# The Sanitary Idea



The history of Canadian public health begins to gain momentum after Confederation. The sanitary reform movement required a number of fundamental elements before it could succeed: the gathering of information on mortality and morbidity levels in order to understand and measure public health problems; activists who could publicize this type of information in order to mobilize public and professional opinion; and the existence of a municipal infrastructure sophisticated enough to be able to implement and enforce legislated reforms.[1] Between 1867 and 1909, these elements were still being developed to varying degrees in Canada.

The *British North America Act of 1867* created the Dominion of Canada through the Confederation of the provinces of Nova Scotia, New Brunswick, Quebec and Ontario. Prior to 1867, what little organized health care available was provided locally. Some cities and towns set up local health boards, usually after a serious epidemic of cholera, smallpox or typhoid. Legislation permitting such

John Henry Walker, ©McCord Museum M991x.5.795

*A depiction of death, 1878*

1 Heather MacDougall, "Epidemics and the Environment: The Early Development of Public Health Activity in Toronto, 1832–1872" in R.A. Jarrell and A.E. Roos (eds.) *Critical Issues in the History of Canadian Science, Technology and Medicine* (Ottawa: HSTC Publications, 1983), pp. 145–151

health boards was passed by the Parliament of Upper Canada in 1834. There was little mention of health in the British North America Act, other than establishing federal jurisdiction over quarantine and marine hospitals. Provincial governments had responsibility for hospitals other than marine hospitals, and asylums and quarantine stations were the only permanent public health institutions. (In this era, the mentally ill were either kept at home or in insane asylums, where they were often brutally treated.) Municipal government authority varied widely, even within provinces.

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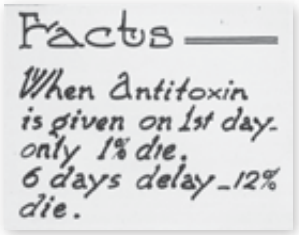
## Hygiene and Sanitary Reform

The creation of permanent local and provincial boards of health was still a work in progress but their efforts to control infectious diseases and build effective water and sewage systems were aided by discoveries of the bacteriological revolution in the 1880s. As knowledge and infrastructures developed, a growing number of voluntary organizations and individual sanitary reformers preached the gospel of hygiene. The invention of the microscope permitted the discovery of the microbe in the late 17th century, but the field of bacteriology didn't develop until the 19th century and popular acceptance of "the germ theory" was not widespread until the early 20th century. Before the 1880s, many common infectious diseases were thought to be due to bad air or heredity. Typhoid, for example, was widely thought to have a spontaneous origin but during this era, growing evidence pointed to contaminated drinking water or milk. The specific causative bacillus was identified in 1880 with definitive proof that it caused typhoid in 1896. The discovery and successful testing of both the diphtheria antitoxin and rabies vaccine in the 1890s were major achievements and provided the first reliable and scientific biological tools for the control of these deadly diseases.



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These and other scientific discoveries between 1850 and 1900 completely transformed the popular understandings of the nature of infectious diseases, including their origin, transmission and how to fight them. Knowledge about how infectious diseases were spread brought the realization that individuals and communities could do something to prevent the spread of disease and benefit from early detection. This new way of thinking was called the *sanitary idea*, and it first spread amongst medical elites and then was gradually adopted by the educated middle classes and then later by the population at large. Over time, long-standing beliefs about disease transmission were replaced with new understandings about personal hygiene, prevention through vaccination and early diagnosis and treatment.[2]

The challenges involved in managing human waste dominated Canada's public health journals in the 1870s and 1880s. The prevailing approach to the disposal of excrement at this time was by using portable dry-earth closets in the home with a variety of absorbents and then burying the waste. People became increasingly concerned

2 Nancy Tomes, *The Gospel of Germs* (Boston: Harvard University Press, 1999); G. Desrosiers, "Le système de santé au Québec : Bilan historique et perspective d'avenir" *Revue d'histoire de l'Amérique française,* 53 (1), 1991. p. 6

about sewers, wash basins and toilets. Collective action was needed to manage sewage and garbage and to purify drinking water and this led to a growing government role in the prevention of disease and death through public health. The early sanitary reformers embraced the need for hygiene and sanitation with religious fervour and their commitment helped lay the foundations of Canada's public health infrastructure.

## Confederation and Growth

W. L. Bishop, NSARM accession no. 1983-240, no. 27

Mechanized industry began in Canada in the 1840s and gradually increased the concentration of economic power and the size of the labour force by the 1890s. Anglo-American industrial and financial elites were well represented at the federal political level, especially lawyers and doctors. Confederation permitted the creation of larger political and economic structures and economic growth in turn resulted in expanded immigration from continental Europe, in addition to the usual American and British sources. The social, political and economic elites, however, remained broadly Anglo-American.[3]

If health concerns for Indigenous peoples were considered at all, it was by missionaries, traders and individual physicians. The health of First Nations and Métis people had begun to seriously deteriorate by 1900, due to the decline of the fur trade and relegation of Indians to under-developed and isolated reserves that were

George W. Dawson, Provincial Archives of Alberta, A17476

*Blackfoot Indians, Old Fort Whoopup, 1881*

rife with poverty, overcrowded housing and malnutrition.[4]

Great Britain and its *Public Health Act of 1875* were models for sanitary reform in Canada. This landmark legislation enshrined the British government's responsibility for the health of the people, most of whom were living in old but rapidly changing cities and densely populated rural areas. In contrast, the first generation of Canadian sanitary reformers "functioned in relatively new cities which were trying to erect basic industrial, housing, and sanitary infrastructure while often absorbing immigrants on a scale not seen in Europe. Outside Canada's towns and cities, the widely scattered populations often living in wilderness conditions had no counterpart in Western Europe."[5]

Sanitary reformers worked tirelessly over several decades, trying to convince the federal government to follow a number of other countries and set up a national department to collect vital statistics, build sewers and reduce the impact of infectious diseases. Federal interest in public health matters tended to be led by Members of Parliament and Senators who were medically qualified. In the summer of 1873, Dr. William Henry Brouse, Ontario MP for Grenville South, led a select committee to look into the sanitary

Jean Holder, NSARM accession no. 1980-195, no. 24

*Clayton & Sons, Halifax. Women sewing in factory, 1900*

3 Desrosiers, p. 8; *Canadian Encyclopedia* (accessed online at www.thecanadianencyclopedia.com

4 Moffat and Herring, 1999; History of the Medical Services Branch, April 1969

5 Aleck Ostry, "Difference in the History of Public Health in 19th Century Canada and Britain," *Canadian Journal of Public Health* 86 (1) (January-February 1995): 5

condition of the House of Commons itself, focusing on the heating, lighting and ventilation.[6]

## Edward Playter, A Leader in Canada's Sanitary Reform

One of the most important early sanitary reformers was Dr. Edward Playter (1834–1909). This physician, based in Toronto and later in Ottawa, single-handedly published Canada's first professional public health journal from 1874 until 1892. He also worked on a number of public health initiatives at the local, provincial and federal levels, playing a central role in sanitary reform and the scientific era. Playter was born into a prominent Upper Canadian family, graduated from medical school at the University of Toronto in 1868 and practised as a county coroner in York Township. His inherited wealth enabled him to focus his considerable energies on promoting public health reforms, including the need for a system of collecting accurate and comprehensive mortality and morbidity statistics. Likely influenced by British sanitary reformers, Playter recognized that the practice of medicine went beyond treating the sick to include the prevention of sickness and the promotion of health—not only to save lives and suffering but, as he often argued, to protect the economic health of the country.[7]

### Canada's Indigenous Peoples

As detailed in the 1996 Report of the Royal Commission on Aboriginal Peoples, the term *Aboriginal peoples* refers generally to the Indigenous inhabitants of Canada who are made up of three main groups recognized under the Constitution—Inuit, First Nations and Métis people. Within these broad groups are a number of distinct languages and cultures. Today, the term *First Nations* replaces *Indian,* the word historically used by the Canadian government to describe the Indigenous peoples with whom the Canadian or British government had entered into treaties. The *Métis* are distinct Aboriginal peoples whose early ancestors were of mixed heritage (First Nations, or Inuit in the case of the Labrador Métis, and European). Inuit replaces the term *Eskimo* and refers to the Indigenous peoples of the North.

### Edward Playter

Dr. Playter was a strong proponent of government's responsibility for general health. As a result of his efforts, Ontario passed an improved statute in 1875 concerning the reporting of deaths. He was one of the first medical officers of health appointed in Ontario. The public health journal founded and edited by Edward Playter appeared from July 1874 until 1892 under a variety of titles, including *Sanitary Journal, Canada Health Journal, Dominion Sanitary Journal, Man, and Health Journal.*

—Dictionary of Canadian Biography online

6 W.H. Brouse, "Report," Journals of the House of Commons, 36 Victoria, 1873, Appendix No. 4

7 Robert D. Defries, "Dr. Edward Playter: A Vision Fulfilled," *Canadian Journal of Public Health* 50 (September 1959): 368–77; Paul A. Bator, "Playter, Edward," *Dictionary of Canadian Biography: Volume XIII: 1901–1910* (Toronto: University of Toronto Press, 2000) (accessed online at http://www.biographi.ca)

Playter financed, produced and promoted *The Sanitary Journal*, "devoted to public health and individual hygiene." It was first published in 1876 and became a monthly in 1877 until June 1880, when the sudden death of Playter's wife forced a four-month suspension. When publication resumed, Playter renamed it *The Canada Health Journal*: *A practical sanitary monthly devoted to individual and public health and a reporter of vital statistics*. Playter tried to expand the journal's appeal beyond the medical profession and across the country, while frequently appealing to subscribers to pay late bills and distributing promotional copies to attract new subscribers.[8]

*The Sanitary Journal* highlights the development of public health in Canada during these early years. Included in the first issue were articles on sanitary science, the effects of tobacco, preventing the spread of contagion and disease, typhoid and disinfecting chambers. Playter's first editorial argued that more attention was needed to look after the health and development of infants, children, youth, mothers and their unborn. He also called on the medical profession to work at improving the recently implemented *Ontario Public Health Act of 1873* and to lobby the government to establish a sanitary bureau. Issues needing legislative attention included drainage and ventilation (especially in schools), school education in hygiene, physiology and greater physical exercise. Other concerns included the clothing of the young, which in many cases was "woefully defective; health is too frequently the sacrifice of fashion."[9]

8 Defries, "Dr. Edward Playter: A Vision Fulfilled," p. 368

9 Editorial, "Our Future Generations," *The Sanitary Journal*, 1 (1) (July 1874): 29–31

## Expansion of Municipal Public Health

Awareness of public health was gradually increasing within some local governments. For example, Winnipeg implemented By-Law No. 13 in 1874 with regulations against adulterated food and tainted meat, the defiling of water and allowing stagnant pools to stand, and keeping dead animal carcasses in the city. The law required every home to connect a privy and keep it clean and to collect all dirt into one place and keep filth off the lots and streets, with penalties of a fine up to $20 or a jail sentence up to 21 days.[10]

In Toronto at this time, sanitary reformers were concerned about expense and safety of the city's proposal to build a trunk sewer line across the waterfront to channel the sewage into the lake, three miles from the city, in the questionable hope that currents would not carry it back to where the water supply was drawn.

Public health activity also expanded in Montreal, where before 1870, these matters related only to the control of nuisances, with a few policemen giving attention to cleaning yards, lanes and privy-pits. Unlike Ontario and most of the other provinces where public health services first developed at the municipal level, Quebec's public health services had been left to the attention of individual religious communities.

NSARM Album no. 5, #74

*Infant mortality was a reality of life in Victorian Halifax. A recognized custom of the time was for parents to have their dead child photographed as if the youngster were sleeping*

10 "Public Health," *Winnipeg Free Press* (August 24, 1874): 1

Fader, NSAHM accession no. 1972-21, no. 24

*Faders Bros. Market, Halifax, NS, 1885*

During the 19th century, Montreal recorded the highest mortality rates of all British North American cities. Montreal had become the industrial centre of Canada and rapid settlement resulted in working class families living in crowded, unsanitary and poorly built housing. As was common in other Canadian cities during or after epidemics, Montreal's city council established a health committee with limited powers after a smallpox outbreak in the 1870s. At a public meeting called by the mayor, a Citizens' Public Health Association was established, supplanting the Montreal Sanitary Association, to "increase and diffuse knowledge on all subjects relating to the public health, by the discussion of sanitary subjects, by exposure of sanitary evils, and by promoting sanitary legislation." In 1875, the Province of Quebec adopted compulsory smallpox vaccination, despite strong opposition, gave Montreal's health officer much more power and promised to fund a Bureau of Vaccination.[11]

11 Industrial Architecture of Montreal, "Living Conditions in Montreal's Industrial Neighbourhoods" (accessed online at http://digital.library.mcgill.ca/industrial/livingconditions.html); "Sanitary Reports: Public Meeting," *Public Health Magazine* 1 (1) (July 1875): 6–11; Georges Desroisiers and Benoît Gaumer, "Les debuts de l'éducation sanitaire au Quebec: 1880–1901, *Canadian Bulletin of Medical History* 23 (1) (2006): 186

## Ontario Takes the Lead

Prompted by a serious yellow fever epidemic in the United States, Toronto's leading sanitarians—including Playter, William Oldright at the Toronto School of Medicine, and Charles W. Covernton of Trinity College Medical School—convinced Premier Oliver Mowat to appoint a special sanitary

### Adelaide Hunter Hoodless

Mrs. Hoodless was born in 1857, near Brantford, Ontario. Growing up on a mid-19th century farm with its privations and isolation perhaps inspired her to take up the cause of domestic reform. She launched a life-long campaign to gain province-wide acceptance of domestic science in the educational curriculum in order to advance the education of girls. She was the visionary behind the Women's Institute movement and is also credited with helping to establish the National Council of Women, the Young Women's Christian Association, and the Victorian Order of Nurses. Mrs. Hunter recognized that the roles of women were changing and that more and more women were entering the work force in technical trades (factories, mills etc.) Most were underpaid, under-trained and working in deplorable conditions. She convinced the Minister of Education to send her to America to examine the technical schools there and bring back a report. Unfortunately she died in 1910, before she could complete this task.

—Adelaide Hunter Hoodless Homestead

committee of the Legislature in 1878. A survey of 171 municipal clerks revealed "that absolutely nothing, almost, is being done throughout the province toward the prevention of disease or improvement of the public health." Of about 1,000 municipalities in Ontario, no more than 20 had medical officers of health appointed. An anticipated provincial board of health was not established however, because according to the Attorney General, "there is not yet sufficient public interest taken in this question to warrant any special action and the appropriation of much money for the purpose." Playter responded by arranging through the Ontario government to distribute copies of his journal to the clerks of all the principle municipalities in order to help generate the interest and awareness needed.[12]

United Church of Canada, NSARM accession no. 1975-194, no. 19

*Halifax Medical College, ca. 1890*

In 1882, Ontario became the first provincial government to establish a full-time Provincial Board of Health. It was made up of seven members, including four physicians and a chairman appointed by the Lieutenant Governor in Council and given an annual budget of $4,000. William Oldright was the board's first chairman and Peter Bryce the first part-time secretary and chief medical officer of health until 1904. The provincial board's work in relation to local boards of health was strictly advisory, with no legal authority to require local authorities to appoint boards of health or require any action.

12 "The Proposed Sanitary Legislation," *The Sanitary Journal* 3 (7) (June 1878): 272–75; "Report of Select Committee on Public Health," *Journal of the Legislative Assembly of Ontario, 1878, Appendix No. 2;*" 'Sanitary Reform' This Year, And Why?" *The Sanitary Journal* 4 (4) (March 1880): 225–26

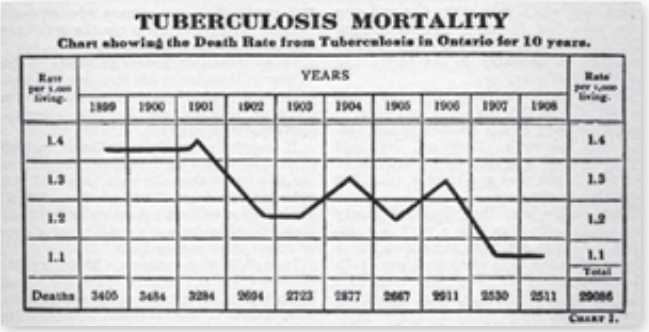
### Montreal Living Conditions

The Royal Commission on the Relations of Labour and Capital described Montreal's working-class neighbourhoods in 1888 as "nests of contagion." Women represented 20% of the adult work force in the city but earned substantially less than men, who generally didn't earn enough to support a family. Many women worked in textile mills, tobacco factories, food processing, retail and domestic service and children were also working part-time to contribute to meagre family incomes.

In most working-class neighbourhoods, the toilets consisted of community privy pits in the backyards and houses had no facilities for bathing. Herbert Brown Ames, in his 1897 book, *The City Below the Hill,* reported that more that half the homes in Sainte-Anne Ward still relied on "that relic of rural conditions, that insanitary abomination, the out-of-door-pit-in-the-ground privy." His eight-year campaign against pit privies in Montreal earned him the title, "Water Closet Ames."

—digital.library.mcgill.ca

The Ontario Board of Health assembled public health education exhibits and gathered information about new strategies to prevent disease on behalf of local boards of health. A portable isolation hospital was displayed at the 1883 Toronto Industrial Exhibition which the Provincial Board "hoped that many municipalities or groups of municipalities will avail themselves of it and have such an inexpensive structure ready to meet any outbreak of infectious disease, and not wait to construct it after an outbreak appears



TUBERCULOSIS MORTALITY

Chart showing the Death Rate from Tuberculosis in Ontario for 10 years.

| Rate per 1,000 living. | YEARS | | | | | | | | | | Rate per 1,000 living. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 | |
| 1.4 | | | | | | | | | | | 1.4 |
| 1.3 | | | | | | | | | | | 1.3 |
| 1.2 | | | | | | | | | | | 1.2 |
| 1.1 | | | | | | | | | | | 1.1 |
| | | | | | | | | | | | Total |
| Deaths | 3405 | 3484 | 3284 | 2604 | 2723 | 2827 | 2667 | 2911 | 2530 | 2511 | 29086 |

CHART I.

*Public Health Journal, 2* (March 1911)

and after many lives have been sacrificed by the spread of the disease."[13]

Ontario strengthened its public health act in 1884, requiring that a local board of health be established in each city, village and township and medical officers of health appointed. The new act also provided for a full-time secretary, who served as the province's chief medical officer of health, and empowered the board to investigate the causes of disease and issue regulations to prevent their spread, secure sanitary conditions and establish quarantine, to be enforced by local boards of health. In addition, all plans for water and sewer systems had to be submitted to the Provincial Board for approval.

Ontario served as a model for other provinces in setting up their boards of health over the next two decades. Manitoba passed a pubic health act in 1883, administered by a public health superintendent within the Department of Agriculture, Statistics and Health, and then established a provincial board in 1893. New Brunswick followed with a comprehensive *Public Health Act* in 1887, which established a provincial board of health and divided the province into health districts, while Nova Scotia set up a central board of health in 1889.

13 "Isolation Hospital," *The Sanitary Journal* 6 (1) (October 1883): 16–17

## Federal Impetus for Progress

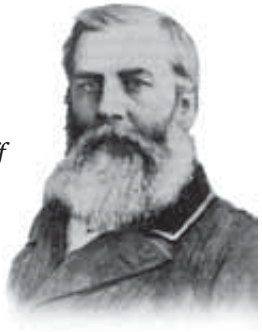
The federal *Census and Statistics Act* was passed in 1879, providing funding for the collection of vital statistics in cities with a population of more than 10,000. In early 1881, a delegation from the Canadian Medical Association met with Prime Minister Sir John A. Macdonald to discuss the "establishment of a bureau of statistics, and the adoption of certain legislation upon sanitary subjects." Macdonald promised "to lay the whole

### Peter Henderson Bryce

*Public Health Pioneer and First Secretary of Ontario Board of Health*

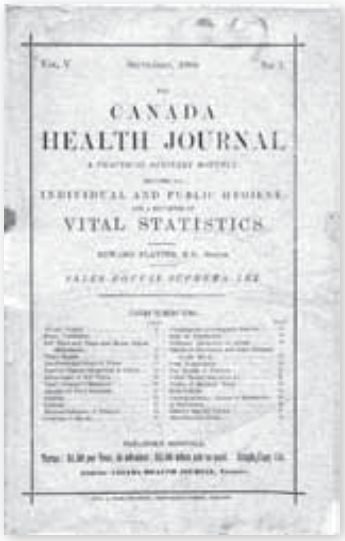
Dr. Bryce was Chief Medical Officer in the federal Department of Immigration and chairman of the organizing committee appointed at the inaugural meeting of the Canadian Public Health Association in 1919. Dr. Bryce was appointed the first secretary of the Provincial Board of Health of Ontario in 1882 and prepared the comprehensive Public Health Act of 1884, which became the model for legislation in other provinces. He was a pioneer in health education in Canada and stressed the necessity of public education if tuberculosis was to be controlled, setting up in 1883 Canada's first public health education exhibit. Upon his retirement from the position of chief medical officer of health of Ontario in 1904, he became chief medical officer of health of the Department of the Interior.

—*Canadian Journal of Public Health*, Vol. 50, No. 1, January 1959



*Dr. William Canniff*

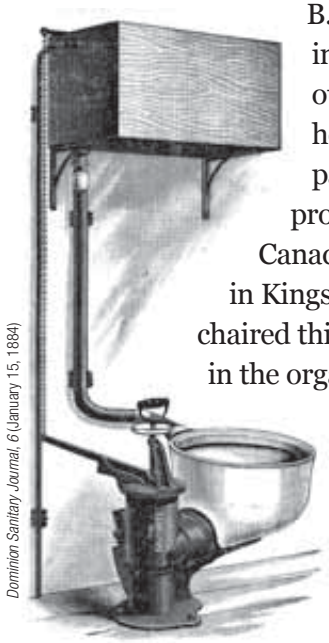
matter speedily before his colleagues"[14] and in 1882, the *Public Health Act* compelled local governments to set up health boards and impose sanitary regulations. In 1883, the vital statistics grants were made conditional upon the existence of an active local board of health and a permanent, salaried health officer in the cities, which provided an incentive for public health investments across the country. Toronto, for example, appointed William Canniff as its first permanent, salaried medical officer of health in 1883, encouraged by federal grants for the collection of mortality statistics to any city with a permanent salaried medical officer of health.


CANADA
HEALTH JOURNAL
VITAL STATISTICS

*Public Health Journal, 5* (September 1880)

More broadly, federal sponsorship for statistics collection also sparked the first effort to organize a national public health association in Canada.

Montreal health officer Dr. A. B. Larocque invited the other 10 health officers who were participating in the federal program to meet with the Canadian Medical Association in Kingston in 1883. Playter chaired this meeting, which resulted in the organization of the Dominion Sanitary Association "to enlist the co-operation, with medical men, of all others who feel an interest in public health work in Canada in the education of the people in all matters pertaining to health."



*Dominion Sanitary Journal, 6* (January 15, 1884)

*Early plumbing, 1884*

However, as reported in *The Sanitary Journal,* "on account of the great distance between the different members of the Executive, and the consequent difficulties in the way of meetings," the association dissolved after its 1884 annual meeting in Montreal when not enough members were present to form a quorum.[15]

There was greater success at the local level. The Toronto Sanitary Association formed in the fall of 1884, was overseen by a council of physicians, architects and plumbers and the Associate Editor of *The Sanitary Journal*, Alan Macdougall, as Secretary. Active members were directly connected with sanitary matters and associate members had an interest in furthering sanitary science, and would focus on water purity, sewage, ventilation and sanitation of schools, colleges and other public buildings, and the licensing of plumbers. The Ottawa Medical Society, alarmed by the threat of cholera, focused on sanitary matters in the city, with Playter playing a leading role after he moved to the Ottawa area.

Playter also helped organize a group of MPs and Senators who were medically qualified, along with Ottawa-area physicians for a March 4, 1884 meeting to again consider the question of a Dominion Health Bureau. Playter presented a

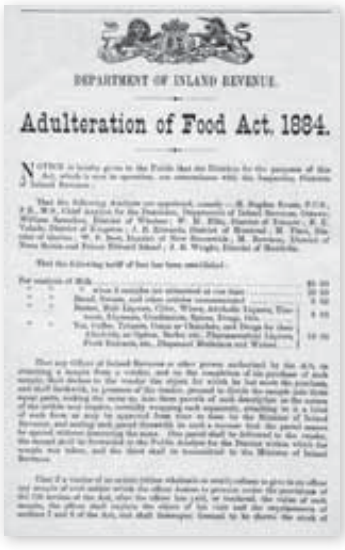
14 "The Public Health: How The Good Work Goes On," *Canada Health Journal* 5 (7) (April 1881): 183

15 "The Dominion Sanitary Association," *The Sanitary Journal* 6 (4) (January 1884): 122; "Canadian Sanitary Association," *The Sanitary Journal* 6 (11, 12) (August-September 1884): 310

detailed plan, in which a Deputy Minister or Chief Sanitary Officer connected with the Department of Agriculture and a Sanitary Committee made up of representatives from each province, and at least 145 Sanitary Officers in each of the electoral districts providing monthly disease statistics to the bureau.

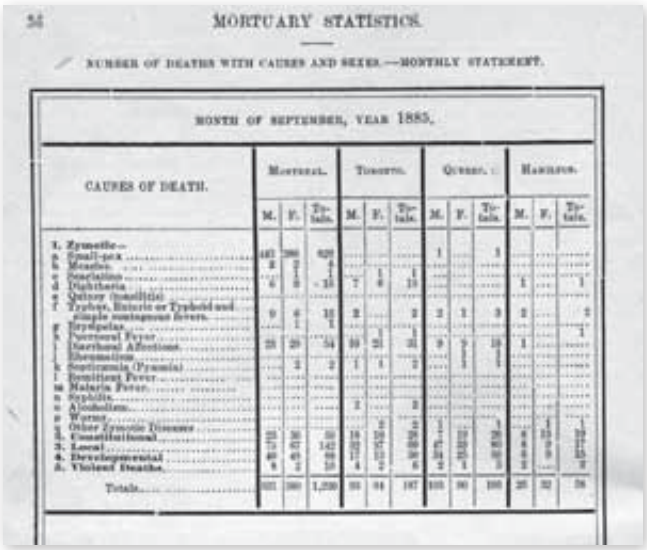
Two weeks later, a delegation of physicians, aldermen and other members of the Quebec Sanitary Association visited Ottawa to give a presentation to the Minister of Agriculture on public health matters. They called for a Dominion Sanitary Exposition sponsored by the federal government, "embracing an exhibition of all appliances pertaining to the public health, which would tend to inform the public generally on this subject of great importance, such as drainage, disinfectants, heating appliances, baths, closets, etc."[16]

Although the Dominion government took some action to address the adulteration of food with the implementation of legislation in 1874 and the act's revision in 1884, the government hesitated to act further on public health and disease prevention. A March 1884 debate in the House of Commons focused on the lack of progress in mortality statistics and some MPs argued that the government was listening too much to the medical profession and questioned the $600 federal subsidy Playter received for 600 copies of *The Sanitary Journal*. Others argued that a similar subsidy should also be given to the new French sanitary publication, *Le Journal d'Hygiène*. By 1887, the federal subsidy to Playter's journal had risen to $1,000, with $400 also provided to the editor of the French journal, which was published by the Hygienic Society of Montreal.


DEPARTMENT OF INLAND REVENUE.

Adulteration of Food Act, 1884.

Man: Canada Home Magazine, 1 (November 1885)


56 MORTUARY STATISTICS.

NUMBER OF DEATHS WITH CAUSES AND SEXES.—MONTHLY STATEMENT.

MONTH OF SEPTEMBER, YEAR 1885.

| CAUSES OF DEATH. | Montreal. | | | Toronto. | | | Quebec. | | | Hamilton. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. |
| 1. Zymotic— | | | | | | | | | | | | |
| a. Small-pox | 447 | 380 | 827 | | | | 1 | | 1 | | | |
| b. Measles | 2 | 2 | 4 | | | | | | | | | |
| c. Scarlatina | | 1 | 1 | | | | | | | | | |
| d. Diphtheria | 6 | 5 | 11 | 1 | 0 | 1 | | | | 1 | | 1 |
| e. Quinsy (tonsilitis) | | | | | | | | | | | | |
| f. Typhus, Enteric or Typhoid and simple contagious fevers | 0 | 4 | 10 | 2 | | 2 | 2 | 1 | 3 | 2 | | 2 |
| g. Erysipelas | | 1 | 1 | | | | | | | | | |
| h. Puerperal Fever | 23 | 29 | 54 | 10 | 21 | 31 | 0 | 1 | 10 | 1 | | 1 |
| i. Diarrhœal Affections | | | | | | | | | | | | |
| j. Dysentery | | | | | | | | | | | | |
| k. Cerebro-spinal (Pyæmia) | | 2 | 2 | 1 | 1 | 2 | | | | | | |
| l. Remittent Fever | | | | | | | | | | | | |
| m. Malaria Fever | | | | | | | | | | | | |
| n. Syphilis | | | | | | | | | | | | |
| o. Alcoholism | | | | 1 | | 1 | | | | | | |
| p. Worms | | | | | | | | | | | | |
| q. Other Zymotic Diseases | | | | | | | | | | | | |
| 2. Constitutional | 33 | 30 | 63 | 16 | 10 | 26 | 1 | | 1 | 6 | 1 | 7 |
| 3. Local | 74 | 67 | 141 | 22 | 17 | 39 | 25 | 7 | 32 | 6 | 3 | 9 |
| 4. Developmental | 40 | 49 | 89 | 13 | 7 | 20 | 14 | 5 | 19 | 6 | 0 | 6 |
| 5. Violent Deaths | 6 | 3 | 9 | 4 | 2 | 6 | 2 | 1 | 3 | 2 | | 2 |
| Totals | 631 | 580 | 1,211 | 69 | 64 | 137 | 45 | 16 | 69 | 25 | 5 | 30 |

Man: Canada Home Magazine, 1 (November 1885)

## The Montreal Smallpox Epidemic, 1885

In the spring of 1885, two Pullman-car conductors infected with smallpox had arrived in Montreal from Chicago. The disease spread within and then beyond the Hotel Dieu hospital. Public health officials tried to enforce vaccination and isolation of the sick but were met with resistance and some were assaulted as they tried to remove corpses from the worst-infected neighbourhoods. On September 28, police from all over the city assembled to disperse an angry mob that roamed the streets while hurling stones.

Ontario had amended its *Public Health Act* to compel the appointment of a local medical officer of health and sanitary officers answerable to the provincial board and if necessary, to appoint local health officers and tax municipal funds to pay

16 "Recent Sanitary Proceedings," *The Sanitary Journal* 6 (6) (March 1884): 182–83

### Anti-Vaccinationists

The first law requiring compulsory vaccination passed in Britain in 1853, requiring parents to have their young children vaccinated against smallpox. Popular resistance to vaccination began immediately after, with violent riots in a number of towns. The Anti-Vaccination League spoke out against infringements on their personal liberty and choice. An 1867 act extended the compulsory requirement to age 14 and a number of other books and journals started publishing against vaccination legislation in the 1870s and 1880s in Britain and elsewhere. During this era, French Canadians were generally much more suspicious of vaccination than English Canadians, although anti-vaccination sentiment could be found across the country. French Quebeckers associated vaccination with British surgeons and while many of them lived in filthy, overcrowded tenements in the poorest neighbourhoods of Montreal, they were hostile to public health attempts to help them or to contain the disease. Homeopathic advocates called the vaccinators charlatans and many among the poor saw a conspiracy of the rich and powerful trying to kill their children.[a]

a R.M. Wolfe and L.K. Sharp, "Anti-vaccinationists past and present" British Journal of Medicine 325 (24 August 2002) pp. 430-432; *Canadian Encyclopedia*, http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ARTA0007462

them. A smallpox epidemic that struck eastern Ontario in 1884 gave the Provincial Board of Health its first opportunity to manage a serious infectious disease threat. When the head of a hastily assembled local board of health fell ill, residents of nearby towns called in the Provincial Board of Health. Peter Bryce, Secretary of the Provincial Board, ordered schools and churches closed, banned public gatherings, suspended stagecoach service into the community, and posted constables on the roads and railway stations to control the movement of anyone who might be carrying the disease. He also brought in medical students to conduct house-to-house vaccinations, disinfected and fumigated all infected houses, and issued a special pamphlet that attacked the anti-vaccination views of a local practitioner. By January 1885, and after 202 cases and 45 deaths, smallpox was kept from spreading outside the township.

In response to the growing smallpox crisis in Montreal and the "complete absence of any provincial sanitary authority prepared to grapple with the epidemic" in Quebec, the Ontario Board of Health took the extraordinary action of extending its authority across provincial lines. Bryce deployed medical inspectors to Quebec to ensure that all persons and freight boarding trains to Ontario would be free of smallpox infection, enforced through strict inspection, vaccination and fumigation.

In the end, this interprovincial strategy was remarkably effective, limiting smallpox deaths in Ontario to 30 in 1885, while the death toll in Montreal reached 3,157, with a total of 19,905 cases and 5,964 deaths across Quebec that year. The Montreal outbreak would prove to be the last uncontained outbreak of smallpox in a modern city and in its aftermath, Quebec passed a public health act in 1886 and established a provincial board of health in 1887. The Montreal smallpox experience also led to a requirement that all passengers and crews of arriving vessels had to show evidence of smallpox vaccination or submit to vaccination upon their arrival in Canada.[17]

17 http://www.thecanadianencyclopedia.com/PrinterFriendly.cfm?Params=A1ARTFET_E103

## Bacteriology and Public Health Laboratories

Canadian Bulletin of Medical History 1989

*Dr. Alexander Stewart*

In 1882, Louis Pasteur successfully demonstrated his anthrax vaccine for sheep and Robert Koch announced his discovery of "the germ of tuberculosis."[18] No ships stopped at the Grosse Isle quarantine station for inspection that year, as quarantine was being replaced by more pragmatic regulations that reflected the increased speed of ocean shipping and better understanding of infectious diseases, as revealed by bacteriology. In 1886, Dr. Alexander Stewart of Palmerston began producing smallpox vaccine on behalf of the Ontario Board of Health and the Ontario Vaccine Farm was soon shipping to other provinces.

Ontario established the first public health laboratory in North America in 1890. Dr. J.J. Mackenzie was appointed the director of the lab and oversaw its modest quarters, working alone except for the assistance of a young boy to look after the animals and clean glassware. In 1900, Dr. John A. Amyot succeeded McKenzie as director of the Provincial Laboratory and in 1910, he was also appointed part-time professor in the newly created Department of Hygiene and Sanitary Science at the Provincial University.

University of Toronto Archives

*Dr. J.J. Mackenzie*

Building on the Ontario model, public bacteriological laboratories were established in Quebec and Nova Scotia in 1894 and in Manitoba in 1897. The Ontario laboratory's early work focused on systematic examination of milk and water supplies, tests of samples taken from suspected diphtheria and typhoid cases, employing chemical and bacteriological methods to ensure the safety of public supplies, and investigating rabies outbreaks. By the mid-1890s, provincial public health laboratories also facilitated the inspection of cattle and meat and the serum diagnosis of typhoid cases.

### John A. Amyot

*First Deputy Minister of the Federal Department of Health and First Chairman of the Dominion Council of Health*

Lt.-Col. John A. Amyot was born in Toronto in 1867 and graduated in Medicine from the University of Toronto in 1891. In 1900, he was appointed Director of the Ontario Provincial Board of Health Laboratory, where he served until 1919. Dr. Amyot had a leading role in introducing the filtration and chlorination of water and the pasteurization of milk in Canada. In 1919, Dr. Amyot became the first Deputy Minister of the Federal Department of Health, where he secured the co-operation of provincial and local health authorities throughout Canada. When the Department of Soldiers' Civil Re-establishment and the Department of Health were united in 1928 under the name of the Department of Pensions and National Health, he was made Deputy Minister of the new department. Dr. Amyot exercised a wide influence on public health in Canada for nearly 40 years.

—*Canadian Public Health Journal*, Vol. 25, 1934

18 Peter H. Bryce, "History of Public Health in Canada," *The Canadian Therapeutist and Sanitary Engineer* 1 (6) (June 1910): 290


Sanofi Pasteur Limited, Connaught Campus, Archive

Louis Pasteur's developing and testing a rabies vaccine in France was a key event in the bacteriological revolution. The success of Pasteur's treatment against the otherwise always fatal bite from a rabid animal generated considerable interest. The subsequent founding of the Pasteur Institute in Paris in 1888 was the first in a series of institutions that were built around the world to prepare the new rabies treatment, as well as the diphtheria and tetanus antitoxins that were discovered in the 1890s.

Diphtheria incidence had increased sharply around the world during the second half of the 19th century. Its causative bacterial organism was identified in 1883–84 and the specific endotoxin produced by the disease was recognized in 1888. The New York City Department of Health produced and administered the first supplies of diphtheria antitoxin on the continent in 1895 and a former collaborator of Pasteur's set up the New York Bacteriological and Pasteur Institute in 1889, becoming one of the first companies to produce and market the new antitoxins in North America.

The cost of importing diphtheria antitoxin was the focus of a lively discussion at a meeting of the Ontario Medical Association in 1905. An editorial in the *Canada Lancet* found it remarkable that the discoverer of diphtheria antitoxin, Emil von Behring, received nothing for his discovery, yet commercial manufacturers have made millions out of it, while the public have been "charged a very long price for the serum.... Such a discovery as this should be placed under the highest authority in the government of the country."[19]

19 "Discovery and Commercialism," *Canada Lancet* 39 (5) (Jan 1906): 463–64.

## Pushing for Progress


Sanofi Pasteur Limited, Connaught Campus, Archive

Meanwhile, Edward Playter and other sanitary reformers kept working to keep public health issues alive at the federal level in Canada. Playter gave detailed addresses to the Members of Parliament, focused on Canada's death rate, which was 25% higher than in Great Britain and on "the immense money loss in Canada through preventable sickness and deaths."[20]

In 1891, when Prime Minister John A. Macdonald died, Playter wrote that his passing was a significant loss for Canadian public health development. "It is probable that but for him the Journal would not have survived more than a year or two," and indeed a comprehensive Dominion sanitary system "would have been achieved had Sir John Macdonald lived but a year longer."[21]


*Health, Disease and Medicine: Essays in Canadian History* (Toronto, 1982)

After Macdonald's death, Playter's energies flagged and his struggling journal published its last issue in September 1892. When the Dominion Sanitary Association also failed, Playter left Ottawa and

20 Edward Playter, "An Address to the Members of the Parliament of Canada," *Man: A Public Health Magazine* 1 (6) (April 1886): 183–93; Edward Playter, "On the High Death Rate in Canada and its Prevention: An Address to the Members of the Parliament of Canada," *Canada Health Journal* 9 (5) (May 1887): 109–13

21 "Editorial Notes," *Canada Health Journal* 13 (6) (June 1891): 105; "Playter, Edward," in H.J. Morgan (ed.) *The Canadian Men and Women of the Time: A Handbook of Canadian Biography* (Toronto: W. Briggs, 1898), p. 824

returned to Toronto to re-establish his practice, leaving to others his life's ambition of "a national public health association and an adequate program of public health services, in which the medical profession was intimately involved."[22]


THE DOMINION
SANITARY JOURNAL
The "Cream" of the Sanitary Literature of the World.
THE CHEAPEST SANITARY JOURNAL IN THE WORLD.

*Dominion Sanitary Journal*, 6 (May 15, 1884)

Doctors pointed to the amount of public money being spent on preventing and stamping out infectious diseases among animals and plants by the Department of Agriculture, while little, if anything, was being spent on preventing or stamping out human diseases. Appearing before Prime Minister Wilfrid Laurier in 1908, the Canadian Medical Association stressed that "we are not making full use of the scientific knowledge of the age in preventing many forms of disease that have been traced to their source." It was estimated that the cost of typhoid in Canada amounted to $5.5 million a year. There were also some 40,000 cases of tuberculosis and 8,000 deaths in Canada annually at an estimated cost to the economy of $8,800 each, or a total of $70,400,000 per year.[23]

The fight for infectious disease prevention and control prompted the creation of a number of national organizations, such as the Canadian Association for Prevention of Tuberculosis which was established in 1901, as well as the expansion of other groups into this sphere of interest. The National Council of Women, for example, dedicated itself to the fight against venereal disease in 1906.

Public education remained fundamental to reformers' public health crusades. While the new bacteriological understandings were embraced by the medical and social elites in Canada, significant numbers of the rural and working classes—most of whom were illiterate—clung to the old beliefs and fatalistic attitudes towards infectious diseases.

Peter Bryce moved from Toronto to Ottawa in 1904 and became Chief Medical Officer of the departments of the Interior and of Indian Affairs, but his efforts to advance public health within the federal government would not result in the same success he achieved in reforming Ontario's provincial system. Dr. Frederick Montizambert,

### Frederick Montizambert

Dr. Frederick Montizambert was born in 1843 in Quebec City and was appointed Assistant Superintendent and later as Superintendent of Grosse Isle Quarantine Station. As thousands died in this country from typhus fever and cholera, Dr. Montizambert worked to improve quarantine regulations and became General Superintendent of Quarantine Services of Canada in 1894. He served as Director General of Public Health from 1899 until 1919 and played a leading part in the organization of the St. John Ambulance Association, the Victorian Order of Nurses and the Canadian Tuberculosis Association and the Canadian Public Health Association.

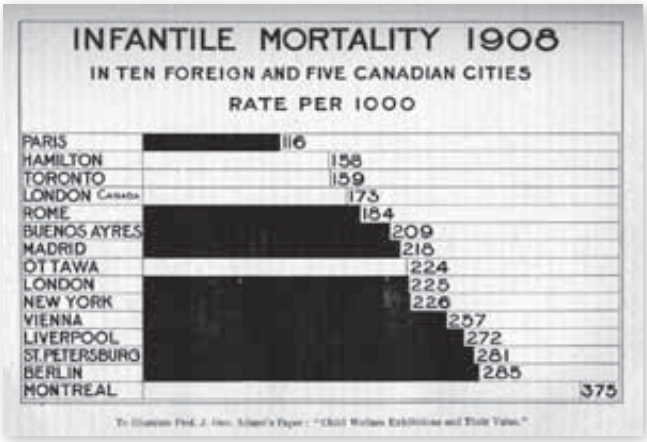
—*Canadian Journal of Public Health*, January 1959

22 Defries, ""Twenty Years of Pioneer Effort to Establish a Canadian Health Association," pp. 365–66; Defries, "Dr. Edward Playter: A Vision Fulfilled," pp. 373–75

23 "Dominion Bureau of Health," *Canada Lancet* 41 (7) (March 1908): 549–50; "A Federal Department of Health," *Canada Lancet* 41 (8) (April 1908): 652

who had worked managing the Grosse Isle quarantine station since 1869, was named Director General of Public Health and Sanitary Advisor to the Dominion Government in 1899. His promotion to an office in Ottawa overseeing contagious diseases in the Northwest Territories was in recognition of his long service, but the lack of an appropriate salary in his new deputy minister position, as he viewed it, also reflected a lack of recognition for the value of his work.[24]

Thanks to these two men as well as a number of others advocating for change, progress was slowly being made in establishing Canada's public health infrastructure, and legal and educational foundations. McGill University endowed a Chair in Hygiene in 1894, while the University of Toronto created a Department of Hygiene in 1896. Canada's first tuberculosis sanatorium, the Muskoka Cottage Sanatorium, had opened in 1887 and in the next century, provincial governments would begin to launch




*Public Health Journal*, 3 (July 1912)

concerted responses against this disease. In 1904, the Department of the Interior and of Indian Affairs appointed a medical officer to organize and supervise the health of more than 100,000 Aboriginal people across the country.

There was also a growing expectation that the bacteriological revolution would continue to bear fruit and quickly produce new wonder drugs against other infectious diseases. But the demise of Playter's journal in 1892 and the failure of the Dominion Health Institute reflected the ongoing challenges for expanding public health in Canada. Playter's retirement and subsequent death in 1909 symbolized the passing of an era.

24 Bilson, "Dr. Frederick Montizambert (1843–1929): Canada's First Director General of Public Health," pp. 393–95