duffy 1990:175) causing Londoners to request that “the streets be called by their proper names, that is to say... Open Sewer Street, Gully Hole Court... [and] Shambles Place” (Anonymous 1849: 159). One Milwaukee resident lamented in 1889 “that the garbage remained so long in the streets that it eventually attempted to remove itself by crawling away, in the shape of active little worms” (Duffy 1990:176). Horses were also a major contributor to the build-up of street waste. Chicago, home to 82,000 horses, mules and cows, dealt with “more than 600,000 tons of manure a year” (Melosi 1980:106).

Growing cities also faced volumes of human waste which created its own list of problems. Also disposed of as easily as possible, sewage was often deposited in privies or piped directly into waterways. In miserable situations, even privies were unavailable for use. In almost half of the poorly funded public schools, “as late as the Civil War,... boys relieved themselves on one side of the building and girls on the other” (Duffy 1990:182). While some wastewater was recycled into fertilizer, a tremendous amount of

waste made its way into nearby waterways or wells, affecting the drinking water quality. In the mid 1800s, “a large part of Philadelphia’s million inhabitants drank water from the Delaware River into which... emptied daily thirteen million gallons of sewage” (Marshall 1937:172; see also Nevins 1927:321). An observer in Baltimore noted in the 1880s that the water “smelled like a billion polecats” (Garraty 1968:192).

While the filth steadily increased in the late 19th century, preventative action progressed much slower. The American Civil War brought a new level of awareness to the urban problem of filth and its connection to diseases (Hoy 1995:60). In fact, many identified “striking similarities between urban neighborhoods and army camp sites” (Hoy 1995:59). In the first year of the Civil War “five-sixths of the deaths in the Union armies were due to illness having no connection with the battlefields” (Shryock 1966:136). However, although the general understanding of the origin of diseases had not changed, soldiers of the Union army were issued rations of soap (Silvuka 2001:42) and “wartime mortality statistics demonstrated that the programs of the United States Sanitary Commission had indeed saved lives” (Hoy 1995:59), making disease preventable for the first time.

Following the Civil War, city sanitation increasingly became a problem and public awareness heightened, leading municipalities to adopt new roles and regulations in their cities. While many of the sanitation problems appeared daunting, municipalities were eager to show residents that they could prevent and protect people from disease (Stone 1979:283). Consequently, municipalities began to regulate sanitation, maintain public utilities, record statistics, and carry out disease-prevention programs. Adopting regulations such as sanitation standards for markets, slaughterhouses, and enforcing such

public health laws, municipalities also began to develop and maintain new public utilities such as water supplies, sewers, and removal of street waste. Along the way, municipalities recorded vital statistics of death records, diseases, and general location, population and climate. If disease was discovered by a department of health officer, common tactics included quarantine, isolation, immunization, and disinfection of the area (Chapin 1970).

While municipalities eventually reached this heightened level of sanitation control and regulation by the turn of the century, several significant changes, such as wastewater disposal and disease prevention, created the need for different aspects of municipal involvement in public health. Increased public acceptance, technology, and access to city water in some areas allowed households to install water closets and overnight, wastewater disposal became a major public concern as traditional methods were overwhelmed. Water closets, which “had not been anticipated by the advocates of piped-in water” (Tarr et al. 1984:231), drastically increased water usage and consequently the amount of wastewater. Initially, household privies and cesspools were modified for use with the water closet (Tarr, McCurley, and Yosie 1980:63). But, as usage increased and the modified systems became strained, “citizens demanded that they be permitted to connect their water closets to existing stormwater sewers” (Tarr, McCurley, and Yosie 1980:63). But stormwater sewers, built to carry street runoff directly to rivers, were not large enough to handle the storm runoff and millions of residents’ wastewater.

Responding to the concerns of middle and upper class citizens, reform measures resulted in municipalities taking a more active role in wastewater management. Thus, in the late 19th century, cities began some of “the most expensive capital projects

undertaken by nineteenth-century municipalities” (Tarr, McCurley, and Yosie 1980:64) as city planning was born (Peterson 2003:29). Deemed by some to be a blessing to business and health, others argued that municipal sewers were a waste of money, resources, and a health danger due to sewer gas (Tarr, McCurley, and Yosie 1980:65-67). Nevertheless, some cities believed that the best advertisement was public health services (Andrews 1984) and by 1890, there was a nearly “threefold increase in [sewer] mileage” (Tarr, McCurley, and Yosie 1980:68). Some believed this drastic increase in sewers decreased the mortality rates (Tarr, McCurley, and Yosie 1980:65-67). However, early sewers were built under the “assumption that running water purified itself and that the dilution would eliminate hazard” (Tarr, McCurley, and Yosie 1980:70). Thus, sewers were piped directly to water sources, from which many people got their drinking water and effectively increased the disease death rate for cities which had no filtered drinking water (Tarr, McCurley, and Yosie 1980:70). Downstream cities watched as their rivers became an open sewer. Turning to the courts, these cities were awarded damages between 1899 and 1905 (Tarr, McCurley, and Yosie 1980:70-71).

Not all cities or citizens approved of the large-scale municipal actions. Some saw the public health reforms as the upper class’s efforts to force the “physical and moral regeneration of the urban poor” (Allen 2002:383). Thus, as the urban landscape changed dramatically and municipal control reached into the personal habits, residents responded with “considerable opposition and anxiety” (Allen 2002:383). Opposing sewer construction longer than most, Baltimore had “no sewage system... built until 1912” (Tarr, McCurley, and Yosie 1980:67; see also Duffy 1990:177)

Municipalities also took a greater role in managing garbage littering the streets

and piling up in alleys. In fact, “urban officials ranked street cleaning among the most important duties” (Jamieson 1977:27), possibly because “street had no clear territorial limits” (Melosi 1980:107), but needed to remain clear in order for business and commerce to continue. By 1880, most cities “made public provisions for street cleaning” (Melosi 1980:107). In the 1890s, “contractors removed an average of eight thousand dead horses a year from the streets of New York” (Duffy 1990:176).

Legislative boards also entered into the municipal arena by the end of the 19th century. Most of these legislative bodies had duties and goals which included collecting vital statistics, monitoring preventable disease, providing scientific judgment-based action, and creating an abatement program (Peterson 2003:31). After a successful campaign of quarantine, sanitation, and public education during a cholera outbreak in 1866, other cities followed the lead of New York’s Metropolitan Board of Health by creating their own health boards (Hoy1995:64). By 1900, “virtually every major city and state [had] a health department” (Hoy 1995:64; see also Tarr, McCurley, and Yosie 1980:71). State Boards of Health followed shortly thereafter with Massachusetts in 1867, and a number of other states by the end of the 19th century (Tarr, McCurley, and Yosie 1980:71). Unfortunately, health boards during the 19th century were not completely effective because “a large proportion... were dominated by city officials, rather than by physicians or sanitarians” (Melosi 1980:111) and thus, were subject to political interference. In 1878, Congress created the National Board of Health to assist, through investigation, local and state health officials with quarantine regulations and sanitary measures for epidemics (Hoy 1995:66). By 1905, eight states had enforceable regulations on stream pollution (Tarr, McCurley, and Yosie 1980:72).

While urban sanitation and waste removal was improving by the end of the century, reforms and municipal codes were not universally adopted by cities or properly enforced. In 1900, “the majority of Americans living in towns were still relying on privies” (Duffy 1990:179). In New York, “as late as 1914 the raw sewage from some six million people was still being discharged into the harbor” (Duffy 1990:177). Even by 1920, cities and reformers had “not resolve[d] the refuse problem” (Melosi 1980:127).

Hygiene, Cleaning and the Home

In contemporary American society, people are bombarded with advertisements, articles and news reports on all manner of cleanliness to avoid the thousands of germs and diseases that threaten lives. In this deluge, it is easy to simply accept daily washing, disinfectant, and deodorant as a healthy lifestyle in pursuit of a universal cleanliness. However, the reality is much different. Cleanliness, filth and dirt are, in part, social constructs and “it is only in our judgments that things are dirty” (McLaughlin 1971:1; see also Douglas 1966:2; Frykman and Löfgren 1987:165). Thus, “what is seen as dirt varies from one time period to another, between classes and individuals” (Berner 2000:83). Popular understandings of cleanliness and the pathway to health were in tremendous flux at the end of the 19th century, reflecting deep changes in social structure, ideals and order.

Before the mid 19th century, cleaning and hygiene involved minimal amounts of water and scrubbing, even for the middle and upper classes. Often, people simply did not believe that more intensive cleaning was necessary (Bushman and Bushman 1988:1214), because prior to the mid 1800s, many diseases were believed to be “the result of poor heredity complicated by unhealthy living habits” (Tomes 1998:4). During this time,

everyday cleaning involved “a basin of water and a towel” (Bushman and Bushman 1988:1215). Indeed, “most Americans did not take baths on a regular basis until around 1850 or later” (Applegate 1998:118; see also Bushman and Bushman 1988:1225). Prior to this, people only completely immersed themselves in water for stimulation, but this began to change by the end of the 18th century when cleanliness was emphasized at newly constructed public baths (Bushman and Bushman 1988:1215). For the new, cleanliness-oriented baths, the immersion in water was followed by a “brisk rub with a towel [to] keep one clean” (Bushman and Bushman 1988:1217) as soap was not readily common for bathing until the 1850s (Bushman and Bushman 1988:1233).

The mid 19th century witnessed many changes in ideas of cleanliness. Gone were the days of unwashed hands and dusty corners of homes as cleaning and personal cleanliness became an obsession within certain portions of society. Indeed, during this period “good housekeeping required constant attention to detail” (Smyth 1993:53) for the upper classes. In the house, cleaning was such an intense ritual and priority that one 19th century man sarcastically noted that household articles “are to be made clean at all events; but their preservation is not worthy of attention” (McGuffey 1879:75). These dramatic changes reflect the powerful transformation of the late 19th century society which reached well beyond the medical discoveries of the 19th century which identified germs. Indeed, many hygienic practices were adopted “for reasons other than avoiding disease” (Tomes 1998:3). Dealing with new everyday social situations such as industrialism, social mobility, public health reformers and expansionism, 19th century Americans developed new ideas of cleanliness to cope with and order their new world.

Many 19th century Americans were overwhelmed with the changes going on

around them. As the cities became larger and larger, chaos seemed to reign as old sources of control and comfort were lost in the vastness of urban society. As the world outside of the home became more and more distant and composed of institutions beyond an individual's control, homes and bodies became more important as arenas that individuals could dominate (Lears 1987:164). Homes, like the thousands of advertisements for products, offered to provide "havens of security, intimacy, and simple pleasures [that] would compensate for, and make tolerable, the anonymity and competitive insecurities of urban complexity" (cited in Sivulka 2001:15).

Once more, local disease prevention gave homeowners a feeling of empowerment (Tomes 1990:519). Because the home was seen as the "breeder... of all germ-related ailments" (Tomes 1998:136), homeowners had the opportunity "to combat nature's threats to health and possessions" (Berner 2000:81; see also Lears 1987:157; Frykman and Löfgren 1987:172). As one 1880s observer noted "you cannot look into the sewer and see whether it is clean or not. But, into all the arrangements of your own individual house you can peer at all times, and can plainly see whether they are all right or not" (Edwards 1882:151).

Cleanliness also began to differentiate social classes. As mass production, with its wages and lower product prices, made accumulation of products possible for a variety of people (Norris 1990:47) for the first time, families wishing to distinguish themselves from the lower classes turned to cleanliness. Backed by centuries of religion which "linked moral and spiritual purity to bodily cleanliness" (Sivulka 2001:35; see also Bushman and Bushman 1988:1217; Smyth 1993:61), the middle class adopted increasingly intense methods of cleanliness, considering it as a part of a genteel code of

behavior (Applegate 1998:117; Bushman and Bushman 1988:1219). Indeed, the new cleanliness technology, such as the bathroom, was used as a “means of impressing one’s friends with one’s wealth and good taste” (Wright1967:225).

This new level of cleanliness demanded by the genteel code was soon required to enter the upper classes (Applegate 1998:118; Lears 1987:157). Thereafter, cleanliness progressively became a moral ideal (Berner 2000:81; Bushman and Bushman 1988:1227), gained social power as a standard of judgment (Bushman and Bushman 1988:1228; Smyth 1993:61), and reasserted social boundaries (Lears 1987:161; Douglas 1966). The middle class further differentiated themselves from the increasingly immigrant lower classes by connecting cleanliness with civilization and Americanization (Hoy 1995:87-89).

In light of the new moral order cleanliness brought to the middle and upper classes, these groups soon set out to transform the lower classes from their wretched condition. Believing that all the lower classes needed to gain this new freedom of cleanliness and upward mobility was knowledge (Bushman and Bushman 1988:1230-1231), the middle and upper classes made sure that “Americans of all ages were subjected to aggressive public health campaigns that taught them the new lessons of the laboratory” (Tomes 1998:6-7). Cleanliness was of such importance that “it is no exaggeration to say that next to teaching a people to read and write, if not equal to it in importance, is teaching them to prefer soap and cleanliness to perfumery and enervating pleasures” (Comments 1899:232). These reformers “forged a powerful association between guilt and responsibility for infection” (Tomes 1990:539), but it was not until the 1940s and 1950s that “the ideal of the well-ordered home with the competent housewife

in control... spread from the middle to the working class” (Berner 2000:104).

Summary

Change marked the late 19th century. Never before had the country witnessed the amount of industrialization, immigration, and medical advances which took place in just a few short years. Lives were turned upside down as cities sprouted overnight and brought with them a host of problems never before imagined. Within this backdrop, individual families responded with a new and different concept of hygiene. Yet, these families also responded to local conditions which were often unique, as not all cities faced the same problems or adopted the same solutions. In the booming west, San Francisco was no exception as it faced particular set of complications and resolutions.