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Surviving the Early Years: Childhood Diseases in Hamilton at the Beginning of the Twentieth Century

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Introduction: Surviving the Early Years

D. Ann Herring

This book has been written by a group of fourth-year Honours Anthropology students studying infectious disease at McMaster University. Our focus is on children and the afflictions from which they suffered and died in Hamilton during in the early 1900's. The story is set in a time when the city was growing spectacularly, when ideas about children and how to rear them were changing, and when there were considerable impediments to surviving in an urban environment that was less than salubrious and often downright dangerous to health.

The inspiration for the book's theme came from an international research group known as The Children and Childhood in Human Societies Cluster, lead by Dr. Shelley Saunders (Canada Research Chair in Human Disease and Population Relationships, Department of Anthropology, McMaster University). One of the goals of the cluster is to encourage research on children, a challenge that was ably and enthusiastically taken up by this class of fourteen graduating student authors. The third in a series of books written by the Anthropology of Infectious Disease class at McMaster, this project revealed how little attention has been paid to children, childhood and childhood diseases in early twentieth century Hamilton (an exception is Rosemary Gagan's excellent research on the subject). The authors address questions about living conditions in Hamilton, the experiences of the city's children, the urban geography and impact of childhood diseases, municipal strategies to reduce the infectious disease load, treatments used during the period, and the ways in which children's bodies were prepared and their lives memorialized after death.

Our book begins with Daniel Rowe's discussion of the social determinants of

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childhood disease and mortality, viewed from a political and economic perspective that situates the local realities of Hamilton in wider global processes. Patterns of disease and death varied along class lines because city officials privileged economic expansion over the public health needs of the people. Infants and children, often from working class families living in overcrowded and poorly serviced neighbourhoods, paid the price for this policy with their lives. Graeme Housego scrutinizes initiatives aimed at intervening and improving public health, undertaken by the Hamilton Board of Health. Medical officers in Hamilton acted as part of a larger, international movement toward sanitary reform that typified many western nations at the time. Despite these efforts, Hamilton lagged behind cities such as New York, London and Toronto and failed to keep pace with the massive expansion of the city in the early twentieth century. Miranda Brunton considers the double difficulties faced by immigrant children during this period, not only in terms of the impoverished conditions they often endured, but also the stigma and blame attached to being an immigrant child in Hamilton. Angela Berlinger explores the lives of orphans, another group of stigmatized and disadvantaged children in Hamilton. She contends that they were at one and the same time invisible and ignored, and the subject of a great deal of attention, as various institutions and organizations strove to transform them into productive adults.

The landscape of infectious disease in early twentieth century Hamilton was dramatically different from today, as Samantha Parker makes clear in her chapter on typhoid fever. Overcrowded conditions, low incomes, inadequate sewage treatment and garbage disposal – and a lack of political will to change them – opened up attractive niches for the housefly and allowed typhoid fever to flourish in the city, especially among children. Scarlet fever was also prevalent in Hamilton in the early twentieth century. Depicted in the epidemiologic literature as a ‘democratic disease’ because it crosses socioeconomic and class lines, Danielle Budhoo concludes that while this may be true for the disease, deaths from scarlet fever seemed to cluster in impoverished parts of Hamilton. Rose Monachino finds a similar configuration for childhood diarrheal deaths in Hamilton, observing that impoverished parts of the city suffered more extensively from these maladies. Diarrheal diseases were far more prevalent than either typhoid fever or scarlet fever, taking a particularly heavy toll of infant and child deaths in the late summer and early autumn. Sick children often unwittingly took their infections with them to school where the particular ecology of the classroom

and school building ensured that infectious diseases spread quickly to other children, and to other children's homes. Samantha Craigie analyses 'the school' from an ecological standpoint and considers the efficacy of strategies adopted by the Hamilton Board of Education to curb the spread of disease in the classroom.

In view of the unhealthy living conditions that existed in Hamilton in the early twentieth century, it is reasonable to expect that conditions worsened for children during World War One. Madison Rose's examination of the period shows just the opposite: child health improved substantially, not only because of the success of public health initiatives, but because new ideas about the importance of children had emerged and Hamilton's larger urban ecology had changed. By then, a specialized children's hospital had been built. Reshma Saeed traces the campaign by private citizens to convince city officials of the need for a hospital dedicated to children, and sees it as an emblem of Hamilton's modernity, waved in the competition between southern Ontario cities at the time. Outside of a hospital setting, a variety of treatments was available for childhood diseases in the popular, folk and professional sectors of health care. Anna Kata takes a close look at proprietary medicines, medical advice, family recipes, and other medications sought by worried parents seeking to alleviate the suffering of their ailing children. Some of these were touted as 'wonder drugs' and cure-alls. Krystal Cameron assesses the effectiveness of these products and what it would have cost the average family in Hamilton to purchase them.

Many children succumbed to illness and failed to survive their early years. Bonnie Chan considers how children's bodies were prepared for burial and how, even after death, infection could spread from the dead to the living. Dianne Pelzowski takes us to two cemeteries in Hamilton where children are buried. She examines the epitaphs, symbols, and materials used on monuments erected to memorialize children. Monuments to children in the early twentieth century reflect the new construction of children and childhood as innocent and pure, and their increasing importance as social actors.

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The Ambitious City: The Rise of Hamilton as an Industrial Centre

Daniel Rowe

Nature has indeed smiled upon our city. In situation and environment and abundance of all natural advantages we occupy a unique – an almost ideal position. (Dr. James Roberts, in Gagan 1981:81)

Perhaps the best way to study the dynamic and rapidly-expanding city of Hamilton, as it existed during the period of our study, is through the theoretical lens of political economy. Goodman and Leatherman's (1998) understanding of political economy primarily informs my analysis of Hamilton's history in this chapter. It is particularly well suited in this regard, as it provides a way of situating the various social determinants of childhood disease and mortality within a political and economic perspective through which local realities were shaped by much wider global processes. It is a holistic approach in that it interprets human biology and health in terms of social relations and the multiplicity of ways in which these relations determine access to resources and the differential spread of disease.

These considerations are central to an understanding of the health of Hamilton's populace in a city which had been forced by a diversity of external pressures to develop an industrial rather than commercial economic base, despite the efforts of many of its leading citizens. The preponderance of manufacturing concerns in the city created a social structure that was marked by inequality and increased spatial segregation between working class neighbourhoods and those neighbourhoods occupied by middle and upper class citizens. In turn, these inequalities manifested themselves in the health of Hamilton's citizens, with residents of poorer wards subject to higher rates of disease and mortality than

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residents of more affluent wards. As such, a fully contextualized history of the city becomes necessary in order to comprehend how patterns of disease and mortality developed among infants and children, a particularly vulnerable segment of the population.

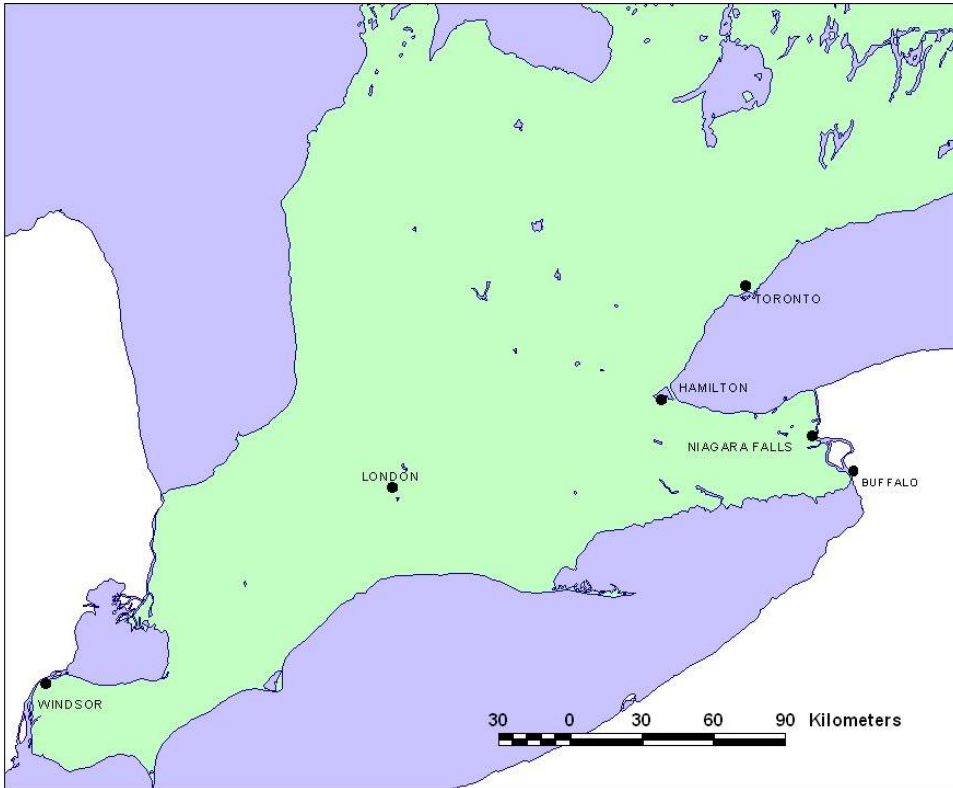


Figure 2.1: Hamilton in the context of Southern Ontario (Moulder 2008)

Hamilton in Historical Context

Economic considerations have, from the founding of the city, played an integral role in its development. Hamilton is unique in that, unlike other cities in Ontario such as Kingston or Toronto, it was not founded with military or governmental functions in mind (Figure 2.1). Its founder, George Hamilton, who had acquired the land that would become the original town site after the War of 1812 and had

inherited substantial business interests and capital from his aristocrat father, was motivated principally by commercial concerns. In essence, George Hamilton was someone we would call a property developer today, and the city he founded has the distinction of being the "...first speculative townsite to evolve into a major Canadian city" (Weaver 1982:16). Having reached an agreement with the owner of adjacent land, Nathaniel Hughson, George Hamilton petitioned to have his newly founded town be designated the administrative centre of the proposed Gore district, which became a reality in 1816. Comprising the area at the eastern extent of Lake Ontario, Gore district incorporated Hamilton, Dundas, Brant's Block (Burlington), Crook's Hollow, and Ancaster. All of these communities vied to be selected as the district centre and the fact that newly-founded Hamilton was the eventual winner is rather surprising given that both Dundas and Ancaster had been established for decades, with the latter being the largest regional milling centre and whose population numbered an impressive 2,000 (Gentilcore 1987:102; Weaver 1982:16).

As the district centre, Hamilton was given the responsibility of administrative functions over the surrounding communities and was the recipient of funds to build both a courthouse and jail. Throughout the 1820's, Hamilton's regional prominence grew, in part due to the construction of a port on the lake and the excavation of a channel through the Burlington Bay. By exploiting its proximity to the lake, Hamilton eclipsed its neighbouring rivals, Dundas and Ancaster, in terms of commercial importance. With the construction of the Welland Canal in the late 1820's, it became an important port of call in Great Lakes shipping, while continuing to be a hub for accessing the towns of the hinterland above the escarpment (Gentilcore 1987:104). Undeniably, Hamilton's status as an important Great Lake port was to have significant consequences for the city well into the next century.

Hamilton's rising star simultaneously precipitated a flurry of speculation on land as investors bought up tracts neighbouring the burgeoning town, whose population was beginning to swell with an influx of merchants and workmen. Among these early immigrants to the city was Allan MacNab, a lawyer who had been attracted to Hamilton by its legal function. Having gained experience in the real estate market in York (Toronto), MacNab capitalized on the property boom, and soon after his arrival in the city in 1826 was operating a thriving realty business (Weaver 1982:17). This enterprise led to his amassing a great deal of wealth which subsequently aided his entry into public life as MacNab would play

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a central role in the city's development through the middle part of the century. Throughout the 1830s, commercial activity in the young city continued to grow, as the contemporaneous growth of inland communities in the Thames and Grand River regions such as Waterloo, Galt, and Brantford provided lucrative new markets for the "...mercantile houses, artisan shops and manufacturers setting up in Hamilton" (Weaver 1982:23). This economic activity produced a sharp increase in the population of the city which grew over two and a half times between the years 1834 and 1842, from 1,367 to 3,414 (Gentilcore 1987:107).

This high rate of growth manifested itself in the *ad hoc* nature of much of the housing in the city and the overcrowding and lack of basic sanitary facilities had adverse affects on the town's population which, in 1840, experienced a mortality rate of some 23 per 1,000. Over *three quarters* of the dead were believed to have been infants and children, while an officer investigating the health conditions of the city remarked that the children who died were "...mostly of the poorer classes" (Weaver 1982:32). The class-determined spatial distinctions that were to characterize the city in later years were prefigured during this period. Corktown, for instance, emerged as a neighbourhood comprised of small frame buildings and shanties located on low-lying and poorly drained land which was home to a sizable population of impoverished Irish Catholic immigrants. Corktown was a sharp contrast to the stately homes of Hamilton's wealthy citizens who lived to the south and west of the neighbourhood (Gentilcore 1987:108).

Economic growth continued throughout the 1840s and 1850's with the population expanding from 10,000 in 1851 to an astonishing 25,000 only six years later. Much of this growth had been prompted by the construction of a railway which had been conceived of almost two decades before and was to become a defining feature of Hamilton and the eventual collapse of its "metropolitan pretensions" during the mid-nineteenth century (Gentilcore 1987:109). Envisioned by Allan MacNab and other prominent citizens as early as 1834, the construction of a railway based out of Hamilton was part of a more general strategy to augment the commercial importance and marketing function of the city, to rival the economic power and prestige of nearby Toronto. After failing to secure government funds for the project, MacNab and the other principle backers of the railway secured massive loans from sources in London and throughout the United States (Gentilcore 1987:49). The Great Western Railway (GWR), as it came to be known, strategically bypassed both Ancaster and Dundas and provided Hamilton with a rail connection to lucrative American lines such as

the NYC Trunk. This important link with the major American cities of the Midwest and with those on the east coast facilitated Hamilton's role as a hub for American immigration into Upper Canada, with 32,000 immigrants entering Canada via the GWR in 1857 alone, as well as serving an important function in the export of Ontario's wheat crop to the American market (Weaver 1982:50).

The city's fortunes quickly reversed, however, as it became caught up in the international depression of the late 1850's, its significant railway debt hastening a complete economic collapse which caused the city's population to drop by 20 per cent between 1858 and 1862 (Weaver 1982:196). Further, with the backing of powerful interests in Toronto and Montreal, a rival line was constructed connecting those two cities with Maine in the east and Windsor in the west, intensifying the link between Upper and Lower Canada and completely bypassing Hamilton and the GWR. This effectively ended Hamilton's bid to surpass its regional rival, Toronto, in terms of commercial and economic clout and would lead to its subsequent transformation into a city renowned for its manufacturing economy.

While Hamilton's location, in close proximity to the United States and astride a route that hastened travel between the American east coast and their compatriot cities on the Great Lakes (Milwaukee and Chicago in particular), had worked to its disadvantage in jockeying for political and economic prominence among Canadian cities, its geographic placement actually proved to be quite beneficial in attracting a great deal of investment from American businessmen who served to profit from differing Canadian commercial regulations (Weaver 1982:54). An exemplar of this trend is Richard Wanzer, who established a sewing machine shop in Hamilton in 1859. Large manufacturers of sewing machines in the United States had, in 1856, formed a patent pool that froze smaller entrepreneurs out of the industry. The manufacturer's patent pool, however, did not apply to Canada, which allowed Wanzer to manufacture sewing machines in Hamilton without penalty. Wanzer's sewing machine company forged a reputation for quality and prospered after it won recognition in an 1867 international exhibition; by the 1880's it was one of the largest single employers in the city (Weaver 1982:55).

While Wanzer represented a new breed of large-scale manufacturers in the city that had clustered around the railway in its north end, for most of the latter part of the nineteenth century, manufacturing in the city was still dominated by "...a large number of small enterprises, oriented to the local market and located in the core of the city" (Gentilcore 1987:117). Steady growth characterized the city

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through much of the latter part of the 18th century with a population that numbered 50,000 by 1891, making it, albeit for a short time, the fourth largest city in Canada. Division of the city along socio-economic lines also continued during this period as tracts of working class housing sprang up among the factories in the city's rapidly expanding north end while the advent of street cars drastically shifted the social/spatial relationships between places of work and places of residence (Gentilcore 1987:114-17). Indeed, many of the city's working class resided in small, rented, shabbily constructed cottages that lacked even the most basic amenities, while they laboured in unventilated factories that were often closed for extended periods during the harsh winter months, depriving the workers of pay precisely when they required it most (Wood 1987:121).

The Rise of Industry

By the eve of the twentieth century, a number of primarily economic and political factors had emerged that would bring about an unprecedented period of growth in Hamilton in terms of both population and manufacturing capacity. Federal legislation enacted in the early 1890s had increased import tariffs which had the effect of protecting Canadian manufacturers from foreign competition (Farmer 2006:76). These regulations were to have significant ramifications for industry in Hamilton as it became cheaper to manufacture pig-iron in Canada than to continue importing it from foundries in Britain (Wood 1987:122). Again, Hamilton's location proved to be quite beneficial in its rise as a leading centre for the manufacture of iron and steel in Canada, eventually surpassing manufacturers in Nova Scotia. Its relatively close proximity to the metallurgical coal deposits in West Virginia and Pennsylvania, access to iron ore from Lake Superior, as well as its placement in the centre of the "compact Ontario market" were central to the surge in industrial development in the city during the early part of the century (Weaver 1982:81). Hamilton's appetite for iron had been driven principally by its status as a centre for the production of stoves during the latter part of the nineteenth century, as well as providing the city with an abundance of individuals skilled in working with iron. The first blast furnace in Hamilton was constructed in 1896 and was likely only considered economically feasible due to the presence of the city's stove producers who constituted the "the leading industry in Hamilton" (Weaver 1982:82). Iron and steel manufacture increased throughout the first decade of the twentieth century, culminating in the formation of the Steel

Company of Canada (Stelco) through the amalgamation of five local companies in 1910, as well as the establishment of Dominion Foundries and Steel Limited (Dofasco) in 1912.

Another development key to the expansion of the city was the construction of the Toronto, Hamilton and Buffalo Railway (TH & B) in 1899, after more than a decade of heated city council debates and legal wrangling (Middleton and Walker 1980:33). The TH & B had been chartered in 1882 after its predecessor, the GWR, had been absorbed into the GTR, creating a lack of competition for freight transport. Although its construction was plagued by prolonged delays due to poor management and a period of economic depression, it became a Hamilton institution and played an integral role in transporting Hamilton's manufactured goods to ever-expanding markets in the west (Weaver 1982:80).

Perhaps of most significance to the decision of many manufacturers to locate in Hamilton during this period, however, was "the cheapest and most reliable supply of electricity available to any large urban centre in Ontario", provided by the Cataract Power Company that had constructed a hydro-electric generating site plant on DeCew falls, some 54 kilometres away (Wood 1987:123). The plan was initially ridiculed as there had never been attempts to transport such large quantities of electricity over such a great distance; yet, the endeavour proved to be a great success and by 1898 the Cataract Power Company was supplying the electricity that powered the city's street lights, electric street car system, and much of its industry. While the company charged high domestic rates and provided poor service to the general public, their industrial rates were quite economical and played a vital role in the selection of Hamilton as the site for new branch-plants of established American companies including Westinghouse, Frost Wire, and International Harvester (Weaver 1982:87). By 1913 there were a total forty-six such branch plants in the city, up from only four in 1890, while in the years between 1900 and 1910, manufacturing employment in the city increased by over 107 per cent (Middleton and Walker 1980:21-22).

Such remarkable growth in manufacturing capacity required an attendant increase in Hamilton's population as an ever-larger labour-force was needed to man the mushrooming number of factories. Although population estimates from this time may be somewhat inaccurate, between 1900 and 1913, the city's population nearly doubled, from 51,500 to 100,000 (Weaver 1982:93). In light of its substantial growth over such a short period, Hamilton certainly earned its popular moniker as "The Ambitious City" (Trigge 1934:63).

The People of the Ambitious City

The glut of immigration during the first decade of the twentieth century served to further demarcate social division along class lines that had been a constant feature of Hamilton's social geography since its inception. While before the dawn of the new century the vast majority of immigrants to the city had their origins in the United States or United Kingdom, this boom period saw the first sizable population of southern and eastern Europeans settling in Hamilton, accounting for about one third of all immigrants. These newcomers experienced a great deal of hostility from the native population who accused them of stealing jobs from "British subjects". By the summer of 1913 it had become a sport of men "who rode the streetcars to spit tobacco juice at Italian labourers digging trenches" (Weaver 1982:93). This antagonism toward "foreign" labourers contrasted with the almost complete indifference shown them by their employers and city officials. The census of 1911 likely underestimates the population of Italians in Hamilton three-fold while their anonymity often persisted in the workplace; employers would record neither their names nor addresses and Italian employees, all called "Joe", were timed and paid by number (Weaver 1982:93). (For more on immigration see Brunton, this volume)

While most pronounced for "foreigners", the disregard of city officials extended to the bulk of Hamilton's working class population, located in the wards of the city's east end and living in close proximity to the factories in which they laboured. Paradoxically, housing conditions in the working class east end deteriorated during the period of rapid economic expansion as a "young migrant industrial labour force crammed itself into an unprepared city" while the provision of city sewers to the area typically lagged behind other, higher-income regions, which had serious effects on the health of the area's residents (Doucet and Weaver 1991:434,442). Indeed, in 1910 population densities in the east end Wards 6 and 7 exceeded 16,000 per square mile, a density four times higher than in the most affluent area of the city, Ward 1 (Gagan 1989:165). Predictably, living standards were atrocious in the working class areas of the city. In a 1912 investigation conducted by the health department, 65 of the 221 house examined were judged to be "greatly overcrowded", with 45 male boarders residing in a four-room house while a city official, upon inspecting a one room shack that was home to a family of six, commented that he would "...not let [his] dog eat its'

breakfast there. The stench was awful” (Doucet and Weaver 1991:424; Gagan 1981:177).

Despite the constant agitation of city council by the irascible Dr. James Roberts, Medical Health Officer for Hamilton from 1905 until his death in 1940, to increase funding for public health measures as well as for more stringent regulation of industry, city officials often dismissed his requests. Roberts was the “foremost reform figure in the city” whose efforts to advance the international public health movements were recognized in 1912 when he was elected vice-president of the American Public Health Association (Weaver 1982:103). The fact that the city council was not amenable to the requests of such a high-profile health figure in their midst is likely related to the occupations and commercial interests of those who served on the council. In their study of industrial development policy in Hamilton from 1890-1910, Middleton and Walker (1980) conclude that the pro-industry/development bent of city policies is in large part due to the number of city council members with significant business interests. Well over 50 percent of council members during this period were managers of either commercial or manufacturing concerns while 79 of the 152 aldermen during the same period owned and operated their own businesses. Working class representation on the council during was typically below 10 percent, while only one councilman, William McAndrew, actually represented a “labour point of view in Hamilton” (Middleton and Walker 1980:27).

While it seriously under funded the public health department, the city council was offering attractive inducements to industries, actively lobbying them to locate in the city. The American firm, Westinghouse, for instance, was granted a decade long tax exemption in return for locating in the city while the manufacturer, Sawyer-Massey, demanded and received – at the city’s expense – the construction of a large water main to the company’s property. Perhaps the most blatant example of the lengths city officials would go to meet the demands of industry is the case of the International Harvester corporation, an American manufacturer of farm equipment which had requested a \$50,000 bonus as well as significant tax concessions in return for opening a branch plant in Hamilton. Citing the company’s poor treatment of workers, organized labour mounted a successful campaign to stop the bonus. In response, city council simply annexed part of Barton Township and fixed tax assessments at the rural rate for industry, a move which immediately prompted Harvester to locate to the city. Although impossible to correlate directly, these policies undoubtedly had an adverse impact on the

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health of the city as the astonishing growth of industry swelled the ranks of the city's working class population while the numerous financial bonuses and inducements the city lavished upon prospective industries significantly reduced the funds available to address the health concerns of Hamilton's newest and most deprived citizens.

Hamilton and Public Health

By the turn of the century, great strides had been made in the understanding, treatment, and prevention of contagious diseases, the result of "a new orthodoxy emerging from the marriage of science and medicine" (Gagan and Gagan 2002:31). The work of Pasteur and Koch in the 1860s had led to the development of contagionist theories which held that diseases were transmitted by specific germs. These would eventually replace the older 'zymotic' or 'miasmatic' theories that asserted that diseases were the product of noxious vapours (Brace 1995:35). The advent of germ theory had immediate and practical results as surgeons such as Joseph Lister pioneered the concepts of *antisepsis* and *asepsis* which stressed the importance of conducting surgical procedures with sterilized implements and in a contagion-free environment. This "hygienic enlightenment" drastically improved the efficacy of operations and at the same time accelerated the process of professionalizing the field of medicine as doctors increasingly worked in hospitals – "warehouses of death" that once had only served the poor and destitute. These institutions (including Hamilton City Hospital) increasingly became the venue of advanced medical treatment for all social classes (Gagan and Gagan 2002:28,17). Finally, while not necessarily predicated upon these scientific and medical advancements, the sanitary movement that had originated in England in the 1840s introduced the notion of "moral environmentalism" and emphasized the importance of public works, particularly the provision of adequate sewerage, to a population's health and welfare (Brace 1995:34).

Considering these momentous achievements in the fields of medicine and public health, it seems curious that the health of Hamilton's citizens actually *deteriorated* during the first decade of the twentieth century, in contrast with the improving health of many American cities during the same period. Rosemary Gagan's (1981,1989) extensive study of disease and mortality in Hamilton revealed that general mortality rates steadily increased during the first decade of the century, peaking in 1910 at 20.6 per 1,000 and only decreased steadily after

1912. Although infant mortality was consistently the largest single proportion of mortality, with 31 percent of all deaths occurring among those under the age of one year, in the early part of the decade more attention focused on the spectre of tuberculosis (Gagan 1981:116). It was not until the Chief Health Officer of Ontario, Charles Hodgetts, raised the issue in 1906 that it became a topic of concern to the public who feared “race suicide” (Gagan 1989:168). Predictably, infant mortality was notably higher in the working class wards of the city.

Conclusions

While expert opinion is divided as to whether “overcrowding, poor sanitary facilities or poor dietary conditions enforced by limited budgets had the most determining role in urban mortality”, the fact that patterns of mortality in Hamilton varied as they did along class lines demonstrates the degree to which health is determined by material factors that have their origin in political and economic processes (Weaver 1982:103). While Hamilton may have been the ‘Ambitious City’, its highly segregated social geography that relegated the working classes to crowded and substandard housing in neighbourhoods that lacked proper sewerage, was the result of the ambitions of Hamilton’s elite citizenry, who privileged economic expansion by aggressively enticing manufacturers at the expense of the health and well-being of much of the city’s population. Tragically, it was infants and young children, a vulnerable segment of the population that comprised such a significant portion of Hamilton’s total mortality, who often did not survive and paid for these ambitions with their lives.

3

“So...What do you want to do?” “I don’t know, you figure it out” – Strategies of the Hamilton Board of Health and the City to tackle Childhood Disease

Graeme C. Housego

All human societies go through fads in which they temporarily either adopt practices of little use or else abandon practices of considerable use. (Diamond 2001:15)

Hamilton was a rapidly expanding area during the early twentieth century, as well as the late nineteenth century for that matter; with such expansion brings new niches for infectious disease to take hold. It was the job of the Hamilton Board of Health to curb the spread of disease as well as propose reforms to the city to make sure they would not return.

Throughout this chapter I attempt to describe the role of the Board of Health, what they did to accomplish public health reform in Hamilton and whether their methods were effective (based on statistical analysis) as well as other endeavours undertaken by other city administrators. This is accomplished by applying a medical ecological perspective; that is, looking at how the environment had an impact on human health and how human interventions changed the environment for better or worse. Along with this, Hamilton is placed in a larger picture of sanitary reform in the Western world and compared to England and New York.

The Rise of the Board of Health

In the waning years of the nineteenth century it was clear that public health was on the decline due to increasing industrialization and urbanization. As more and

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more people flocked to urban centers to be a part of the booming industry taking place here unsanitary conditions prevailed. This was due to overcrowding and explosive population growth (Gagan and Gagan 2002). Out of these squalid conditions came a social reform movement whose first goal was to improve public health and eliminate sources of epidemic disease (Gagan and Gagan 2002). The Ontario Provincial Board of Health (B.O.H.) emerged out of this in 1882 and two years later enacted the Public Health Act, which allowed the board to make regulations for improving health and especially for eliminating disease in the province's urban centers (Gagan 1981). Hamilton, itself, had established a board with a Medical Health Officer (M.H.O.) in 1873 with the goal of controlling contagious disease in the city (Gagan 1981). Hamilton's first two M.H.O.s, Dr. O'Reily and Dr. Ryall, seemed to put little stock in germ theory, which postulates that most diseases can be attributed to microorganisms (Madigan and Martinko 2006).

This sanitary movement was taking place in many other places throughout the western world. Sanitary reform saw its beginnings during the industrial revolution in England and came out of the "question of community organization for health protection due to labour being brought into factories" (Rosen 1993:170). As was the case later in Hamilton, it was compulsory for residents of London to register births, deaths and marriages by 1837; this facilitated the keeping of statistics which became a large part of sanitary reform which were used to compare cities with each other (Rosen 1993). The working conditions of London in the first half of the nineteenth century were deplorable, and resulted in high mortality and morbidity rates in the city and the surrounding countryside (as many people came into the city from outside to work). London had no template for designing its health infrastructure and thus the city often implemented piecemeal changes, ad hoc expedients and compromises that were designed to deal with specific evils (Rosen 1993). For example, before the formation of a permanent B.O.H., voluntary B.O.H.s were established as specific epidemics cropped up. The Public Health Acts of 1848 and 1875 went a long way toward organizing sanitary efforts, creating local health boards and requiring M.H.O.s for each of these boards as well as sparking some members of the public to form associations to ensure that sanitary reform got underway (Rosen 1993). Similar patterns can be seen in other major cities as well; for a long time in the United States, permanent boards of health were not common and usually only dealt with epidemics. Medical inspectors, often employed by the police department, were

used by American cities to handle health administration, environmental sanitation and collection of vital statistics (Rosen 1993). It took many years to change the status quo of American cities until finally, as sanitary conditions rapidly deteriorated while communities rapidly expanded, voluntary health associations began to form in 1845 (Rosen 1993). These groups were modeled on those found in the UK and went a long way to bring change to American cities that had spent too long in a state of poor sanitation.

The Board of Health, both local and provincial, used statistics to help to control communicable disease rates, and thus by 1896 it was necessary to have all births and deaths registered and sent to the Provincial Board of Health (Gagan 1981). As well, it was the job of the M.H.O. to record all cases and deaths caused by infectious disease and send data weekly to the Provincial Board of Health (Gagan 1981). The M.H.O.s were given the power to quarantine or hospitalize individuals suffering from illness as well as to placard homes. This most often exacerbated the situation of families, who could do little to provide for themselves with such quarantines in place (Gagan and Gagan 2002). In 1905, Dr. James Roberts was hired for the position of M.H.O. and from his work Hamilton began to undertake serious endeavours to improve health for the people of the city.

What was being done?

Hamilton's B.O.H was a council with relatively little power when it came to actually making changes; just like every part of a municipal government, the B.O.H had to refer all large projects or reforms to the City Council. As well, the board was not made up of individuals with medical backgrounds but simply those appointed by City Council to deal with health issues. Most of the best reforms were proposed by the Chief Medical Officer of Health, Dr. James Roberts, who took over in 1905; Dr. Roberts was responsible for such accomplishments as an expansion to the isolation hospital for infectious diseases. When first built this hospital only had facilities for diphtheria and scarlet fever, with a limited number of beds (Annual Report of the Board of Health 1906-07).

There was also a large increase in inspections done by the B.O.H into conditions in restaurants, butcher shops, and grocery stores; as well, a designated milk inspector was appointed. Such inspections were important to ensure sanitary regulations were being followed; several diseases such as typhoid fever (see

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chapter 6) can be spread due to improper sanitary practices. Milk in particular is an excellent medium for the spread of typhoid (Hardy 1993). Inspection of milk would have been of particular importance to the city for this reason. Hamilton, along with Toronto, founded a bacteriological laboratory that conducted frequent analysis of many different sources of infection, such as contaminated water, milk and the effluent from infected individuals. Dr. Roberts was seen as a crusader for sanitary reform; according to Gagan (1981) he was adamant about solving the problems with Hamilton's water treatment after the 1906 typhoid epidemic (Table 3.1). The city council tried to dissuade Roberts from pointing to unsatisfactory water treatment as the cause for the epidemic but he refused (Gagan 1981).

	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1914-15	1915-16	1916-17
Diphtheria	218	180	146	92	182	152	89	130	126	210	223	255
Mumps	6	1	98	270	4	6	96	1219	23	246	733	37
Small Pox	10	1	3	78	3	2	0	43	204	19	0	0
TB ¹	19	109	64	92	92	79	78	124	136	182	163	213
Polio ²	0	0	0	0	2	98	0	2	5	0	17	5
W.C. ³	176	73	54	157	123	62	142	583	159	327	489	243
Typhoid	48	125	52	43	58	80	62	48 ⁴	74	10	16	12
S.F. ⁵	129	162	68	171	356	221	330	339	161	96	84	57
Measles	1102	46	434	96	69	2327	65	1470	152	2015	1033	1732

Table 3.1: Cases of Specific Infectious Diseases in Hamilton from 1904 to 1917 (Annual Report of the Board of Health 1904-1917)

The suggestions of the B.O.H or the M.H.O. were not always heeded by the city. Dr. Roberts, for instance, demanded a separate isolation hospital for infectious disease patients since the isolation wing of the existing hospital could not deal with all of the cases in the city. This was not built for many years after it

¹ TB encompasses Tuberculosis and all of its variants including consumption

² Polio stands for Poliomyelitis

³ W.C. stands for Whooping Cough

⁴ In the reports from 1911-1912, cases of Typhoid began being reported for only those that lived in the city; this year had both cases in the city and all cases so the latter was used to correlate with the previous years. However the years after this only gave data for cases from individuals native to Hamilton, which could give cause to the dramatic drop in the number of cases.

⁵ S.F. stands for Scarlet Fever

was initially proposed by Roberts (Annual Report of the Board of Health 1909-10). Hamilton was in a state of continual growth during the study period and as a result the new infrastructure, especially for dealing with waste, needed to be constructed throughout the newer areas of the city. The desire for improved infrastructure was apparent throughout the Western world as sanitary reform took hold. This can be seen in both London and in New York City (Rosen 1993). It is clear that better infrastructure led to improvements in health as this improved waste removal and often provided cleaner water to residents (Hardy 1993). The B.O.H constantly gave strong recommendations to the city for improvements to sewerage in the newer parts of the city, especially in the new industrial section which needed it the most (Annual Report of the Board of Health 1909-10). A scavenger system was put in place before the study period in order to remove household waste; scavengers took garbage away in carts and dumped the carts in designated areas. The problem with this system is that there was no actual garbage dump; most often the garbage was dumped on people's property when asked by property owners (for the purpose of grading) or on out of the way streets (B.O.H minutes 1896-1907).

Did it work?

To evaluate the effectiveness of these initiatives, data were collected on both cases of and deaths from infectious diseases in children⁶. Diphtheria was a very prevalent disease in Hamilton during this time, and beside tuberculosis, was the biggest killer as far as infectious diseases were concerned, especially of children (Annual Report of the Board of Health 1904-05). In 1904 the mortality rate from diphtheria was approximately 4.1 per 10,000 and by the end of the study period this rate was almost cut in half (2.5 per 10,000). The same can be seen with cases of diphtheria which dropped from approximately 40.4 to 23.6 per 10,000. These levels are lower than other urban centers in Ontario as well as major cities in the United States (Gagan 1981). These cities were often more crowded than Hamilton, however, having undergone large increases in population much earlier (Meeker 1972). Whooping cough was another problem in the city, though it killed fewer children than diphtheria; mortality rates dropped from 1.7 to 0.4 per

⁶ stillborns are removed from this analysis, at least as well as can be done based on the recording methods from this time period

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10,000 from 1904 to 1917. This is clearly a decline, but is also misleading since the rates between these years are actually higher and certain years were much worse than others. For example, in 1911-12, mortality from whooping cough was 2.7 per 10,000. This rate is higher than either rate from 1904 and 1917.

Though there seems to be a general decline in most diseases over the period this does not reflect the actual picture; there were several serious epidemics during the period. For instance, there were four epidemics, of measles during this period, each with well over one thousand cases; measles is not an overly deadly

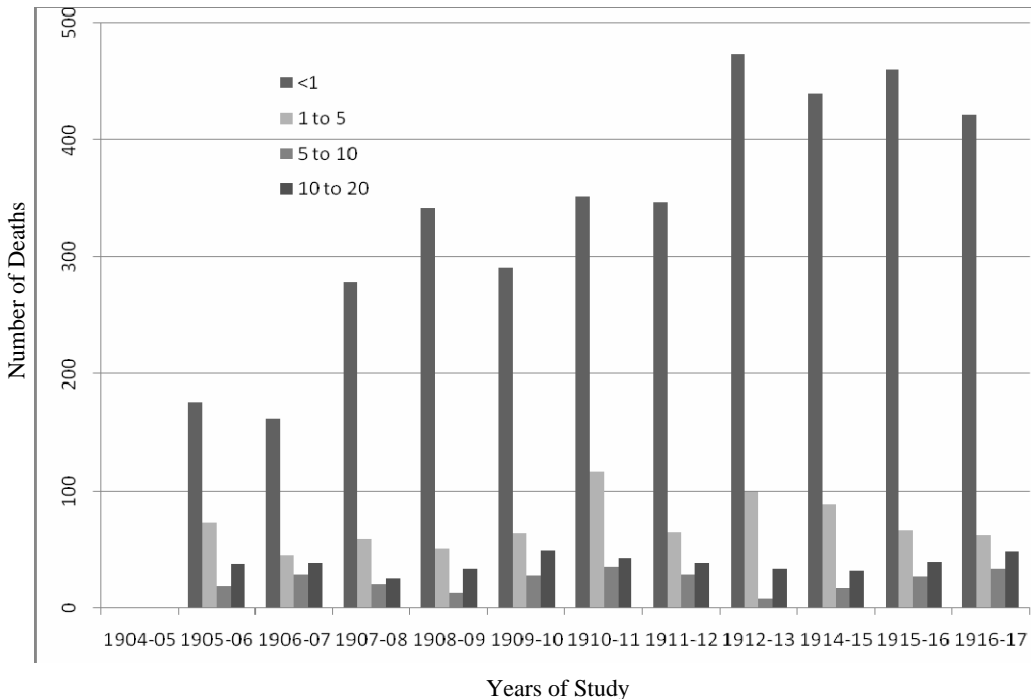


Figure 3.1: Mortality Levels among Children (Annual Reports of the Board of Health 1904-1917)

statistically representative without reference to the overall population of children at risk of dying. Looking at mortality of children with data on population size from the Engineer Reports, just like Table 3.2 on overall death, (Annual Report of the Chief Engineer 1905, 1917) there appears to have been an increase in mortality from the beginning to the end of the study period. Take for example children under the age of one; in 1905 mortality was 29.6 per 10,000 and in 1917

this had risen by almost 10 points to 39.1 per 10,000. There was no real change in mortality in the other age categories during this study period.

Typhoid as an Index of Effectiveness

Typhoid has long been seen as an index of the effectiveness of public health initiatives, going back at least one hundred and fifty years (Hardy 1993, Annual Report of the Board of Health 1916-17). According to the Center for Disease Control and Prevention, typhoid is a “life threatening illness caused by the bacterium *Salmonella typhi* that results in high fever, rash, diahrea, stomache problems to name a few” (CDC 2005). The bacterium is spread through human fecal matter in food or water. Typhoid is thought to spread “without [having] respect for social class” (Hardy 1993: 151). In England, before the 1870s, there was a broad miasmatic (pollutant) initiative aimed at preventing typhoid, such as clearing cesspools, closing wells, piping water, and repairing sewers and drains (Hardy 1993). It was not until the mid-1870s, according to Hardy, that typhoid was recognized as an independent malady; it is believed that “this discovery began the process by which modern standards of personal hygiene were eventually achieved” (Hardy 1993:152). After this discovery there was an upsurge in sanitary awareness and an increased individual effort among all social classes of England.

The typhoid bacillus can only survive in a human host and after recovery, the host is immune to further attacks. As stated above, *S. typhi* is spread through fecal matter-contaminated food or water; water-borne tyhoid can be either explosive or drawn out depending on the degree to which the water has been contaminated (Hardy 1993). As well, the disease has a fairly long incubation period of 18-20 days which can facilitate disease spread because it can be transferred to many individuals before intial symptoms arise. In England, the General Board of Health took steps to improve conditions, especially water and sanitary practices, and this lead to the elimination of typhoid by about 1914 (Hardy 1993). Unlike England, Hamilton still had a typhoid problem until the end of the study period (1917) despite similar endeavours to eradicate the disease.

The population of Hamilton doubled in size over the study period (Annual Reports of the Chief Engineer 1901 and 1917), from approximatly 54,000 in 1902 to 107,800 in 1917. Despite this drastic increase in population, there was a decrease in the overall cases of typhoid in the city from about 8.3 per 10,000

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individuals in 1904 to 1.1 per 10,000 individuals in 1917 (see Table 3.1). Deaths from typhoid dropped from 1.4 per 10,000 to 0.5 per 10,000 in 1904 and 1917, respectively (see Table 3.2). Unfortunately, typhoid seems to be the only disease that began to be reported differently starting in 1911; after that year cases from the surrounding rural areas (known as outside cases) were not included in annual data reported to the public or province (Annual Report of the Board of Health 1911-12). It is interesting that typhoid is used as an index of public health initiatives and that typhoid is the only disease for which outside cases were removed from reporting. It seems clear that the city of Hamilton was trying to make the data seem more favourable to boost Hamilton's image as a healthy location, most likely to attract in a larger workforce. Looking at the data before this change in reporting practise, there is only a minute change in both morbidity and mortality from typhoid, however this change is actually to a higher rate!

Since typhoid is spread very quickly through water it is important for a city to improve water transport and purification to keep levels of contamination down. Practices and improvements geared towards stemming typhoid are also, obviously, effective in reducing the frequency of other ailments such as diphtheria and cholera. The most significant improvement that can be made is developing infrastructure for piping fresh water into homes from a source outside the city; this provides water that is not contaminated from the bacteria that are often found in water sources in the city (Hardy 1993). Hamilton had a network of water pipes running through the city prior to the study period, however these needed constant repairs and more were added in the early twentieth century, most often improved from their previous versions (Annual Report of the Chief Engineer 1907). The original pipes were most often made from lead or wrought iron, and became porous quite quickly and needed constant repairs. It is interesting to note that London started using cast iron pipes almost 100 years before Hamilton. The newer pipes were most often made from cast iron (but lead was still used) which, while safer, were also less prone to leaks and thus could last for longer periods without repair (Annual Report of the Chief Engineer 1902). Piped water reduced reliance on surface wells, which were often sources of contamination, and permitted a higher degree of cleanliness for domestic chores (Hardy 1993). This method of piping water can also be seen in many urban centers of the western world, for example in England where an established piping system was in place but not made available to poor districts until the latter half of the nineteenth century (Hardy 1993).

	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1914-15	1915-16	1916-17
	22	21	14	8	18	23	9	10	12	20	35	27
Mumps	0	0	0	0	0	0	0	1	0	0	0	0
Small Pox	0	0	0	1	0	0	0	0	0	0	0	0
TB	72	70	64	81	105	81	72	100	92	82	110	85
Polio	0	0	0	0	2	12	6	1	0	0	0	0
W.C.	9	1	4	12	12	7	7	24	6	8	5	4
Typhoid	8	20	11	10	6	12	9	8	10	7	3	4
S.F.	3	1	2	7	13	8	9	3	6	1	0	0
Measles	6	1	5	1	1	18	1	14	0	15	7	2

Table 3.2: Deaths recorded of Specific Infectious Diseases in Hamilton from 1904-1917 (Annual Report of the Board of Health 1904-1917)

Clean water was a must, but so was the disposal of waste water; especially important was preventing the two from mixing. In 1905 the city of Hamilton passed a by-law (by-law 79.10) stipulating that domestic plumbing could not connect pipes from drinking water with those from the water closet (By-Laws 1911). The by-law included an amendment that water pipes must be made of lead, brass, copper or galvanized iron. Throughout the study period, an extensive network of sewers was being built across Hamilton; the sewers were often made from lead or iron, just like the water pipes. Hamilton only had one water filtration plant before 1907 when the East End purification center was put in (Annual Report of the Chief Engineer 1907) and 1913 when the West End disposal works was built; these facilities were able to deal with all of Hamilton's waste water (Engineer Report 1913). Unfortunately, the city did not learn from the mistakes of having lead and iron water pipes; it was not until 1915 that sewers began to be constructed from cement in response to a B.O.H petition (B.O.H. Minutes 1907-1922). After this a by-law was passed (by-law 1901) that required that all new water-tight pipes be made from cement (City Council Minutes 1916). The infrastructure that Hamilton was building seemed to be aimed at improving the health of its citizens, however, it was far behind other urban centers outside of Canada, such as London or New York City, both of which had begun such endeavours many years before Hamilton (Rosen 1993).

False promises?

The overall impression from the health reports is that Hamilton was doing a great job and that it was very clean and mostly free of disease. As can be seen from the statistical data above, this was clearly not the case for young children (or all ages for that matter), who were dying more often as time passed. This false picture of disease in the city and the promise of factory work seemed to be what caused the population to double over the study period (see Brunton, this volume), which could quite possibly be an additional contributor to the increase in disease.

The city often provided explanations for epidemics, placing the blame on others rather than examining the role their own inadequate programmes may have played. In his reports, Dr. Roberts often places blame for disease on mothers who did not follow regulations put in place by the city to help combat disease (Annual Report of the Board of Health 1911-12). For example, during the typhoid epidemic of 1906, Dr. Roberts blames people with “neglect and failure to carry out minutely the directions given here” (Spectator 1906). The way the health of the city was portrayed to the masses, especially those outside of Hamilton, may have been very different from what was actually the case, as can be clearly seen from increasing mortality rates for all diseases discussed as well as increases in childhood mortality. The endeavours that the city and the B.O.H. undertook were, most certainly, steps in the right direction; they followed in the footsteps of other cities such as London. However, the growth in Hamilton during this period seemed to be too rapid for the city’s health protocols and improvements in infrastructure. London had gone through its population boom before most of their improvements were completed (Hardy 1993). It is likely that the eventual effectiveness of public health initiatives there would have been seen in Hamilton under the same circumstances.

Disease in the Early Years: Immigrant Children and their Childhood in Hamilton

Miranda E. J. Brunton

Annual income twenty pounds, annual expenditure nineteen six result happiness. Annual income twenty pounds, annual expenditure twenty pound ought and six, result misery. (Dickens 1849:87)

Promise and prosperity are words that could describe Hamilton in the early 1900's. Once a small city on the southern shore of Burlington Bay, by the early twentieth century the population had expanded and pushed the city's boundaries further along the southern shores of Burlington Bay and up the escarpment. It had the hallmarks of a successful, modern city: intense mechanization, industrialization, electrification, and urban expansion (Freeman 2001:87). This promise and prosperity were, however, built on the backs of immigrants and working class people.

Most of the literature about immigration at this time focuses on immigrant men because of the large number of males who migrated to the Americas in search of work (Gagan 1989:163-64). Less is known about immigrant children. Were there no immigrant children in Hamilton, or are they simply invisible in the literature? This chapter aims to uncover their lives. I begin by examining the value of a child in the early twentieth century. Then, using census data for early twentieth century, I examine the proportion of Hamilton's population represented by child immigrants. Immigrants were subjected to stigma, especially in terms of the perception that they were the source of disease. Scholars have noted, however, that public perceptions didn't reflect the real state of health of

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immigrant groups (Gagan 1981:3, Rogers 1989:486). Immigrant children would have been subjected to the same stigma as adults and possibly even more so due to their young age. Were these children as fragile and as sickly as they were believed to be (Barmaki 2007:267)? To examine this question, I turn to registered deaths for children in Hamilton which are used here as a proxy for their health.

Child Labour in the Early Twentieth Century

Attitudes toward children, the economic value of a child, and the appropriateness of child labour, have changed over the past century. Child labour laws have been instituted slowly, yet the outcome for the present is a dramatically different ideal of childhood than existed in the early 1900's. Child labour was common in the early twentieth century, although not all children were required to earn a living. The children of middle and upper class families probably did not work and enjoyed lives of relative luxury, while children of working class families lived in poverty and were expected to work (Barmaki 2007: 264). The key industries of the period were not only built on the backs of immigrants but on the backs of child labourers (Cunningham 2000:411, Zelizer 1985:5).

The mechanizing world of industrialization had no need for craft skills, just people to work machines; child labour was ideal in this setting (Barmaki 2007: 267). A child therefore was an economic asset to a family; a new baby was a future labour. By the late 1800's approximately one out of every eight children was working (Zelizer 1985:5). Children were the least powerful and most easily exploited members of the labour force; their wages were low and the working conditions were harsh (Barmaki 2007:266). Children entered the workforce as early as five years of age in both urban and rural settings and their tasks often consisted of strenuous manual labour (Barmaki 2007:266, Zelizer 1985:5).

All that Glitters is Just Coal: Immigrant life in Hamilton

Given the booming economy and industrial growth of the early twentieth century, Hamilton and Hamiltonians alike should have been overjoyed by the influx of immigrant workers to help the city grow and prosper. In fact, immigrants were greeted with the opposite reaction. They were stigmatized and carried images of 'dirt and disease.' The jobs given to immigrant men were the hottest, direst, most strenuous, physically demanding, and lowest paid jobs (Freeman 2001:88). If

working conditions for immigrants were not bad enough, often their living condition were worse.

Immigrants comprised the majority of the population in the slums in Hamilton in the early 1900s, particularly in the eastern industrial end (Gagan 1989:165). Men, women and children could be found piled into one-room shanties with awful living conditions. Rooms were small and unhygienic, roughly constructed, supporting too many people and were by no means conducive to 'healthy living' (Freeman 2001:89, Gagan 1989). Freeman describes an overcrowded, seven-room house that held twenty-seven members of a family, plus extra boarders (2001:89). Boarding, whether for economic or social reasons, was a common practice in Canada at this time (Baskerville 2001:323). In 1901 it is estimated that approximately one out of every ten people over the age of fourteen was a boarder in urban Canada (Baskerville 2001:324).

Immigrants also suffered from social stigma (Rogers 1989:486, Zelizer 1985:71, Freeman 2001:88, Bial 2002:9). They encountered hostility upon arrival; they were considered to lack decency or civilization; they had to cope with upturned noses and whispers behind their backs in languages they often did not understand (Bial 2002:9, Zelizer 1985:71). Surprisingly, immigrants were treated with animosity by churches. In particular, the Methodists believed that "Europeans were an immoral and ignorant lot who where imprisoned in decadence by avaricious medieval churches" (Zelizer 1985: 267). Methodists also had a long list of grievances about immigrants and raved about their negative effects on Canadian society (Zelizer 1985: 267).

Diseases, such as tuberculosis, polio and typhoid fever, were often attributed to immigrants. At the time, these diseases were considered to be 'filth diseases' and reflections on the quality of living conditions (Gagan 1981:31,39, Rodgers 1989:488). This only served to fuel the social stigma surrounding immigrants (Rodgers 1989:488). Naomi Rodgers notes with respect to the 1916 polio epidemic in New York City that attitudes were beginning to change. "During the first two decades of the twentieth century, as poliomyelitis epidemics began to appear with increasing severity, confused and frightened men and women also blamed the epidemic on, among other things, foul sewage odors, mouldy flour, infected milk bottles, Swedish gooseberries, and rubber diapers (1989: 486)."

Immigrant Children

Immigrant children were doubly stigmatized, first as children, then as immigrants. As such, immigrant children faced challenging lives. Over and above the large influx of male European immigrants searching work, there were thousands of unaccompanied children, male and female, shipped from the slums of Britain to American shores (Sutherland 1976:5). Between 1869 and 1919, approximately 73,000 children were sent, unaccompanied by their parents or guardians, to American shores (Sutherland 1976:4). If the children were too young to work, generally those under the age of seven, they were adopted out to families (see Berlinger, this volume). Children of working age, generally over the age of seven, worked in both rural and urban settings (Barmaki 2007:267). As was the case for most working class children, these children were viewed in an asset to employers because they provided cheap labour (Barmaki 2007:267). They were simply products of an “immigration business” (Sutherland 1976:5) and often were treated badly by their adoptive families and places of work (Barmaki 2007:267).

In addition to the negative stigma surrounding immigrants, some feared that Canada had become, in Barmaki’s words, “a dumping place not only for Britain’s poor but also sick and deranged” (2007:267). Immigrant children were believed to be frail, destined for insanity and crime, and to pass on inherited diseases to their offspring, slowly deteriorating the quality of the Canadian population (Barmaki 2007:267). In contrast, Sutherland states that children brought overseas were in excellent physical condition (1976:34). In Hamilton, it would appear that even though there were few immigrant children (see Figure 4.1), they were reasonably healthy because they are not a prominent feature among registered deaths for the city. However, this relative absence may reflect the fact that their deaths were under recorded; they may have been as invisible in death as they were in life (Zelizer 1985:46). Which image is correct? To explore this question we must first understand population dynamics in Hamilton population at this time.

Prosperity and Population

As can be seen in Table 4.1, Hamilton experienced a large population increase between 1890 and 1914, doubling in size (Freeman 2001:87). Prior to the industrial revolution, Hamilton’s industry depended on skilled craftsmen (Freeman 2001:87). In the later years of the 1800’s, production was simplified, sped up, and

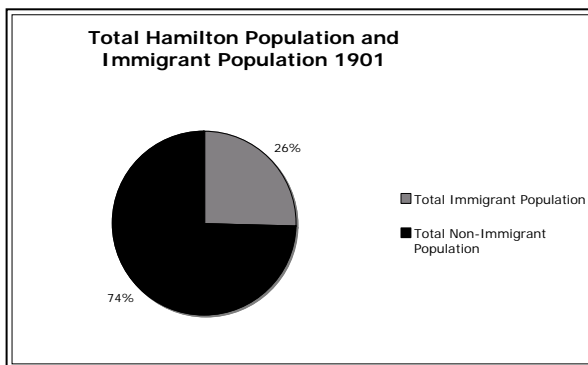
no longer required the talents of skilled craftsmen; semi skilled and unskilled workers began to replace them as the process of industrialization gained ground (Barmaki 2007: 267, Freeman 2001:87). With increased production, workers were needed to fill factories in Hamilton; these positions were easily filled with the steady flow of immigrant workers who flocked into the city in search of steady employment and opportunity (Freeman 2001:87-88, Gagan 1989:164).

By 1901, immigrants comprised over one-quarter of Hamilton's population, coming from Germany, Ireland, Italy, Britain and other European countries (Government of Canada 1901, Bial 2002:9, Gagan 1989:164). During 1911 and 1913, the period of strongest growth in Hamilton, approximately 1500 immigrants came to the prospering city (Gagan 1989:164). Most were men looking for a steady job in hopes of earning enough money to eventually bring over their families (Freeman 2001:89)

Year	Population of Hamilton	Source
1890	44,653	Freeman 2001:87
1910	52,634	Government of Canada Census 1901
1911	77,072	Government of Canada Census 1911
1914	101,314	Engineering Reports 1914

Table 4.1: Population of Hamilton, 1890 to 1914

Imagine, all the people...



As can be seen in Figure 4.1, in 1901 the immigrant population in Hamilton accounted for a fairly significant proportion of the population (Government of Canada 1901). Most were adults; as Figure 4.2 shows, 90% of the immigrant population consisted of individuals aged twenty and over (Government of Canada 1901). The child

Figure 4.1: The Proportion of Immigrants in Hamilton, 1901 (Government of Canada 1901)

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immigrant population, represented by the ‘Total Immigrant population under 10 years of age’ and ‘Total Immigrant Population between 10-19 years of age’, was therefore quite small, accounting for approximately ten percent of the total.

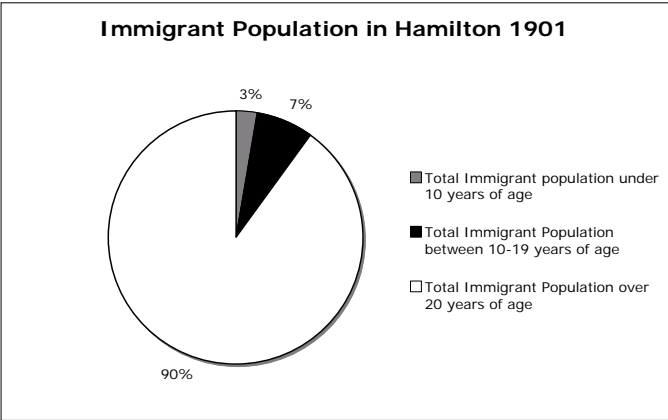


Figure 4.2: Proportions of Immigrants in Hamilton According to Age Categories in the 1901 Census (Government of Canada 1901).

Mortality and Disease

Building upon the census data, cause of mortality among immigrant children need to be situated and evaluated relative to childhood mortality in Hamilton. The total number of children’s deaths was broken down into two categories: infant, birth to one, and children between the ages of one and fourteen (non-infants). As can be seen in Table 4.3, slightly less than three quarters of childhood deaths occurred among children under the age of one. Infant deaths, therefore, accounted for the majority of childhood deaths. If a child survived its first birthday, the chances of survival began to improve significantly, leading to a much smaller percent of child deaths between the age of one and fourteen (Gagan 1989:170).

Age of Children	1901	1911
Infant	70%	71%
Non-Infant	30%	29%
Total	211	328

Based on an evaluation of all the recorded child deaths in the death records for Hamilton in 1901 (Government of Ontario 1901) a total of 211 deaths and approximately 56 different causes of death were listed for children. In 1911, 328 child deaths were recorded, along with approximately 83 different causes of death. The ten most frequently occurring causes of death in 1901 and 1911, respectively, are listed in Table 4.3.

1901		1911	
Disease	% of Death	Disease	% of Death
Premature Birth	11%	Premature Birth	12%
Diphtheria	9%	Malnutrition	6%
Marasmus	7%	Pneumonia	6%
Pneumonia	6%	Broncho pneumonia	5%
Broncho pneumonia	5%	Marasmus	5%
Convulsions	5%	Inanition	4%
Bronchitis	4%	Diarrhea	4%
Meningitis	4%	Indigestion	4%
Tuberculosis	3%	Cholera infantum	3%
Debility	3%		3%
Total	211	Total	328

Table 4.3: The Ten Most Frequently Reported Primary Causes of Death in Children, 1901 and 1911.

For both years, ‘premature birth’ was the most frequently occurring cause of death. Diphtheria, one of the major scourges of childhood in the early 1900s, ranked second in 1901 and tenth in 1911. It often occurred in cycling epidemics, particularly in developing industrial regions. Cramped, unsanitary living conditions helped in the transmission of this disease, which spread through droplet secretions from the nose or mouth (Freeman 1932:271, Galazka *et al* 1995:95). Pneumonia, broncho pneumonia, meningitis and tuberculosis spread and flourish particularly well among children and in the same unhygienic conditions (Sulkin 1941:25, Write and Write 1945:15, Chiocca 1995:25). Diarrhea and Cholera infantum are both gastro intestinal diseases that strongly effect children (see Monachino, this volume). Conditions such as marasmus, malnutrition,

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convulsions, inanition, debility and indigestions are all caused by or associated with starvation, malnutrition, under nourishment or vitamin deficiencies. In addition, they often reflect poor socioeconomic situations (Sheehy 1932:81, Jay 1958:1552, Bender 2008:http). It is evident that there is much overlap in the causes of death for Hamilton children in 1901 and 1911, but conditions associated with poor nutrition and substandard living situations are more prominent in 1911.

No deaths were ascribed to immigrant children in 1901 and only eighteen were noted in the death records for 1911. Of these eighteen, twelve of the deceased children were born in England. Both male and female children are represented in this sample. The children's dates of death do not concentrate in any particular season, but range over seven months. Their ages range from a few months old to ten years of age, but the majority was over the age of one. This suggests that infant deaths among immigrants may have been under-recorded. Most of the primary causes of death fall within the ten most frequent causes for children in 1911 (Table 4.3). This suggests that both immigrant and locally born children were affected by a similar suite of diseases.

The Hamilton Effect

It is truly hard to appreciate what life would have been like for a child in the early 1900s, considering that the lives of children in early twenty first century Ontario differed from those of children today. Strict government rules, regulations and labour laws, and contemporary social conceptions of children and childhood have had a substantial effect. Children's employment is now subject to and limited by compulsory school attendance and many other labour laws. Children have been transformed from economic assets of the family to, one might say, economic drains on their parents. Ideas about children now focus on love, family, education and safety (Labour Law Analysis 2006, Cunningham 2000:426, Zelizer 1985:41).

Although Hamilton was experiencing a period of prosperity during the early twentieth century, many were unable to reap the rewards of industrialization. Life was hard for working class children, immigrants and immigrant children alike. However, regardless of the social stigma, harsh work, poor living conditions and general low socioeconomic status of immigrant children, their primary causes of death fall within the same categories as locally born children. Whether this is the result of under recording and or lack of attention, immigrant children remain a silent but critical component in much of the history of Hamilton's growth and

prosperity. It is evident that part of the picture that has survived of immigrant children is not simply one of ill-health, but one of fear and stigma

5

Of Asylums and Homes: A Look at Orphans in Hamilton, 1900 to 1917

Angela Weir Berlingeri

It is, or it is no, according to the nature of men, an advantage to be orphaned at an early age. (De Quincey, cited in Simpson 1978)

The nineteenth century had witnessed a revolution in ideas about the role of children in North America. The childhood period, associated with innocence, extended past the age of five or six into the teen years, and the ability and willingness of children to learn was finally recognized (Holt 1992:11-17). Yet it was difficult to reconcile such ideas with the hardships faced by orphans and other destitute children in Hamilton and elsewhere in the early 20th century. These children inhabited a very strange place in society. On the one hand, they did not conform to the societal norm and therefore were often pushed aside and ignored; on the other hand, because they were so young and malleable, much attention was paid to them because of the belief that interventions by adults could save them from a future of destitution. To achieve this goal, institutions that cared for orphaned and destitute children in Hamilton taught religious values and strove to inculcate the values of industry and tenacity and a belief that through hard work they could prosper, rise through the societal ranks and make a name for themselves. Towards this end orphans and other destitute children were often adopted or rather apprenticed out to farms in rural areas. This strategy ensured two outcomes. First, the children were removed from all the moral traps associated with sinful city life. Second, the move placed the children with a family that had need of their labour and teach them the values and traits they

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would need to prosper as adults. This created an exceedingly unusual place for orphans in Hamilton society: they were simultaneously invisible and the focus of much attention.

This chapter considers the situation of orphaned children in Hamilton in the early twentieth century. The term orphan is used to refer to any child who was taken in and housed in a group living environment. Under this definition there are cases where children who had lost one parent were considered destitute and were been taken into orphanages. In such cases the living parent, whenever possible, was expected to help provide for the child or children in question. In a few cases a child with two living parents entered an asylum (Hamilton Herald September 22 1903). The term orphanage is used here to refer to asylums, homes and orphanages.

US by Rail, England by Boat

The nineteenth and twentieth century saw many children uprooted from their homes and sent long distances to start new lives. In the United States, approximately 150, 000 children were moved from New York to the West between 1854 and 1930. The trip was accomplished by train and the phenomenon was eventually called The Orphan Train. (Cook 1995). During the same period thousands of children from England were brought to Canada and The United States (US) by individuals and groups, such as Annie McPherson and Dr. Barnardo. The children who undertook the sea voyage to North America became known as Home Children (Kholi 2003).

In both instances urbanized areas were faced with overcrowding in general and with the presence of large numbers of orphans or otherwise destitute children. Such children faced a bleak future. Gail H. Corbett eloquently states:

A fraternity of underworld children evolved: illiterate, furtive and desperate. Homeless children, scavenging for sustenance, sleuthed by day and shivered by night. Like Fagan's boys they formed their own underground. Thousands of "no-bodies children" trembled in the black, back alley ways of the world's wealthiest nation. (Corbett 1997: 13)

In order to rid urbanized areas of this problem and to give the children a better future, they were removed to rural areas where they could be either placed-out (in the case of the Orphan Trainers) or apprenticed out (in the case of Home children).

The two schemes have several common themes that tie them together. They both captured the odd social position of orphaned children as invisible yet subject to much attention by the larger community. They were also predicated on the idea that children were sufficiently malleable that once removed from the negative environment, the poverty and despair, they could rise above their beginnings and become valuable, respected, and prosperous citizens. It was believed that a healthy environment, strict instruction and work were required to achieve this.

History of Hamilton Home

Over the years many orphanages operated in Hamilton; there were five between 1900 and 1917: the Boys' Home, the Hamilton Orphan's Asylum and Aged Women's Home, St. Mary's Orphans Asylum, the Girls' Industrial School Association, and the Home for the Friendless and Infant Home.

The Boys' Home originally opened in 1870 on Locomotive Street. In a December 24 1909 Newspaper article the Hamilton Herald reported that in its first year it housed forty-five boys (Hamilton Herald December 24 1909). Seven years later a second, larger house on Stinson Street was built. The home was praised by the Hamilton Herald in 1909 with remarks such as: "lads who received their early training in this institution have become men of standing in the business world" (Hamilton Herald December 24 1909).

The Hamilton Orphan's Asylum (HOA) and Aged Women's Home were initially conceived of in May of 1846 as a joint venture by women of several religious organizations. The Hamilton Ladies' Benevolent Society was thus created "to minister to the wants of the sick and destitute in [Hamilton]" (Hamilton Herald October 19 1901). In December 1846 at the Society's first annual meeting it was decided that it was necessary for them to provide a school. In 1841 the School opened on John Street. By 1850 the society built a larger orphanage that opened on June 27 1853. As other institutions began to care for most of Hamilton's orphans, in 1877 it was decided to convert parts of the house to accommodate aged women.

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St. Mary's Orphan Asylum was run by the Sisters of St. Joseph and opened its doors on April 30th 1848. In 1857 Bishop Farrell had the honour of laying the corner stone of the Sister of St. Joseph's new Asylum. By 1901, 4700 children had passed through the home. In the previous year 18 girls and 80 boys were cared for (Times February 16 1901).

The asylum was run mainly on public donations and in 1853 the Sisters held their first Orphan Festival, an annual fundraising concert put on by and benefiting St. Mary's Asylum. It ran for over fifty years. The event was called a festival because "in the early years the day in which the annual affair was held was one of rejoicing and merriment, winding up with a big supper for the orphans and a ball for the patrons" (Times February 16 1901). It usually took the form of a concert, featuring singers and the orphans themselves, and occasionally included skits, other acts, and speeches. For the eighty-fourth festival held on February 8th and 9th 1937, Mayor William Morrison and Reverend J. T. McNally D.D. are listed as speakers in the play bill. In earlier festivals it was customary to wind up the festivities with a dance (Hamilton Herald June 22 1903).

The Girl's Industrial School Association was opened in 1863; the name was later changed to The Girls Home. It was dedicated to providing destitute children a place where they could be cared for and trained. For a few years the house also accepted boys, but in 1866 this practice was disallowed and the Boys Home was created soon afterwards. In 1874 a larger house was opened.

There are few surviving records for the Home of the Friendless and Infant Home (HFIH). For the most part the children housed here seem to have come to the home in the company of their parents, although a few were abandoned. According to a 1903 Hamilton Herald article the home took in 80 children in 1900, an additional 76 in 1901 and none in 1902 (Hamilton Herald September 22 1903). Most of the children at The HFIH either remained with their parents or were too young to be accepted into the other orphanages.

Orphan Invisibility

The invisibility of orphans in Hamilton at the turn of the twentieth century is due, in part, to a lack of data and research on the issue. An intensive archive, library and internet search turned up only about a dozen articles and sources pertaining to orphans. All of the primary sources date from the 1900s and almost all of the newspaper articles were written by the same journalist, who wrote under the

pseudonym, Jaques. This does not mean others don't exist, but simply that these are the only ones that are currently accessible.

The few articles recovered use language that paints a picture of invisibility. In an article on St. Mary's, Jaques states, "the orphans were not dressed in a uniform style. Meeting one on the street, a stranger could not point to the boy or girl as one from any institution" (Hamilton Herald June 22 1903). There is more than one reason why Jaques would have made this comment; it is possible that he considered this invisibility, this ability to blend into the general public, as a benefit to the orphan. If they could not be identified as orphans then the stigma associated with that status could be avoided. He goes on to mention that after the second grade, orphans attended public schools along with other children. However, the following quote is telling:

Try to remember the orphans when putting on a new suit. Send your old one to the asylum on park street. Deft hands and busy fingers will cut and rip, rip and cut take in here, let out there – The old clothes will turn into a new suit! The Johnnies and Tommies, the Willies and Billies, the Matts, and Pats will be delighted at Christmas or soon afterwards.

If the reader is a lady – young or old – she too should think of the little girls wanting something new and neat. A discarded dress, old fashioned waists, or any wearing apparel of no use to the owner will be acceptable. The Lillies and the Daisies, the Marys and Marthas, the Janes and the Kates will rejoice and thank Santa Claus, for the articles sent in and rejuvenated by the energetic needle sisters. (Jaques Hamilton Herald June 22 1903).

The author seems to have assumed readers would think of orphans only as an afterthought, if at all.

An article about the 1901 Orphans festival echoes this theme of invisibility, "The annual festival is an important method of raising funds, for it always gives patrons full value for their money, besides an opportunity of seeing the orphans once a year, and of hearing of and from them" (Times February 16 1901). Here it is clear the author expects the average Hamiltonian to think about and see the orphans once a year. Many articles include a plea for donations, and in all cases a

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large section is devoted to discussing the history of the institutions, presumably to educate the public.

Given these examples of invisibility, how do we know that orphans were the subject of attention? In 1909 it was reported that the City of Hamilton gave a 2 cent per head per day grant to St. Mary's⁷ (Hamilton Herald June 22 1909). Hamilton City Council had set aside a portion of the town budget to be redistributed to charitable institutes. According to the City Council Minutes the orphanages fell into two classes: class A and class D. The Council Minutes describe class A as: "Boys' Home, Hamilton Orphan Asylum, St. Mary's Orphan Asylum and Girls Home. This class is paid at a rate of two cents per head per day for inmates" and class D as "Home of the Friendless and Infants home. 6.5 cents per head per day for children and adults." (Hamilton City Council Minutes 1900). Records were kept of how much money was spent at which institution and the average number of inmates at each institution.⁸ Figure 5.1 shows the average number of inmates for each institution, as recorded in the Council Minutes⁹.

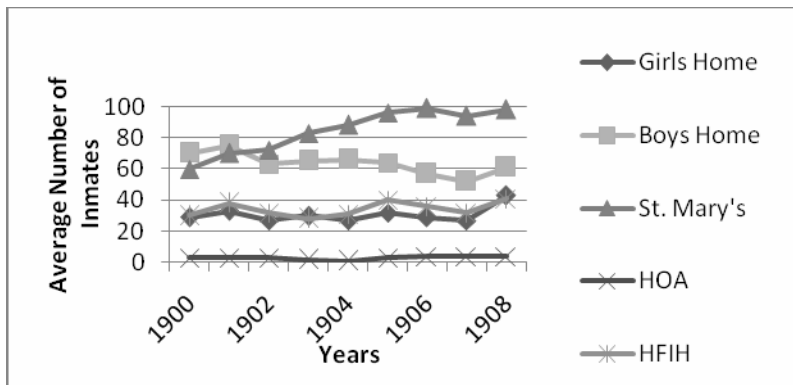


Figure 5.1: Grants from Hamilton City Council 1900-1908 (Hamilton City Council 1900-1908)

⁷ The article also mentioned that the orphanage received a two and a half cent per head per day grant for the "government" but it does not state which branch of the government. ¹The article went on to mention that the average cost per head per day was twenty cents (Hamilton Herald June 22 1909).

⁸ In the Hamilton City Council Minutes between 1900 and 1908 the Financial Report records how much grant money was given to each individual institution and the average number of inmates in each. After 1908 the money is reported as a lump sum donated to charities.

⁹ The Minutes do not indicate the age of inmates in the HFIH.

From this we can see that orphans and their needs were visible, at least to the City Council. However the grants and donations received by orphanages was not the end of the attention orphans received, at least not from their guardians. As can be seen by the history of the orphanages their purpose was not just to house orphans but to ensure their growth into respectful, successful citizens.

Moulding a Citizen

The old adage that things hiding in plain sight are the hardest to find holds true for orphans. The available evidence suggests that the purpose of Hamilton's orphanages was to turn the children into well rounded adults and respectable citizens, indistinguishable from any other member of Hamilton society. Work training was an important part of this project.

An October 24 1903 article notes "The lads [are] still kept busy hemming handkerchiefs, knitting mitts and stockings, and paper making match boxes; in the winter the elder boys were employed by citizens in clearing away snow." According to a December 24 1909 article the Boy's Home also taught their young charges to cut carpet rags (Hamilton Herald December 24 1909). None of the articles or other sources of data indicate that the children were forced to work unreasonable jobs or hours. The Girls of St. Mary's Orphanage are "taught to be domesticated – taught to sew, to wash, to iron, to cook. Several have been sent to training school for nurses" (Hamilton Herald June 22 1903). The same article notes that the first two girls admitted to St. Mary's later became members of the Order of the Good Shepherd. These three excerpts illustrate the work ethic instilled in Hamilton's orphans. Holt stresses the importance placed upon ideals, such as the work ethic, for moulding proper citizens "Labor is elevating and idleness sinful" (Holt 1992: 44). It was believed that work would, in and of itself, help raise respected adults. In addition, the emphasis on work opened up new possibilities for the orphans. In *The Orphan Train* Holt discusses at length how orphans were almost always hired on as labourers in Western states, something also observed in the Home children program (Bagnell 2001).

In the endeavour to turn orphans into productive and respected adults it was not enough to house and care for them. As long as the orphans remained in destitute surroundings there was a chance that they could turn their backs on the teaching they were receiving and slide into a life of sin. The preferred solution was to put the orphans in better environments because of the belief that "children

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could be productive citizens if removed from their environments” (Holt 1992:26). This is one of the key concepts that provided the rationale for removing children from destitute urban conditions and placing them in rural households. According to one article, St. Mary’s “endeavour[ed], where possible, to place the inmates in rural districts” (Hamilton Herald June 22 1903). Orphans in Hamilton, like their Orphan Train and Home Children counterparts, would have been moved out of the city into the country in hopes of offering them the chance at a better life.

Myths about Orphans

Thousands of children rode The Orphan Train, called themselves Home Children or lived as orphans in Hamilton. Few of their stories have been recorded. Ironically, the three programs are considered to have been successful, even though the stories the children themselves alternate between agreeing and disagreeing with this assessment (Corbett: 1997; Bagnell 2001; Holt 1992).

Similarly the success or failure of orphanages in Hamilton likely depends upon the perspective in which they are being viewed. All of the newspaper articles recovered for this chapter sing the praises of the orphanages. A 1903 newspaper article reads “[i]nstances could be given where lads, who received their early training in [The Boys’ Home] have become men of standing in the business world filling responsible positions in many commercial and other houses” (Hamilton Herald December 24 1903). The Hamilton Herald praised The Girls Home by saying “many a child who would have been neglected has been reclaimed and sent forth to the world a young woman worthy respect and a good moral character” (Hamilton Herald August 29 1903). The same article ends by reminding young mechanics and farmers that the young women who graduate from the Girls’ Home make very good wives. These articles seem to have served the purpose of singing the praises of the institutions and Hamiltonians who supported them and to solicit even more donations.

In the end Hamilton orphans at the turn of the twentieth century, may not have had to travel as far as their Orphan Train or Home Children counterparts, but they did face many of the same challenges, finding themselves paradoxically both invisible and the subject of much attention.

6

Houseflies and Hygiene in Hamilton Homes: The Spread of Typhoid Fever in Children

Samantha Parker

Nothing can so effectually destroy a city's future as the proportionate increase of homes that are unsanitary, damp, dark, unventilated, unclean, unattractive and immoral. (Roberts 1912-1913:19)

In any given environment, human activities do not occur in isolation from social and cultural dynamics. In fact, the social and cultural interactions within a society help frame the characteristic life processes we undergo as a species (Whitaker 2006:133). This idea holds true, even at the household level. This chapter suggests the unsanitary household conditions in Hamilton in the early 20th century contributed to the spread of infectious disease. These conditions are explored in this chapter using a biocultural approach. This approach suggests that sociocultural and political economic processes impact human biologies and in turn, human biologies influence social and cultural relations (Goodman and Leatherman 1998:5).

This chapter introduces the political, economic, social, cultural, and ecological processes responsible for the unsanitary housing conditions found in Hamilton from 1900-1917. More specifically, it illustrates the enormous impact these conditions had on the spread of typhoid fever among children. Emphasis is placed on the ecological factors related to the spread of typhoid fever, including seasonality and the vectors of transmission. Furthermore, political economic issues related to proper garbage removal, sewage systems and housing conditions are explored. Specific social and cultural interactions that aid in the spread of

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typhoid fever among children become evident through this exploration of the environment in which the people of Hamilton lived in the early twentieth century.

The Transmission of Typhoid Fever

Typhoid fever is an acute infectious disease caused by the typhoid bacillus known as *Salmonella typhosa*. The typhoid bacilli cause an intestinal infection that becomes localized in the lymphatic tissue and spreads to the blood stream. “Complications such as pneumonia or perforation of the intestine occur in 10 to 30 percent of the cases, and, as a result, the cause of death in these cases may be falsely attributed to the secondary infection” (Gagan 1981:40). Typhoid fever spreads through milk, water and food supplies that have been contaminated by the feces of typhoid victims or less frequently, through contact with healthy persons who carry the typhoid bacillus but are unaffected by its negative infectious properties (Gagan 1981:40).

Typhoid fever spreads to new hosts through direct or indirect transmission. Direct transmission occurs through the soiling of the hands of a new victim (Anderson and Arnstein 1948:150). In 1912 Dr. Roberts, Hamilton’s Medical Officer of Health, suggested that “the transference of the virus from the patient or his surroundings to fingers and from fingers to mouth of those in a state of susceptibility, is an easy and common mode of infection, and should never be forgotten” (Roberts 1912-13:15). Because children often suck their fingers and various other objects, direct transmission is nearly impossible to avoid if the typhoid bacillus is present. Furthermore, housing conditions in Hamilton from 1900 to 1917 left few sanitary mediums in which children could play. In one public health report Dr. Roberts stated, “In practically all overcrowded premises sanitary conditions were bad; the bedding dirty, floors and walls neglected and lavatories unclean and foul smelling” (Roberts 1911-12:22).

Although there is no doubt that these conditions helped spread typhoid fever in children, indirect transmission was likely the most common mode of spread in Hamilton homes. Indirect transmission of typhoid fever occurs through drinking or eating contaminated milk, water and food supplies (Gagan 1981:40). These supplies are often contaminated by houseflies that carry the typhoid bacteria on their feet spreading the bacilli from sewage to various other mediums throughout the home (Anderson and Arnstein 1948:152). The methods of direct and indirect transmission illustrate a number of complex ecological processes involving

interactions between houseflies, children and homes that are responsible for the spread of typhoid fever.

The Vector That Came and Never Left

Typhoid fever was most definitely an endemic disease in Hamilton from 1900 to 1917. The disease attacked people of all ages and never ceased to take at least a few lives each year. Table 6.1 shows the number of deaths from typhoid fever reported each year. The highest death rate from the disease during the study period occurred in 1905-1906 when 20 deaths were reported (Annual Board of Health Report: City of Hamilton 1917:n.pag.).

Years	n of Deaths	Years	n of Deaths
1900-1901	10	1909-1910	12
1901-1902	7	1910-1911	9
1902-1903	6	1911-1912	8
1903-1904	7	1912-1913	10
1904-1905	8	1913-1914	9
1905-1906	20	1914-1915	7
1906-1907	11	1915-1916	3
1907-1908	10	1916-1917	4
1908-1909	6		

Table 6.1: Reported Deaths from Typhoid Fever in Hamilton, 1900-1917 (Annual Board of Health Report: City of Hamilton 1917:n.pag.).

It is important to note that the data presented in Table 6.1 only includes reported deaths from typhoid fever and that these deaths are likely underreported (Gagan 1981:143). In 1910, approximately 50 percent of all reported deaths in Hamilton occurred before the age of 16 (Gagan 1981:130). Furthermore, 6.3 percent of the total deaths in 1910 among children 5 to 14 years old were attributed to typhoid fever (Gagan 1981:95). Similarly, the mortality rate from typhoid fever in 1900 was 5.9 percent in this age group (Gagan 1981:95). However, it has been suggested that these calculations are inaccurate due to low population estimates (Gagan 1981:123). Table 6.2 illustrates the percentage of deaths from typhoid

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fever among individuals under the age of 30 for Hamilton in 1900, 1905, 1910 and 1914.

Age Group	% of total deaths 1900	% of total deaths 1905	% of total deaths 1910	% of total deaths 1914
< 12 months	-	-	0.8	-
1-4 yrs	-	-	-	1.7
5-14 yrs	5.9	-	-	6.3
15-29 yrs	7.6	6.7	7.7	2.3

Table 6.2: Mortality from Typhoid Fever by Age: 1900, 1905, 1910 and 1914 (Annual Board of Health Report: City of Hamilton 1917:93-96).

Typhoid fever was always relatively dormant during the winter and began attacking the people of Hamilton during the mid summer months. This seasonal pattern is typical of most areas struck by typhoid fever during this time period (Anderson and Arnstein 1948:147). The disease spread rapidly in August and continued to flourish through October and sometimes November. Figure 6.1 shows a clear seasonal pattern in the spread of typhoid fever in Hamilton from 1900-1917. A more detailed explanation of seasonal patterns related to the spread of infectious disease can be found in chapter 9.

Although seasonality describes only one of the ecological processes at work in the spread of typhoid fever in Hamilton, it is one of the most important. When considering this pattern, it is reasonable for someone today to suggest that the hot summer and unsanitary living conditions together allowed the bacteria responsible for typhoid fever to flourish. However, germs and bacteria were relatively new ideas in the early 1900's and sanitation problems created by overcrowding, food handling and accumulated waste were not always addressed (Tomes 1998:4).

In the early 1900's the people of Hamilton were just becoming aware of the mediums through which typhoid fever can spread. In 1906 Dr. Roberts reported, "The role played by the common housefly in the spread of typhoid fever is now generally believed by prominent sanitorians to be a very important one that will undoubtedly be more taken into account in the future" (Roberts 1906-07:22). This discovery led to new sanitary measures enforced by city officials to help prevent typhoid fever and these measures are discussed in chapter 4. Despite the

best efforts of city officials to help promote and clean up poor housing conditions, sanitary matters worsened due to the population boom described in more detail in chapter 3 (Roberts 1911-12:22). The population boom gave typhoid fever the ability to maintain itself in Hamilton (Roberts 1911-12:22). However, Figure 6.1 shows that the percentages of typhoid fever cases reported did not increase during the population boom. This suggests that the sanitary measures implemented by the city to help combat infectious diseases like typhoid fever helped. The role the housefly played in the transmission of typhoid fever, especially during the summer months is an important ecological process to take into consideration when exploring the sanitary conditions of the home and the spread of typhoid fever in children. Furthermore, the cities action plans to help combat typhoid fever reveal the political economic forces at work in Hamilton in the early twentieth century.

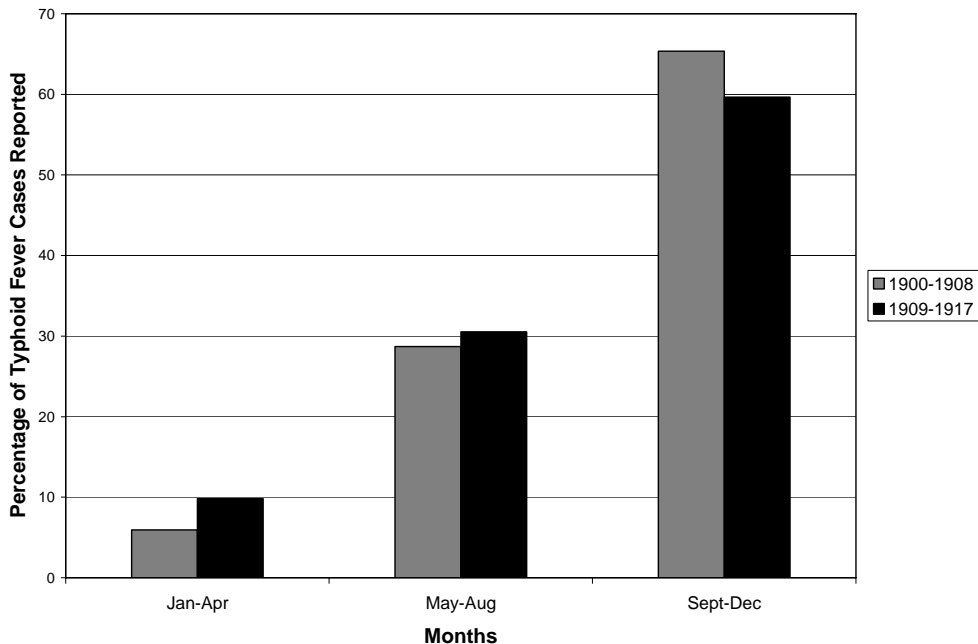


Figure 6.1: Percentages of Reported Cases of Typhoid Fever in Hamilton, 1900-1917
(Annual Report of the Board of Health: City of Hamilton 1916-17:n.pag.)

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Guests, Pests and Overcrowding

In many ways, housing conditions in Hamilton from 1900 to 1917 can be compared to crowded army camps from the early twentieth century. In 1898-99 during the Spanish-American War and the Anglo-Boer War, typhoid fever “killed more soldiers than enemy bullets” (Cirillo 2006:52). This was due to the overwhelming amount of flies attracted to the unsanitary living conditions that included improper disposal of animal and human wastes as well as kitchen filth (Cirillo 2006:56). These conditions nearly parallel those reported in the annual board of health reports for Hamilton in 1912-13. A home inspector from the city of Hamilton reported detestable unsanitary conditions in Hamilton basements:

Here are sometimes found water, sewerage and filth of every description. In some instances the cellar is used for the keeping of domestic animals, cows, pigs, rabbits, dogs, etc, but most objectionable of all is turned into sleeping apartments for day and night relays of labourers [Annual Board of Health Report: City of Hamilton 1912-13:25].

As Hamilton’s population continued to grow, the sanitary conditions within homes worsened, putting every occupant at greater risk of acquiring infectious diseases like typhoid fever. The influx of people into the city resulted in an increase in garbage, manure and flies (Roberts 1912-13:26). Some of the worst cases drew media attention. During one of the city inspections a doctor found a large house that had 12 families living in it. Each family had one room for cooking, sleeping and eating (The Hamilton Spectator May 16, 1914).

The people of Hamilton were desperate for shelter in the early 1900’s and would live anywhere, prompting Dr. Roberts to comment, “every available four walls that under ordinary conditions of city growth would never be accused of being part of a home is eagerly seized upon and occupied, no matter how outrageous the rental” (Roberts 1911-12:20). These overcrowded conditions were obvious as early as 1905 when it was noted, “there still is a dearth of houses in the city and many families are living in shacks, attics and doubling up with other families in places almost too small for the comfortable accommodation of one household” (The Hamilton Spectator September 19, 1905:10). In some cases, single attic rooms were rented out to 9 different families (Roberts 1911-12:21):

In one of these within a couple of blocks of the City Hall, a man, his wife and four children lived. The entire space allotted for cooking, eating and sleeping was a room 14X14 with one small window less than 2X4. It is entirely superfluous, almost an insult to common intelligence, to remark that the unhygienic environment was reflected in the countenances of the children [Roberts 1911-12:21].

The results of overcrowding of this kind are predictable. Massive amounts of garbage from human activities accumulated in small spaces and kitchen refuse built up, creating cesspools that attracted house flies (Cirillo 2006:54). Transmission of typhoid fever became a likely event, especially for children who are oblivious to the bacteria in their surroundings. Certainly, the extremely crowded conditions in Hamilton created more mediums through which typhoid fever could spread. Furthermore, overcrowding changes the social and cultural dynamics experienced within a household which in turn affected the attitudes and perceptions of the people living in Hamilton.

The Sewage, The Garbage, The Foul Smell

The smell of excrement often filled the air in Hamilton homes in the early twentieth century. The sewage system in the city was incomplete and a number of homes had nowhere to put fecal waste (Roberts 1904-05:15). Newspaper accounts drew attention to the problem:

The houses are a disgrace to the twentieth century civilization, if indeed they can be called houses: rather should they be denominated as hovels. They are not connected with sewers, and from the outbuildings there arises a stench that breeds fever and all manner of diseases. [The Hamilton Spectator July 8 1904:4]

Additionally, animal waste was not properly disposed of especially during the summer months, “when fly-breeding season constitutes a menace to health” (Roberts 1912-13:26). One of Hamilton’s inspectors reported:

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A great deal of difficulty has been encountered with those who persist in leaving manure piles exposed, thus affording an excellent nidus for the propagation of the fly nuisance. Very often in response from the department a properly constructed receptacle for manure has been provided, but the cover is constantly neglected, rendering the efforts of the inspector of no avail [Annual Board of Health Report: City of Hamilton 1912-13:26].

Certainly, the rapid increase of typhoid fever during the summer months was in part due to the piles of manure left on the road from the horses that were used as a common means of transportation in the early twentieth century. Furthermore, garbage wagons were overloaded causing various kinds of waste to spill out onto the street (Roberts 1904-05:17). This situation only created another invitation for the fly nuisance. It is clear that overcrowding led to increased human activity that resulted in the inadequate waste removal described above. Hamilton's waste removal problems illustrate the inability of the political agenda – reflecting a lack of political will – to keep up with the population boom, with the result that typhoid fever remained endemic in Hamilton in the early 1900's.

Fear of the Fly

As populations in many major cities continued to explode and advertising campaigns began to target the housefly, people began to fear the fly (Tomes 1998:135). In the late eighteen hundreds nursery rhymes in children's books treated flies as harmless creatures:

'Buzz-Buzz' was the jolly fly, full of life and gay
You could hear his merry dance at the dawn of day.
Up and down the window pane, in the soup tureen.
'Buzz-Buzz' was the dearest fly you have ever seen.
(Cloudsley-Thompson 1976:128)

However, as major cities became more aware of the dangerous vector and campaigns against them more common, notions of jolly flies slowly faded:

Oh them tormentin' tormentin' flies,
Catch 'em alive...
Oh they git in the poor baby's eye, and make 'im cry.
Catch 'em alive...
(Cloudsley-Thompson 1976:128)

Certainly, these poems provide some insight into changing attitudes to flies and infectious disease in the early twentieth century. As the people of Hamilton began to fear the housefly, housing conditions became more crowded and socioeconomic conditions worsened. "The highest mortality rates were recorded for those persons living in wards with the highest population density, the lowest property values" and the areas with a lack of sewer systems (Gagan 1981:136).

Vulnerable Children

Like a variety of other diseases, typhoid fever is more likely to affect people who are less educated and poverty stricken (Farmer 1996:259). As described in chapter 4, poverty stricken areas were common in Hamilton, especially after the early twentieth century population explosion. Germ theory advertising campaigns became the primary educational force in Hamilton and many other American cities struggling to keep up with infectious diseases (Tomes 1998:11). Unfortunately, these campaigns failed to reach every family, especially lower class or immigrant families (Tomes 1998:11). "Working-class families could ill afford even the most basic prerequisites for practicing the gospel of germs, such as flush toilets, clean running water, and a safe milk supply" (Tomes 1998:11). The ability to conform to new sanitary standards differentiated rich from poor, educated from uneducated and locals from foreigners (Tomes 1998:11). In 1906 Dr. Roberts observed:

Let me tell you that the weekly incomes of the bread winners, even when augmented by additions from an older boy or girl, are not sufficient in a large percentage of cases to stand any avoidable strain especially in these strenuous times, when working folk pay high rents for houses in poor repair, and have to depend on heavy coal bills to keep them tolerably habitable [Roberts 1905-06:10].

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This quote reflects the role children played in providing income for the family at the turn of the twentieth century. Furthermore, it illustrates the harsh socioeconomic conditions that had a significant impact on the sanitary environments in Hamilton homes.

As mentioned above, infectious diseases often circulate through poverty stricken areas (Farmer 1996:259); however, they are also more likely to affect people with weaker immune systems (McGaha and Snow 2003:57). It is a well known fact that children and infants are more susceptible to a variety of viruses and bacteria (McGaha and Snow 2003:57). Small children generally have little to no understanding of abstract concepts involved in germ theory and will therefore touch, lick or consume anything in their path without any concern for their health. Evidently, poor socioeconomic conditions in addition to weaker immune systems make children a likely target for typhoid fever.

Conclusion

It is clear that a variety of political, economic, social, cultural, and ecological processes were responsible for the spread of typhoid fever in Hamilton children from 1900 to 1917. The lack of space, income, sewage treatment and proper garbage removal associated with the population boom contributed to unhygienic household environments, as did the lack of political will to change these conditions. The relationship between human activity, the fly vector and the household environment are an excellent illustration of the interaction between biological and cultural factors (Goodman and Leatherman 1998:5) in the spread of typhoid fever among children in Hamilton.

In the Nurse's Office: Addressing Childhood Disease in Hamilton Schools

Samantha M. Craigie

...[that] the presence of contagious disease deprives the remaining children in 125-175 homes of their privilege of attendance at schools is a circumstance of some importance. (Dr. James Roberts, Annual Report of the Board of Health 1906:10-11)

Schools in the early 20th century were faced with two problems concerning childhood disease. Sick children were contributing to epidemics of disease by attending school when they were ill and spreading infections amongst themselves; newly infected children would then return home to infect their households. As well, when children were sick or kept home due to the illness of a family member, they missed important schooling time. This chapter investigates the means by which children spread disease in schools and the responses of the Hamilton Board of Education and Board of Health to these problems. These issues are explored through the ecology of disease transmission framework, which focuses on the biological, physical, social and cultural aspects of the environment that lead to exposure to infectious disease. Coreil, Whiteford and Salazar (1997) used this model to explain the role of the household in spreading dengue fever in the Dominican Republic. A version of the framework has also been used to study dengue fever in Malaysia (Harkness and Super 1994) and childhood respiratory infections in Kenya (Super, Keefer and Harkness 1994). Here the model has been adapted to focus on the school environment, rather than the household, and considers the influence of the school environment on risk behaviour, transmission

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behaviour, and risk protection behaviour with respect to infectious disease. Life at school and activities of students and parents are examined as risk and transmission behaviours, while school-sponsored vaccinations, school closures, medical inspections and the work of school nurses will be discussed as risk protection behaviours.

Schools in Hamilton in the Early 20th Century

At the turn of the 20th century, Hamilton had begun to take schooling very seriously. Aikman and Williamson (1997) chronicle the events, changes and developments in Hamilton's public education from 1847-1997 and their research forms the basis for this discussion. By the end of the 19th century, several new schools had been built, which were a vast improvement over the "mere educational shacks" that had existed throughout the 1800's (25). Central Public School, the first "proper" public school providing education for all, was opened in 1853 (27). To meet the demands of the growing number of school-aged children



Figure 7.1: Victoria Avenue School, renamed Tweedsmuir School in 1941 (Courtesy of the Educational Archives and Heritage Centre).

in Hamilton, the second half of the 19th century saw construction of several more large schools, including Murray Street School, Victoria Avenue School (Figure 7.1), Cannon Street School and Hess Street School.

Classrooms were overcrowded and dreary, due to the lack of electrical lighting. Forty-eight unmovable desks were standard in classrooms, but class sizes often exceeded 50 students and teachers could only hope for absences to reduce numbers (38). Primary schools held eight grades, after which students proceeded to secondary schools (43). The school day began with morning exercises, which consisted of prayer and singing patriotic songs, then students tackled standard subjects such as mathematics, geography, history and spelling, and other

“less stressful” subjects like art and physical education (43). Students were treated strictly by both teachers and parents, who wanted to make sure that their children received a proper education (38). Games such as spelling bees were often used to make lessons interesting, and the monotony of everyday classes was broken by visits from Professor Johnson, the music supervisor, and Sergeant-Major Higgins, who led the students in physical education exercises (38; 43). There were many other special events, such as Empire Day and the Annual School Games, for students and teachers to look forward to (39). Time was spent out of doors whenever possible. Classroom conditions and student activities provided many opportunities for risk and transmission behaviours.

Risk and Transmission Behaviour: Spreading Illness in Schools

It is important to distinguish between risk behaviours and transmission behaviours. Risk behaviours increase an individual's risk of contracting a disease, while transmission behaviours facilitate the spread of an infection from one individual to another (Coreil et al 1997:154). The classroom is one of the primary places where children contract infections (Riley et al 1978:425). Conditions in the schoolroom in the early 20th century were particularly favourable for disease transmission. Beyond the presence of sick children, these included poor ventilation, extreme temperatures, overcrowding, and general unsanitary surroundings (Wald 1905:90). Diphtheria, smallpox, measles, and tuberculosis, all common diseases of childhood in the early 20th century, are spread by airborne droplets and thrive in crowded, poorly ventilated conditions (WHO 2008). Simply being at school was an obvious risk behaviour for contracting infectious disease.

Several actions of parents and students could be considered transmission behaviours that contributed to the spread of disease in schools. Parents often neglected or were unable to obtain proper medical care for their children when they showed signs of illness (Sutherland 1976:43). Children were often sent to school when another family member was seriously ill, or returned to school too early after an absence, still infectious (Wald 1905:90). Children's behaviour, such as playing and improper hand washing, could also substantially increase the risk of infectious disease transmission (Robinson 2001:40). Wald (1905:90) recalled an incident where a child, recently returned to class after a bout of scarlet fever, picked off his scabs and passed them around to his classmates. In the face

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of such behaviour, educational boards were under pressure to come up with strategies to halt the spread of disease in the classroom.

Risk Protection: Public Health in Hamilton Schools

Risk protection behaviours are actions that decrease the possibility that an individual will be exposed to a disease-causing agent. Examples of such activities are boiling water before drinking and using bed nets to prevent mosquito bites (Coreil et al 1997:154-55). Several risk protection behaviours were undertaken in Hamilton schools at the turn of the century.

Overcrowding and poor sanitary conditions in Hamilton schools had given rise to high rates of diseases such as smallpox, diphtheria and tuberculosis. In response to these high rates, the Hamilton Board of Education, in conjunction with the Hamilton Board of Health, began to design strategies to reduce disease transmission and improve the overall health of children in schools. Strategies included vaccinations, school closures, medical inspections, and the appointment of school nurses. These initiatives were often met with apathy and opposition on the part of parents.

Vaccinations

School vaccination programs were highly controversial at the turn of the 20th century. Dr. Craigie, a well-known Hamilton medical doctor and member of the Board of Trustees for Common Schools, had advocated vaccinating children in schools since 1860, arguing that they should be mandatory (Aikman and Williamson 1997:26). However, even though Ontario schools had the power to exclude unvaccinated children, and despite evidence for the effectiveness of the smallpox vaccine (the only vaccine in existence at this time), school boards were reluctant to enforce vaccination (Sutherland 1976:41). This was certainly the case for the Hamilton Board of Education in 1900, where the general feeling was against compulsory vaccinations even though smallpox was a growing concern in the community. The Board did, however decide to circulate to parents pamphlets that advocated vaccination as a disease preventative (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1900:13).

Smallpox continued to be a concern into 1901, and the Board's debate on vaccination became more urgent. It was decided in March of 1901 that

distributing pamphlets was no longer sufficient action and that the help of parents was needed to prevent a serious outbreak (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1901:18). The following letter was sent home with children to be returned with their parent's signature:

1. Has ____ been vaccinated?
 2. If so, in what year?
 3. If not, will you have the vaccination done at once by your own physician?
 4. Or, do you prefer to have it done at school by a physician appointed for that purpose?
- [Minutes of the Proceeding of the Board of Education for the City of Hamilton 1901:19]

The Board subsequently vaccinated 1101 children in schools in April of 1901.

It took a serious smallpox outbreak in Ward 4 in May of 1901 to push the Board of Education into enforcing compulsory vaccinations for students. All children were to be vaccinated immediately unless they showed evidence that they had already been immunized (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1901:57). The following September, every new student was required to show a certificate of vaccination (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1901:73).

As new vaccines for childhood illnesses were developed they were often administered through school vaccination programs, such as diphtheria in 1922 and polio in the 1950's (The Hamilton Spectator November 15, 1922:n.pag.; The Hamilton Spectator December 1, 1954:n.pag). Today vaccines are commonly given in public schools: shots for influenza, measles and hepatitis B are all administered regularly to students. However, the issue of distributing vaccinations in schools is still capable of generating considerable controversy, evident in the mixed responses to giving the new Gardasil® vaccine to Grade 8 girls in Ontario (The Hamilton Spectator September 18, 2007:n.pag.).

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School Closures and Medical Inspections

School closures often occurred when excluding sick children failed to prevent epidemics (Sutherland 1976:41). In light of the conditions in Hamilton schools, some closures were inevitable. Victoria Avenue School (Figure 7.1), for instance, was closed on June 15, 1905 following an outbreak of diphtheria (The Hamilton Spectator June 15, 1904a:n.pag.). The outbreak claimed the lives of several students, including seven-year old Hilda Watson, whose death triggered the school's closure (The Hamilton Spectator June 15, 1904a:n.pag.). This incident exemplifies the risk and transmission behaviours in schools: overcrowding and unsanitary conditions (in this case, the plumbing system) were blamed, although it was later discovered that the plumbing was not responsible (The Hamilton Spectator June 15, 1904b:n.pag.) Several children with diphtheria had been sent home only to return untreated, one even with a physician's note declaring the child "perfectly fit to attend school" (The Hamilton Spectator June 15, 1904b:n.pag.). Hilda Watson's sore throat had gone unnoticed by parents and teachers, leading to her untimely death and ultimately the closure of her school (The Hamilton Spectator June 15, 1904b:n.pag.). School closures, however, were hardly an ideal strategy for preventing disease students missed their lessons.

As disease transmission in schools increasingly became a public risk, more stringent supervisory methods were adopted to prevent epidemics (Wald 1905:89). Initially, the task of inspecting students and sending them home fell to the teachers (Wald 1905:90). Several problems with this approach immediately became apparent. Teachers were not sufficiently trained to recognize disease symptoms, nor did they have time with their overcrowded classrooms to pay much attention to individual students (Wald 1905:90). There was also no guarantee that children would be properly attended once sent home (Sutherland 1976:45). Overworked mothers were often too busy to give sick children proper care; other parents were indifferent or defiant of the school's recommendations, which could result in children continuing to play with friends and not receiving the care of a doctor (Wald 1905:91). Children also missed important schooling while kept home sick (Wald 1905:92). Dr. Roberts in particular shared this last point of view, and did not consider prolonged absence due to sickness beneficial to a child's education (Annual Report of the Board of Health 1906:10-11).

The Board of Education decided that the solution to these problems was to inspect children both at school and in their homes (Sutherland, 1976:45). In this

way, medical inspection of schools was born. In 1907, Dr. Roberts was appointed the first medical inspector for Hamilton schools (Gagan 1981:164). His job was to inspect students on a monthly basis and report any "defects" to the teacher. Defects were physical conditions that interfered with a student's ability to learn successfully (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1911:125). Dr. Roberts was required to submit a monthly report on school conditions to the Board of Education (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1907:47).

Dr. Roberts discovered considerable defects in the children (Annual Report of the Board of Health 1907:25). He reported on cases of infectious disease and the absences/exclusions pertaining to them. Between May and June of 1907, a total of 110 children were absent from school on account of infectious disease (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1907:79). He also reported on chronic defects found in schoolchildren, the most prevalent being defective teeth (1267 children) and defective vision (113 children) (Annual Report of the Board of Health 1907:25; Minutes of the Proceeding of the Board of Education for the City of Hamilton 1907:79).

The duties of medical inspectors were not limited to examining children. They were often responsible for inspecting sanitation and hygiene, heat, lighting, ventilation, drainage and plumbing systems, and reporting on overcrowding and other poor conditions in the schools (Wald 1905:89). A wry comment made by Roberts in the 1906-07 Annual Report alludes to the conditions he found in some schools: "It is not in the interests of the children in one or two of the schools that the saving of water in the lavatories should be encouraged" (1907:25).

Although the Board of Education and Dr. Roberts had a number of disagreements that led to a temporary discontinuation of his inspections (Gagan 1981:165), the Board became convinced that medical inspections were necessary and beneficial to students as well as the community as a whole. Hamilton, like many other school boards in Canada, saw inspections as important not only for detecting disease but also for correcting any defects that interfered with a student's ability to achieve an education (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1911:124-25; Sutherland 1976:49). School medical inspections were so successful that by 1914 almost all urban school systems in Canada had an established inspection system (Sutherland 1976:55).

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School Nurses

During the early twentieth century, school nurses began to become important in Canada. Their primary task was to control the spread of communicable diseases, although they actually did much more (Sutherland 1976:50). The nurse's responsibilities in the school included conducting medical inspections and examining the students, excluding children from the school and allowing their re-admission, keeping track of the students' medical records, and giving health demonstrations to teachers and students on subjects such as tooth-brushing and nose-blowing (Figure 7.2) (Sutherland 1976:50). Her most important task, however, was to visit the homes of children who were absent or excluded from school due to sickness (Sutherland 1976:51).



Figure 7.2: School Nurse Leading Children in a Nose-blowing Drill (Courtesy of the City of Toronto Archives)

City of Hamilton 1907:115-16). In January, Nurse Deyman began inspecting students and making weekly home visits to all sick children's homes (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1908:13). In her monthly reports to the Board of Education, she provided information from the inspections, including the conditions found in schools and how many children suffered from them. She also drew attention to sanitary issues in schools, such as the "deplorable" conditions of the lavatories and inadequate window ventilation,

After Dr. Roberts' strenuous complaints about the strain of inspecting so many students, Hamilton's Board of Education decided that the appointment of a school nurse was necessary (Annual Report of the Board of Health 1907:24). Hamilton's first school nurse, Emma J. Deyman, was recommended to the Board of Education by Dr. Roberts, and appointed for what was initially

intended to be a six-month term starting in January 1908 (Minutes of the Proceeding of the Board of Education for the

and floor cleaning (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1909:87).

Nurse Deyman's appointment lasted well beyond the initial six months. In November 1909 the Board sent her, expenses paid, to Pittsburg to be trained in treating tuberculosis (a growing health concern in schools at this time) and other diseases (Minutes of the Proceedings of the Board of Education for the City of Hamilton 1909:127). In 1911, the Special Committee on Medical Inspections requested that three additional nurses be hired to assist Nurse Deyman (Minutes of the Proceedings of the Board of Education for the City of Hamilton 1911:125). These were the first signs that the work of school nurses was becoming an important element in treating diseases in Hamilton's schools.

Conclusions

In the face of infectious disease, the Hamilton Board of Education implemented numerous strategies to curb the spread of disease and keep children and the community healthy; in essence they laid the groundwork for the education system that we are familiar with today. Vaccinations, medical inspections, and school nurses contributed significantly to reducing disease risk and transmission in Hamilton schools. These strategies have been examined through the disease ecology framework, which shows how the school environment influenced transmission, risk and protection behaviours. The strategies to prevent sickness in schools were not limited to the school environment. They were integrated with households and the community through home inspections, and with the medical community through the doctors and nurses who worked through the schools to examine the children.

Although initially met with skepticism and outright objections by parents, teachers and Board members, vaccinations and medical inspections were eventually recognized by the Board of Education as beneficial to students and the community as a whole. As time went on, school medical inspections by doctors and nurses focused less on infectious disease prevention and instead on ensuring that children were at full potential to pursue their studies. When it came to children's health, "the old maxim still holds good: a sound mind in a sound body. As far as possible, this should be the dominant aim of any Board which has control over the educational development of the rising generation" (Minutes of the Proceeding of the Board of Education for the City of Hamilton 1911:125).

8

Is Scarlet Fever a Democratic Disease?

Danielle Budhoo

With no precise knowledge of its cause and modes of transmission our procedures in this field are uncertain. (Kaiser 1915:718)

Many diseases plagued the city of Hamilton in the early twentieth century, and who the diseases affected and where they appeared can tell us a great deal about the social and political structure of the city during that time. Hamilton underwent extensive population growth between 1901 and 1911 that had a significant influence on the health of children in the city (see Rowe, this volume). Much of this growth resulted from immigration that occurred over a relatively short period of time, and the population of immigrants residing within the city expanded from approximately one quarter of the population in 1901 to a third of the population in 1911 (see Brunton, this volume). Population increase was accompanied by increases in both morbidity and mortality from childhood diseases associated with city living (Gagan, 1989). This is not surprising, for as Mercier (2006:129) notes, “[w]hen greater numbers of people congregate in close proximity, especially in poor sanitary environments, there is an increased risk of spreading infectious diseases”. For many children in Hamilton, these illnesses were the consequence of poor sanitation, overcrowded living conditions, increased contact in social situations such as school (see Craigie, this volume), and the squalor associated with poverty. Despite the undeniable role played by environmental conditions and socioeconomic circumstances in the determinants of health, there are diseases that cross social boundaries.

Such is the case of scarlet fever, the focus of this chapter, a disease seemingly unrestricted by socioeconomic status and therefore ‘democratic’ in its distribution

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(Porter and Ogden 1998:10). To determine whether scarlet fever was, indeed, democratically distributed in Hamilton, I explore its expression in children of Hamilton through 1901 to 1911 and examine whether cases were limited to children living in areas characterized by low socioeconomic status.

Understanding Scarlet Fever

Scarlet fever was commonly identified by physicians during the period of 1820 to 1880 (Swedlund, 2003:161), but was still present in Hamilton and a threat to children well into the twentieth century. Although not the most virulent disease, it was capable of causing mortality in children within a few days. Scarlet fever was highly contagious and could be transmitted via several different modes, including ingestion and airborne droplet infection (Swedlund, 2003:159). Because transmission did not require close contact, the disease could spread widely through mediums such as milk, or to people occupying the same buildings (Swedlund, 2003:159).

As early as 1915, it was understood that scarlet fever was caused by an organism (Kilduffe, 1915:17). Symptoms of the disease include sore throat, fever, and rash, followed by peeling of the skin; sometimes the full suite of symptoms was absent (Kaiser, 1915:719). More severe cases are marked by rapid onset with fever, convulsions, and vomiting. This usually lasts for twenty-four to thirty-six hours, and is followed by a bright red rash on flushed skin, particularly in the places where joints fold the skin. Kaiser (1915:718) suggests that doctors in the early twentieth century were aware that the virulence of scarlet fever, and danger to individuals, could vary between outbreaks. They also knew that occasional occurrences of the disease were unlikely to be more or less severe than epidemics (Brownlee, 1905:519).

Scarlet fever was recognized to be transmitted by contaminated milk as early as 1914 (Sutter, 1914:508), and many nursing journals of the time emphasized the importance of personal hygiene for reducing the incidence of the disease. Contaminated materials, such as textiles, were also known to transmit scarlet fever (Auten, 1901:619) and that the disease was sufficiently contagious that infected workers in sewing shops could transmit it to their customers without ever coming into direct contact with them. Scarlet fever was also observed to spread through children in schools (Hay, 1901:562-563), as well as through other indirect means. Eveleen Harrison (1904:435), writing in a nursing journal,

observed “...we realize that some fever germs live for months in a covered-in space, and when freed proceed to do their deadly work” after describing a case of scarlet fever carried home to a child by a nurse who had been visiting friends. Scarlet fever was seen, at least by nurses, as a disease that could be dangerous to anyone in crowded places and that it could be carried to many potential victims if care was not taken to isolate and disinfect clothing, objects, and individuals. Consequently, it was recommended that infected cases be isolated (Figure 8.1).

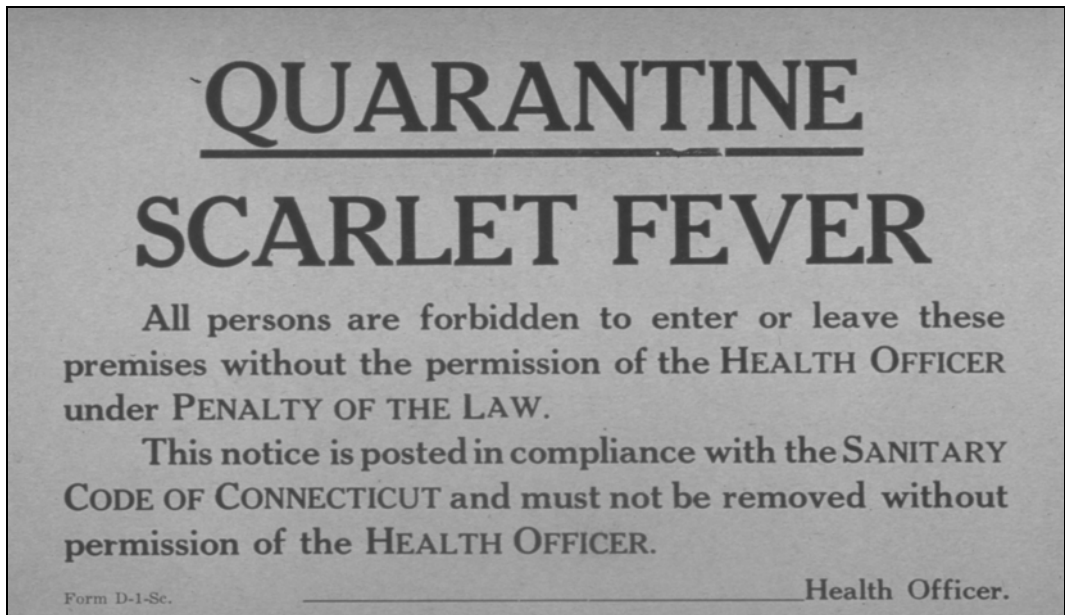


Figure 8.1: Quarantine Notice from Connecticut Public Health Office (The History of Medicine Division. Prints and Photographs Collection)

This is significant because the ability to isolate cases effectively may be an indicator of socioeconomic status rather than an indication of virulence. Because preventing the spread of scarlet fever required isolating infected children, families would have required enough living space to do so effectively and thereby minimize the children’s contact with other family members. Families of limited means might not have been able to avoid constant contact due to more intense household crowding.

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Kaiser (1915:718) suggests that the re-opening of schools during the autumn months may have served to progressively increase the number of scarlet fever cases until the height of infection in January, followed by little decline until the summer recess. Both Kaiser (1915:718) and Brownlee (1905:531) indicate that scarlet fever was likely to be transmitted to a large range of childhood ages because of school attendance.

In Search of Scarlet Fever

Materials

Preliminary investigation of scarlet fever in Hamilton was conducted using the Marjorie Freeman Campbell collection to determine whether the disease afflicted enough individuals to provide a sample of children's deaths that could be described on a map of the city of Hamilton. Then registered death records were transcribed for the city of Hamilton for 1901 to 1911 at the Archives of Ontario (Government of Ontario 1901-1911). I collected the names, ages, addresses, and dates of birth of all children under the age of 13 who had been registered as having died of scarlet fever or scarletina.

Information was also collected from the Board of Health Annual Reports for years 1905-1906, 1906-1907, and 1907-1908 in order to determine the extent of morbidity from scarlet fever (Annual Report of the Board of Health 1907-08:13). The Board of Health Annual Reports from the Hamilton Public Library contained only three years or data between 1901 and 1911; consequently, morbidity and mortality rates could only be obtained for those three years.

Analyses

A data-base of the registered deaths from 1901 to 1911 for Hamilton was created using Microsoft Excel©. Scarlet fever deaths were then mapped onto a modern GIS map of Hamilton's roads using ArcMap Version 9.2, a GIS program. A geo-referencing program was used to match addresses in the death records with addresses on the map of Hamilton, and each identified point was marked. Some scarlet fever deaths could not be placed on the map because they lacked a record of the place of residence of the deceased child.

Where Scarlet Fever Lurks

As Figure 8.2 shows, deaths from scarlet fever extended across most of Hamilton from 1901 to 1911. Although most years had too few scarlet fever deaths to show a meaningful distribution, with as few as one death in 1906 and as many as 15 deaths in 1909 (Figure 8.3), grouping all of the years onto one map provides a visual demonstration of where scarlet fever deaths were occurring in the city. Of the 58 scarlet fever deaths extracted from the death records between 1901 and 1911, over three quarters had addresses that could be mapped.

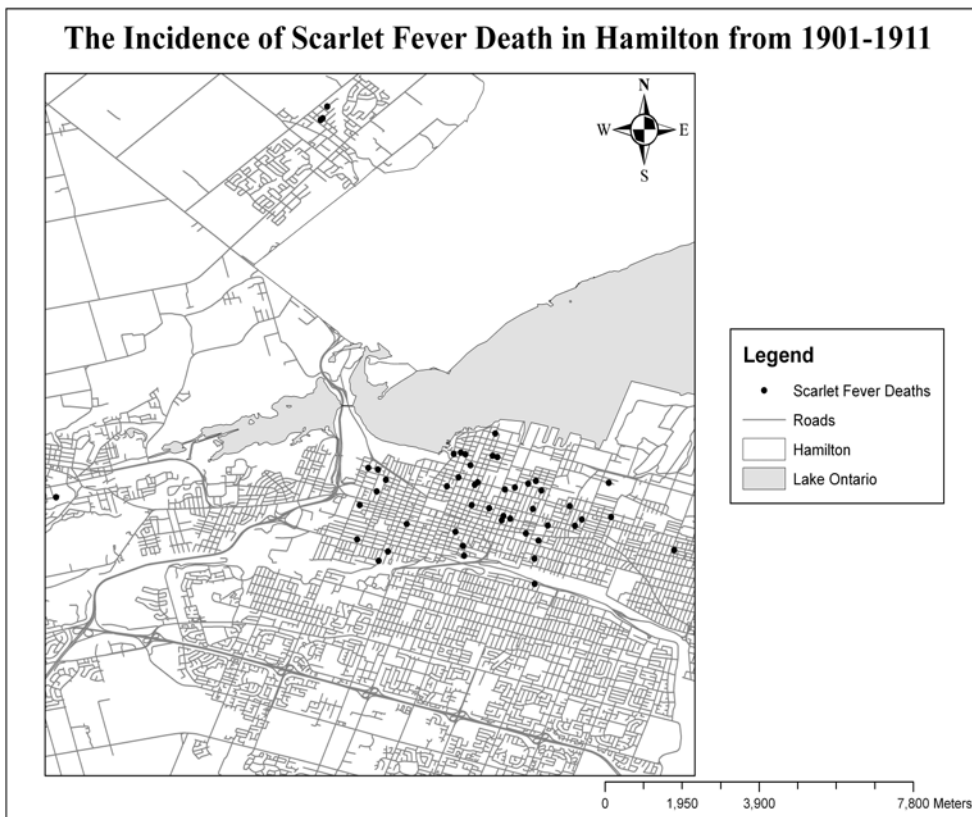


Figure 8.2: Scarlet Fever Deaths of Children, 1901-1911

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In general, morbidity from scarlet fever far outweighed mortality, with well under ten percent of cases ending in death. For many years, deaths were infrequent, with only one or two deaths reported (Table 8.1). Other years produced a relatively high number of deaths, such as 1902 and 1909, during which 7 and 15 individuals died, respectively.

Year	Cases	Deaths	Percentage
1901-1902	97	3	3.1
1902-1903	104	7	6.7
1903-1904	218	3	1.4
1904-1905	129	3	2.3
1905-1906	162	1	0.6
1906-1907	68	2	2.9
1908* ¹⁰	-	5	-
1909*	-	15	-
1910*	-	5	-
1911*	-	8	-
Average	130	5	2.8

Table 8.1: Cases and Deaths of Scarlet Fever, 1901 – 1911. (Annual Report of the Board of Health 1907-08: 13)

Deaton (2003:113-114) suggests that people experiencing low socio-economic status are not only missing the health advantages gained by having better healthcare and living conditions, but that poverty specifically puts them at greater risk for disease.

On the other hand, scarlet fever deaths also occurred in more affluent areas of Hamilton, suggesting that it was not just a disease of the poor. Porter and Ogden (1989:79) suggest that “democratic” diseases are transmitted widely and easily across class and ethnicity, and this is supported by the distribution of scarlet fever in Hamilton. Porter and Ogden (1989:79) further note that when a disease occurs across all groups, the more powerful elements in society are unable to place the blame for that disease on a particular group.

How Democratic was the Disease?

In Hamilton, scarlet fever appears not to have been limited by socio-economic circumstances, shown by the distribution of deaths from the disease throughout the city. Yet clusters do appear in certain parts of the city, particularly in the north end (Figure 8.2). According to Gagan (1989:165), this part of the city was characterized by higher population densities, poorly constructed, overcrowded residences, and general impoverishment. These conditions may have contributed to the greater number of scarlet fever deaths in these wards.

¹⁰ Death records only available for these years.

If scarlet fever could be transmitted beyond the limits of class and wealth, then individuals of higher socio-economic status were not necessarily at an advantage over poorer individuals with respect to this particular disease because of better access to healthcare and cleaner living conditions. That said, there is suggestive evidence that vulnerability to scarlet fever among Hamilton's children may have varied in different parts of the city. Figure 8.3 shows the distribution of scarlet fever deaths in 1909. Not only were deaths from the disease high that year, potentially indicating a virulent strain (Swedlund, 2003:159), but the deaths also seem to be clustered in the north end of the city.

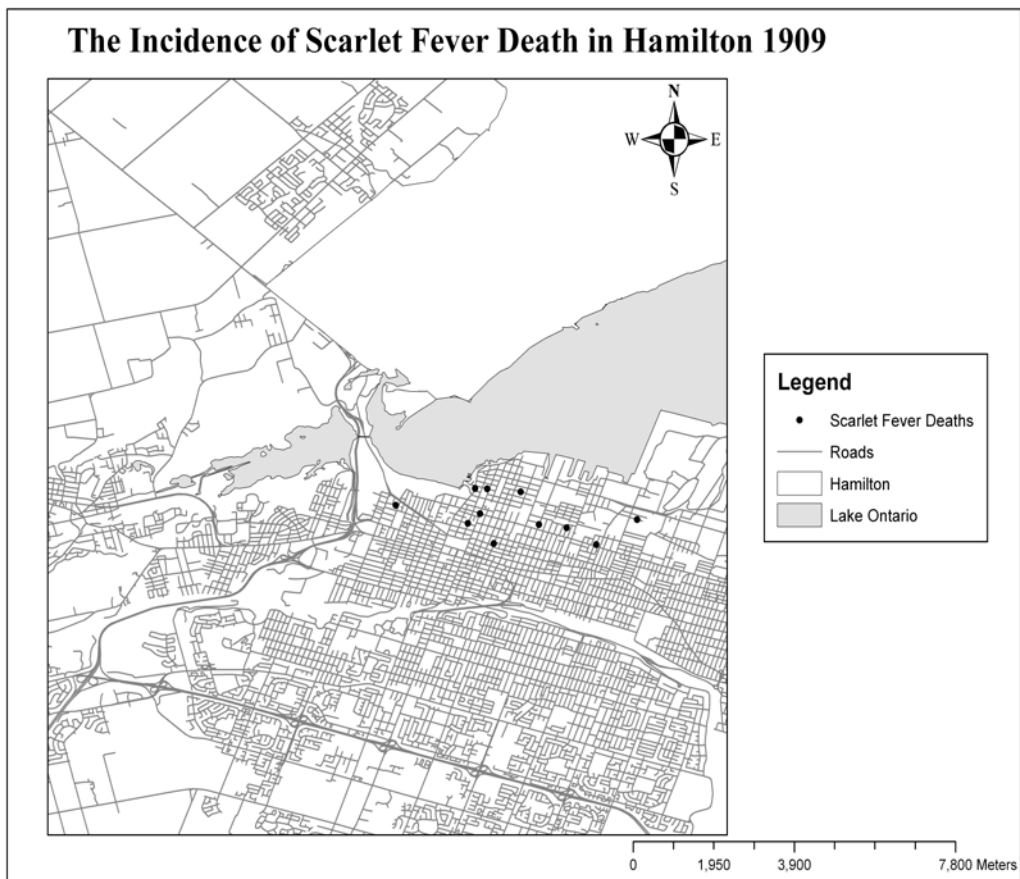


Figure 8.3: Scarlet Fever deaths of Children in Hamilton Registered in 1909

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This distribution is interesting because the map of scarlet fever deaths from 1901 to 1911 (Figure 8.2) indicates that deaths occurred widely across the city over that decade. Perhaps this particular epidemic was more localized, suggesting that the determinants of this particular outbreak warrant critical examination.

Although, a general increase in the number of scarlet fever deaths occurred in Hamilton during the study period (Table 8.1), this increase was not necessarily in proportion to the growth of the population and did not account for the changes in morbidity or mortality from it. In 1901, Hamilton's population was 52,634, and by 1911 had increased to 77,072 (Brunton, this volume). Yet, scarlet fever deaths did not grow steadily in conjunction with population expansion, indicating that other factors must have contributed to its presence in the city.

It is possible that during the years in which deaths from scarlet fever were high, the virulence of the virus was particularly severe. However, it is also feasible that additional factors, such as school attendance, influenced the presence of the disease. Increases in the number of children attending school (see Craigie, this volume) may have increased their exposure to scarlet fever through the shared, overcrowded, classroom environment. Milk handled by individuals infected with scarlet fever may have also have enhanced its transmission to children (Sutter, 1914:508). This, in turn, may have exposed a wider range of people to infection than might have occurred through more limited household contacts (Gagan, 1989:163).

Despite the likelihood that the schools and contaminated milk helped spread scarlet fever, the important point here is that *deaths* from the disease seem to have clustered in the north end of the city. Hardy (1993:56) observes that in London, England, children of both wealthier and poorer classes were affected by scarlet fever but poorer groups still had higher incidence and mortality rates compared to the wealthier groups. Hardy suggests that even if scarlet fever is a disease that afflicts individuals regardless of class and economic standing, the poor were still disproportionately affected by it (1993:56). The data from Hamilton suggest that this may also have been the case for Hamilton, though more detailed analysis is necessary to support this intriguing possibility. Indeed, although infectious disease epidemics in general may have been on the decline in association with broad improvements in socioeconomic conditions (Post 1976:15) the persistence of scarlet fever and the occasional clustering of scarlet fever deaths in Hamilton's less affluent wards, suggests that many of the city's children were not benefiting from improvements in the overall standard of living.

Conclusions

Scarlet fever does not seem to conform to Porter and Ogden's (1989:79) notion of democratic disease. Although it was widespread in Hamilton, scarlet fever did have a greater affect on the individuals and families of north Hamilton where living conditions were generally poorer and socio-economic status was lower than other parts of the city (Gagan 1989:163). This means that even though children were not safe from scarlet fever because of class or status, they still had a great advantage over their poorer counterparts when confronted with this disease.

Hot Town, Summer in the City: Childhood and Infant Diarrheal Death in Hamilton, 1901 to 1911

Rose A. Monachino

*Hush a bye baby, in the tree top,
When the wind blows the cradle will rock;
When the bow breaks, the cradle will fall,
And down will come baby, cradle and all.*
(Anonymous)

Diarrheal diseases are among the most important diseases plaguing populations today. According to the World Health Organization, the diarrheal death rate in 2004 was as high as 7058.5 per 100,000 deaths worldwide (WHO, 2004). In the early twentieth century diarrheal diseases spread in pandemic waves causing thousands of deaths (WHO, 2002). The inhabitants of Hamilton at the turn of the century were no strangers to the deadly affects of the diarrheal disease complex. By examining when and where it was prevalent in the city, and identifying who was most greatly affected by them, we can learn a great deal about the city's political structure, socio-economic difficulties, and sanitary conditions. In this chapter I use a biocultural lens to examine the relationship between the political-economic structure and the wellbeing of the populace, and consider how this, in turn, influenced social relations (Goodman and Leatherman, 1998).

Understanding Diarrheal Disease

The term 'diarrheal disease' is a catch-all phrase that encompasses a number of wasting diseases with similar symptoms. The most basic and widely accepted

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definition of diarrhea is, “abnormally loose or fluid stools which are passed more frequently than is normal” (Gracey, 1991, p 1). Dysentery refers to a diarrheal complex in which the “abnormally loose or fluid stool is admixed with blood or mucus” (Gracey, 1991, p 2). The most common form of infectious diarrhea is acute diarrhea which has a rapid onset, and is usually self limiting and short lived, typically lasting anywhere from four to seven days (Gracey, 1991).

The transmission of diarrheal diseases varies depending on the type of microorganism contracted; usually the mode of transmission will determine the symptoms that occur in a sufferer. The main mode of transmission of any type of diarrheal disease is fecal-oral transmission. The fecal matter is usually spread through fingers, feces, flies, fluids such as water or milk, foods and fomites. There is a wide range of microorganisms that can also cause diarrheal disease (Gracey, 1991). For the purposes of this discussion specific information concerning each microorganism will be omitted.

Historically, the diarrheal disease complex has been a prominent cause of death. One of the earliest cases of diarrheal disease was recorded by Herodotus, who described an outbreak of dysentery during one of the many Grecian wars (Lim and Wallace, 2004). Diarrheal diseases continue to affect human populations in urban and rural settings. As North American cities began to industrialize in the late nineteenth and early twentieth centuries, the prevalence of diarrheal disease began to increase, notably in New York City, St. Louis and Buffalo (Mangold et al., 1908). Hamilton also experienced growing rates of the disease during that time, reflecting sanitary conditions in the city and their impact on the health of its inhabitants. Living conditions in Hamilton were poor; many people lived in sub-standard housing, in over-crowded areas (Gagan, 1989). These poor environmental circumstances created prime conditions for outbreaks of diarrheal disease.

Collecting Information on Diarrheal Deaths in Hamilton

In order to determine who died from diarrheal disease, it was necessary to transcribe the registered deaths for Hamilton from 1901 to 1911. The records are held in microfilm format at the Archives of Ontario (Government of Ontario 1901-1911: n.pag). The deaths were transcribed and the following information was entered into an Excel[®] database: Name of Deceased: Surname and Given Name, Sex, Age, Date of Death: Day, Month, Year, Place of Death or

Residence, Place of Birth, Cause of Death and, when included, Duration and Religious Denomination.

Only the records for individuals who died from the diarrhea complex were transcribed. For the purposes of this paper, the following terms are considered to represent diarrheal disease: diarrhea, cholera infantum, gastro-enteritis, enteritis, gastritis, dysentery, colitis, teething, inanition, indigestion, and summer complaint or summer diarrhea. Differential diagnosis for any diarrheal case is usually simple, yet many of the cases in the death records for Hamilton may not have been recorded accurately, no matter how meticulously the registers were maintained. Causes of death were often assigned incorrectly because diagnosis of any disease was difficult at this time (Black, 1984). Furthermore, physicians' diagnoses were influenced by popular "philosophies, taxonomies and perceptions of disease; the physicians diagnostic ability, approach to disease causation, and understanding of pathological process, and by the length of time that has been spent caring for the person prior to the death" (Sartwell and Last, 1980, cited in Moffat and Herring, 1999: 1824).

To determine the spatial distribution of diarrheal disease in Hamilton, deaths attributed to diarrheal disease were mapped geographically using the GIS program ESRI ArcGIS 9.2 ©. Some deaths could not be located on the map; only those with an exact residence were used in this analysis. Ambiguous addresses, such as 'City Hospital', were omitted since they provided no information on the place of residence of the deceased. To construct a map for each year (1901 to 1911), a contemporary GIS road map of Hamilton was imported to ESRI ArcGIS 9.2 ©, then the database of diarrheal deaths from 1901 to 1911 was imported into the GIS software. Through a geo-referencing program all of the death records were matched to a location on the road map, and markers were placed at each of the approximated locations.

Silence in the Nursery

Diarrheal disease can strike all members of a population at any point in life, but young children and infants are more severely affected than other age groups. Infants, moreover, are the most vulnerable members of society and the infant mortality rate (IMR) is a "health statistic used internationally as a measure of community health and well being" (Moffat and Herring, 1999:1821). At the turn of the twentieth century, one out of every five to seven babies in Canada died

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before their first year (Sutherland, 1976). In Hamilton at this time, the infant mortality rate was at an all time high. Stillbirths, premature births, malformations and disease such as diarrhea accounted for 111.8 per 1000 deaths (Gagan, 1981). Hamilton's high infant mortality rate speaks to the poor sanitary, socioeconomic and health conditions in the city (Bolt, 1921).

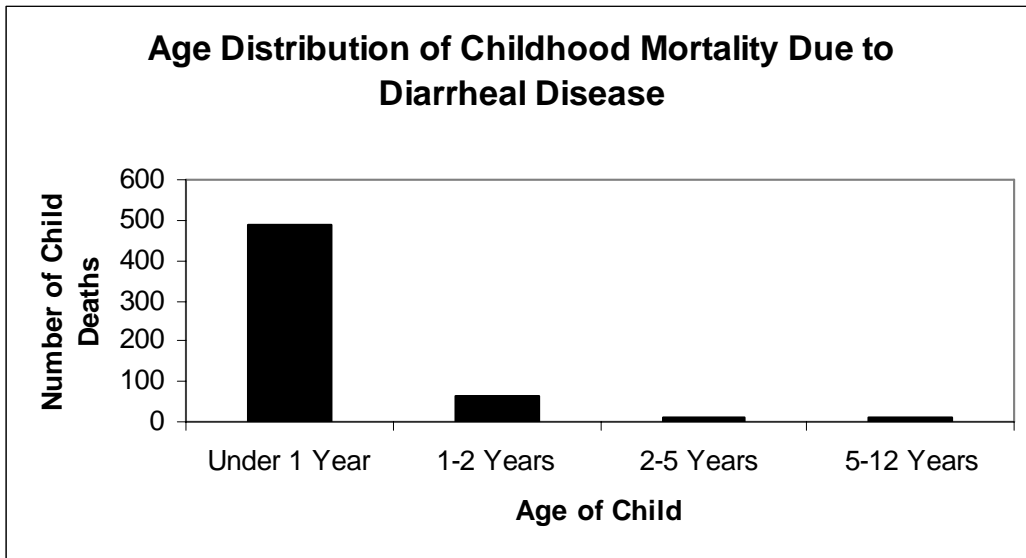


Figure 9.1: Age Distribution of Childhood Mortality Due to Diarrheal Disease.

Children not only are more susceptible than adults to contracting diarrheal diseases but they are also more vulnerable to the effects of dehydration, malnutrition and electrolyte imbalances (Levy and Deckelbaum, 1991). It was therefore important to determine the age distribution of children who died from diarrheal diseases, not just concentrate on infants; as a result, this study examines diarrheal deaths among children from birth to age 12 (Figure 9.1). The graph in Figure 9.1 incorporates the yearly totals for diarrheal deaths for the period under study (1901-1911) and therefore depicts the pooled deaths for all 10 years, for each age category. It is evident from the graph that most of the diarrheal deaths occurred among children under the age of one, with a total of 488 deaths over a 10 year period, followed by children aged one to two years of age, with 64 total deaths over the same span of time. By age three the incidence decreases

immensely, with only 12 deaths over the study period; by age five, deaths due to diarrheal disease have greatly decreased to about 8 deaths over the 10 year period.

Many ecological factors influence the rate of diarrheal disease in infants and young children. They are prone to contracting debilitating diarrhea when they have ingested substandard or contaminated water or milk products, when they inhabit overcrowded areas with poor quality housing, and when they live in areas of the city with dire sanitation practices (Sawchuck et al, 1985). Areas with relatively low standards of living are usually located in the more impoverished sectors of the city. Many studies of infant mortality show a strong relationship between infant mortality rates and socio-economic status (Klein 1980).

The Dangers of “Summer in the City”

There are certain times of the year when certain illnesses and diseases are more prevalent because of seasonal shifts in climatic and ecological conditions. The importance of seasonality to disease incidence was first documented by Hippocrates in 400 BC, “Whoever wished to investigate medicine properly, should proceed thus: in the first place to consider the season of the year and what effects each of them produces” (Rau, 2007). Diarrheal diseases rise and fall according to the seasons.

In Hamilton, a clear seasonal pattern of diarrheal death among children under the age of 12 is evident from 1901 to 1911 (Figure 9.2). Diarrheal deaths increased in the summer months of July and August and in the early fall months of September and October. This phenomenon came to be known as the ‘summer complaint’ due to the increased amount of death during the hot summer months (Cheney, 1984). The graph in Figure 9.2 also shows that death due to the diarrheal complex was constant through the year; therefore, there was never a time in which Hamilton’s children were not plagued with the disease. Seasonal fluctuations in diarrheal deaths are also found in other cities in the early twentieth century, though the pattern might be shifted to earlier or later months due to local climatic and ecological conditions.

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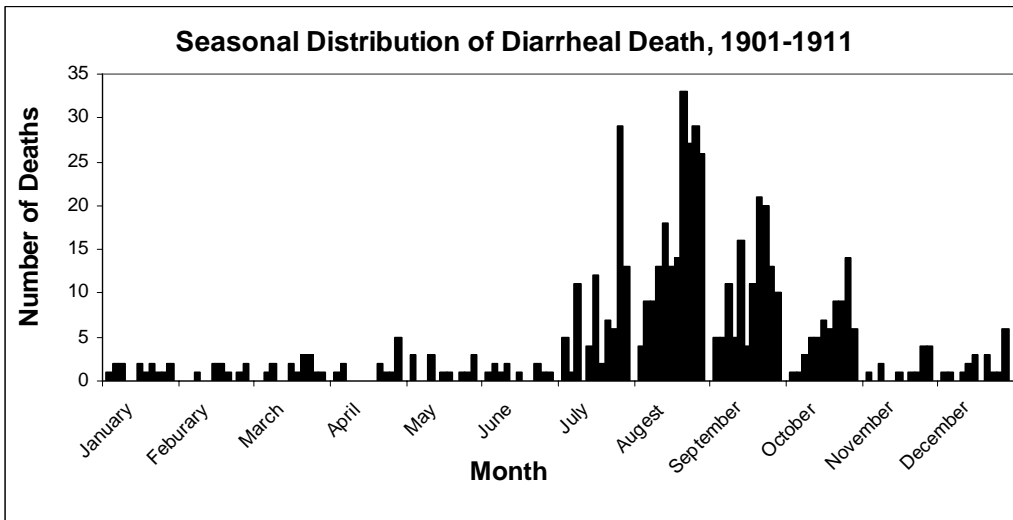


Figure 9.2: Seasonal Distribution of Diarrheal Death among Children under 12 Years of Age, Hamilton, 1901 -1911.

The reasons for seasonal increases in the rates of diarrheal death are complex. Many explanations focus on ecological factors that act in conjunction with sanitary and socio-economic conditions. Many diseases are more prevalent at specific times of the year because the pathogen or vector responsible for them can only survive during those months (Rau, 2007). This is true for diarrheal diseases that are prevalent in the summer months because many pathogens responsible for their spread thrive in regions with higher mean temperatures (Gracey, 1991). During the summer months they survive for longer periods of time, infect more individuals, and contaminate more sources. Areas with poor sanitary conditions provide the diarrheal pathogens with an optimum breeding ground. Foods such as milk and meat are more likely to be contaminated with a diarrhea-causing pathogen in the summer due to higher fly populations that spread the disease (Cheney, 1984). The summer, therefore, was a particularly deadly time for Hamilton children who were vulnerable to diarrheal disease.

Location, Location, Location!

An individual's risk of contracting infectious diseases can depend on the area in which he or she resides. This is due to the fact that most cities are stratified and

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sectored along socio-economic lines. This was true for Hamilton in the early twentieth century, which was characterized by “residential segregation” based on socio-economic levels. Most individuals with reduced economic means lived in the city’s north end, in the low, industrialized land adjacent to the bay. The east end of Hamilton, moreover, was over-crowded and over-populated. The more affluent members of Hamilton society lived in the more sparsely populated southern part of the city, which was close to the base of the Mountain, and devoid of industry. According to Gagan (1981), higher rates of infectious disease were found in the less affluent parts of the city.

To determine whether diarrheal diseases clustered in the less affluent and overcrowded parts of Hamilton, it was necessary to examine the spatial distribution of childhood deaths from diarrhea. Figure 9.3 depicts all of the diarrheal deaths among children under the age of 12 from 1901 to 1911. It is evident that there is a major cluster of deaths in the northern part of the city, closest to the bay. There are scattered cases of diarrheal death in other parts of the city, but the incidence is much lower than in the northern end.

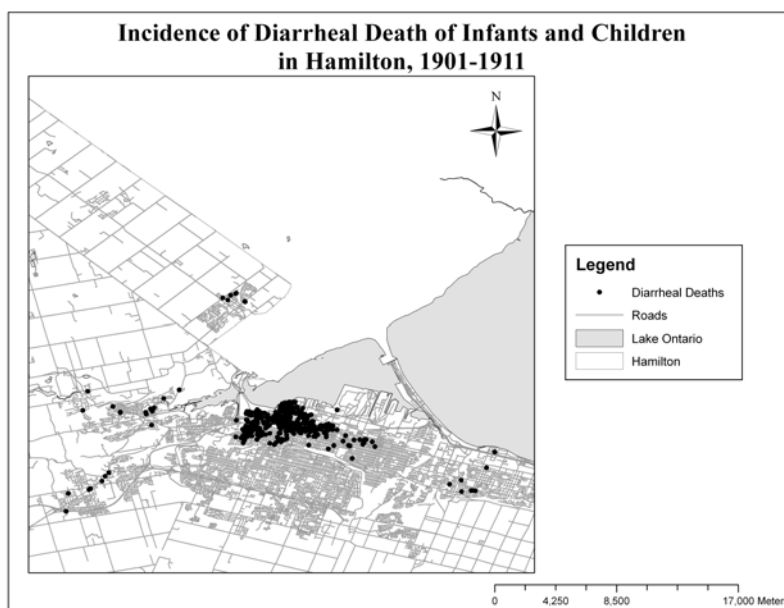


Figure 9.3: Incidence of Diarrheal Death among Hamilton Children, 1901-1911.

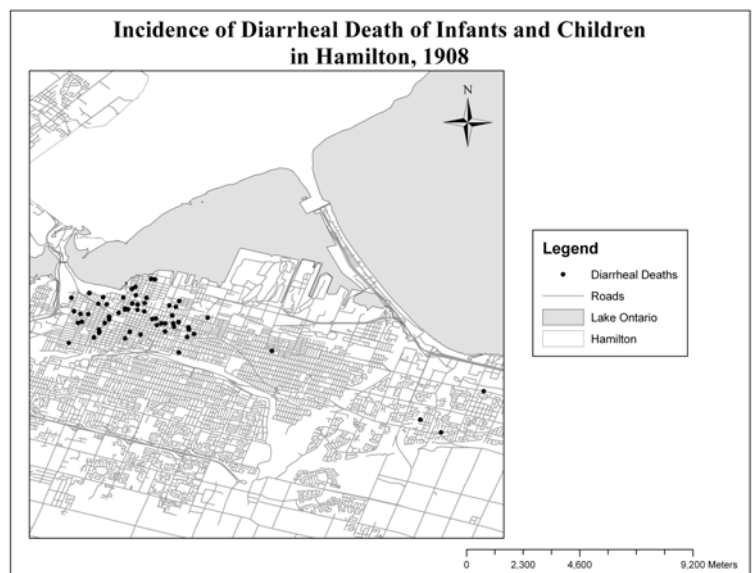


Figure 9.4: Incidence of Diarrheal Death among Children in Hamilton, 1908

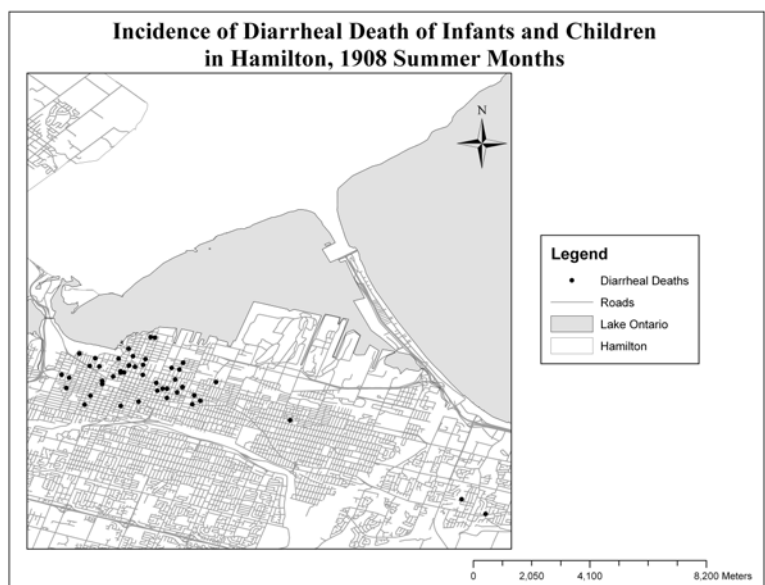


Figure 9.5: Incidence of Diarrheal Death among Children in Hamilton, 1908, Summer Months.

The spatial distribution of diarrheal deaths was mapped in entirety for each year. Then the distribution of diarrheal deaths was mapped solely for the summer months (July, August and September) to determine whether ‘the summer complaint’ pattern differed from that for the year as a whole. For simplicity’s sake, the maps for 1908 are shown below to illustrate the findings (Figure 9.4). This particular year was chosen because it best represented the patterns and distributions found in all the years under study. Figure 9.5 depicts only deaths recorded in the summer months of 1908.

Final Thoughts

From the evidence presented here, it is clear that there is a complex relationship between the political, economic, social, cultural and ecological process responsible for the spread of diarrheal disease in Hamilton’s infants and children from 1901-1910. Children under the age of one were most susceptible to dying from a diarrheal disease. As well, the time of year had a large effect on mortality, with the number of deaths rising during the warmest time of year (summer and early autumn). Finally, the area in which a person lived also had an immense impact on susceptibility to diarrheal diseases. These issues can be related to the socio-economic divide within the city of Hamilton. The areas characterized by lower socio-economic status had higher rates of diarrheal death throughout the year. Through the biocultural approach developed by Goodman and Leatherman (1998) it is evident that the social, political and economic processes of the city had enormous consequences for the spread of childhood diseases, and for mortality from them.

Changing Perspectives on Child Health and Disease during ‘The Great War’

Madison L. Rose

We are all apt to be depressed by the quickly-following lists of casualties and by the hope deferred that soon these melancholy indications of the war will cease with the establishment of a hardly earned but honourable and lasting peace, and that instead of the places of the fathers there will be the children. But will there be the children to fill the places of the fathers? The question cannot be answered with the confidence that one would like to feel... (Lancet September 4, 1915: 6)

There are conflicting views about the affects of war on childhood health. Some researchers, such as Paul Farmer and Roger Cooter, argue that children are marginalized groups and suffer from poor access to resources and from political and economic penalties. War conditions, moreover, affect food and labour systems and government resources are diverted to supply military endeavours (Panter-Brick 2000). Other researchers have suggested that international conflicts elevate the value of children, and thus, they become a focus of improved access to resources and of public health initiatives (Dwork 1987: 12). During World War I, childhood health in Hamilton was influenced by a range of opposing forces. On one hand, the city was experiencing rapid growth and economic transition as well as high rates of immigration. Despite the pressures of war and industrial development, many significant aspects of childhood health improved during the war. Public health officials and the Board of Health developed infrastructure and services to protect and nurture children’s health.

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Using information provided in the death records (Government of Ontario 1914-1917), Board of Education meeting minutes (Educational Archives and Heritage Centre of Hamilton-Wentworth 1910-1920), the Hamilton Health Association annual reports (Hamilton Health Association 1914-1917), and articles from the Hamilton Spectator and Hamilton Times newspapers, this chapter examines infant and child mortality and morbidity patterns in Hamilton during World War I. This paper attempts to critically analyze changes in childhood morbidity and mortality in Hamilton during this period using cross-sectional analysis and a political economy perspective.

Full Steam Ahead: Positive Change on the Eve of World War

No analysis could take place without considering the state of childhood health in the city in the years preceding the First World War (WWI). Hamilton's Board of Health had already implemented a number of services and inspections and the city had begun enact significant positive health changes before the beginning of WWI (see Housego, this volume). In 1912 a broader Provincial Public Health Act established province-wide standards for water and waste disposal systems and extended the responsibilities and authority of the medical health officer (Gagan 1981: 171). In fact, in the years leading up to the War, there were decreases in mortality from contagious disease, nervous and respiratory ailments, along with some components of infant mortality (Gagan 1981: 164; Hamilton Health Association 1914-1917). Cholera infantum, as well as digestive illnesses, TB and smallpox declined in the five years preceding World War I (Gagan 1981: 165).

Children Lost – Child Mortality during WWI

To evaluate childhood mortality and stillbirth rates for Hamilton from 1914 to 1917, death records for the period were transcribed from the Government of Ontario registry of deaths (Government of Ontario 1914-1917). Three age categories were created in order to assess ages-specific mortality: neonatal (<28 days), post-neonatal (28 days to 1 year), and child (1 to 14 years or age). While adult deaths represented the majority of deaths recorded each month, childhood mortality was a significant component in the death registers. Taken as a whole, childhood deaths represented 34% of all deaths. Between 1914 and 1917, the monthly number of childhood deaths varied dramatically (between 13 and 54

deaths per month) and averaged 33 deaths per month (Figure 10.1). Childhood deaths showed significant seasonality, with peaks in mortality in August and September in all years analyzed.

More boys than girls died during WWI. Males accounted for 55 percent of all childhood deaths, and the sex ratio was 121.4 males per 100 females between 1914 and 1917. Child mortality (1 to 14 years of ages) increased slightly, probably due to an increase in accidental deaths. One of the most significant changes that occurred was the decline in infant mortality between 1914 and 1917. Neonatal mortality, defined as deaths before one month of age, and post-neonatal

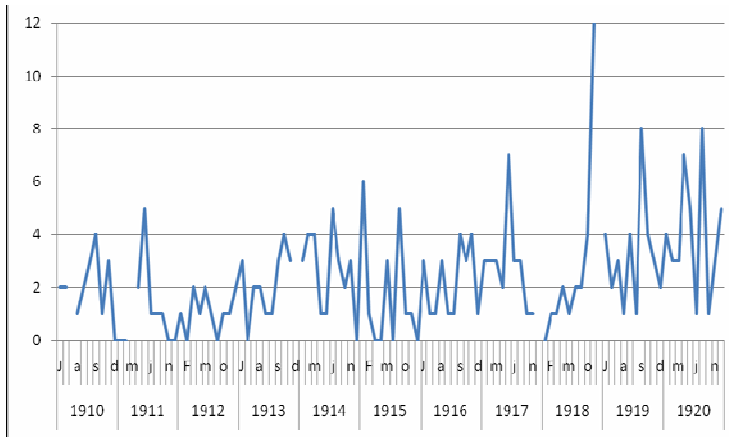


Figure 10.1: Childhood Deaths by Month, 1910-1920. (Hamilton Health Association 1910-1920)

mortality, defined as deaths between one month and one year of age, decreased as a proportion of overall deaths between 1914 and 1917. Despite monthly variation, neonatal deaths declined from 12 deaths per month in December 1914, to 8 deaths per month in 1917. Post-neonatal mortality was the

largest component of childhood deaths in most months. Infant deaths increased in August of all years.

Cause of death was not accurately or consistently recorded in the death records for Hamilton. A significant number of death registrations lacked any information related to cause of death. There was significant terminology variation in the death registries as well. The most comprehensive data set was collected from the 1914 and 1916 death records for Wentworth County. In 1915, only 39 percent of the childhood death registrations listed a cause of death.

George Newman, a contemporary expert on infant mortality, outlined five main pathological conditions that caused mortality in the first twelve months of life: epidemic diarrhea, respiratory diseases (including bronchitis and pneumonia), prematurity and congenital defects, atrophy and debility, and

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meningitis and convulsions (Newman 1906: 50-1). In 1914, the main causes of death had not changed. The number of deaths increased month-by-month, from 20 reported deaths in January 1914, to 47 reported deaths eleven months later; however, the child population of Hamilton showed similar increases over the same period of time. Overall, infectious disease accounted for 56 percent of childhood deaths. Between August and November, the percentage of deaths from infectious disease rose to 60 percent and higher. In 1914, prematurity and congenital defects were the most prevalent cause of death. These deaths primarily affected neonatal and post-neonatal mortality, representing 22 percent of neonatal deaths. Deaths due to prematurity and congenital defects were, by and large, considered to be non-preventable: “these children are simply born in such poor physical condition that they are unfit to live” (Newman 1906: 47). However, by the beginning of WWI, there was growing evidence that linked maternal health with infant mortality and survival (Newman 1906: 47). Respiratory diseases were the second leading cause of mortality in 1914, accounting for 73 child and infant deaths or 20 percent of the total child mortality. Diarrheal diseases accounted for 19 percent of all childhood deaths in 1914 and there was a notable spike between August and November, increasing from 4 deaths in April, to 15 deaths in November. Diarrheal deaths represent the most frequent causes of death, peaking in August and September (see Monachino, this volume).

Children-at-Risk: Morbidity Patterns during WWI

Information was also collected from the Board of Education’s monthly reports from the school nurses for 1910 to 1920 (Educational Archives and Heritage Centre of Hamilton-Wentworth 1910-1920). School nurse reports indicate the value placed on hygiene. Of the frequently reported ailments, hygiene-related ailments, such as pediculosis (head lice) represented a large portion of the total number of illnesses found in the school nurses’ reports. The number of reported cases of pediculosis declined by 70 percent between 1914 and 1917 (Figure 10.2). Pediculosis displayed strong seasonality, with the number of cases spiked in September and October in all years. Eye and ear diseases also fell between 1912 and 1918. Eye diseases decreased from 504 reported cases in 1912, to 39 cases in 1918. Dental caries were the most frequently reported ailment in the monthly School Nurses’ Reports of the Board of Education Minutes. Adenoid and tonsil

ailments were also widespread throughout the second decade of the twentieth century.

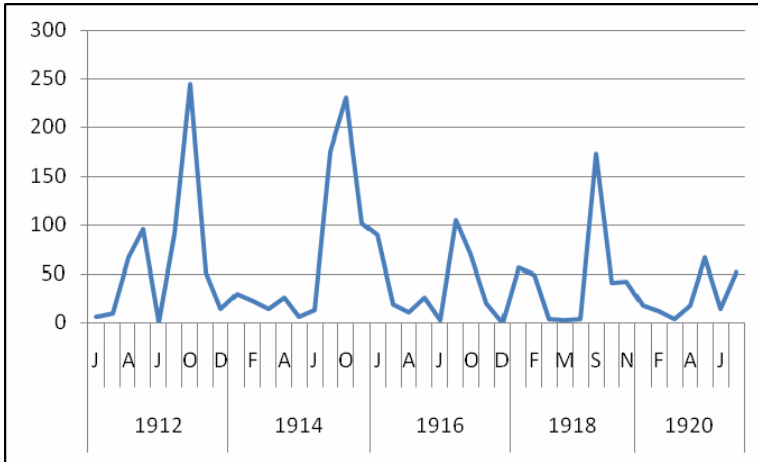


Figure 10.2: Pediculosis Rates Showing Seasonal Increases Between September and November of Every Year (Educational Archives and Heritage Centre of Hamilton-Wentworth 1910-1920)

The Board of Health reported a rise in some specific infectious diseases in Hamilton between 1914 and 1917. For example, the number of cases of mumps reported to the Board of Health increased from 23 in 1912-1913, to 733 in 1915-1916, before decreasing to 37 in 1916-1917. Mumps was

reported quite variably throughout the first two decades of the twentieth century, and spikes in the reported number of cases appeared in 1911 and 1912. Despite the large number of reported cases, mumps did not contribute to mortality statistics. The disease, rarely fatal, caused no deaths between 1914 and 1917. Diphtheria, on the rise in Hamilton since 1910, continued to pose a health risk to children during WWI. The number of cases rose steadily between 1914 and 1917, from 210 to 255. Diphtheria deaths also increased during the war, rising from 20 deaths in 1914, to 27 deaths in 1917. Whooping cough was an unpredictable disease during World War One. The number of reported cases soared from 159 cases in 1912 to 489 in 1916, yet, by 1917, there were only 243 cases reported. While the number of cases was quite high, deaths reported from whooping cough were quite low. In 1916, for example, 489 cases were reported, but there were only 5 reported deaths.

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The Board of Health reports indicate that some common infections among children were vanishing. Smallpox, responding to local, national and global public health and vaccination campaigns, was reported only 19 times between 1914 and 1917 and no deaths were reported. Poliomyelitis, a disease that primarily affects children under five years old (West, 1996), was not commonly reported in the Board of Health reports between 1914 and 1917. There were only 22 reported cases and zero deaths from polio. Typhoid cases and deaths declined

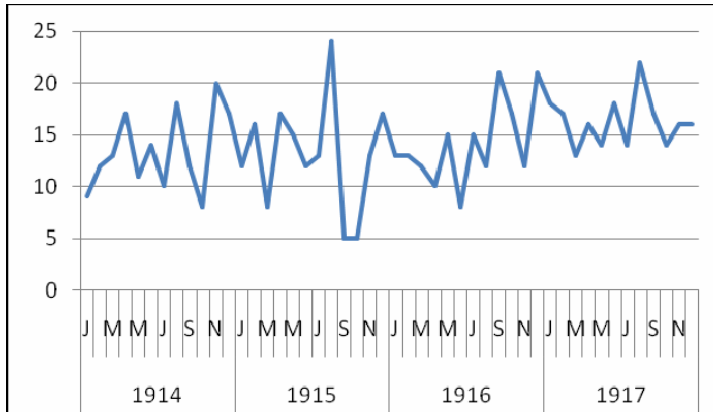


Figure 10.3: Stillbirths, 1914-1917 (Government of Ontario 1914-1917)

during WWI. The number of cases of typhoid reported by the Board of Health decreased from 74 cases in 1912 to 12 cases in 1917. Typhoid is commonly spread through contaminated food and water, usually as a result of poor

waste removal, poor sewage and draining, and inadequate hygiene

and sanitation (Preston 1991). The number of public inspectors increased substantially during WWI, as did food and dairy inspections (Hamilton Spectator December 27, 1916: 9).

Stillbirths are considered an accurate barometer of general population health and the quality of life of a population (Gagan 1981: 165). The number of stillbirths reflects standards of obstetric and paediatric care, the effectiveness of public health initiatives, maternal health and nutrition, and environmental hazards (Gagan 1981: 165; Statistics Canada 2001). Throughout the First World War, the number of stillbirths recorded in the death registry remained high, averaging 14.2 per month. There was some variation between months, from an average of 13.4 in 1914, to 16.3 in 1917. Nevertheless, there was a marginal increase in the number of stillbirths in 1914 and 1915, followed by a gradual decrease between 1916 and 1917. Stillbirths displayed seasonality, and like childhood deaths, there was a peak in the number of stillbirths in August and September of all years under

analysis. The high number of stillbirths in Hamilton reflected rapid industrial and demographic changes, inadequate maternal care and nutrition, and possibly unidentified environmental hazards affecting the people (Gagan 1981: 165).

Changes on the Home Front – The Battle for Child Health Improvement

Between 1914 and 1917, health initiatives expanded in Hamilton. The first Board of Health Nurse designated for home visits, Miss I. Ramsay, was appointed in 1916 (*The Hamilton Spectator* July 15, 1946: 5). The number of school nurses quadrupled and as a result, the number of inspections rose dramatically (see Craigie, this volume). The monthly nurse reports illustrate the changing concerns of the school health programs. In 1912 and 1914, the reports focus on the number of cases of specific infectious diseases, such as tuberculosis, diphtheria, and measles. These diseases, while often fatal, were among the least common diseases affecting children at the time. By 1918, the reports focused on pediculosis (head lice), dental caries, and eye disease. The reports paint a more complete picture of the health issues of school aged children. Referrals to other medical organizations were first reported in the school nurse reports in 1914 and every year the number of referrals made by the school nurses increased. The mounting number of referrals reflected the growing dependence of public health officials on professional medicine and a growing variety of medical services available in the city. In 1916, dental clinics for Hamilton's public schools were established. A majority of the school nurses' referrals were to the dental clinic, however, referrals were also given to the dispensary and the city hospitals. School enrolment increased gradually and steadily throughout the war years. Average school attendance also remained fairly constant, with an average monthly attendance rate of 89.5%. While the war affected the demographic composition of Hamilton, the child population of Hamilton continued to grow between 1914 and 1917.

Sanitary reforms made by the municipality were also beginning to make a difference. In 1916, public health officials made over 19,000 inspections and cited 554 people for unsanitary or overcrowded housing (*Hamilton Spectator* December 27, 1916: 9). Great improvements in milk sanitation contributed to improved health for both children and adults (Gagan 1981: 167). By 1916, there were 5,000 inspections of dairy farms annually, 1,178 milk samples tested for butter/fat content, and 313 milk samples tested for dirt and sediment. Food

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inspections were becoming routine. Annually, 6,000lbs of beef and 1,000lb of pork were destroyed for “being unfit” (Hamilton Spectator December 27, 1916: 9).

Perhaps, the most direct effect of WWI on the children of Hamilton was the loss of their most vigilant crusaders. Among the many health officials who left Hamilton to serve overseas, Dr. Roberts’ departure was a blow to the numerous campaigns that aimed to improve childhood health (The Hamilton Spectator February 11, 1915: 11). The third city official to respond to the call for volunteers, Captain James Roberts, Hamilton’s health officer, had regularly called for public health reforms that benefited children. Despite the loss of Dr Roberts, the Board of Health continued to advocate public health improvements aimed directly at children (The Hamilton Spectator, December 27, 1916: 9). But, as Hamilton lost some of its most prominent Health Officials, it gained new workers and new programs. Women were first brought into the realm of public health during WWI and were recognized for their unique role in the protection of children’s health.

Changing Perspectives: The increasing value of children

“When a nation is fighting a war or preparing for another... it must look to its future supplies of cannon fodder” (Sara Josephine Baker, *Fighting for Life*, 1939: 165)

In many ways, children were the silent beneficiaries of a world at war. Instead of finding children marginalized during Hamilton’s war period, many aspects of public health mobilized to reduce infant and child deaths and to improve monitoring and care for a wide variety of health threats. Canada’s unique position in WWI allowed children to benefit from improved public health and medical services, without being directly affected by battle. Canada’s support of Britain led to a substantial number of men leaving to fight in Europe. In Hamilton, this caused a demographic restructuring. While the population of men aged 16 to 21 decreased consistently from 1914 to 1917 (The Hamilton Times 1914: October 1), the number of school-aged children increased. Deborah Dwork argues that WWI was actually beneficial and not harmful for infant and child health. The loss of a significant number of working-aged young men due to losses incurred in battle placed greater societal importance on children, who would grow up and replace the dead and displaced. War conditions abroad created a greater sense of urgency

in Canada, the United States and Britain to establish efficient and comprehensive infant and child welfare systems. “Participation in the bloodiest and most lethal war in European history not only raised foreboding that a new, vital generation capable and competent to take on the work of their parents would not be born at all: too many fathers killed, too many children unborn”(Dwork 1987: 12)

Across Europe and North America, public health programs, especially those relating to children, flourished during World War One. Sara Josephine Baker, the Chief of the Division of Child Hygiene of the New York City Health Department, stated in 1939, “in Europe and North America, enthusiasm for such public health programs was much more easily roused and maintained far longer during belligerent as compared to peaceful times” (Dwork 1987: 209). Indeed, in Hamilton, the number and variety of public programs increased dramatically during the war to include, by 1918, a variety and dental and maternity services, the dispensary and nutrition campaigns, and public wards of the city’s hospitals. The scope of activities carried out by the Board of Health and the Board of Education in Hamilton also expanded. Throughout WWI, more attention was paid to antenatal work and infant health, medical consultations were extended from infants to all elementary students, and milk and food sanitation increased. The role of the MOH was expanded with changes to Provincial regulations and municipal structure changes.

Significant positive improvements were being seen, and children were the prime beneficiaries. Many infectious diseases, such as tuberculosis, smallpox, scarlet fever and typhoid were gradually declining. Public health initiatives, school nursing and diversified medical resources began to flourish in the city. Despite the significant social disruption, Hamilton’s child population increased (The Hamilton Times 1916: September 30:3). Student enrolment rose gradually but steadily over the war years, and average class attendance remained strong. Both stillbirths and infant deaths decreased as a proportion of total deaths between 1914 and 1917, indicative of long term mortality trends. During WWI, public health surveillance moved beyond mortality figures and started to record and monitor the more benign but prevalent diseases that affected children.

The changing record of morbidity and mortality cannot solely be explained by the successes and failures of public health initiatives. Many anthropologists and epidemiologists argue that public health initiatives have only a limited role in determining health. According to Shapiro and Schlesinger, declining mortality results from a “variety of coexisting and complexly interrelated causes” (Shapiro

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and Schlesinger 1968). Factors such as urbanization, industrialization, occupational changes, ethnicity, nativity, diet and household income all play a factor in infant and child mortality patterns (Preston and Haines, 1991). Despite these improvements, there was still substantial cause for concern in Hamilton's health statistics. The number of stillbirths, long considered a barometer of health and quality of life, continued to rise during WWI. While Rosemary Gagan suggests that the rise in stillbirths in Hamilton may be an outcome of more representative registration, the high number of stillbirths also reflects the rapid industrial and demographic changes, inadequate maternal care and nutrition, and possibly unidentified environmental hazards in Hamilton throughout the war (Gagan 1981: 165).

As Rosemary Gagan discussed, "the advent of a golden age of public health in Hamilton awaited the coalescence, on a broad front and over a long period of time, of a combination of ecological, economic, political, technical and medical initiatives" (Gagan 1981: 166). Factors that affected childhood health, such as population density, overcrowding and poor personal hygiene were regularly reported by Hamilton's Medical Officer of Health, Dr. Roberts, and were regular topics in the *Hamilton Spectator* and *Hamilton Times*.

The changing perspective of the health of Hamilton's children is situated within the changing view of the nature of childhood that occurred at the beginning of the twentieth century. Elliot West argues that "a new childhood emerged in the 19th century and came into its full flowering in the 20th century. Based on this new perspective, childhood was seen as a unique and distinctive time of life" (West 1996: 1-2). Childhood was emerging as a unique physical and emotional stage, and children were being seen more and more as a demographic segment of society that required nurturing and care in order to prepare them for adulthood. This perspective of childhood was moving children closer to the center of family life and government agendas (West 1996: 4). The complicated and challenging job of child rearing demanded a new spirit of dedication and care among parents. The local, provincial and federal governments were also taking an increasing role in raising children. In Hamilton, this changing paradigm was evident in the growing media attention to the care of children, the public health efforts of the Board of Education and the Board of Health, and the increasing powers afforded to the Medical Officer of Health. During the War, part of the "progressive era", governments began to take unprecedented powers and

responsibilities over the lives of citizens, including looking after the nation's children (West 1996: 12).

A Need for a Children's Hospital in Hamilton

Reshma Saeed

If there is an urgent need for a [children's] hospital, I think the public should know of it and hear it proclaimed so loudly that it will touch their hearts and their pockets. (Callaghan, Hamilton Daily Times May 21, 1910).

Hospitals specialized in treating children are relatively recent phenomena. It was not until the end of the nineteenth century that public hospitals in Canada were gradually being accepted as acceptable institutions for medical care. With the rise of scientific medicine and the growth of the urban population in the early twentieth century came encouragement for developing more and better institutional facilities (Agnew 1974). Children's Hospitals were among the institutions that emerged and flourished during this period. Why did children's hospitals become a social and medical necessity? Was it because of the increase in both the morbidity and mortality of childhood diseases at the time? Or was it due to the medicalization of children and child related diseases that led to greater knowledge of and concern about childhood health?

According to Nichols (1991) and Jenks (2005), the development of children's hospitals in western countries is rooted in Rousseau's revolutionary insights of the eighteenth century, in which he provides a rationale for the idea that children are born innocent. Along with this notion, he goes on to posit a novel formulation for his time: that children are different from adults and they deserve special treatment and care. How did these transformations in conceptions of childhood occur in societies and within health care systems? How did this affect the treatment of children?

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The purpose of this chapter is to investigate the development of a children's hospital in Hamilton, Ontario in the early twentieth century within the broader perspectives of modernization theory. The thematic aim is to explore the relation between changing conceptions of childhood and the need for children's hospitals. A detailed analysis of the conditions under which Hamilton established a children's hospital is presented in order to address the central questions that stimulated this chapter.

A Macrosocial Perspective: Modernization Theory

Among the various conceptualizations of modernization, the theory states that traditional values and behaviours are gradually shed for social change that is both transformational and progressive (Tipps 1973). A common type of social change described within this theory involves the 'increasing differentiation of structure and increasing specialization of function' (Irwin 1975, Tipps 1973). The theory has been widely criticized for its definitional problems and, in the words of one author, "attempts at definition are aimed more at telling us what modernization is (or might be) than what it is not" (Tipps 1973: 202). Despite its shortcomings, this version of modernization theory provides a convenient framework within which to investigate the processes of modernity in connection with the development of children's hospitals and the changing conceptions of childhood.

Modernity is characterized by two significant transformations that have contributed to the modern society: objectification and rationalization. Firstly, the process of objectification refers to the separation of activities and forms of knowledge that progressively become specialized in function within the society (Bury 1998, Freund, McGuire, and Podhurst 2003). In relation to disease and illness, the development of medicine marked the end of the eighteenth century paradigm and "separated disease from the experience of the sufferer" (Bury 1998: 6). This eventually led to the increased specialization of medical science in the early twentieth century. In this way, the establishment of the hospital near the end of the nineteenth century allowed for the objectification of health. The social changes occurring during the early nineteenth century involved greater professionalization of medicine, which improved attempts to control infectious diseases (Bury 1998). This raises the question of how children came to be perceived as different from the rest of the population, given that they became objectified in children's hospitals.

The second quality of modernity involves the adoption of empirical evidence to explain natural phenomena while emphasizing the use and dependence on technology and technique to govern choices made about lifestyles. Thus, where the objectifying processes separated experience from everyday life, the rationalizing process is applied to the everyday world (Bury 1998, Freund et al. 2003). A product of rationality is the medicalization of everyday life, which is created through “the process of legitimating medical control over an area of life, typically by asserting and establishing the primacy of a medical interpretation of that area” (Freund et al. 2003: 207). An additional invention within rationalization is the process of commodification. Through this process, qualities, such as health, are transformed into objects that can be absorbed and applied to daily aspects of life (Bury 1998, Freund et al. 2003). This provokes the question, how did social transformations create new ways of viewing and treating children?

The Beginnings of an Idea: Conceptions of Childhood

Before examining the conditions under which Hamilton developed a children's hospital, it is useful to consider historical changes in the concept of the child in order to: a) understand how modern childhood conceptions were developed and; b) examine how this affected the social and medical treatment towards children.

The 'Child' in History

Based on the literature of paediatric history, special credit has gone to Rousseau for being the first philosopher to influence a large number of people to give importance to childhood and the needs of children. Studies in childhood history have shown that since the fifteenth century there has been a ‘softening of attitudes’ towards children, which has ultimately contributed to the “structuring of modern family and social life” (Savage 1982:105). These ideas are well explained by Jenks (2005) who, through the work of Philippe Ariès, provides an analysis of the changing conceptualizations of childhood from the Middle Ages to the modern world.

During medieval times children were perceived the same way as everyone else in society, which in essence rendered them ‘invisible’. There was a lack of distinction between life stages and thus, between childhood and adulthood. In this view, once the child became independent of its mother, he or she belonged to

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adult society; children were treated as adults with the same expectations of responsibility and behaviour. It was not until the sixteenth and seventeenth centuries that the conception of the child gradually emerged as different from the adult. Children came to be viewed as weak and susceptible to corruption, which in turn gave rise to the perceived need for strict moral guidance in parenting to ensure that children did not stray from the path of ‘appropriate’ human culture. Until the early twentieth century, children were exploited in factory labour as a source of capital for the family economy (see Brunton for more information about child factory labour, this volume). Nevertheless, in this period another transformation in attitudes towards children occurred that “shifted [them] from having low economic worth to immeasurable, or ‘priceless’, emotional value” (Jenks 2005: 53).

Children of a Modern World

The most recent conceptions of childhood distinguished it from adulthood and served to acknowledge the special needs of children. This attitudinal shift relates to the multi-processes of modernity that created a rationalized and objectified way of viewing and treating children. In other words, children became important because of social changes that involved a shift in traditional modes of thought towards new and rational ways of thinking (Jenks 2005, Wright 1988). While Britain was developing into a wealthy industrial capitalist nation, the population had to be kept healthy since the quality of the nation’s people was believed to be connected to its power. Growing concern for the well-being of infants and children was therefore linked to the need to create a healthy population and avoid political and economic problems in the future (Wright 1988). Infants and children became valuable parts of progressive society and their importance grew within the project of creating a greater nation.

This new importance gave rise to new ways to treat children. The frequent deaths of children at the turn of the twentieth century led to their institutionalization and medicalization, as physicians’ expertise in child care increased (Wright 1988). However, with the emergence of childhood importance and increasing specialization in the medical sciences, children’s hospitals and scientific child rearing developed that allowed physicians to become more precise and authoritative in their knowledge of childhood disease and illness. As a result, the establishment of child care health systems gave new forms of control to

medical professionals over the health of children; in turn, children become increasingly objectified through scientific medicine (Jenks 2005, Wright 1988).

Thus far, it has been shown that the need for a children's hospital arose from the re-conceptualization of childhood associated with social changes that occurred in western society at a particular time. Children became institutionalized and medicalized as they came to be viewed as important through the new social construction of childhood. Medical professionals are chiefly responsible for the control and objectification of children through scientific medicine. In this way, children's hospitals and scientific child rearing became commodities, and doctors and other advocates, such as women, promoted a dependence on science in daily life to prevent disease and illness among children.

In Canada, the rise of children's institutions also resulted from attitudinal shifts that related concepts of childhood to 'child rescue' (Rooke and Schnell 1982). The concern for child rescue was connected to the history of child abandonment, enslavement, beating, mutilation and killing in past times (Rooke and Schnell 1982, Savage 1982). However, a close look into the development of a children's hospital in Hamilton in the early nineteen hundreds shows different motives, but ones that are still connected to the processes of modernity and changing conceptions of childhood.

The Story of Hamilton's First Children's Hospital

The first decade of the twentieth century in Hamilton came with a substantial increase in population (see Rowe, this volume). Despite the building boom in 1912, the growth of Hamilton resulted in an ever increasing need for more hospitals to accommodate the rising number of ill that crowded into the city's hospital wards (Hill 1989). Infectious diseases such as smallpox, diphtheria, whooping cough, and typhoid fever caused the dramatic increase in mortality and morbidity. It was not until Miss Jeannette Lewis (Figure 11.1), a local



Figure 11.1: Miss Jeannette Lewis, 1877-1942 (*Hamilton Spectator* February 1, 1908:13)

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Hamiltonian, visited her father in the hospital that she saw the need for better facilities for children and came up with the idea of establishing a children's hospital in Hamilton (Bailey 1992).

The conditions of the City Hospital at this time were reported to be below standard for the care and comfort of the patients. The provincial inspector, Dr. Bruce Smith, noted that the hospital was poorly located with the risk of nearby industrial pollution worsening the health of the sick. In addition to the congested wards, the hospital was noisy and unsanitary. (Hamilton Spectator September 25, 1913:n.pag). Hamilton's City Hospital was condemned as the worst in the province (Hill 1989). The lack of preparation by the hospital was attributed to the city's unforeseen rapid growth and epidemics of infectious diseases (Hamilton Spectator June 10, 1913:n.pag). The City Pathologist, Dr. William Deadman, recalls

The responsibilities of the Health Officer and his department were heavy in those days, for infectious diseases like diphtheria, scarlet fever and typhoid could not as yet be controlled by immunization measures. Diphtheria and scarlet fever were rampant, and the summer of 1913 saw the medical wards filled with typhoid cases from an epidemic in the Crown Point area" (Hill 1989:14).

Amidst the congestion and confusion in the hospitals, Miss Lewis felt compelled to give the children a place of their own in which to heal and cure their illnesses. Over a period of five years, Miss Lewis attempted to raise enough money to establish a children's hospital in Hamilton. In 1907, she began fundraising by selling bricks for one dollar and gained support of women's clubs, such as the Y.W.C.A. as well as the greater public (Hamilton Herald March 20, 1911:9, May 27, 1911:35). By 1910, Miss Lewis had raised half the amount of money needed to build a children's hospital. However, at a mass meeting of citizens in May 1910, it was suggested that the money be used to erect a statue of King Edward VII. Miss Lewis and members of the hospital committee were strongly opposed to this and it was finally decided against by the city council (Hamilton Times May 21, 1910:201). A ward for sick children was thus built in the City Hospital that year, funded by the city of Hamilton. (Campbell 1910).

Miss Lewis nevertheless continued working towards establishing a hospital solely for children. In 1911, she bought two houses and proposed to use them as

the site for the children's hospital (Hamilton Herald March 4, 1911:8). The site never amounted to anything and difficulties with the project continued into the next year (Hamilton Herald March 20, 1911:9). Issues over money were created by the city council, which suggested that Miss Lewis give over her funds to the city and allow them to help construct the hospital (Hamilton Herald March 20, 1911:9, September 11, 1912:16-18). This idea was rejected by Miss Lewis on the grounds of her mistrust of the city council and she insisted on constructing the hospital herself and then handing over the building to the city (Hamilton Herald September 24, 1912:30, Hamilton Times March 21, 1912:6). After heated arguments between the council and Miss Lewis, she ended up handing over her collected funds to the city council (Hamilton Times October 28, 1912:18, Hamilton Herald November 4, 1912:83). In 1913, the construction of a children's hospital was underway as an extension of the General Hospital, which was completed in 1914. Miss Lewis continued to be involved in the developments through donations and by taking an active interest (Hamilton Times May 28, 1913:21, July 23, 1913:25).

A Microsocial Perspective: Significance of a Children's Hospital in Hamilton

Apart from the increasing number of sick children admitted to hospitals due to infectious diseases during the early twentieth century, the need for a children's hospital in Hamilton was twofold: first, to prove to the world that Hamilton was a modern city, and second, to show that it was also prosperous. The pressure of meeting the same quality and wealth of nearby cities, chiefly Toronto, which had already built a children's hospital before the twentieth century, can be seen in Miss Lewis' reaction of frustration and anger towards the Hamilton City Council over issues of money during her hospital project. "[Miss Lewis] has grown to hate her native city and will ask her supporters' permission to endow a [children's] ward in Toronto" (Hamilton Herald August 1, 1912:15).

This comment reveals a perception of Hamilton as lacking medical progress when compared to Toronto, which is perceived to be more advanced because of its established hospital for sick children. In this view, the city of Hamilton was almost compelled to build a children's hospital so as not to lag too far behind in the competition for a superior civilization, motivated by processes of modernization. The example of the reconceptualised infant in England during the nineteenth hundreds also applies here. According to Wright (1988) the

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development of infant health care systems were also driven by the fear that other nations had a superior level of physical health and health care technology. In this sense, competition for advanced technologies drives the creation of new institutions and systems for social constructions that may not be fully developed as yet, much like the case of Hamilton's children's hospital in the early nineteen hundreds.

Miss Lewis's cause for building a children's hospital was attributed to her "heart [being] full of sympathy for the unfortunate...actuated by a love for children" (Bailey 1992). This implies a modern conception of childhood in which children acquired an 'emotional value' and were seen as important. However, a closer look into the affairs surrounding the development of a children's hospital in Hamilton shows that a modern conception of childhood was not fully accepted at the time. The proposal for a statue of King Edward VII instead of a children's hospital proves just this point. Moreover, the fact that Miss Lewis did not completely accomplish her goals of building a hospital solely for children also supports the idea that the desires to become modern were greater at that time than the view that children were important. One could argue that there may not have been enough funding to construct a hospital dedicated to children, but this was not entirely the case in Hamilton because Miss Lewis mistrusted the city council's handling of money, implying that corruption got the better half of city funds.

However, the fact that two hospital wards for children were constructed over four years, from 1910 to 1914, reveals that Hamilton was not far from expressing the social importance of children through the erection of a dedicated facility for their care. Although Miss Lewis appeared quite alone in her endeavours to build a hospital for children, it could be said that she was merely ahead of her time.

To turn to the point of Hamilton's desire to display its prosperity by constructing a children's hospital, this relates to the construction of differentiated structures within urban settings. The early 1900's were marked by a building boom across Canada. It was believed that a city's prosperity and value was based on the number and size of buildings and also the facilities the city had to offer. An article from Maclean's magazine captures the feeling of the time: "a nation to be truly great must have wealth, commerce, buildings, railways and bridges" (Maclean's April, 1912:595).

With this concept of 'bigger is better' and the rise of scientific medicine at the time, the need for creating specialized departments and services within hospitals was beneficial to Hamilton since, after all, "hospitals are an economic necessity"

(Maclean's June, 1914:6). Furthermore, it contributed to an appearance of modernity, given that medical science was growing in esteem. Thus, with the desire for modernity and prosperity, comes the justification for a children's hospital in Hamilton.

Conclusions

The necessities for the development of a children's hospital are clearly not simple, as illustrated by Hamilton's experience in the early twentieth century, because such an institution is, by its very nature, a specialized product of modernization. Certain common factors are probably necessary for a children's hospital to be established. These include: social transformations that give importance to childhood for the purposes of the "destiny of the nation and responsibilities to the state" (Jenks 2005:60) and the objective treatment of children under the modern cultural construction of childhood. In Hamilton there was a clear indication of the lack of collective acceptance of the idea of childhood importance, which was illustrated in the city's inability to establish a hospital solely for children. However, because of its desire to become modern and prosperous, Hamilton was motivated to adopt conceptions of childhood importance in order to compete with nearby cities. It can be said therefore that a city's or nation's achievements can be determined through the way children are treated and viewed within that society.

‘A Sure Curer’ – the Treatments and Remedies of Childhood Diseases

Anna Kata

You, or some one of your family, are sure to need this remedy sooner or later and when that time comes you will need it badly; you will need it quickly. Why not buy it now and be prepared for such an emergency! (The Hamilton Spectator January 7, 1905:9)

Today we have a vast amount of medical knowledge and technology at our disposal. If we are faced with a health crisis, there are many avenues available to us – whether it be going to a hospital or simply taking a walk to the drug store. The same options were not necessarily available one hundred years ago, although there were still many choices for sick Hamiltonians.

Between the years of 1890 and 1920, the number of hospitals increased across Canada (Gagan and Gagan 2002:4). Despite this, many people avoided hospitals because they were considered to be full of dangerous infections and contagious patients. ‘Respectable citizens’ obtained medical attention in their own homes, from their relatives, household staff, or family physician. What sorts of treatments did these options offer to ailing individuals?

This chapter outlines the treatments and so-called ‘cures’ that were available for childhood diseases during the early 20th century. There were many to choose from in the popular, folk, and professional sectors of health care (Helman 1994:64). Each of these areas is examined herein. In the popular sector, ‘patent medicines’ are analyzed within the framework of social representations theory (Washer 2004:2561-2562) in an attempt to understand their popularity.

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Advertisements for such medicines from Hamilton newspapers are compared to those appearing in almanacs and even medical journals. They are then compared to treatments from the folk and professional sectors, such as those provided by family members or prescribed by doctors.

What are ‘Patent Medicines’?

‘Patent medicine’, the term given to various medical compounds sold under countless different names and labels, is actually a misnomer. The patent does not refer to legal protection but rather to the British monarchy, when an item was “a patent of royal favour” (Anderson 2000:173). Governmental patents would not have been of particular use to medicine manufacturers, for they only provided protection for a limited amount of time before reverting to the public domain; obtaining a patent also would have required revealing the secret ingredients and methods involved in making the product (Clark 1938:6). A more accurate term was ‘proprietary medicine’, which referred to medication sold over the counter without a prescription (Anderson 2000:173). Such products involved trademarks rather than patents, which meant that while their formulas and ingredients could change over time, their names and logos would remain protected.

Although manufacturers often touted the exact contents and preparation methods of their products as ‘secret’, Canadian law required the listing of some ingredients on the labels. The Proprietary Medicine Act (Department of Health Canada 1927:2) decreed that if a medicine contained any drugs listed in the Act’s Schedule, the exact quantities had to be provided when applying for the product’s certificate of registration. The Schedule was composed of many drugs, including heroin, morphine, opium, and strychnine (Department of Health Canada 1927:8-9). Many proprietary medicines did indeed contain these worrisome ingredients, which most likely would have done the very opposite of curing an illness (for an in-depth examination of the effects such drugs may have had, see chapter 13).

Newspaper Advertisements

Proprietary medicines can be considered to fall under the popular sector of health care; this is the non-professional domain (Helman 1994:64-65). It is comprised of the therapeutic options people turn to rather than consulting healers or medical practitioners. This includes self-medication.

A wide array of self-medication was available – this could be demonstrated by simply opening the daily newspaper to any page. Newspapers were the most effective method of promoting trademarked medicines, due to the constant repetition of a product's name (Anderson 2000:38). Hamilton's newspapers printed advertisements for the same products nearly every day.

Medicines aimed towards children often tailored their advertisements to persuade parents to purchase those specific products. An example was noting that a product had a pleasant taste, such as with sulphur pellets coated in chocolate (The Hamilton Spectator January 7, 1905:7). More importantly, products were also explicitly advertised as safe for children (Fig. 12.1). An advertisement for Scott's Emulsion actually claimed it was “not medicine”; rather, it “contains nothing that children

should not have and everything that they should” (The Hamilton Spectator January 6, 1905:9). Advertisements for Chamberlain's Cough Remedy unambiguously stated, “It contains no opium or other harmful drugs, and may be given as confidently to a baby as to an adult” (The Hamilton Spectator January 10, 1905:8).

Advertisements for proprietary medicine typically listed a host of ailments that could be cured. For instance, Vapo-Cresolene claimed to cure whooping cough, croup, coughs, grip, hay fever, diphtheria, and scarlet fever (The Hamilton



Figure 12.1: Chamberlain's Cough Remedy Advertisement (The Hamilton Spectator January 10, 1905:8)

Spectator January 9, 1905:9). Another medicine boldly claimed to cure “every ailment known to man, woman and child” (Anderson 2000:32).

The Bad Cold of To-day May Be Pneumonia To-morrow.
The Sore Throat or Tickling Cough that, to the careless, seems but a temporary and trivial annoyance, may develop into Bronchitis.
Every hour delayed in curing a cold is dangerous.
Dr. Wood's Norway Pine Syrup
contains all the lung-healing virtues of the pine tree, and is a sure cure for Coughs, Colds, and all throat and lung troubles. Miss Bertha E. Craig, Almont, Ont., says:—"Last fall, for over two months, I had a very bad cold, and although I tried several remedies, it seemed as if I was getting worse instead of better. While looking over the Burdock Blood Bitters Almanac, I read about Dr. Wood's Norway Pine Syrup, and decided to give it a trial. When I had used about half a bottle, I found it was doing me good, so kept on until I had taken two bottles. It is the best cure for a cold I ever heard of."
Price 25 cents per Bottle. THE T. MILBURN CO., LIMITED TORONTO, ONT.

Figure 12.2: Dr. Wood's Norway Pine Syrup Advertisement (The Hamilton Spectator January 10, 1905:8)

These advertisements were often large, with eye-catching images. However, some were also very plain, comprised merely of words in the same typeface as surrounding articles (Fig. 12.2). Could this have been done to confuse readers into thinking they were reading a report rather than an advertisement, thus providing the product with a sense of authority or respectability?

One characteristic of the popular sector of health care is that advice is sought from friends, neighbours, family, or lay people who have prior experience with the disease (Helman 1994:65). In advertisements, this was embodied in customer testimonials. For example, in one advertisement Mrs. Mary Murdock of Topeka, Kansas, wrote, “I am the mother of ten children and only one living – the tenth one. I tried Doctor Pierce’s Favorite Prescription the entire nine months and have one healthy girl” (The Hamilton Spectator January 6, 1905:2). Some of these testimonials were fabrications. One documented example was the advertising campaign for Mayr’s Wonderful Remedy for Stomach Trouble. Mayr’s advertising copy-sheets contained dozens of testimonials of how the writer had been cured – but each had a blank space that was to be filled in before the newspaper printed it. The accompanying instruction sheet explained, “Insert name of your

city in heading of each ad” (Cramp 1936:197). However, despite common beliefs that the majority of testimonials were faked or purchased, it seems that most were actually genuine. Having one’s comments published was a way for an ordinary person to experience a small moment of fame. One newspaper editor wryly noted, “If your brains won’t get you into the papers, sign a patent medicine testimonial. Maybe your kidneys will” (Anderson 2000:39).

Almanacs

The manufacturers of proprietary medicines did not stop at newspaper advertisements. They also published colourful almanacs, which were distributed at no cost in stores and pharmacies (Anderson 2000:40). Almanacs contained recipes, jokes and advice – but the calendrical information that usually appears in them, such as the times of sunrises and sunsets, moon phases, and weather forecasts, made up a very small portion of these books. For instance, in *Burdock Blood Bitters Almanac & Key to Health* (1905), only one column across a full two-page spread contained any calendrical data; the majority was dedicated to descriptions of the company's products and the accompanying testimonials.

Almanacs used the same techniques to promote their medicines as did the newspapers. Testimonials could be seen in an almanac published by Parke & Parke Druggists, a pharmacy located in Hamilton. In it, Mrs. J. Gowell claimed:

I used Parke's Emulsion of Cod Liver Oil with my little boy who had Croup very bad, and the glands all swollen. We used nothing else and he got well very quickly. We have used it before with great satisfaction. [Parke & Parke Druggists n.d.:14]

Fear mongering was another technique commonly used to promote products. A manufacturer would feed on parents' fears that their children would be ill, and then insist that the only cure was their own medicine. For example, the *Na-Dru-Co 1910 Almanac* explained:

The mother's greatest anxiety is during the first two years for Baby's life. Hot weather and teething bring their troubles even in healthy localities and well ventilated houses. The teething period makes the child susceptible to many ills, such as vomiting, nausea, indigestion, constipation, colic and feverishness. The best known cure for all these things is Na-Dru-Co Baby Tablets. [National Drug and Chemical Company of Canada, Limited 1910:12]

Some almanacs provided other information about healing, such as advice on setting broken bones or about keeping children in warm, dry places and away

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from draughts. However, as can be seen with these instructions on the treatment of influenza, companies did not miss a single chance to promote their products:

First: Give a dose of Dr. Pierce's Pellets. These should be used daily to carry off poisons from the system and keep the bowels loose. Second: To prevent attacks of bronchitis or pneumonia, to control the pains and aches, Dr. Pierce's Anuric tables should be given, one every two hours, with lemonade. ...Dr. Pierce's Ammonia-Camphorated Liniment should be applied to the chest if the lungs are sore and the chest protected by a cotton or wool jacket. ...In some cases where diarrhoea is a prominent symptom, a few doses of Dr. Pierce's Smart-weed Extract will give relief. [World's Dispensary Medical Association 1870:45]

The Popularity of Proprietary Medicines

According to British statistics, the dollar value of drugs prescribed by doctors was approximately half of what was spent on proprietary medicines (Clark 1938:10). Why were such nostrums so popular?

Proprietary medicines were popular because they provided convenience. Instead of having to mix one's own ingredients and prepare one's own remedies, or even wait for a doctor, all one had to do was reach for a bottle. In this way, proprietary medicines became "mother's little helper" (Anderson 2000:37).

Another reason for their popularity is that they provided desperate people with a sense of control. Most proprietary medicines made claims about cure-alls, and promised that they would surely restore ailing individuals back to health. This can be interpreted through social representations theory, which proposes that when faced with an unpredictable phenomenon, people attempt to impose order and create shared ideas (Washer 2004:2561-2562). Such representations are comprised of 'common sense' ideas shared by the community; these ideas are often cultivated by the media. This framework can apply to the chaotic nature of diseases. The newspaper was the main mode of media in the early 20th century, which reported both disease outbreaks and advertisements for supposed cures. The Ontario Board of Health and Hamilton's Municipal Board of Health rarely discussed diseases such as whooping cough, measles, and scarlet fever because they had no effective means of prevention or treatment (Gagan 1981:68). When

faced with an unpreventable disease menace, the public likely would have latched onto proprietary medicines advertising a sure cure; such treatments would have acted as coping mechanisms.

Doctors' Advice

Doctors are members of the professional sector of health, which is comprised of legally sanctioned and organized healing professions (Helman 1994:75-77). The basis of this sector is usually scientific medicine. Its practitioners have the power to prescribe powerful – and potentially dangerous – treatments to their patients. Why might ill Hamiltonians have given such power to their physicians? One reason is that doctors appeared to have considerable specialized knowledge once the shift from the humoral medicine system to the biomedical model occurred. The notion that poor health was due to imbalances of environmental, physical, and psychological factors was abandoned (Waller 2004:10). Instead of poor health being due to unclean air, bad spirits, or a melancholy state of mind, the germ theory of disease identified microorganisms as the cause of illness.

With this newfound medical understanding came better abilities to prevent and cure infectious diseases. One might think that with this paradigm shift, doctors surely would have begun to prescribe better treatments than suspicious proprietary medicines. However, “the medical profession [was] not exempt from the common failing of credulity” (Clark 1938:7). A number of the very same nostrums that were advertised in Hamilton newspapers were also advertised in medical journals, such as Vapo-Cresolene (Ontario Medical Association 1901:xxxiii). Free samples or discounts were even offered to physicians.

Not all doctors were swayed by such ploys. Many had a low opinion of proprietary medicines, and argued that such self-medication was dangerous (Anderson 2000:33). Most considered the business to be “deliberate misrepresentation and downright fraud” (Cramp 1936:iii). One doctor noted, “Pink dishwater, if put on the market under some fancy name, could, by persistent and insistent advertising, be built up into a commercially valuable ‘patent medicine’” (Cramp 1936:ix). Physicians considered their own treatments to be superior to proprietary medicines, and even to a mother’s methods. Indeed, some of their advice was very reasonable, and similar to what doctors would prescribe today. For instance, mild attacks of scarlet fever were not thought to need any medicine; sufferers would be confined to bed (Holt 1900:908). Children suffering

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from measles or influenza were also put to bed; if they had a high temperature, cold baths or ice packs were used (Holt 1900:925; Ontario Medical Association 1913:188-189).

Yet despite taking a Hippocratic Oath to do no harm, doctors' medical knowledge at the turn of the 20th century still included treatments that could very well have been harmful. In fact, some medical remedies may have been more dangerous than bottled nostrums, for doctors would not have been subject to the same laws that applied to proprietary medicine manufacturers. For more severe cases of influenza, grains of codeine, heroin, belladonna, or strychnine might have been prescribed (Ontario Medical Association 1913:189). For typhoid fever, minute doses of nitroglycerine were thought to be a "vigorous remedy" (Jacobi 1898:210). For scarlet fever, "cooling drinks" of dilute hydrochloric acid in water would supposedly help a sore throat (Jacobi 1898:235).

Many medical textbooks recommended toxins and alcohol. When such 'stimulants' were prescribed, much smaller doses were often suggested for young children, so it seems that doctors were at least somewhat aware of the negative effects such substances could have on a body. Administering the precise dosage was considered essential, for as one doctor observed:

Having said this much in favour of the use of alcohol, I must also express my conviction that great harm is done by too large doses of alcohol... I have seen babies who were being dosed with brandy every hour and even oftener in amounts far exceeding those I have mentioned, with the result that vomiting was actually aggravated, and sometimes it seemed to me that the drowsiness or the supposed delirium of the infant was largely if not entirely due to the brandy.
[Still 1909:226]

Folk Remedies

The folk sector of health care is placed between the professional and popular sectors; it refers to healing that is sacred or secular (Helman 1994:67-70). One characteristic of this sector is the involvement of the family in diagnosing and treating the ill individual.

Folk remedies may have included traditional recipes passed down through a family for generations. For example, the Pennsylvania German settlers of

southern Ontario advised that scarlet fever be treated by covering a child with lard, and diphtheria treated by breathing in fumes from slaking lime (Smith 1991:79). Drinking cream of tartar dissolved in water was their cure for smallpox (Smith 1991:21). Most of these remedies were made from natural ingredients that grew in the area, and could simply be harvested from the outdoors. For instance, a remedy for whooping cough involved grinding up sunflower seeds and sumach bobs (Smith 1991:17).

Other folk knowledge consisted of wisdom about food. *The Boston Cooking-School Cook Book*, an influential American cookbook, included an entire section on recipes prepared specially for the sick (Farmer 1997:490-504). These included barley water for laxative conditions, oatmeal water for digestive problems, and fruit waters for fevers. However, the advice provided went beyond recipes. There were also suggestions for how to set an invalid's tray, with tips on selecting the finest dinnerware, on how to place the cutlery, napkins, doilies, and condiments, and on how to cheer the patient by including flowers with their meal. The serving, timing, and proportions of meals were considered very important; the cookbook proposed that the majority of diseases were actually caused by an error in diet. It is important to note that this advice would have required considerable effort on the part of the caretaker and may not have been feasible for families with limited means.

Examples of more sacred treatments included praying and pilgrimages. One popular pilgrimage at the time was the shrine of Sainte Anne de Beaupré, outside of Québec City, which attracted 200,000 pilgrims per year (MacLean 1910:521-527). One of the titles given to Sainte Anne was the 'Wonder Worker', for on each side of the church lay crutches, canes and bandages from pilgrims (including children) who had been healed. Interestingly, it seemed that even the church used testimonials to promote its cures. *The Annals of Sainte Anne de Beaupré* were published monthly, with tales such as that of Mrs. Bourget of Drummondville:

My little daughter, although two years old, could not walk and had such pains in her legs that she could not even stand up. Fearing that she would be crippled for life, I decided to take her with me on a pilgrimage to Beaupré. Kneeling at the foot of the statue of Sainte Anne, I begged that good mother to have pity on my child. My prayer was at once granted. [Maclean 1910:522]

Conclusions

In Hamilton at the turn of the 20th century there were many types of treatments available for ailing children. They encompassed the popular, professional, and folk sectors of health, and included such methods as proprietary medicines, medical advice, and family recipes. Proprietary medicines were very popular. They claimed to offer miraculous cures for a wide range of ailments, and so it is understandable within the framework of social representations theory that worried parents would reach for such nostrums in attempts to exert some control over the unpredictable diseases that afflicted their children.

During the early 1900s, convalescing in a hospital was not the norm. In those days, as well as today, the majority of sicknesses were dealt with in the popular domain (Kleinman et al. 1978:251-258). Each domain has distinct roles – an ill child may be a family member or a friend in the popular or folk sectors, but a patient in the professional sector. Each domain also has its own explanatory systems of a disease, based on factors such as social class, education, culture, religion, and previous experiences with an illness. However, perhaps the most important factor to keep in mind is the time period. Despite an important shift from the humoral to the biomedical model of disease, the medical knowledge of the time was by no means perfect. Although the various treatments described in this chapter may seem ridiculous, dangerous, or even ignorant based on what we know of health and illness today, at the start of the 20th century the citizens of Hamilton believed in and sought these methods, and they made as much sense within the medical paradigms of the time as do today's treatments.

Taking the Wonder Out of the ‘Wonder Drugs’: A Critical Examination of the Effectiveness and Economic Feasibility of Cures for Childhood Diseases in Hamilton

Krystal L. Cameron

This preparation is perfectly harmless, readily absorbed, and through its healing, soothing action affords immediate relief and quickly cures Catarrh of the Nose and Head, Catarrhal Deafness, Hay Fever, Cold in the Head, La Grippe, Tonsillitis, Sore Throat and all inflamed, irritated conditions of the nose and throat. (The British Medical Association, 1909: 3-4)

During the early twentieth century in Hamilton, several diseases that affected children were circulating, such as tuberculosis, influenza (also known as la grippe), catarrh, and diarrheal diseases, to name a few. Although these diseases also affected adults, many therapeutic treatments that were valuable for adults would have been completely useless for children (Holt, 1897: 45). Despite the fact that there were no great pandemics within this time period, pharmaceutical developers were actively pushing their products onto the public. However, it is even more fascinating to consider what these self-proclaimed ‘miracle cures’ actually contained, and how effective they would have been for curing a disease, or in many cases, the several diseases they claimed to cure.

This chapter examines the overall effectiveness of self-proclaimed cure-alls used for childhood disease and illness in the early twentieth century. Several of the so-called wonder drugs from this era are evaluated to determine whether they

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could have had a positive impact on the disease, acted as a placebo, or might actually have been a potentially harmful nocebo. Additionally, this chapter explores the cost of these drugs relative to the social economy of the period, to assess whether these medications would have been affordable to families within the Hamilton area. Not only is the initial cost of the nostrum considered, but the potential follow-up expenses resulting from consumption are also discussed. By critically assessing the active ingredients in some of the drugs that were offered during this period, it is possible to gain a greater understanding of the biocultural aspects of this subset of medical knowledge. These include the physiological outcomes, as well as the socioeconomic costs, that may have resulted from the purchase and consumption of these drugs.

Although there were, and still are, several other forms of potential treatments, including those which fall under the popular, folk and professional sectors (Helman, 1994), only medicines considered to be 'wonder drugs' are explored herein, (for other types of treatment, see Kata, this volume). By focusing on this particular category of treatment, it was possible to evaluate cures that were being offered during this period that were not necessarily recommended or produced by physicians, but were available and being actively advertised to the public in a popular media source – the newspapers. This chapter demonstrates the age-old saying that 'if something seems too good to be true, it usually is,' and it is hoped that the people of Hamilton heeded this warning in times of sickness.

Methodology: Microfilms and Medicine

In order to grasp what types of drugs were offered for children's ailments in Hamilton during the early twentieth century, I searched for medical advertisements in microfilms of the Hamilton Spectator newspaper from January 1904 to December 1905. I also consulted, *Secret Remedies: What they cost and what they contain*, published by the British Medical Association in 1909. While some of the advertisements in the Hamilton Spectator blatantly told the consumer what the product contained, others did not. Therefore the British Medical Association volume was consulted, where applicable, in order to gain an understanding of the ingredients in these 'cures,' what other cures might have been available, and what the relative cost of these medicines would have been. The 1911 census for was consulted to determine the average household income in Hamilton and literacy rates among the working population. This information was

useful for determining whether the ‘wonder drugs’ of the period would have been affordable. Literacy rates were valuable as a proxy indicator of the extent to which people in Hamilton would have been able to comprehend fully the components of these drugs, as well as their potential effects.

Once a list of ingredients was accumulated, including the most popular elements and potentially harmful properties, these ‘medicinal’ components were researched in scholarly journal articles published within the last twenty years. The feasibility of these cures was reviewed by comparing their initial, secondary, and potential tertiary costs with the average family income within Hamilton, Ontario in 1911. Simply looking at the cost of the various drugs was necessary but not sufficient to evaluate the economic consequences associated with the consumption of the ‘wonder drugs’ sold in the early twentieth century.

Placebos: “It Will Work, I Just Know It!”

Sugar pills are the most common form of placebo known, however they are only one of the many types of this category of ‘medication.’ In the medical world, placebos are considered to have a positive psychological effect on an individual with a disease, illness or sickness, allowing them to gain a more optimistic outlook and therefore feel physically better, even though the treatment administered possessed no actual medicinal properties (Brody, 2000). That said, some of the supposed ‘wonder drugs’ available for children during the early twentieth century would not have created any *substantial* positive outcomes for an ill child. For example, one supposed cure for whooping cough, Dr. B. Assmann’s Whooping Cough Remedy, was composed of several different powders, all of which were discovered to be mere milk sugar (lactose) (British Medical Association, 1909: 19). However, believing that the cure would work may have positively affected the child to a small degree during his or her disease, resulting in temporary feelings of renewed energy or strength. This could have been especially helpful in times of desperation when a child’s family may not have been able to afford the personal attention of a doctor, and the all-consuming *need* for a drug to work could have created a welcome though false sense of improvement.

Although a child may have recovered after using one of the many wonder drugs available during this period, it is important to note that almost eighty percent of all cases of disease will result in the body being able to “heal itself,

**To Loosen
the Cough**
**AND BRING ABOUT A THOROUGH
CURE OF COLDS, USE**
**DR. CHASE'S SYRUP
OF
LINSEED AND
TURPENTINE**

It is sometimes dangerous to stop a cough.

The aim should be to loosen the cough, relieve the tightness and pain in the chest, and aid expectoration, so that the obstructing and irritating mass may be passed out of the air passages.

This is exactly what is accomplished by the use of Dr. Chase's Syrup of Linseed and Turpentine.

It is not a mere cough mixture, and not intended to stop the cough, but rather to cure the cold.

If you have tickling in the throat, pains and tightness in the chest, sensations of irritation, of oppression or suffocation this great family medicine will afford almost instant relief, and thoroughly overcome the cold which gives rise to these symptoms.

~~Not only is Dr. Chase's Syrup of Linseed and Turpentine a positive cure for croup, bronchitis, whooping cough, asthma and severe chest colds, but is also a preventive of all diseases of the lungs.~~

It has time and again proven its right to a place in every home, and is the standby in thousands of families.

Dr. Chase's Syrup of Linseed and Turpentine, 25 cents a bottle, at all dealers, or Edmanson, Bates & company, Toronto. To protect you against imitations, the portrait and signature of Dr. A. W. Chase, the famous receipt book author, are on every bottle.

Figure 13.1: Advertisement for Dr. Chase's Cough Syrup (The Hamilton Spectator, January 10 1905: 3)

with no medication at all" (Anderson, 2000: 32). In fact, "It is a common mistake to underestimate the importance of the hygienic surroundings of the patient, the value of good nursing, careful feeding, and judicious stimulation, just as it is to overestimate the beneficial effects of drugs" (Holt, 1897: 45).

By putting faith in the idea that it was the drug that cured the child's disease and not simply the process of recovery, individuals truly believed that without the drug the child would not have survived, resulting in false testimonials as to the drug's efficacy. Drug producers used these testimonials in order to advertise and sell their product to a larger audience, and were considered 'proof' that the drug worked and provided positive results to the user (see Kata, this volume).

Nocebos: The Proverbial Medical "Oops!"

The category of drugs known as nocebos consists of medicines that do not possess any helpful medicinal ingredients, but cause severe negative outcomes (Brody, 2000). The consumption of these medicines can have effects that are worse than the manifestations of the disease itself, and they potentially can cause

confusion as to which symptoms are due to the individual's illness and which are due to the drug. In essence, the death of an individual may be caused by the 'cure', rather than by the disease. During my investigation into wonder drugs of the early twentieth century available in Hamilton, I came across two 'cures' which had some very questionable ingredients. One of these miracle cures was a cough syrup called Dr. Chase's Cough Syrup, which claims turpentine as the main ingredient (The Hamilton Spectator, January 10 1905: 3). Another 'cure', Fellows' Syrup of Hypophosphates, lists strychnine as one of its main ingredients (The Canadian Practitioner and Review, 1901: 39 (back cover)).

According to contemporary medical knowledge, consuming turpentine can have several undesirable consequences, which can range from relatively minor concerns, to quite serious problems. These outcomes may include a "burning sensation, abdominal pain, nausea, vomiting, confusion, convulsions, diarrhea [and] unconsciousness" (IPCS, 1999: 1-2). Ingestion of the substance can also cause chemical pneumonitis and affect the "central nervous system, bladder and kidneys [and] may result in tachycardia, [...] respiratory failure and *death*" (emphasis added; IPCS, 1999: 2). Although turpentine has a substantial, characteristic odour, allowing the consumer to easily identify its presence in the concoction, it is somewhat relative, since the producer freely advertises the fact that one of the main components of the product is turpentine (Figure 13.1).

Meanwhile, strychnine, usually referred to as rat poison, can also cause considerable harm to the human body, especially to children. As little as 5 to 10mg of strychnine is considered fatal to a child (Starretz-Hacham et al., 2003: 532). Death, however, is not the only potential outcome of consuming strychnine. In as few as 15 minutes following ingestion, muscle spasms and seizures can begin, and after prolonged exposure, respiratory paralysis, along with other pulmonary problems, can occur (Starretz-Hacham et al., 2003: 532), which would be even more pronounced in children.

Cases of strychnine poisoning in children as a result of ingesting medication were reported throughout Toronto and New York from 1919 to 1933, with the affected children usually being between the ages of 1 to 5 years old (Brown and Ross, 1935). The culprit of these poisonings, some of which resulted in death – 6 out of 35 cases in Toronto from 1919 to 1933 ended fatally (Brown and Ross, 1935) – were pills containing strychnine, flavoured with a coat of chocolate. Toddlers, able to walk and maneuver themselves throughout the home, would come across these tablets and, in some cases, consume in excess of 80 at a time,

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due to the delicious chocolate coating (Brown and Ross, 1935). This is frighteningly reminiscent of the recent move in the pharmaceutical industry to apply a candy coating to pain relief medication to aid ingestion.

The knowledge that these dangerous compounds were contained in cures for children seems quite shocking and horrifying. However, the Government of Canada's Memorandum of the Propriety or Patent Medicine Act (1927) actually lists several 'medicinal ingredients', such as strychnine, opium and heroin, the amounts of which were required to be disclosed (Department of Health Canada, 1927: 8-9). However, this does not mean that drugs containing these properties were banned from the market, simply that the government needed to be informed of these ingredients, even if the public was not.

Unfortunately, the average individual would probably not have known which drugs would have been effective for their child, nor would there have been a great understanding of the effects of the advertised 'medicinal' properties. Although the average individual today may not have much more medical knowledge, there appears to be a heightened awareness of potential side effects and increased disclosure from accredited doctors.

“True” Medicine

Although several 'wonder drugs' offered false hope for cures, essentially taking advantage of families wishing for a miracle, some of the drugs available in Hamilton at the turn of the twentieth century actually possessed effective medicinal properties.

Several of the cures listed in the British Medical Association's book were found to contain either licorice root or extract of licorice, such as Fenning's Children's Cooling Powders for teething, and a cure-all called Therapion (British Medical Association, 1909: 133, 172-173). Although these drugs were not advertised in the Hamilton Spectator, it is possible that they were available to individuals in Hamilton. The effects of licorice root can be traced to ancient Egypt, as well as ancient Greece and Rome, and the root was "introduced to the Native Americans by early English settlers" (Davis and Morris, 1991). Licorice possesses potential medical properties and is considered to be a "moderately potent anti-inflammatory used both orally and topically" (Schechter et al., 2003: 454) for sore throats, bronchitis, fever, or infections resulting from viruses (Hou and Jin, 2005). However, the efficacy of licorice root seems to be contested; while some sources praise its uses (Armanini et al., 2002 and Schechter et al., 2003), others conclude that it is simply a "flavouring agent, sweetening the bitter taste of many drugs" (Davis and Morris, 1991: 3).

Another useful medicinal property that was available to Hamiltonians was cod liver oil (The Hamilton Spectator, January 12 1904: 10), which is found in emulsions created by druggists, as well as in Scott's Emulsion, advertised in the

Hamilton Spectator (see Figure 13.2). Although seemingly old-fashioned, the use of cod liver oil is useful for preventing and curing rickets (Vieth and Fraser, 2002). Furthermore, recent research has shown that pregnant women can increase

Why An Emulsion?

Because an emulsion (Scott's) of cod liver oil is agreeable to the taste, while the plain oil is repulsive. Because Scott's Emulsion is easily digested, while the plain oil is not. Because Scott's Emulsion enters the system quickly and without effort, while the plain oil is a burden and a tax on the stomach. Because Scott's Emulsion remains sweet after entering the system, while the plain oil is likely to ferment because of its slow action. Because

SCOTT'S EMULSION

contains not only the best of the pure oil but other valuable properties, while the plain oil offers nothing but the crude properties of the raw oil. Because Scott's Emulsion is always the same in purity, strength and composition, while the plain oil is apt to vary in all three of these particulars. Because Scott's Emulsion is a hundred times more beneficial and desirable than any plain oil could be.

SCOTT & BOWNE, 122 Wellington St., West
TORONTO, ONT.

Figure 13.2: Advertisement for Scott's Emulsion of Cod Liver Oil (The Hamilton Spectator, January 25

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the weight of their baby, associated with “a lower risk of diseases later in life” (Olafsdottir et al., 2005: 424), by ingesting cod liver oil during early pregnancy. Although this is more properly understand as an aspect of maternal health, it certainly has long term implications for the health of children.

Dollars and Cents: The Economic Feasibility of Wonder Drugs

Based on information obtained from the 1911 census, printed in 1921, labourers in Hamilton earned the lowest wage of all workers, at approximately \$498.15 per year (see Table 13.1 for a full list of occupations in Hamilton and their respective earnings per year), or 27.5¢ per hour (Sixth Census of Canada, 1921: 24 and 19). According to the statistics, labourers also possessed the highest illiteracy rate in Hamilton, whose illiteracy rate ranked eighth among some of the most populous Canadian industrial cities in 1921 (Sixth Census of Canada, 1921: 18) (Table 13.2). Labouring work may perhaps have been the only jobs available for these individuals, and despite the low pay rate, they needed the job in order to be able to support their families. Additionally, the literacy rate among labourers was most likely linked to the immigration of individuals into Hamilton during this period, who were proficient in their native language, but not in English. Meanwhile, some of the workers with more profitable occupations, such as bricklayers, could earn upwards of \$720.97 per year (Table 13.1), or 50¢ per hour

<u>Occupation</u>	<u>Average Earnings (CAD)</u>
Bakers	678.78
Bricklayers, Masons and Stonecutters	720.97
Carpenters	651.58
Chauffeurs	736.90
Domestic and Personal	610.54
Electricians	749.95
Labourers	498.15
Painters and Decorators	615.06
Plumbers and Gas Fitters	704.24
Trainmen	862.59
Street Railway Employees	663.73
Salesmen	763.87

Table 13.1: Average Earnings of Heads of Families in Specified Occupations in Hamilton, Ontario from 1911 (Sixth Census of Canada, 1921: 19-20)

<u>Ranking of Canadian Industrial Cities by Illiteracy Rate of Labourers</u>	
1.	Ottawa
2.	Winnipeg
3.	Quebec
4.	Montreal
5.	Regina
6.	Calgary
7.	Vancouver
8.	Hamilton
9.	Halifax
10.	Windsor
11.	Toronto
12.	Edmonton
13.	St. John's
14.	London
15.	Victoria

Table 13.2: Ranking of Canadian Industrial Cities by Illiteracy Rate of Labourers in 1921 (Sixth Census of Canada, 1921: 18)

(Sixth Census of Canada, 1921: 24 and 19), almost double that of labourers. Therefore, it is quite easy to observe the economic disparities that existed in Hamilton at this time. Not being able to read the label or the ingredients would have disadvantaged illiterate individuals, creating social divisions between those who merely had the ability to read, and those who could read with full comprehension the medical ingredients and their effects.

According to the 1911 census information, the amount of money available per person in a Hamilton household was, on average, \$202.45 per year, with each family consisting of four to five children (Sixth Census of Canada, 1921: 24). This household income would

have to be stretched to pay for housing, clothing, food and care. Although the cost of drugs during this time was relatively low, ranging from approximately \$0.25 to \$1.50 per cure (The Hamilton Spectator, 1904 - 1905), it is important to consider that caregivers may have been required to purchase additional remedies, or felt the need to consult a doctor if the symptoms got progressively worse. Furthermore, if the child consumed a drug which resulted in death, the family would have been responsible for arranging and paying for a funeral, which would have been costly and emotionally difficult, especially considering that the death was that of a child (see Chan and Pelzowski, this volume).

Conclusions

The wonder drugs advertised throughout newspapers, such as the Hamilton Spectator, in the form of pills, liquids and inhalants, claimed to cure an individual of all that could potentially ail them. However, many of these wonder drugs contained toxic ingredients, including turpentine and strychnine. Meanwhile, other cures had little or no effect. Although potentially effective medicines

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existed in the early twentieth century, it seems unlikely that the average individual would have known which cures were actually beneficial, and which ones could have made their condition even worse. Doctors' advice, moreover, was not always reliable (see Kata, this volume).

Despite the fact that families may have been able to afford the initial costs of proclaimed medical cures for childhood illnesses, they may not have been willing to put their trust in 'secret remedies' concocted by supposed medical professionals. There were alternatives to wonder drugs at this time, notably home remedies, nutritional treatments, and recommendations from almanacs (see Kata, this volume).

Although this chapter examines only a few specific drugs in detail, there were many 'wonder drugs' available throughout the early 1900s. Many individuals would have had difficulty determining which medicine would have been best. Unfortunately, since it is usually the young and the elderly who are more prone to fall ill, children "in the past have suffered much from overzealous treatment, particularly from drug-giving" (Holt, 1897: 45), and surviving the early years of childhood would have not only been difficult because of disease, but as a result of treatments as well.

14

The Infectious Corpse**Bonnie W. S. Chan**

The ideal way to get rid of any infectious disease would be to shoot instantly every person who comes down with it. (Henry Louis Mencken 1924:131)

Raising a child is no easy task. Today, parents worry that their children may not do well and wonder whether they will make something of themselves in society. In the early twentieth century, these matters may have been relatively trivial because many parents worried that they might not be able to raise their children to adulthood (West 1996). In Hamilton, as well as in many other Canadian cities and towns, epidemics of infectious diseases carried off young children. From 1900 to 1917, over one hundred people succumbed to infectious diseases each year in Hamilton; many of them were young children (Hamilton Health Association 1900-1917). Children were easy targets because their weaker immune systems were less able to fight off an infectious disease, compared to an adult with the same disease.

Infectious diseases were transmitted from one child to another through various types of contact. The most obvious type of transmission occurred through direct contact with microorganisms acquired through coughing, sneezing, touching or from simply being in the presence of an infected child. Indirect transmission could result from contact with the infected person's belongings, such as their clothing, bedding, or any personal belongings touched by the infected child (see Leigh-Parker, this volume). In the sad case of fatal diseases that consumed the life of the child, the disease may not have died with the child. The deadly virus may have continued to live in the corpse or on the deceased child's belongings. Examples of such diseases are spinal meningitis, smallpox, and cholera, diseases

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in which pathogens continue to live in the deceased person's lungs (Spectator Scrapbook, vol. 2:142-143, Hamilton Spectator 1903: 3 and E-mail to Caldwell, March 14, 2008). Much attention was paid to the spread of disease while the child was alive but there is a lack of information on the spread of disease after death. This chapter focuses on the importance of proper treatment of the bodies of children whose lives were taken by an infectious disease. While isolation of the disease during life was an important feature of public health initiatives to stop the spread of infection, it was equally important to continue this vigilance after death.

Preparing for a Funeral

It is a parent's worst nightmares: the death of a child. When a child dies, however, arrangements for a funeral must begin immediately. There were few funeral homes in Hamilton in the early 1900s. In addition, little information was recorded about funerals and documentation about how bodies were prepared for burial is extremely limited. I am grateful to Jeff Caldwell of Humber College (Ontario, Canada) for much of the information on the preparation of the bodies and embalming presented here.

In the early twentieth century, it was common practice for members of the grieving family to prepare the body of a dead child at home, including bathing, cleaning and dressing the corpse for the funeral (Kastenbaum 2004, E-mail to Caldwell, March 14, 2008). Families preparing bodies of their loved ones at home would have been at risk of contracting the disease from which the child died. The child's body was prepared for burial, most likely by the mother, during a time of extreme grief. Rubbing of the eyes or nose during this sad process would have given easy passage for the disease that killed the child to infect the person preparing the body, making them a carrier of the disease.

The practice of preserving the body by lining the coffin with ice also may have contributed to the spread of disease. Special coffins were created to hold ice, which decelerated the speed at which the body decomposed. However, once the ice melted, the moisture from the water and ice reversed the process and the speed of decomposition increased rapidly. If the body reached a state of decomposition, anyone entering the premises where the corpse was held would have been exposed to the infectious agent. Although embalming was practiced at the time, that method of preservation was relatively new and would not have been a procedure every family in Hamilton could afford (E-mail to Caldwell, March 14,

2008). Embalming was mostly practiced in funeral homes or, in some cases, funeral directors went to the family's home to assist with the preparation of the body (E-mail to Caldwell, March 14, 2008).

Embalming basically involves removing all bodily fluid from the deceased and replacing it with embalming fluid that contains preservatives and disinfectants. Today, embalmers use formaldehyde. This funerary ritual has a long history in North America, but became more widespread during the American Civil War because of the need to bury an overwhelming number of casualties. Prior to this time there were basically three parts to a funeral: preparation of the corpse, transportation of the body to the site of burial, and burial. During the Civil War, however, soldiers' corpses had to be transported back to their home for burial, a process that may have taken days to weeks. As a result, the art of embalming became necessary for preserving bodies and slowly became accepted into mainstream practice in North America (Grimes 2000:262-264).

In the absence of embalming, agents of infection can continue to thrive. Each time the corpse is shifted, microbes can seep out from the lungs into the air. Movement of the corpse occurs while the body is being dressed or when it is moved from the preparation area to the coffin. Whether the deceased individual was prepared at a funeral home or at home, the funeral director and family members were likely exposed to microorganisms that emanated from the deceased. This assumption is made with confidence because it is only recently that it became necessary to don masks, gloves, and gowns for protection against infectious diseases, whether airborne or blood-borne (Molinari, 2003:571, Caldwell, March 14, 2008). Funeral directors and family members in the early twentieth century did not wear protective gear, with the result that pathogens could easily have infected them, making them carriers of the disease and potentially able to communicate it to others. Furthermore, although Hamilton's public health officers were charged with inspecting food stores, factories, and schools, the annual reports of the Board of Health make no mention of inspecting funeral homes (Hamilton Health Association 1904-1905, 1905-1906, 1906-1907, 1909-1910, 1911-1912). It is unlikely that Funeral Homes maintained a sterile environment.

Many funerals, whether conducted for adults or children, started from the family home and proceeded to the cemetery (Hamilton Herald 1900-1917). Though this type of funerary practice carried out as usual during epidemics, fear of infection intensified. One concerned citizen of Hamilton worried about the

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possibility of contracting smallpox when the corpse and belongings were removed to the street (Spectator Scrapbook, vol. 2:142-143). Although this concern was raised in 1885, as we shall see later in this chapter, anxiety about contracting infectious diseases from corpses did not merely fade away.

The Funeral

In North America today the two most common ways to bury the remains of the deceased is either through in-ground burial or by cremation. However, this was not always the case. In the early twentieth century, most Christians did not believe that cremation was the proper way to treat the body of the deceased; rather, the body should be left the way it was when the person entered into death so that the physical body would be available for resurrection of the soul (Grimes 2000:264, Mims 1999:172). In fact, it was only as recently as 1963 that the Pope lifted the ban on cremation for Roman Catholics (E-mail to Caldwell, March 14, 2008, Mims 1999:172). Cremation is certainly an effective way to exterminate pathogens, as well as an infected corpse, but the option of cremation was probably not available to the people of Hamilton in the early twentieth century. The first crematorium was built at Bayview Cemetery during the 1920s (see Pelzowski, this volume). Furthermore, the predominance of Christians in Hamilton leaves little doubt that cremation would have been considered as a burial option because it would have destroyed any hope of resurrection.

The Spread of Disease

As discussed earlier, the possibility of the spread of infection through corpses has received little attention in writings from the early twentieth century. Among the plethora of newspaper articles published in Hamilton from 1900 to 1917, only two specifically addressed the possibility of deceased bodies being infectious; neither is the matter considered in the Annual Board of Health Reports for the period. On the other hand, there was an abundance of information pertaining to isolation or disinfection among the living.

Earlier in this chapter, reference was made to anxiety in the 1880s about the spread of smallpox from the corpses and belongings of sufferers. The second reference to contagion and corpses can be found in a 1903 article published in The Hamilton Spectator. It describes an in-ground burial of a child in which the

mourners, who consisted of teachers and classmates of the deceased, touched and kissed the deceased child. Particular concern was expressed that the spinal meningitis to which the child succumbed was still transmissible through the corpse (Hamilton Spectator May 1, 1903: 3). In the Annual Board of Health Report for 1909-1910, Dr. James Roberts, the Medical Health Officer of the time, wrote “Nothing is more reprehensible than for outsiders to enter here, handle the bedclothes, handle the food, kiss the patient before leaving, etc.” Dr. Roberts was stressing the importance of immediate attention to any diagnosed infectious disease, as well as strict isolation of the infected person to avoid further contamination. Such measures, considered to be important for protecting people from contracting infections from the living, also should have been applied to the dead. Open casket funerals and visitations could have been banned or there could have been a complete prohibition on visitations to contain and limit the spread of disease.

Perhaps the popular notion of death as an end to life prevented such measures from being considered, let alone adopted. Death was envisaged as an end to the physical life of an individual as well as all the ailments that once plagued the body. In the midst of mourning a recent death, people undoubtedly forgot that the corpse could still be infected with a contagious disease. In many societies and religious traditions it was customary to keep a body in the household for a couple of weeks, during which family and friends would come by and pay their final respects before the body and coffin were buried (Voeltz 1995). Although the focus of the chapter is mainly on the spread of disease through corpses and belongings, it is immensely important to note that other aspects of funeral rituals could have aided in the transmission of infection. The spread of disease through contact with the corpse, through touching and kissing, did not seem to be a concern, yet great emphasis was placed on the importance of isolating a sick child before death. Dr. Roberts continuously stressed the value of isolation and the importance of disinfection: “More important than all, disinfection of excreta and rigid cleanliness about the entire person must be insisted on” (Annual Board of Health 1909-1910: 19).

Aside from disinfection, other precautions could have been taken in the early twentieth century, such as complete disposal of the person’s belongings. Cremation of the belongings, clothing, or bedding would have eradicated any infection that was present on them. This was rarely carried out, as noted in the Annual Reports of the Board of Health for 1904-1905 and 1912-1913. In the

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1904-05 report, mention was made that seventy-five loads of used rags from the city hospital and seven loads of bedding from infected houses were burnt at the crematory. In the 1912-1913 report, only five bundles of old clothing were cremated. It is not entirely surprising that so few belongings were burnt because disinfection of homes proved to be the preferred method of disinfection (Hamilton Health Association 1905-1912). Each year, the homes of one hundred to four hundred patients were disinfected (Hamilton Health Association 1905-1906, 1906-1907, 1909-1910, 1911-1912). Cremation of belongings may also have been uncommon because parents wanted keepsakes to commemorate or to preserve a living memory of their child.

The 'Living' Condition

We have learned through the other chapters in this book that many conditions in Hamilton allowed epidemics of infectious disease to persist in the early twentieth century. No single problem accounted for the situation and various measures, such as vaccination, new treatments and remedies (see Kata, this volume) and improvements in sanitary matters (see Housego, this volume) were being implemented. Other factors that contributed to the spread of disease included crowded housing and poor living conditions. Infected bedding, linen, and the belongings of the infected individual, especially in cases of typhoid fever, also added to the problem (Annual Board of Health 1906-1907). When a large number of people lived within a single household, the chances of exposure to infected materials increased, especially when the ventilation in some houses was far from good (Annual Board of Health 1906-1907). Under such circumstances, isolating a sick child is unlikely to have prevented the spread of infection to other members of the household.

Now let us revisit the case in 1885 of the Hamilton citizen concerned about contracting smallpox from the belongings of a person who died from the disease. A twelve-year-old boy was diagnosed with smallpox only to die days later. During that time, great emphasis was placed protecting the community by quarantining every person who had been in close contact with the infected person (mainly members of the household) and by isolating infected people in the pest house (Spectator Scrapbook, vol. 2: 142-143, 146). Yet, it is likely that preparations of corpses, viewings, and funerals in family homes also would have brought with them the possibility of transmitting the disease to the living from the

dead. As mentioned previously, each time a corpse is moved or shifted pathogens are likely to be discharged from the lungs into the air (E-mail to Caldwell, March 14, 2008). In overcrowded houses more people would be exposed to such pathogens. People exposed to them could potentially have become carriers, in turn passing along pathogens that could have become fatal for their children or siblings. If bad ventilation and poor living conditions were added to an overcrowded house, then one can imagine the possible outcome. This vicious cycle of contagion did not end with the death of a family member; there was always a chance of catching a fatal disease from an infectious corpse at home.

Conclusion

It is important to examine the possibility that corpses transmitted infectious diseases to the living because viruses and bacteria do not rest until they have reached their final destination along with the body: the earth. A great deal of attention was placed on preventing infectious diseases from spreading among the living, but little attention was paid to the role of the final stage of life in this process. When death is at hand, mourning consumes our every thought. Diseases that may have been of utmost importance in life fade in significance. We often comfort each other and with thoughts that ‘at least they are in a better place now’ or ‘at least they are no longer suffering (from whatever plagued them in life)’. In the early twentieth century, the absence of thoughts about the infectiousness of corpses may have turned them into the silent killers of others.

We live in a privileged society in which having many commodities is a necessity of life. Many members of Canadian society would not think twice about sending our recently departed children to a funeral home to be prepared for the funeral. Just over a century ago there was the option of funerary services at a funeral home, but few could afford the cost. Some opted to prepare their loved ones in the comfort of their own homes because that was normal practice. Children were especially susceptible to epidemics of infectious disease that occurred in Hamilton and many precautions were taken to limit their spread. However, the city should have paid more attention to careful pre-burial and burial practices, including disposal of the child’s belongings, to reduce the spread of infection after death. Epidemics were sufficiently serious in Hamilton that even the most trifling details should have been considered.

Death as a Social Event: Memorializing Children in Hamilton

Dianne Pelzowski

*Mourn not for me my parents dear,
I am not dead but sleeping here.* (Davison, 1990: 65)

Today the deaths of both children and adults are often memorialized in elaborate ways. Styles of commemoration come and go, but their adoption and abandonment reflect social norms and social status (Cannon, 1995:14). For instance, a pattern of status-based, progressive inclusion of children in cemeteries, once reserved for high status families, often emerges among lower status groups over time (Cannon, 1995:14). Death disrupts social and personal bonds and memorialization is therefore a powerful medium of emotional and social expression. Memorialization practices thus are tied to the emotional and social effects of the loss associated with death (Cannon, 1989:446).

In what ways were Hamilton area children memorialized and how did their families choose to express their grief in losing a child? This chapter outlines the memorialization of children during the early twentieth century in Hamilton. Although there were several avenues to explore, such as tombstones, obituaries and death notices, this chapter concentrates on children's tombstones in Hamilton's cemeteries. There is surprisingly little information on this subject (Woods, 2006:1). Here I focus on the motifs, styles, materials, and epitaphs on children's tombstones and analyze them within a symbolic and socio-economic framework. I also consider the manner of memorialization chosen for children in

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Hamilton in relation to the transformation of the cultural meaning of childhood in the late nineteenth and early twentieth century.

A Brief History of Mourning Children's Deaths

Prior to the eighteenth century, the death of an infant or young child is believed to have been an insignificant event in Europe and North America, eliciting a mixture of indifference and resignation on the part of the parents. From the sixteenth to the early eighteenth centuries there is no evidence of the purchase of mourning symbols, such as armbands, and parents seldom attended their child's funeral. The stoic acceptance of young deaths was expressed in the sober and restrained mourning rituals for children and the practice of naming newborns after deceased siblings, basically replacing the child that was lost (Zelizer, 1985:24-25).

In the nineteenth century a revolution in mourning practices took place amongst the upper and middle class families in both Europe and North America, and the death of a young child became the most painful and least tolerable of all deaths (Zelizer, 1985:25). Between 1820 and 1875, concern over the untimely death of children came to the forefront in America (Douglas, 1998:251). Philippe Aries attributes this sensitivity to child loss as part of a revolution of feeling, wherein a broader transformation of the cultural response to death was taking place (Aries, 1974:68); traditional parental restraint turned to visible outpourings of grief over the loss of a child (Zelizer, 1985:25). Parental mourning of a child's death became a social and psychological reality (Stone, 1979:249), expressed through the emergence of consolation literature, a popular literary genre that arose during this time. Consolation literature included mourning manuals that described how parents should cope with the tragedy of their loss, as well as stories and poems that described in detail the grief associated with the loss of a child (Zelizer, 1985:26).

This shift in child mourning expanded in the latter half of the nineteenth and early twentieth centuries. The decline in early childhood mortality in the early twentieth century contributed to the deepening emotional bonds between parents and their children. Falling birthrates and smaller family size augmented the emotional value of each child: when there are fewer children, each one becomes more precious (Zelizer, 1985:10-11). Child insurance came into fashion in New York at this time with the primary selling point being that it bought a dignified death for a child (Zelizer, 1985:115). Although there is no direct evidence that

child insurance was sold in Hamilton, it is likely that expensive caskets and extra carriages were being used for children's funerary processions from the home to the cemetery. Private mourning for lost children was no longer sufficient. This intolerable loss is evident in the tombstones, obituaries and death notices posted in memory of children who died in Hamilton from 1900 to 1917.

Hamilton Cemeteries and Children's Tombstones

This study is based on a pedestrian survey of the Hamilton Cemetery, located on York Boulevard in Hamilton. This cemetery was chosen because it is the oldest cemetery in Hamilton and is still operational today. Throughout the survey I recorded the name, age, date of death, type of material used to make the tombstone, location of inscription, motif, and epitaph for children up to 15 years of age. The Hamilton Cemetery is partitioned into sections, with the north-east quadrant being the oldest portion of the cemetery and containing burials from the 1800's to 1920's. During the winter of 2008, the following sections were surveyed: Z1, Z, C of A-A, C of A-B, C of A-C, and C of A-D, and included children's burials from 1875 to 1917.

The Woodland Cemetery, located on Garden Road in Hamilton, was also included in this study. Like Hamilton Cemetery, the Woodland Cemetery is owned and operated by Hamilton Municipal Cemeteries. It is included in this study because it became operational in the latter half of the twentieth century and the styles of its tombstones for children are a marked contrast to their counterparts in the Hamilton Cemetery. In addition, Woodland Cemetery contains a separate children's section, whereas the Hamilton Cemetery does not. In this way one is able to examine a timeline that extends from the latter half of the nineteenth to the twentieth century in the same city to show a more complete picture of the transformation in the perceived status of children as evidenced through memorialization. Section seven, the Children's Section, is located in the southwest quarter of Woodland Cemetery. A pedestrian survey yielded the name, age, date of death, type of material used to make the tombstone, location of inscription, motif, and epitaph for children up to 15 years of age.

As well, I cross-referenced burial locations using funeral records from the Blachford and Son Undertakers and Embalmers, formerly based at No. 57 King Street West. The records fall within the periods of 1900-1903, 1906-1909, and 1912-1915. Three-year intervals were sampled to determine whether variations

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occurred in the information and language usage in children's obituaries and death notices, and to cope expeditiously with the sheer volume of available records. The funeral records contain additional information on the cost of funerals and thus were useful for interpreting the role of socio-economic status in the memorialization of Hamilton children. Secondary scholarly sources were researched in order to interpret all of the raw data.

Potential Biases

There are several potential biases that could have arisen during this project. For instance, it is necessary to discern which elements of a mortuary monument relate to symbolic representations of a particular group (in this case, children) and that these representations are chosen and manipulated by social actors (Baxter, 2005: 106). Furthermore, aspects of the mortuary monument that serve as signifiers of social status must be discerned (again, for children) and recognized as categories that shaped the daily life of those living that social role (Baxter, 2005:106). Observer error, in terms of missed markers, is also another factor that can influence the results of the study. Information on tombstones can be erased through weathering. It may be difficult to detect specific patterns of differentiation and emulation in monument style in the midst of the great diversity of styles that developed and proliferated over the course of the centuries (Cannon, 2005:43).

The need to use partial and potentially biased samples of cemeteries is also an acknowledged problem. Children are generally underrepresented in burial populations thus limiting sample sizes available for comparisons, which can hinder efforts to trace mortuary fashions between groups (Cannon, 2005:59). Combining cemeteries from different regions to increase the sample size can obscure local trends if regional variability (Cannon, 2005: 59), though in this study both cemeteries are drawn from the same city. Moreover, in terms of representation, it is still plausible that many infants and children were not being buried in these cemeteries but were interred elsewhere. Finally, historical documents (such as funeral records) may contain inaccuracies, be incomplete or illegible, thereby decreasing their utility.

Hamilton Cemetery

The Hamilton Cemetery is the oldest municipally owned and operated cemetery in Canada (Figure 15.1). This nearly 100-acre parcel of land is located on the Burlington Heights, a high sand and gravel bar that separates Hamilton Harbor from Cootes Paradise (City of Hamilton, 2008). This sandbar, created by the last glacial period, was initially home only to waterfowl, indigenous animals and the Mississauga Aboriginal peoples, who also used this area as both a meeting place as well as a burial ground (City of Hamilton, 2008).

During the War of 1812, British forces used Burlington Heights as an encampment site since it was a strategic point of defense against the invading American forces (City of Hamilton, 2008). Remnants of the military ramparts can still be seen today within the Hamilton Cemetery. Today these first lines of defense are marked out with commemorative monuments in two areas of the cemetery (City of Hamilton, 2008).

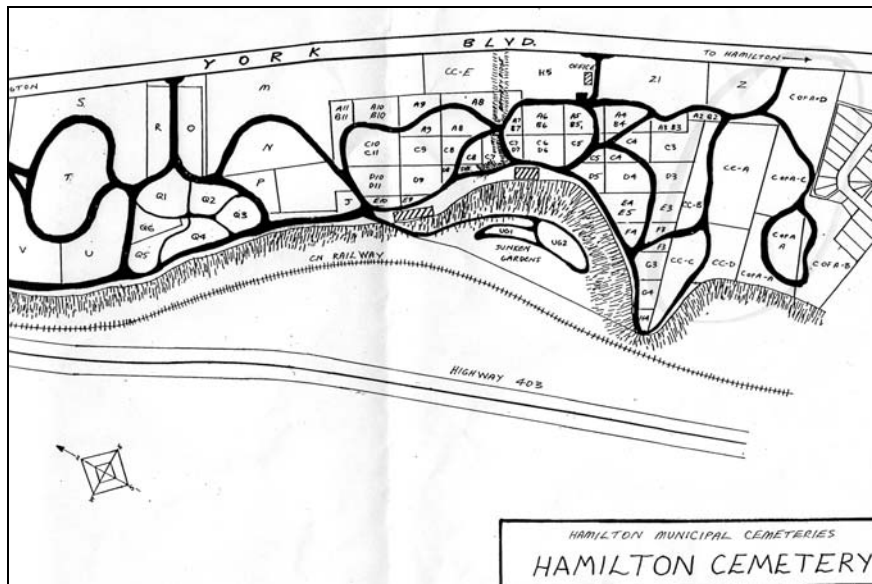


Figure 15.1 –Hamilton Cemetery circa 2008

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The cemetery was established in January of 1847 when Christ's Church purchased a tract of land from Sir Allan Napier MacNab for the purpose of establishing a burying ground (City of Hamilton, 2008). The following year the City of Hamilton acquired its own tract of land and named it Burlington Heights Cemetery. On May 14th, 1850 the City conducted its first interment of William Hetherington in a single grave. In 1851 the Church of the Ascension Cemetery held its first service (City of Hamilton, 2008).

Until the late 1800's, separate groups maintained all three cemeteries. However, financial problems plagued the Anglican churches, making it difficult for them to continue the upkeep and sale of land within their cemeteries (City of Hamilton, 2008). An agreement was signed between the authorities of the two churches and the City of Hamilton making these three cemeteries one. The new amalgamated cemetery was called Hamilton Cemetery (City of Hamilton, 2008)

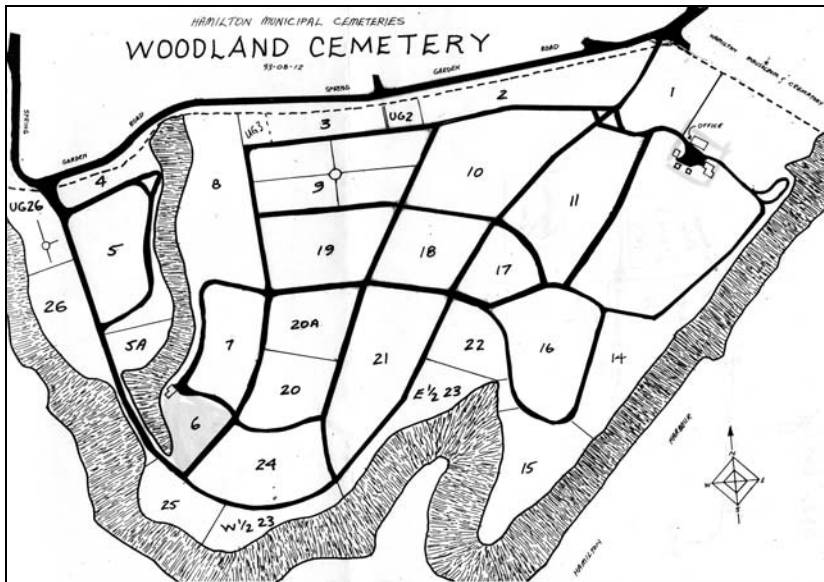


Figure 15.2 – Woodland Cemetery circa 2008

Woodland Cemetery

The Woodland Cemetery, located on Garden Road, was opened by the Municipal City of Hamilton in the 1920's (Figure 15.2). The cemetery was created to serve

the growing East Flamborough area. It remains amalgamated with the other cemeteries under the Municipal City of Hamilton and is operational to this day (personal communication, March 5, 2008).

A Comparison of Woodland and Hamilton Cemetery

The Hamilton Cemetery and the Woodland Cemetery are both sprawling places with marked sections distinguishing the earlier from the most recent burials. However, the oldest parts of Hamilton Cemetery are not laid out in neat rows. As the administrators lament, “the plots are not ordered in the usual way, number 400 could be beside number one. Families might not even be buried together in the old section of the cemetery” (personal communication, March 5, 2008). This seeming disorder results from the decision of Hamilton Cemetery officials to allow individuals to purchase their plots wherever they wished. “If Uncle Joe liked that tree and wanted to be buried there, well then he was buried right near that tree, even if his family was not nearby!” (personal communication, March 5, 2008). Woodland Cemetery contains a more tightly organized layout with a linearly arranged and distinct Children’s Section. This rigid arrangement reflects the desire for order and cleanliness typical of the time it was established (personal communication, March 5, 2008).

In both cemeteries, children were not necessarily buried alongside their immediate family members. The Woodland Cemetery has a distinct section for children and Hamilton Cemetery permitted burials anywhere. Cemetery administrators at the Woodland Cemetery, however, claim that the children’s section was introduced into the cemetery design as a means of further establishing the fact that children had become socially visible and differentiable from adults (personal communication, March 5th, 2008). Infants’ remains are also housed in a small building at the northwestern corner of section. This suggests that it had become more socially acceptable to attach grief to the loss of an infant than in times past, when infants were often buried outside churchyards and cemeteries because of concerns about maintaining consecrated ground and the insignificant role of infants within the family (Woods, 2006:59).

The Children’s Section of Woodland Cemetery also contains only slab headstones that are inlaid in the ground (Figure 15.3), whereas children’s tombstones in the Hamilton Cemetery come in a variety of upright and inlaid designs. Inlaid tombstones are used in the Woodland Cemetery because of the

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relative ease in lawn maintenance afforded by this style of headstone (personal communication, March 5, 2008). The various design elements are discussed below.

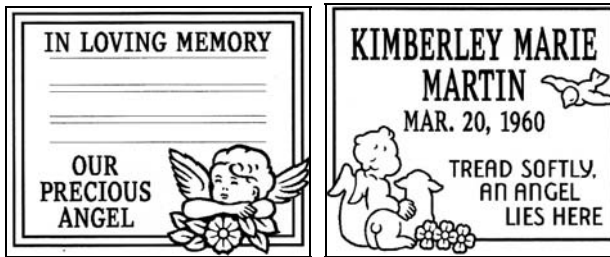


Figure 15.3: Tombstones for Children Offered by Woodland Memorials, Garden Street, Hamilton.

Tombstone Styles

Mortuary practices are a medium for the competitive display of status and status aspirations, and memorializations may become more elaborate or simplified, depending on social trends (Cannon, 1989:437). In nineteenth century England, increasing wealth in the previous centuries resulted in social flux and engendered a need for symbols to express status and status aspirations. The occasion of death became a forum for symbolically displaying status (Cannon, 1989:440). Monument shape, lettering and material drew attention and communicated distinct messages, conveying a family's affluence and grief over its loss (Cannon, 1989: 441).

A similar argument can be made about monuments erected for children in the Hamilton Cemetery. They depict two basic styles. From the early twentieth century to the present, parents erected separate tombstones for their children; in the early nineteenth century, however, children were included on their parents' or family's monument. Interpretations of changes in mortuary behaviour typically adopt the premise that the intensity of expression is a direct measure of the basis of expression. In other words, the more intense forms of mortuary commemoration – single stones– allotted to children in the twentieth century reflects either greater social loss to their family, in terms of their social role, or the degree of personal sentiment attached to them as an individual (Cannon, 1989; 446).

The stylistic characteristics found in the cemetery survey and from secondary sources include: inclusion on family monuments (nineteenth century), personalized markers (early twentieth century) and modern tombstones in specifically created sections, such as the children's section in Woodland Cemetery (Woods, 2006:58). These transformations in memorialization generally result from external influences; mortuary practices do not have a separate existence outside of social and historical circumstances. Mortuary practices change as a result of their role as a vehicle for social expression (Cannon, 1989:446). The emergence of personalized markers in the two study cemeteries in the early twentieth century suggests that families in Hamilton adopted and expressed the new ideas about the important social role of children and a special defined period of childhood.

Materials

The materials used in memorials also reflect social roles, such as those based on gender, age or social status (Cannon, 1995:4). In the nineteenth century and persisting into the twentieth century grave markers for children, especially those surveyed in the Hamilton Cemetery, were made of stone. The most commonly employed variety of stone used to mark children's graves was a soft white marble. This type of stone weathers fairly rapidly, especially along the edges of the carving (Hanks, 1974:12). The white marble was used for children's tombstones for two major reasons. First, the white colour of the stone denotes innocence, purity and peace, terms used to describe children at this time (Woods, 2006:172-173). Second, there are more than one hundred quarries, scattered across Ontario, that supply the building materials and decorative stone for homes, buildings, monuments and roads. These companies have historically played a strong role in local economies and community life (Ontario Mining Association, 2008). Within a tiny radius of Hamilton, for instance, there are three major quarries that are among the top twenty stone producers for the whole of Ontario. This reduced the cost of the white stone used in children's tombstones because it could be locally produced and did not require extensive shipping (Cosedine, 2008). Together, the relative cost and symbolic meaning of white stone influenced its choice for children's tombstone materials in Hamilton.

In the Hamilton Cemetery's oldest sections, where infants and children are included along with the rest of the family, only granite is used for the larger

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family monuments. These granite monuments are a testament to these families' wish to display greater wealth because the carving and durability of the stone means that it was difficult and time consuming to carve by hand (Hanks, 1974:12). The ability to pay for a stone monument appears to be the most influential factor responsible for the limited appearance of monuments specifically for children (Cannon, 1995:8). Therefore, although children were appearing more frequently in the burial population in Hamilton Cemetery in the nineteenth century, still, the family's ability to pay for their deceased children to be memorialized by a separate tombstone was limited by expense; therefore, inscription onto the family monuments became the acceptable alternative.

Social class and economic means are widely recognized as limiting access to monumental commemoration (Cannon, 1995:8). However, in the latter half of the twentieth century, tombstones in the Woodland Cemetery's special section for children are all composed of granite. This could be interpreted as an example of the lower classes slowly gaining access to the mortuary fashions once reserved for high status families (see Cannon, 1995:14).

Epitaphs

Epitaphs were common on old markers for adults, the most popular form being a four-lined verse with alternate line rhyming. Such epitaphs were standardized and appeared on adult grave markers across the country. Scholars believe that epitaphs were generated and maintained via an oral tradition between parishes (Hanks, 1974:19).

Evidence gathered from a variety of cultural contexts has shown that younger children were often not afforded the same type of elaborate monumental burials as older children or adults (Cannon, 1995; 8). In the Hamilton Cemetery the age profile of grave monument inscriptions for children in both the nineteenth and twentieth centuries is skewed towards the older ages of childhood. It has been suggested that the tendency to memorialize older children relates to the life histories of households and the ability of the family to afford a stone monument (Cannon, 1995:7). This observation has also been interpreted as a sign that very young children did not warrant the same type of memorial considered appropriate for older children and adults. For example, the epitaphs in the Hamilton Cemetery for children under the age of eight predominantly identify the child's parents and indicate that the child is lovingly remembered. In most cases infants buried in the

Hamilton Cemetery from the nineteenth to the twentieth centuries appear at the very bottom or on the side of the family headstone but are not named; neither are they given epitaphs. Unlike the case of New York, where even the poorest families attempted to erect headstones bearing inscriptions such as, “my beloved son” or “asleep in Jesus, blessed daughter”, those found in the Hamilton cemetery only included a name, date of death and a clear indication of the age of the child (see Zelizer, 1985:129). Cannon (1995:8) suggests that in such situations occurred because the deceased had yet to assume the full social role achieved by older children and adults.

The Woodland Cemetery’s children’s section boasts numerous headstones with religious epitaphs in the latter half of the twentieth century. This is similar to what was observed for children over the age of eight in the Hamilton Cemetery during the earlier phase of this century. The transition from merely mentioning the existence of the children to a more literal outpouring of epitaphs is a sign of the increasing trend to mourn deceased children (Aries, 1974:68). As well, infants in the Woodland Cemetery received their own building, which further signifies and acknowledges their distinct status in family histories (Finlay, 2000:407).



Figure 15.4: Motifs for Children Offered by Woodlands Memorials, Garden Street, Hamilton.

Motifs

Working class families dreaded a pauper burial, for both themselves and for the youngest members of their families; a pauper’s burial was not only a tragedy but also a mark of their social degradation (Zelizer, 1985:129). In France, therefore, parents commissioned elaborate portrait statues for their children’s resting places, while in Hamilton simple lambs, perched on white marble upright stones, were the preferred method of tombstone memorialization (Woods, 2006:59). Unlike France and Italy, where the small child became the favorite subject of funerary art in large urban cemeteries, early Hamilton cemeteries, such as the Hamilton

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Cemetery on York Street, contained only plain headstones for children (Woods, 2006:59)

In Hamilton Cemetery, nineteenth century tombstones were primarily familial monuments and did not contain motifs that related specifically to children. However, early twentieth century children's stones contained predominantly animal motifs (Figure 15.4). The most prevalent animal motif is a sculptured lamb lying on top of the upright headstone. As a result of its disproportionate use on children's markers, outside of the obvious Christian symbol for Christ, the lamb has come to represent purity and peace (Hanks, 1974:35). The aesthetics of the time ultimately reflect the approval of church and community and, moreover, general agreement on the social representation of the child as an innocent person, not as a small adult as previous generations had supposed (Woods, 2006:87). Later twentieth century children's markers in the Woodland Cemetery exhibited greater variation in terms of the symbols used. In these cases, angels and flowers predominate. The rose and the lily are commonly recognized as symbols of purity (Hanks, 1974:34). Therefore, in the early twentieth century, children's motifs evoked nature and a sense of innocence and purity, ideologies which persist today (Hanks, 1974:35). Prior to the twentieth century children's tombstones were not only unadorned, but were part of a family memorial, if they were memorialized at all. By the twentieth century, however, in concert with the new construction of childhood and children as innocent and pure, the need to adorn their resting places with these symbols prevailed (Woods, 2006:90).

Conclusion

The archaeology of death includes the analysis of mortuary monuments. These lasting monuments leave a graphic depiction of the social roles of children in particular cultural settings. Historical cemetery studies allow researchers to consider changing definitions of the child (and other social groups) through the symbolic expressions and social categories represented in mortuary contexts. The symbols used to construct these monuments to children, in terms of material choices, epitaphs, motifs and stylistic factors, reflect feelings and sentiments about children (Baxter, 2005:105). Based on this survey of Hamilton Cemetery and Woodland Cemetery, it becomes evident that at the beginning of the twentieth century, children were emerging as significant social actors, the loss of

whom warranted expression in the ritual context by the erection of mortuary monuments.

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