



Government  
of Canada

Gouvernement  
du Canada



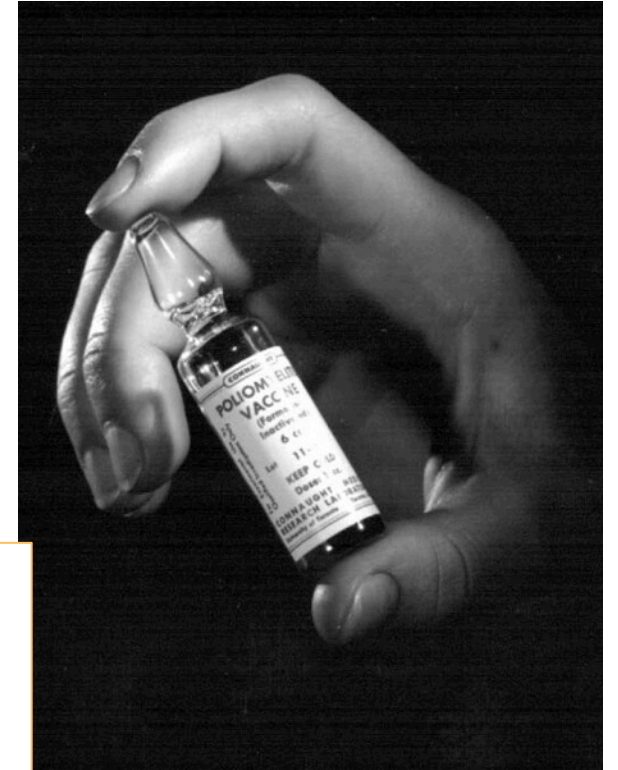
# 100 YEARS OF HEALTH

## “HEALTH CANADA, PAUL MARTIN SR. & THE POLIO STORY”

By **Christopher J. Ruty, Ph.D.**  
Professional Medical/Public Health Historian  
& Adjunct Professor,  
Dalla Lana School of Public Health,  
University of Toronto

*Health Science Forum*  
Shaw Convention Centre,  
Ottawa  
January 21, 2019

Canada



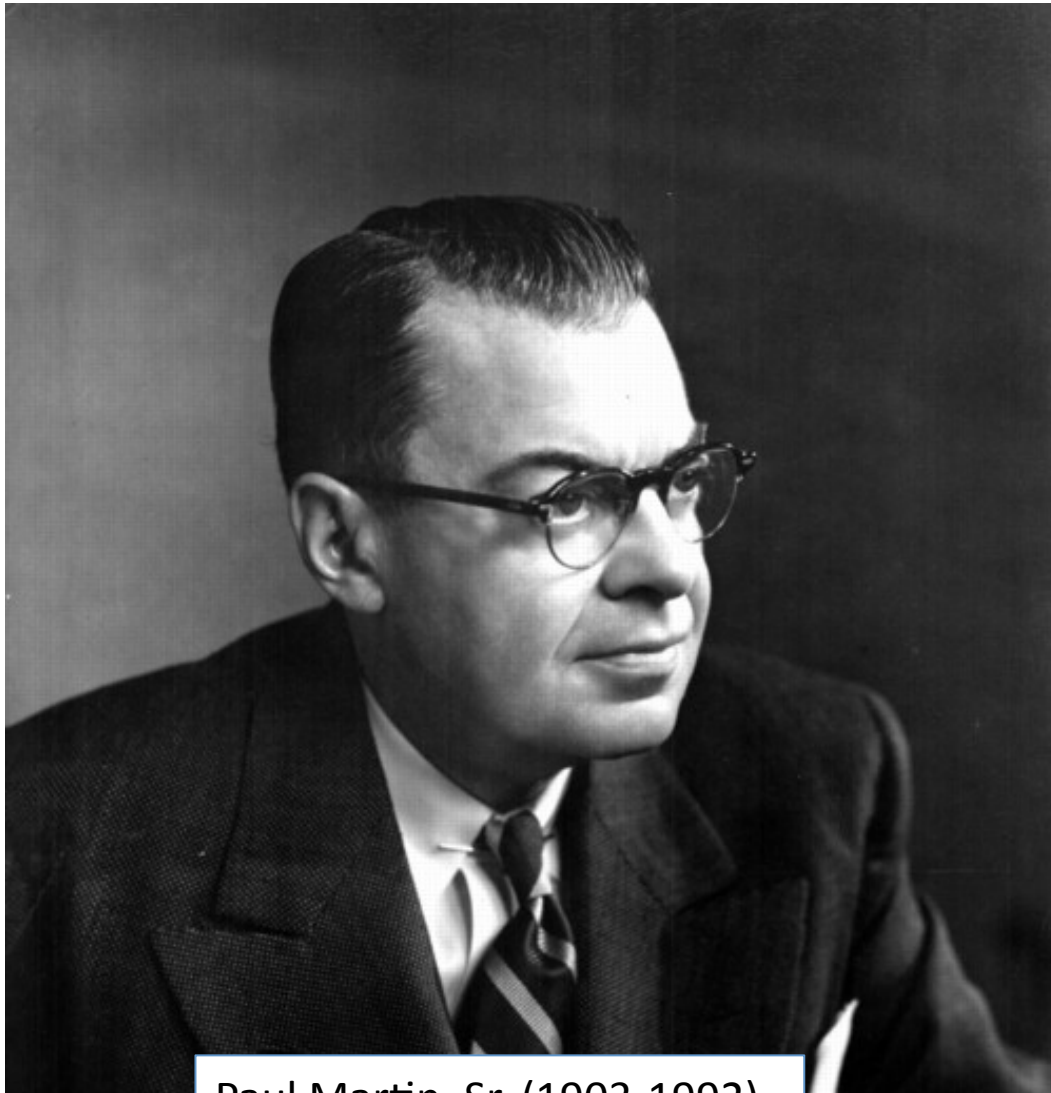
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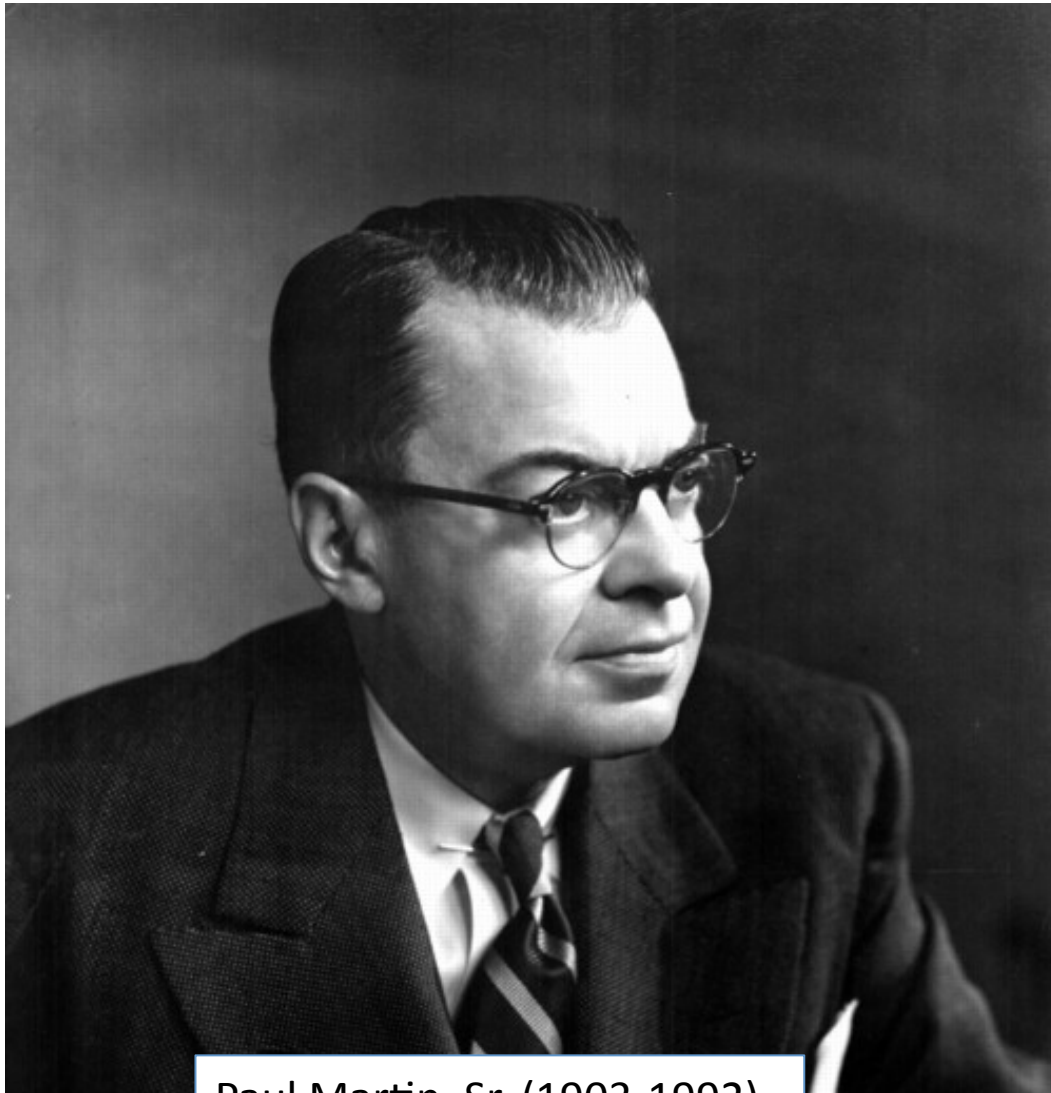
## INTRODUCTION



Paul Martin, Sr. (1903-1992)

- **2019** - 100<sup>th</sup> anniversary of Health Canada, originally the Dominion Department of Health
- **1928** – Department of Pensions & National Health after merger with Department of Solders' Civil Re-establishment
- **1944-1993** – Department of National Health & Welfare
- **1993-Present** – Health Canada
- **1946-1957** – Paul Martin, Sr. was the longest serving Minister in the history of Health Canada and had the most significant influence on its evolution, especially during the critical post-war era
- Among the many public health challenges faced by Martin while Minister of National Health & Welfare, poliomyelitis was one of the most important, and certainly the most personal

## INTRODUCTION



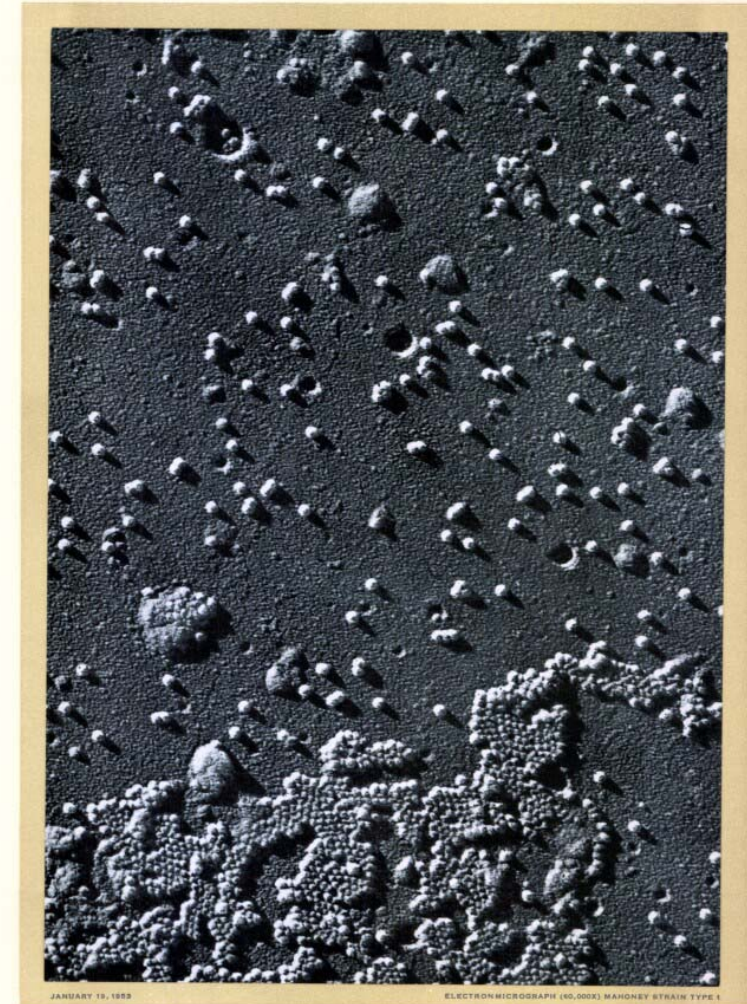
Paul Martin, Sr. (1903-1992)

- **1907** – Paul Martin was stricken with polio
- **1946** – Paul Martin Jr. was also stricken with an especially severe case of polio at age 8
- **1946-1953** – Worsening polio epidemics would become an increasingly national public health challenge and an important catalyst for the expansion of the federal government's active role public health, especially through the federal health grants program, launched by Martin in 1948
- **1954-1957** – Martin would oversee the federal government's close involvement in the mass field trial of the Salk polio vaccine and its launch and further evaluation in Canada, all in close collaboration with Connaught Medical Research Laboratories of the University of Toronto, which played a key role in its development and production



## POLIO: “THE MIDDLE CLASS PLAGUE”

- Polio is caused by one of the smallest known viruses; initially infects the gastrointestinal tract, usually harmlessly, but can become more serious if it escapes the gut, enters the nervous system and damages the motor-neurons in the spinal cord, causing varying degrees of muscle weakness or paralysis
- No two cases of paralytic polio alike; virus could cause weakness/paralysis of a finger, to a leg, arms, chest and/or throat muscles (requiring an “iron lung”), or the whole body
- Prior to late 19th century, the poliovirus (types I, II, III) was endemic, primarily spreading oral-fecally, and infecting almost all very young children with a harmless & immunizing gastrointestinal ‘flu-like illness



JANUARY 19, 1953 ELECTRONMICROGRAPH (60,000X) MAHONEY STRAIN TYPE I

PARKE-DAVIS VIRUS LABORATORIES  
*The First Visualization of Polio Virus*

## POLIO: “THE MIDDLE CLASS PLAGUE”

- As public health/ hygiene standards improved, exposure to the poliovirus became increasingly delayed and less universal
- Over time, more children (and young adults) thus grew vulnerable to paralytic infection if the poliovirus was able to invade nervous system
- Polio outbreaks and epidemics increased until polio vaccines were available; the middle class was particularly vulnerable
- **1860s-1880s** – First reports of “infantile paralysis” outbreaks in Europe; not clear if disease contagious
- **1874** – “Poliomyelitis” scientific name given (inflammation of grey matter in spinal cord)
- **1880s-1890s** – First polio outbreaks in North America
- **1908** – Isolation of poliovirus in laboratory monkeys

### EXPERIMENTAL EPIDEMIC POLIOMYELITIS IN MONKEYS.<sup>1</sup>

BY SIMON FLEXNER AND PAUL A. LEWIS.

(From the Laboratories of the Rockefeller Institute for Medical Research,  
New York.)

PLATES XVIII AND XIX.

#### INTRODUCTION.

Epidemic poliomyelitis has become, in the past decade, a world-wide disease. The present state of our knowledge of the epidemic spread of poliomyelitis, up to the outbreaks in Europe and America since 1907, is well given in Wickman's<sup>2</sup> monograph. That epidemic poliomyelitis is an infectious disease is clearly pointed out by Medin,<sup>3</sup> although, at an earlier date, Cordier<sup>4</sup> gave it as his belief that it is a contagious disease. The most convincing evidence of the contagiousness of epidemic poliomyelitis is supplied by Wickman's<sup>5</sup> studies of several Swedish epidemics.

Up to the present time there has existed no convincing knowledge of the nature of the agent causing epidemic poliomyelitis. Various bacteria and especially certain cocci<sup>6</sup> have from time to time been isolated in cultures from fluids obtained by lumbar puncture from patients suffering from epidemic poliomyelitis, or from specimens of the central nervous system removed at autopsy. These bacteria did not conform to one species or group of microorganisms and did not suffice to set up poliomyelitis in animals. They can be accounted for more satisfactorily as contaminations or secondarily invading bacteria than as the cause of the disease.

<sup>1</sup> Received for publication January 3, 1910.

<sup>2</sup> Wickman, Beiträge zur Kenntniss der Heine-Medinschen Krankheit, Berlin, 1907.

<sup>3</sup> Medin, Verhand. des x Internat. Med. Congresses, Berlin, 1890, ii, 37.

<sup>4</sup> Cordier, cited by Medin, *Lyon médical*, 1888, lvii, 5, 48.

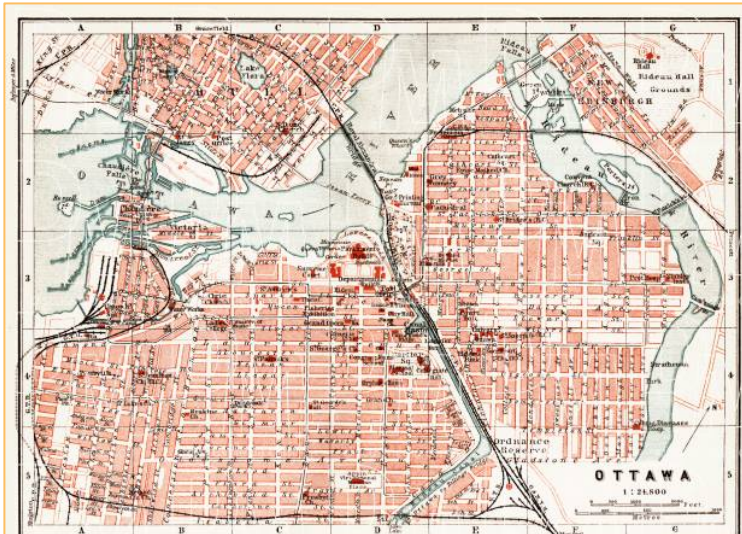
<sup>5</sup> Wickman, *op. cit.*

<sup>6</sup> Geirsvold, *Norsk Magazin f. Lægevid*, 1905, iii, 1280 (cited by Harbitz and Scheel).



## POLIO: “THE MIDDLE CLASS PLAGUE”

- **1907** – When 4-year-old Paul Martin was stricken with polio in Ottawa, very little was known about it
- There was no diagnostic test and Martin’s polio case was also described as cerebo-spinal meningitis
- He was bed-ridden for four years and had to be pulled around on a wagon, and bore “its scars into adult life – slightly deformed knees and a partly paralyzed upper body”



- While cases were isolated in the Ottawa area, New York City experienced a significant polio epidemic in 1907 with over 2,000 cases reported

### EPIDEMIC INFANTILE PARALYSIS.\*

M. ALLEN STARR, M.D., LL.D., Sc.D.  
Professor of Neurology, Columbia University.  
NEW YORK.

During the summer of 1907 an epidemic of infantile paralysis occurred in New York City and its vicinity. The number of cases (probably over 2,000) was so many, the extent of the disease in the city and along Long Island Sound into Connecticut and up the Hudson River as far as Ossining was so rapid, the severity of the cases was so intense and deaths from the disease so frequent, that the epidemic excited a great amount of interest both among the laity and the profession. It seems wise, therefore, to put on record some special account of this epidemic, to call attention to particular clinical features that were presented, to trace the course of the cases as far as possible, and also to bring together an account of other epidemics that have occurred in the past, inasmuch as a large number of records have now accumulated concerning the prevalence of this disease in epidemic form.

Through the kindness of Dr. Simon Flexner I am enabled to present the results of a biological study, made by Dr. Martha Wollstein at the Rockefeller Institute, of the cerebrospinal fluid from cases of the disease, and also the results of an autopsy on one case.

*Journal of the American Medical Association, July 1908, p. 112*



## POLIO, 1910: A WATERSHED YEAR

- **Aug 1910** - the first widespread appearance of the “strange” and often deadly “new disease” of “infantile paralysis” in Canada sparked a wave of public and medical concern
- Initially concentrated in the Hamilton area, the outbreak began with a young girl originally thought to be suffering from rabies, who then died, however “poliomyelitis” proved to be the cause of death; cases soon appeared in Toronto

### CHILDREN ARE ATTACKED BY STRANGE EPIDEMIC

Twenty Cases of Fever and Infantile Paralysis—Once Swept Over the States.

Special to The Star.

Hamilton, Ont., Aug. 17.—An epidemic of poliomyelitis, or infantile paralysis, a comparatively new disease, which is attracting much interest among medical men the world over, has broken out here.

A score of cases have been reported to the Health Department, and the disease seems to be spreading. It was first noticed three or four weeks ago when a little girl, supposed to be suffering from hydrophobia, was taken to the hospital, where she died. It was later discovered she was a victim of infantile paralysis.

The disease generally begins with a high fever and then the patient is suddenly stricken with paralysis.

While most of the cases here are children under four years of age, two or three adults are victims.

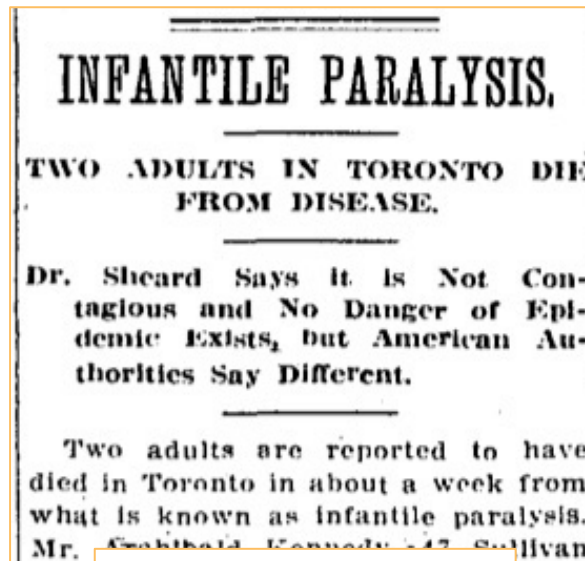
Some years ago the disease swept over a portion of the States, claiming victims by the hundreds.

Toronto Star, Aug. 17, 1910, p. 1

## POLIO, 1910: A WATERSHED YEAR

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- There was much confusion and mystery about “infantile paralysis”, particularly whether or not it was contagious
- Adding to the confusion were headlines about “infantile paralysis” causing the deaths of adults



*The Globe, Sept. 9, 1910, p. 9*



*Toronto Star, Aug. 17, 1910, p. 1*

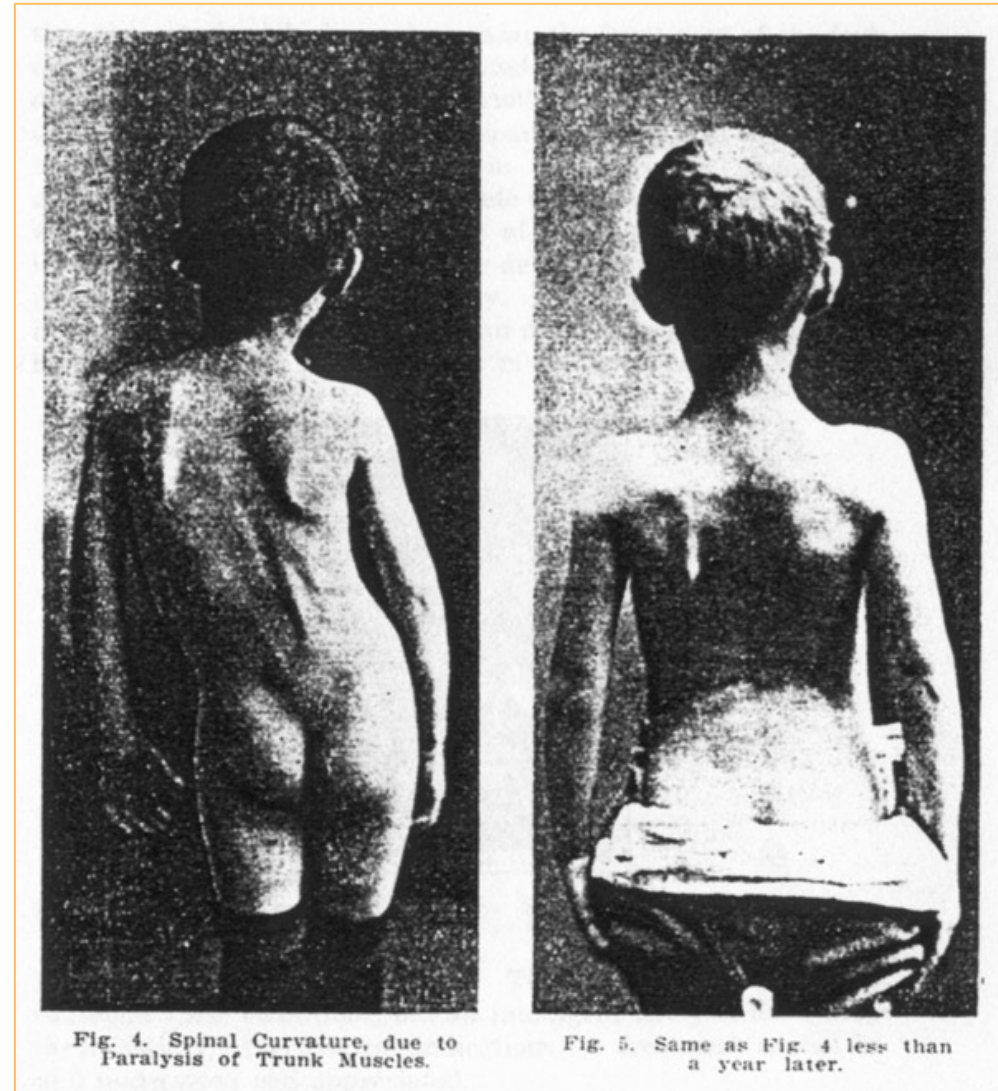


## POLIO, 1910: A WATERSHED YEAR

- Charles Hodgetts, Medical Advisor to the federal Commission on Conservation, investigated the 1910 polio outbreak, his survey of physicians across the country revealing 658 cases and 46 deaths; Ontario was hardest hit with 354 cases, half of which were fatal

Dominion of Canada:	
Ontario .....	354
Quebec .....	187
British Columbia .....	48
Alberta .....	27
Manitoba .....	17
New Brunswick .....	12
Saskatchewan .....	6
Nova Scotia .....	6
Prince Edward Island..	1
	<hr/>
	658

Maclean's, Nov 1912



Canadian Journal of Medicine & Surgery, Jan 1911, p. 9



## POLIO, 1916: PROTECTING BORDERS

- **Summer – Fall 1916** – The fearsome power of polio reached a level rarely surpassed, hitting the Northeastern United States with a devastating fury; some 27,000 cases and 6,000 deaths were reported, with New York City bearing the brunt of the epidemic with 9,000 cases
- Amidst the crisis, protecting borders became a critical issue, starting with New York City imposing strict travel restrictions on all children under 16; they couldn't leave the city without official certification that they were "polio free"
- In Canada, the polio epidemic crisis in the U.S. raised concerns that something similar could develop north of the border, especially when cases began to occur in Windsor

### INFANTILE PARALYSIS SPREADS IN STATES

Deaths and New Cases Decrease in New York, but Develop Elsewhere

(Special Despatch to The Globe.)

New York, July 7.—A decrease of deaths and new cases in this city, but a large increase in other cities and States, was reported to-day in the epidemic of infantile paralysis.

In the five boroughs twenty-two deaths and eighty-seven new verified cases were reported by the Health Department. Simultaneously, however, the State authorities reported forty-five cases in the State of New York. Similarly, the United States Government received reports of the spreading of the plague over eight States. The "plague" belt now extends as far east as Boston, as far west as Chicago, and as far south as Baltimore.

"The apparent decrease in this city as shown by to-day's figures means practically nothing," asserted Health Commissioner Haven Emerson tonight. "You must remember that there has been a great exodus of parents and children from the city. This is going to be a long, hard fight."

The total deaths have now reached 187 for the greater city out of approximately 787 cases.

Allowing for a run of sixty days for the disease, one medical statistician estimated to-day that the total number of cases the second week in September will be 42,180.

Two drastic orders were issued by the authorities to-day.

The first resulted in the closing by the police of all playgrounds and "play streets."

The second resulted in the exclusion from all the city libraries of all children under the age of sixteen.

*The Globe*, July 8, 1916, p. 24

THE GLOBE, TORONTO, FRIDAY, JULY 14, 1916.

### INFANTILE PARALYSIS ROUSES PROVINCE

Dr. McCullough Advises Prompt  
Precautionary Measures

WARNING BULLETIN ISSUED

Several Cases Reported From One  
Town in Ontario, While Others  
Are Suspected—Methods Suggested  
to Avoid an Epidemic.

Observing the legend that "an ounce of prevention is better than a pound of cure," Dr. J. W. S. McCullough, Provincial Chief Officer of Health, yesterday issued a warning bulletin urging citizens throughout Ontario to guard against the possibility of an outbreak in Ontario of the epidemic of infantile paralysis which is raging in some cities in the United States. Major McCullough stated that in one town in Ontario—the name of which he did not care to disclose—several cases had been reported, while others are suspected.

## POLIO, 1916: PROTECTING BORDERS



Dr. Frederick Montizambert (1843-1929)

<http://wikipedia.org>

- While the federal government had yet to establish a formal Department of Health, despite persistent lobbying from public health leaders and many others, there was a Director-General of Public Health for the Dominion, Dr. Frederick Montizambert
- **1869-1899** - Montizambert had served as the medical superintendent of the Grosse-Isle Quarantine Station at Quebec City before being appointed Canada's first Director-General of Public Health, which was based in the Department of Agriculture
- He remained responsible for national quarantine and was kept informed about the escalating polio epidemic in the U.S. and its potential spread into Canada
- **Mid-July 1916** – Based on Montizambert's advice, Minister of Agriculture amended quarantine regulations to include "Infantile Paralysis" in the list of "graver quarantinable diseases"

## POLIO, 1916: PROTECTING BORDERS

IMMIGRATION BRANCH DEPARTMENT OF INTERIOR

Ottawa 29th. July 1916.

Circular to Border Inspectors.  
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Owing to the unfortunate outbreak of infantile paralysis in New York City, it has been decided that until further notice no person under sixteen years of age travelling from or through New York City or the district within a radius of forty miles thereof shall be admitted into Canada unless he or she can produce a certificate from a Medical Health Officer or duly qualified practitioner stating that the person travelling has not in the doctor's opinion been in contact with a case of infantile paralysis.

The certificate to receive any consideration must be issued less than twenty-four hours before leaving New York City or vicinity and even those with certificates may be refused admission if the Officer examining has any doubts as to its authenticity or reliability or as to the state of health of the party carrying same.

Transportation companies have been notified of the new regulation and consequently there are not likely to be many rejections under the same as those who would be likely to be refused admission would have difficulty in purchasing tickets. It would be advisable for you to make an immediate report to me of any rejections under this ruling; Reason for rejection may be given as Circular 29-7-16. Should any rejected desire to remain in the close vicinity of your port for a period of eight days and then apply for re-examination they may be admitted as by that time all danger of contagion will have gone by.

The above regulation does not apply to bona-fide Canadian residents who have been in New York merely on a short visit.

W.D.Scott

Superintendent of Immigration.

- Thus, federal frontier regulations required that children under 16-years-of-age had to produce a medical certificate, dated within 24 hours of departure, that they had no contact with cases of poliomyelitis
- In addition to Windsor, border crossings in Nova Scotia were of particular concern, since it appeared that there were many families “fleeing the scourge” in the northeastern U.S. and hoping to seek refuge in Nova Scotia; there was a similar concern in Kingston about Americans trying to cross the St. Lawrence River to escape polio outbreaks in northern New York
- **Aug-Sept 1916** – Ultimately the Canadian border restrictions were expanded to control the entry of anyone entering the country from or through New York, Pennsylvania, Connecticut, Rhode Island, New Jersey, Vermont and Massachusetts



## POLIO, 1916: PROTECTING BORDERS

- **Late-Oct. 1916** – As the U.S. polio epidemic seemed to be easing and New York City lifted its travel restrictions, an alarming polio outbreak began in Montreal, preventing Montizanbert from relaxing Canadian border restrictions
- Of further concern was the imposition by the Ontario government of a requirement of medical certificates for anyone under 16-years-of-age planning to travel from Quebec into Ontario, testifying to good health and having had no exposure to polio
- **Nov. 30, 1916** – All Canadian border restrictions were lifted

### GUARDING ONTARIO AGAINST PARALYSIS

Children Cannot Leave Quebec  
Without Permit

### NOTICE TO RAILWAYS

Department of Health Takes Precau-  
tionary Measures to Avoid the  
Spreading of Disease — Death in  
Toronto.

To counteract the spread of infantile paralysis, more particularly in consequence of the outbreaks in Westmount and Montreal, the Ontario Board of Health has taken steps to prevent persons under sixteen years of age entering the Province from Quebec unless possessed of a medical certificate, dated within twenty-four hours of departure, that they are in good health and have not been exposed to the disease.

Dr. J. W. S. McCullough, Chief Officer of Health, yesterday sent the following telegram to all general transportation agents of the Canadian Pacific, Grand Trunk, Grand Trunk Pacific and Canadian Northern Railways, advising them of the new regulations being put in force against Quebec Province:

*The Globe*, Oct. 28, 1916, p. 5

## MOUNTING PUBLIC HEALTH CHALLENGES

- While Canada avoided experiencing polio on the scale seen in the U.S. during 1916, its threat, the public health and international issues it raised, added to the growing calls for establishing a federal department of health
- During the last half of World War I, those calls were amplified significantly by two quite distinct and powerful public health crises
- **1915-16** – An estimated 28.5% of Canadian troops were infected by venereal diseases and some 13% of public ward patients in Toronto General Hospital had syphilis
- **1917** – Such statistics prompted a group of Toronto physicians to join a meeting of the federal government’s “Commission on Conservation” – set up to focus attention on protecting the nation’s natural resources - to plead for efficient federal action, not unlike taken in the military, to stem the growing venereal disease threat

EMBER 28, 1917.

### ALARMING EFFECTS OF DREAD SCOURGE

Capt. Gordon Bates' Outspoken  
Paper on Venereal  
Diseases

### RESULTS OF AN INQUIRY

Immediate Steps Urged to Check  
Spread—Address to Health  
Association.

(Canadian Press Despatch.)

Ottawa, Sept. 27.—A remarkable paper on venereal diseases was read at the annual meeting of the Canadian Public Health Association this morning by Captain Gordon Bates, C.A.M.C. The paper was prepared in collaboration with Captain Morris McPhedran, C.A.M.C., and Captain Donald Fraser, C.A.M.C.

Dr. Bates contrasted the efficiency with which this menace is dealt with in the army, and the comparative indifference of the civic authorities. The necessity for efficiency in the army led to the adoption of radical measures, such as periodical inspection and quarantining, from which it has been possible to obtain statistics impossible in civil practice.

*The Globe*, Sept. 28, 1917, p. 4

## MOUNTING PUBLIC HEALTH CHALLENGES

- **1918** – The Ontario government had taken the lead on the issue by passing a Venereal Diseases Act, which facilitated professional medical treatment through provincially-funded hospitals
- However, a broader and nationally-focused effort was needed by the federal government through a long-sought-for Dominion department of health
- Meanwhile, an Advisory Committee on Venereal Diseases was set up, which involved physicians, the National Council of Women and the YMCA and YWCA, which undertook a “nation-wide campaign against vice” during 1918
- **Fall 1918** - Their efforts were disrupted by another, much larger and more urgent national public health challenge..

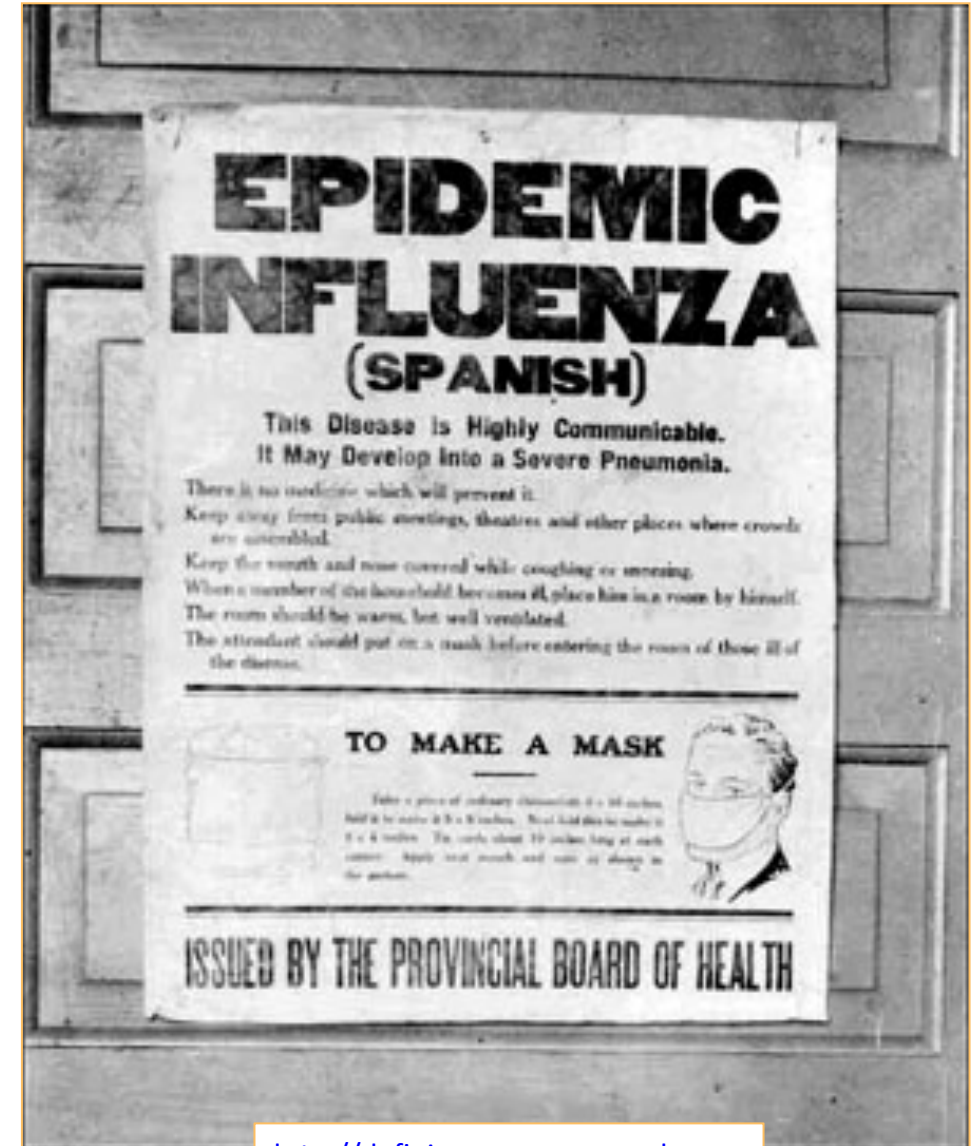


*The Globe*, Jan. 11, 1918, p. 1



## MOUNTING PUBLIC HEALTH CHALLENGES

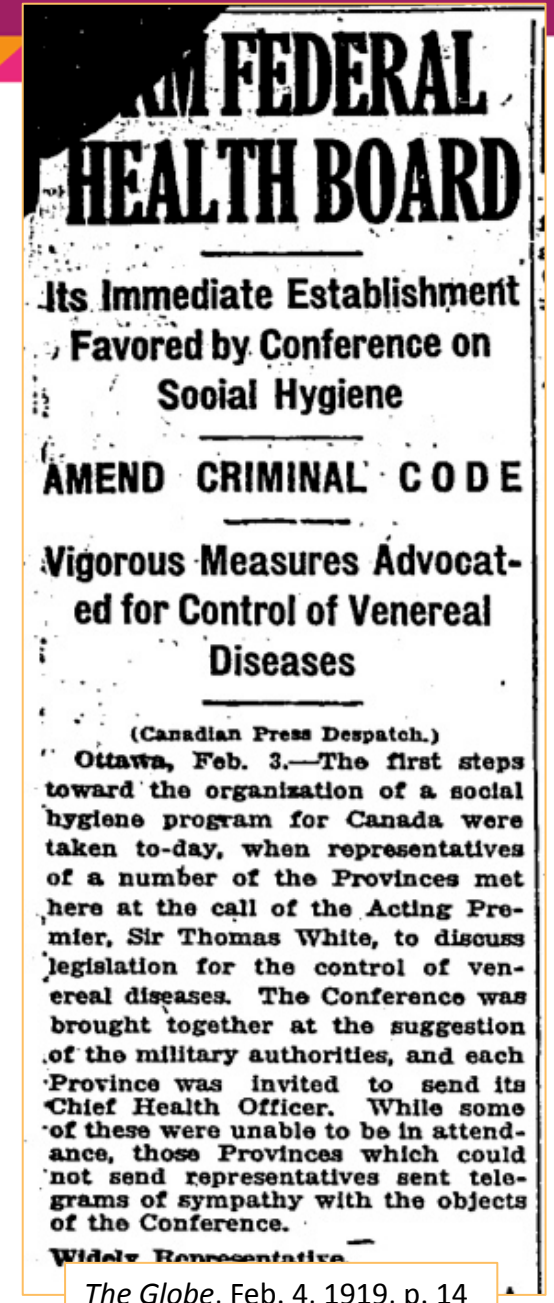
- **1918-19** – The great “Spanish Flu” pandemic had little to do with Spain, but it was where news of it was first reported
- As there have been many initiatives to commemorate the 100<sup>th</sup> anniversary of the great influenza pandemic, we have been reminded of its impact in Canada and globally
- By the time the pandemic eased, some 1/6 of the Canadian population affected, especially young adults with no immunity to the novel swine flu strain, with 50,000 deaths accelerated by complications such as pneumonia
- Globally, there were some 50 million deaths linked to influenza



<http://definingmomentscanada.ca>

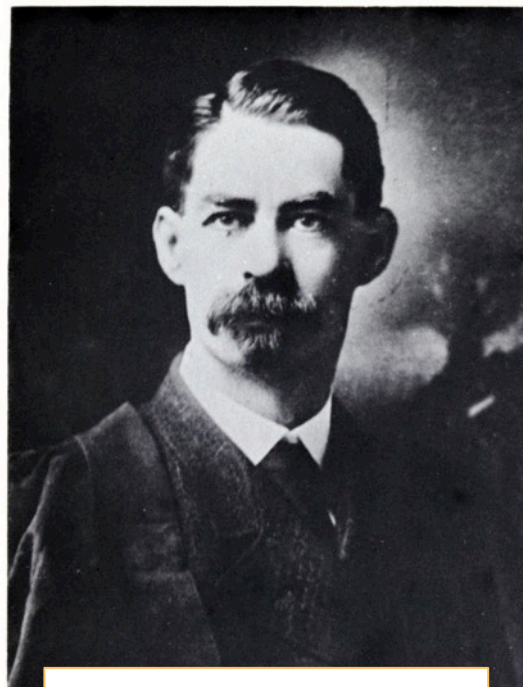
## MOUNTING PUBLIC HEALTH CHALLENGES

- The end of World War I, coupled with the high-profile public health threats of venereal disease and the influenza pandemic, brought intense pressure on the federal government to finally establish a nationally focused department of health
- **Feb. 3, 1919** – A national conference was held, initially focused on creating a national venereal disease program, but which set in motion a political process that led to the drafting of legislation creating the federal department of health
- **Feb. 20, 1919** – In its Throne Speech, the federal government formally committed to creating the new department
- **April 1919** - Federal health bill was first presented in the House of Commons, its main elements included “the conservation of child life and child welfare,” the medical inspection and care of immigrants, the supervision of all methods of transportation and the “collection, publication and distribution of information to promote good health, and improved sanitation.”



## FINALLY, A FEDERAL DEPARTMENT OF HEALTH

- **May 1919** – The Dominion Department of Health was officially established, bringing together health services from a number of federal departments: Medical Services (from Immigration & Colonization); Food & Drug Laboratory (Trade & Commerce); Marine Hospital Service (Marine & Fisheries); Proprietary & Patent Medicines (Inland Revenue); there was also a Division of Statistics, and a Division of Venereal Disease



Sanofi Pasteur Canada Archives

- Newton W. Rowell was the first Minister of Health (1919-20)
- Dr. John A. Amyot (left), Professor of Hygiene at the University of Toronto, served as the first Deputy Minister of Health until 1933
- He had been Director of the Ontario Provincial Laboratory (1900-1919)

## FEDERAL HEALTH DEPT. SANCTIONED

### Senate Committee to Report on Improving Ad- ministration

(Canadian Press Despatch)

Ottawa, May 6.—Authority for the creation of a Dominion Department of Public Health has been given Parliamentary sanction and now requires only the assent of the Governor-General to become law. The measure to-day was given third reading in the Senate, having previously passed the Commons.

#### To Improve Administration.

The improvement of Canadian Government administration will be considered by a committee of the Senate, with a view to making suggestions for the improvement of the existing system. The proposal was put forward some days ago by Senator McLennan, and to-day he secured the appointment of a special committee "to consider and report on the possibility of bettering the machinery of Government." Those named to the committee were: Senators McLennan, Beique, Dandurand, F

*The Globe*, May 7, 1919, p. 2



## FINALLY, A FEDERAL DEPARTMENT OF HEALTH

- **1920** – A key component of the new federal department of health was the Dominion Council of Health, established as its advisory body
- It met twice per year and was made up of provincial deputy ministers of health, the federal deputy minister, and appointed members representing labour, women's groups, social service agencies and universities, including Dr. John FitzGerald of the University of Toronto (rear row, 3<sup>rd</sup> from right)
- FitzGerald served as Director of the university's unique Connaught Antitoxin Laboratories



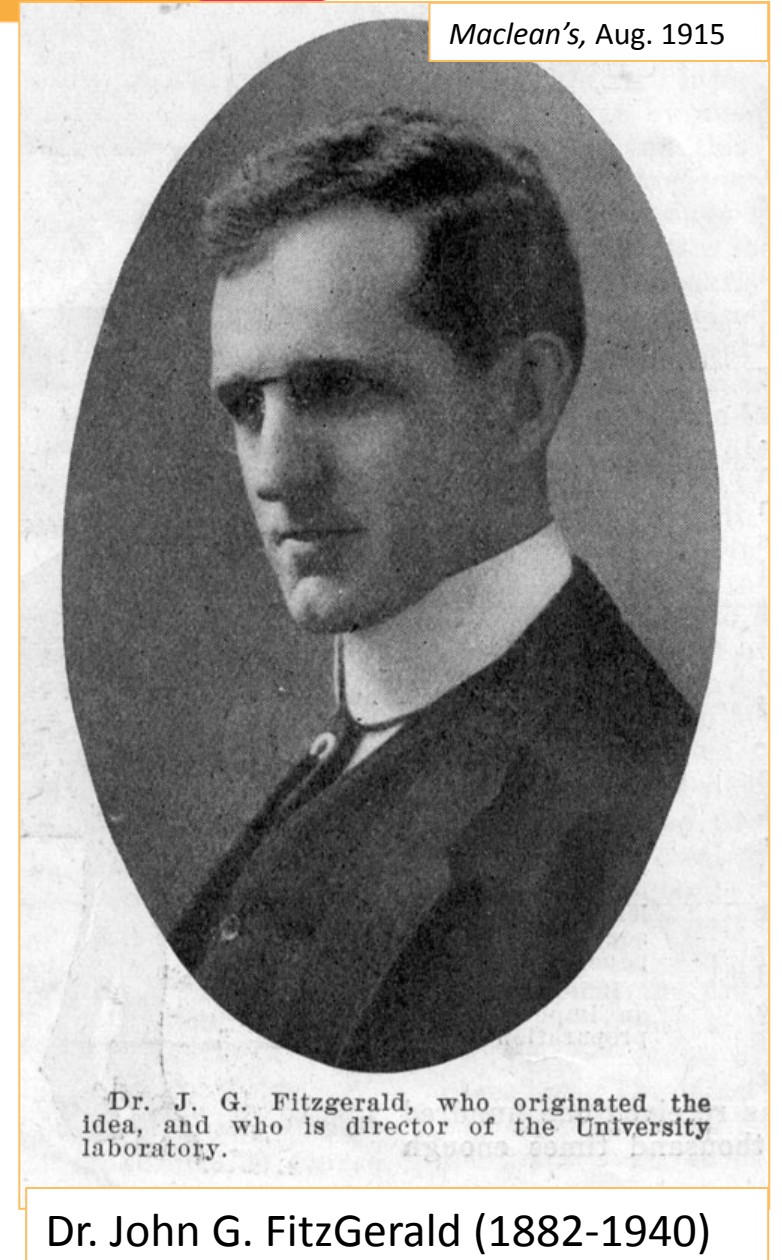
Sanofi Pasteur Canada Archives

## CREATING CONNAUGHT LABORATORIES

- **1914** – Connaught was originally established as the Antitoxin Laboratory in the Department Hygiene, a self-supporting and public service part of the University of Toronto, committed to preparing essential biological health products – antitoxins and vaccines – supplying them at cost to provincial health departments for free distribution, and investing any proceeds into facilities improvement, research, and public health education



Sanofi Pasteur Canada Archives





## CREATING CONNAUGHT LABORATORIES

- **1917** – Prompted by urgent demands for tetanus antitoxin during World War I from the Canadian and British military, the Labs expanded to include a farm site and new facilities provided by Albert E. Gooderham, who also gave the name “Connaught Antitoxin Laboratories” after the Duke of Connaught, Canada’s Governor General from 1911 to 1916

**THE NATIONAL WORK OF THE CONNAUGHT ANTITOXIN LABORATORIES UNIVERSITY OF TORONTO**

For the purpose of Research in the field of Preventive Medicine and for the Production and Distribution throughout Canada of all Public Health Biological Products at minimum prices.

**NATIONAL SERVICE TO THE PROVINCIAL & LOCAL BOARDS OF HEALTH & TO THE PHYSICIANS OF CANADA AND NEWFOUNDLAND**

In Ontario and of all Saskatchewan and all Public Health Biological Products are distributed **FREE** by the Provincial Boards of Health.

Mortality from Diphtheria in Ontario has been reduced from 14% in 1916 to 8% in 1917 as a result of **FREE DISTRIBUTION** by the Provincial Board of Health.

**SERVICE TO OUR ARMY**  
A Research Work in co-operation with the Dept of Militia and Defence

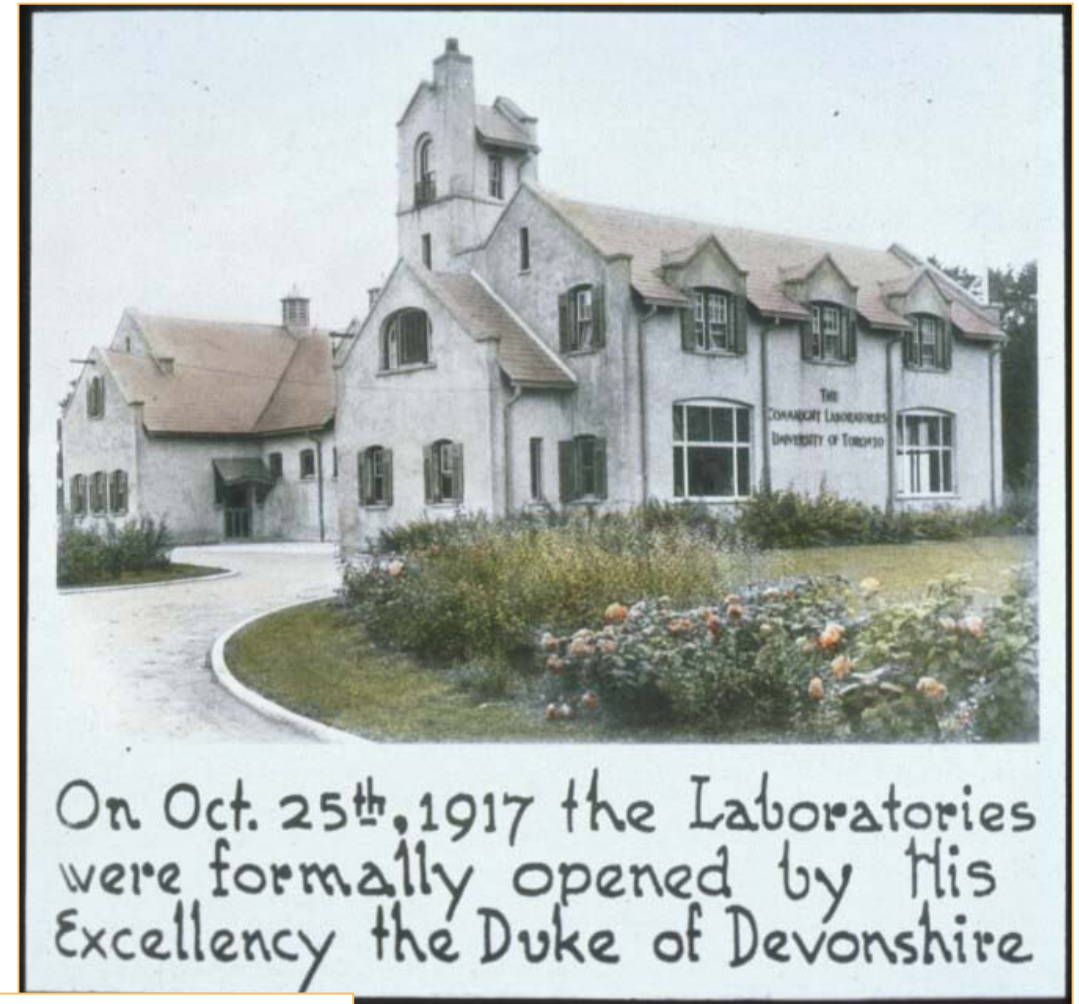
Production of Biological Products for the control of

Over 140,000 Packages Tetanus Antiserum (Aloca) have been sent Overseas.

**NATIONAL-ADVISORY-COMMITTEE**

BRITISH COLUMBIA	Dr. H.E. Young
ALBERTA	Dr. T.J. Norman
MANITOBA	Dr. Gordon Bell
SASKATCHEWAN	Dr. M.H. Seymour
ONTARIO	Dr. J.W.S. McCullough
QUEBEC	Dr. E.P. Lacombe
NOVA SCOTIA	Dr. W.H. Rattray
P. E. I.	Dr. H. Dubouche
NEW BRUNSWICK	Dr. R. H. McQuinn

**DIRECTOR OF LABORATORIES** – J.G. Fitzgerald  
**ASSOCIATE DIRECTOR** – R.S. MacLeod  
**RESEARCH ASSOCIATE** – A.V. Cawthra  
**COMMITTEE OF THE BOARD OF GOVERNORS** – Colonel M. Gooderham, Major, M.C., Dr. Robert Peterson, Colonel R.W. Leonard, Major Eric Amos, T.A. Russell, Esq.



On Oct. 25<sup>th</sup>, 1917 the Laboratories were formally opened by His Excellency the Duke of Devonshire

Sanofi Pasteur Canada Archives



## CREATING CONNAUGHT LABORATORIES

- **1919-20** – By the time the Dominion Department of Health was established, Connaught was providing vital public health products to every province, as well as to other parts of the British Empire
- **1921-27** - The Labs would also play an essential role in the development and production of insulin, as well as pioneered the development and production of diphtheria toxoid, enabling Canada to lead the world in bringing diphtheria under control
- Beginning in the late 1920s, Connaught would play an increasingly vital role in tackling polio's growing public health threat



## POLIO EPIDEMICS & THE PROVINCES

- **1927-28** – While diphtheria was coming under control in Canada, a new wave of polio outbreaks became more provincial in scale and grew in severity over the next decade as each province, almost in turn from west to east, was struck
- **1927** – British Columbia (182 cases and 37 deaths)
- **1927** - Alberta (313 cases and 65 deaths)
- During this period, the Dominion Council of Health played an important role, providing a very useful national forum for provincial health departments to share practical information about this enigmatic disease

### CANADIAN PUBLIC HEALTH JOURNAL

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No. 5

#### Some Findings in the Epidemic of Poliomyelitis in Alberta, 1927

R. B. JENKINS, M.D.

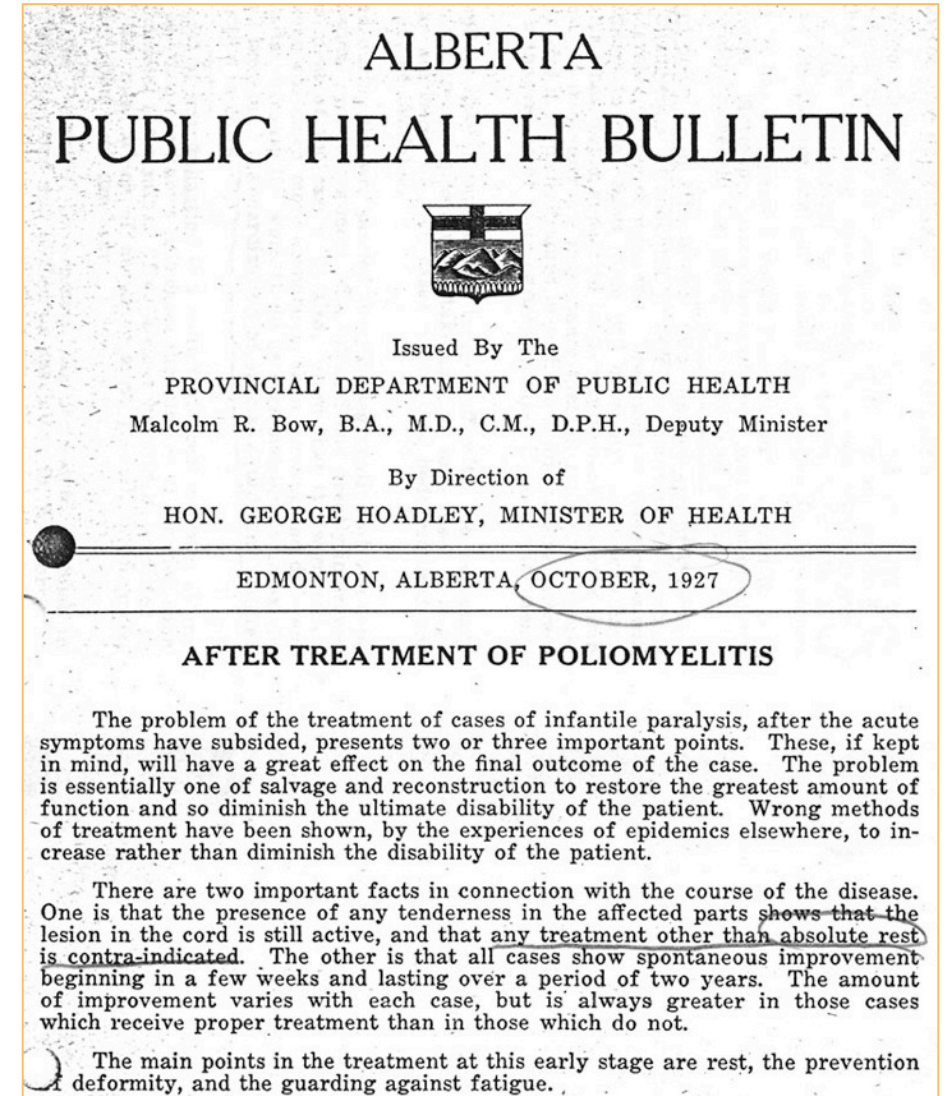
*Provincial Inspector of Health, Alberta*

**D**URING the year 1927 an epidemic of poliomyelitis occurred in Alberta. Considerable information was gathered which it is believed will be of interest to the profession. For some years prior to 1927 there had been sporadic cases in one part of the Edmonton district. In order to get fairly complete information of the situation a questionnaire was prepared, asking, among other things, for the following data concerning the patient: name, age, sex, date and nature of first symptoms, date of onset of paralysis, source of water supply, source of milk supply, presence of other illness in the family, nature of such illness, the number of cases of poliomyelitis in the family, whether there were cases amongst school-mates or friends, whether or not the patient had been away from home during the previous month, names and addresses of recent visitors at patient's home, names of employees in household. This questionnaire was used in collecting data when, in the 1927 epidemic, some two hundred copies were returned.

In all there were 354 cases reported during the year, 101 of these occurring in Edmonton and the greater part of the remainder in the district surrounding Edmonton, a district with a radius of about 100 miles, which is, in most part, tributary to that city. Fifty-three deaths occurred.

## POLIO EPIDEMICS & THE PROVINCES

- While managing the acute crisis of a polio epidemic echoed that of the great Spanish Flu pandemic, with similar public health helplessness, the unique personal, economic and political challenges of paralytic polio continued long after the epidemic emergency passed
- To varying degrees, provincial governments implemented specific polio hospitalization and treatment policies
- **1928** – After the 1927 epidemic, the Alberta Department of Health established a “Provincial Special Hospital” in Edmonton, where specialized orthopedic treatment was provided at cost





## POLIO EPIDEMICS & THE PROVINCES

- **1928** - Marching eastward, polio next struck Manitoba, leaving 434 cases and 37 deaths, mostly in the Winnipeg area
- The primary focus of public health attention was on studying the early use of “convalescent serum” as a means to minimize, or perhaps prevent, the onset and severity of paralysis
- The serum was prepared from blood donated from people who had “convalesced” from polio and were thought to have immunity to the poliovirus
- However, the lack of a clear diagnostic test prior to the onset of muscle weakness or paralysis, and patients often recovering with no treatment, made scientifically assessing the serum very difficult

*Canadian Public Health Journal, May 1929, p. 225*

### Résumé of the Report on the Poliomyelitis Epidemic in Manitoba, 1928

**T**HIS report was prepared by the Medical Research Committee of the University of Manitoba, with appendices on the Method of Control Employed by Dr. A. J. Douglas, Medical Officer of Health of Winnipeg, and Dr. T. A. Pincock, Deputy Minister, Department of Health and Public Welfare of the Province. It has been published for the Department of Health and Public Welfare by the Great-West Life Assurance Company.

Full of information obtained directly from the experience of this epidemic, the report is of probably the greatest significance in that section dealing with the use of convalescent serum, which is reproduced in full on pages 235 to 240. The other sections,—on organization; on the preparation of convalescent serum; on the epidemiology of the disease as shown in Manitoba, the extent in time and place, the age groups involved, the multiple of cases in families, the apparent incubation period; the symptoms and physical signs as found on careful examination; and the control methods employed—all these add much to our knowledge. The main features are shown in the extracts which comprise this review, chosen freely from the various sections.

The Chairman of the Committee was C. R. Gilmour, M. D., and the Secretary, A. T. Cameron, D.Sc.

## POLIO EPIDEMICS & THE PROVINCES

- **1929** - Epidemic polio next struck in Ontario, with 558 cases and 26 deaths, focused mostly in the Ottawa area and the eastern part of the province
- The Ontario Department of Health followed the prevailing public health approach during polio outbreaks, with a reliance on providing convalescent serum for free to all reported cases; Connaught Laboratories prepared the serum
- **1930** - Polio struck Ontario again and more severely, especially in the Toronto area, with 671 cases and 71 deaths reported

### CANADIAN PUBLIC HEALTH JOURNAL

Vol. XXI

February 1930

No. 2

#### Report of an Epidemic of Poliomyelitis in Ottawa, 1929

DR. T. A. LOMER,  
*Medical Officer of Health, Ottawa*

AND

DR. W. T. SHIRREFF,  
*Superintendent of Strathcona Hospital*

ON account of the prevalence of poliomyelitis in Manitoba in 1928, it was considered probable by the Ontario Department of Health that the Province of Ontario might be visited by the disease in 1929, and local health authorities were warned to be on the lookout for cases and to prepare lists of possible donors of convalescent serum.

##### *Incidence*

The first case of poliomyelitis reported in Ottawa was on July 28th,

TABLE I  
POLIOMYELITIS—OTTAWA, 1929  
CASES BY WEEKS

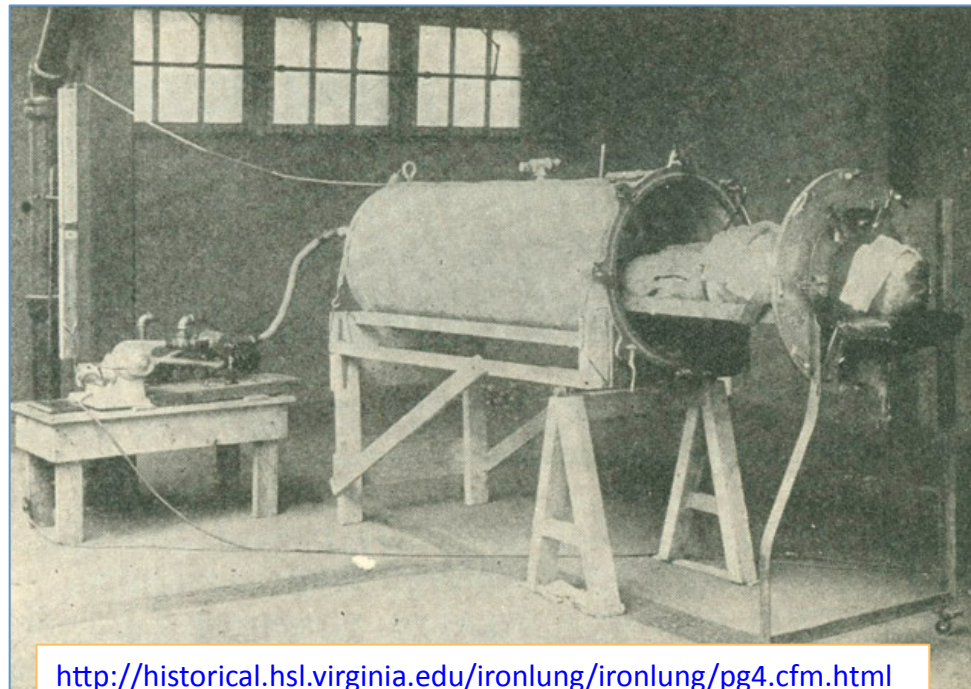
Week Ending	Number	Per cent
August 3	4	2.3
August 10	7	4.0
17	1	.6
24	16	9.1
31	14	7.9
September 7	25	14.2
14	24	13.6
21	23	13.1
28	23	13.1
October 5	18	10.2
12	11	6.2
19	7	4.0
26	2	1.1
	1	.6
Total	176	100.0

although subsequent investigation showed that there had been at least two cases in the vicinity during the previous week.

## POLIO EPIDEMICS & THE PROVINCES


- Also alarming were tragic stories of deaths due to polio, such as a 3-year-old girl dying of polio 10 minutes after arriving at the Hospital for Sick Children, most likely of lung paralysis
- The hospital would get an iron lung in 1930 (the first in the country), but there was no time for this little girl to get to it

- **1928** - The first “iron lung” for polio treatment developed at Harvard University; essentially a metal tank into which all but the head of the patient was sealed.
- A motor, or hand crank, operated a set of bellows and the negative and positive pressure inside the iron lung forced the patient’s lungs to expand and contract to enable breathing



<http://historical.hsl.virginia.edu/ironlung/ironlung/pg4.cfm.html>

PARALYSIS VICTIM



GRACE HANCOCK,  
Aged 3½ years, of 53 Broadview Avenue,  
who died ten minutes after she was  
admitted to the Hospital for Sick  
Children yesterday afternoon from in-  
fantile paralysis.

**ACUTE PARALYSIS  
TAKES BABY'S LIFE  
WITHIN FEW HOURS**

Little Grace Hancock Dies 10  
Minutes After Entering  
Hospital

**NO INQUEST TO BE HELD**

Ten minutes from the time she was  
taken into the Hospital for Sick Chil-  
dren at 4.40 yesterday afternoon, Grace  
Hancock, aged 3½ years, of 53 Broad-

The Globe, Oct. 11, 1930, p. 13



## POLIO EPIDEMICS & THE PROVINCES

- **1931** – Polio’s relentless march across Canada from west to east continued, hitting Quebec next, resulting in 1,105 cases, 744 of which and 74 deaths occurring in the Montreal area
  - **1932** – Quebec City hardest hit in the province, with 784 cases and 105 deaths
  - The Quebec Bureau of Health followed Ontario’s approach, relying on convalescent serum and evaluating its effects in each case
- Despite fears in the Maritimes, this wave of polio epidemics finally ended in 1932 in Quebec, although the eastern provinces would not remain immune for long...

### EPIDEMIOLOGY AND VITAL STATISTICS

A. L. MCKAY, B.A., M.D., D.P.H., and F. W. JACKSON, M.D., D.P.H.

#### *The Present Outbreak of Poliomyelitis in Quebec*

A. R. FOLEY, M.D., DR. P.H.

*Epidemiologist of the Provincial Bureau of Health, Quebec*

##### *Spread of the Disease*

For the second consecutive year, acute anterior poliomyelitis appears in the epidemic form in the province of Quebec. Since 1926, the western provinces were one after the other paid a visit by the dreaded disease. In 1930 a few cases were scattered through Quebec and, in 1931, the wave swept over the city and the district of Montreal: nearly half the population of the province was thus closely exposed to the attack of the disease and some eleven hundred cases occurred.

It was to be expected that the eastern part of the province would not be spared this year. In July, the Director of the Provincial Bureau of Health issued a circular letter, advising the medical profession to be on the look out for cases of poliomyelitis and offering for each case the "convalescent" serum free of charge. Some days later, the first cases were diagnosed and to date—October 8th—540 cases have been reported to the Division of Epidemiology.

##### *Date of Onset*

It is interesting to compare the distribution of cases, by week of onset of the disease, in 1931 and in 1932. Of course, the eleven hundred cases for 1931 are distributed over the period of July to December and occurred in a dense population, while the 1932 cases are crowded within a period of three months and the disease affects a larger area but a lesser population. The peak of the epidemic—mode of the curve—has been reached three weeks earlier this year—

that is, in the week ending August 17th—with 98 cases, against the week ending October 3rd, 1931, with 148 cases.

It must also be borne in mind that figure II has been drawn from preliminary reports and that they may have to be slightly altered. This is specially true for the last bar, in figure II, representing the number of cases for the week ending October 8th. When reports yet to come are included, this last week is expected to show a higher number of cases. If we may depend on last year's progress of the epidemic, a material decrease in the weekly number of cases will soon be observed, though we know that the disease will still be with us late in the autumn.

##### *Geographical Distribution*

Since the beginning of the month of July, 540 cases have been reported in the whole province. Of these, 240 cases occurred in the urban and 300 in the rural population. Out of the 240 cases in the urban population, 201 occurred in the city of Quebec. The focus of the epidemic this year has been the city of Quebec, though small communities, such as L'Ancienne-Lorette and Saint-Charles-de-Bellechasse, have a higher attack-rate.

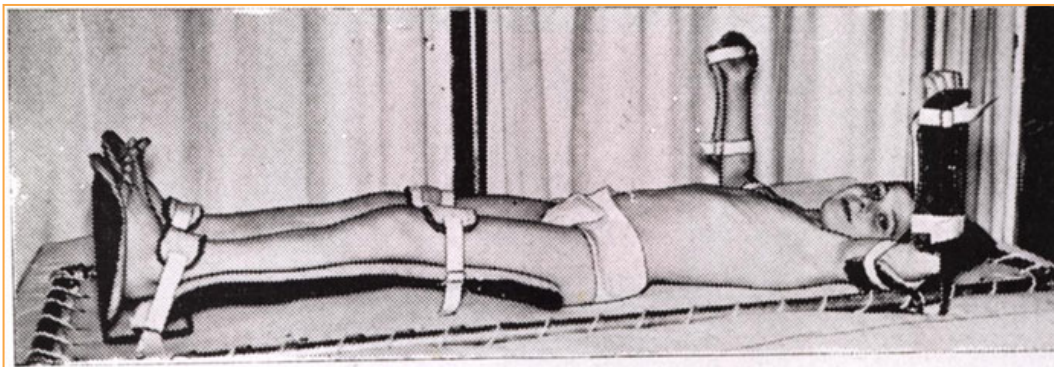
It is to be noticed from figure III that the peak of the epidemic also occurred three weeks earlier in the city of Quebec than in the whole province. The population of the city of Quebec being nearly 140,000, the attack-rate has been—with the number of known cases—143 per 100,000 inhabitants; or, should we consider

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## POLIO EPIDEMICS & THE PROVINCES

- **1937** – While vaccines to prevent diphtheria and pertussis were now available, prospects for a polio vaccine seemed a long way off as polio incidence reached an alarming new peak, especially in Ontario:
- 2,546 cases (750 in Toronto)
- 119 deaths (31 in Toronto)
- Ontario Department of Health in crisis mode
- Convalescent serum & standardized splints provided to all cases

- Managing the crippling effects of polio was a major challenge; strict immobility was the standard of medicine for polio after-care until the early 1940s



The Provincial Department of Health supplied all Poliomyelitis patients suffering from paralysis with splints and frames designed and built in our workshop.



Hospital for Sick Children Archives



## POLIO EPIDEMICS & THE PROVINCES

- The severity of the 1937 polio epidemic prompted the Ontario government to establish a distinctive program to cover the costs of specialized polio treatment and hospitalization
- Similar polio treatment policies began in other provinces in the late 1930s, particularly in Saskatchewan and Alberta, the latter government passing the “Poliomyelitis Sufferers Act” in 1938

**PAY PARALYSIS  
CASE EXPENSES**

Government To Aid Where  
Families Unable To Pay

HEALTH BOARD ADVISED  
M.O.H. Reports 50 Positive  
Cases Treated Here

In cases where families are unable to meet the costs, the Ontario Government will assume all obligations for hospitalization, transportation and medical attention in connection with the infantile paralysis epidemic which has been sweeping

London Free Press, Sept. 22, 1937



Hospital for Sick Children Archives

# THE HORIZON

VOL. 2  
NO. 7

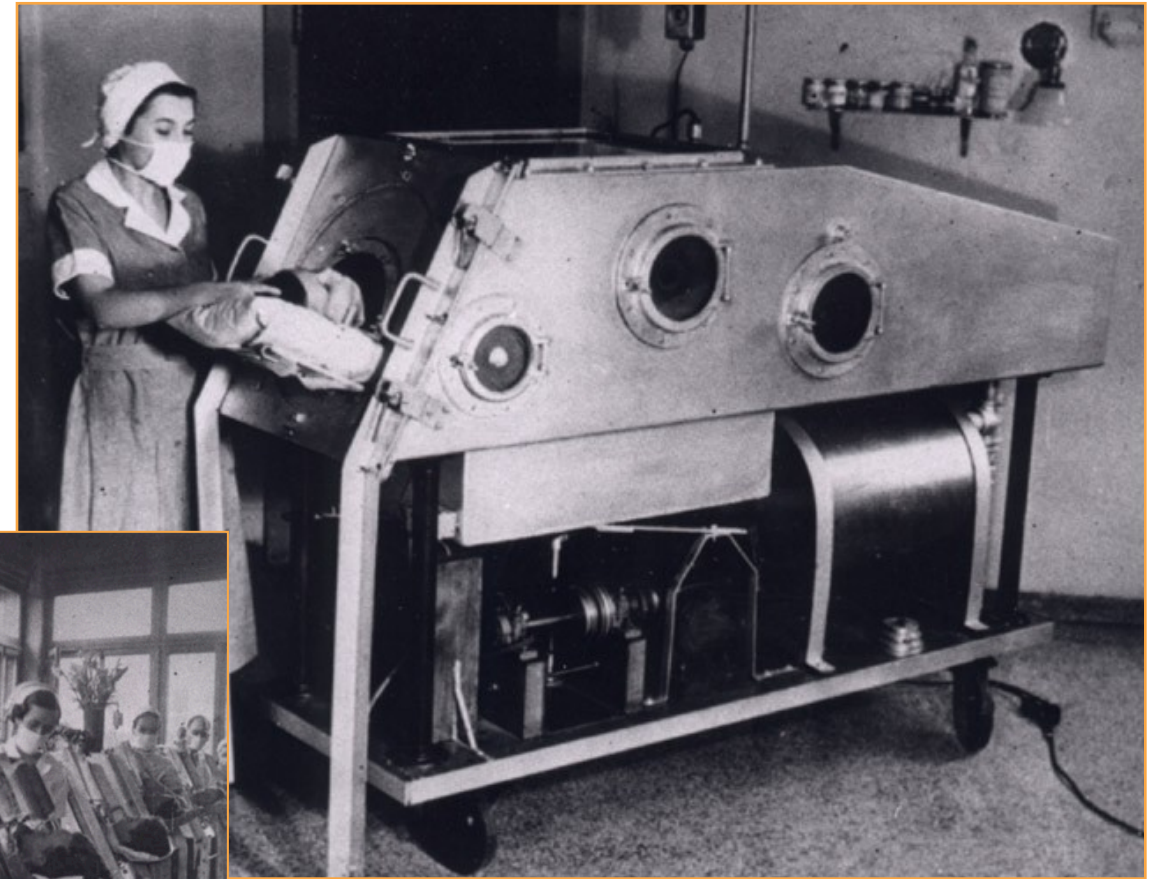
**CHRISTMAS, 1937**

PRICE  
10 CENTS



## POLIO EPIDEMICS & THE PROVINCES

- Most alarming during the 1937 Ontario epidemic was sharply higher incidence of life-threatening “bulbar” polio cases affecting breathing and swallowing muscles
- The crisis prompted the Ontario Department of Health to facilitate the emergency assembly of 27 “iron lungs” in the basement of the Hospital for Sick Children in Toronto



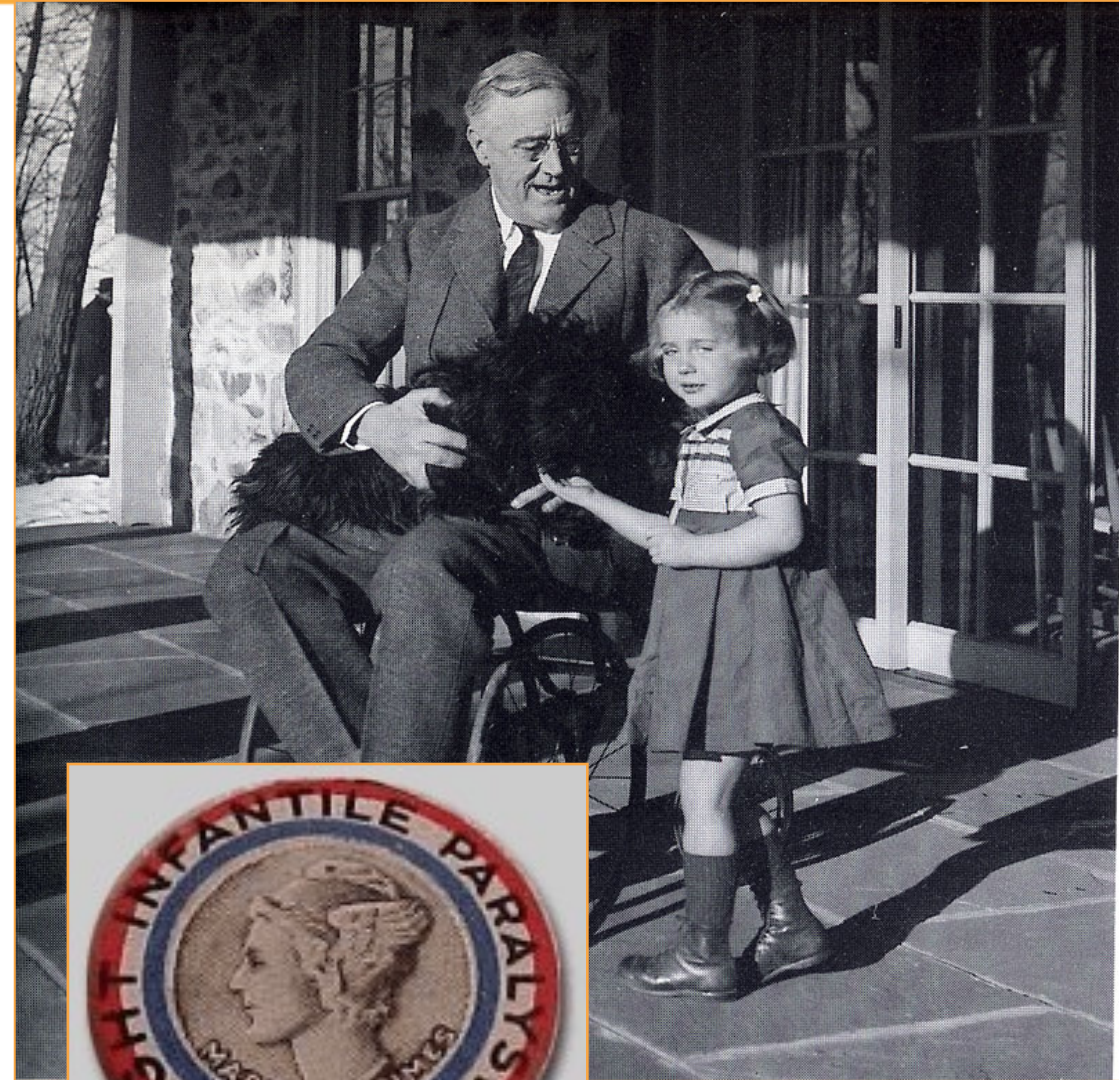
Hospital for Sick Children Archives

- The toll of polio epidemics continued into the war years, most seriously in 1941:
- Manitoba – 969 cases
- New Brunswick – 419 cases



## POLIO EPIDEMICS & THE PROVINCES

- During the war years, however, there seemed little hope of a polio vaccine being available anytime soon, despite considerable research funding provided by the National Foundation for Infantile Paralysis through its annual “March of Dimes” campaigns
- **1938** – As U.S. President, Franklin D. Roosevelt founded the National Foundation for Infantile Paralysis, which was galvanized by his personal experience with polio
- **1921** – Franklin D. Roosevelt stricken with polio when he was a Senator
- NFIP also provided direct support to polio victims for their treatment





## PAUL MARTIN, POLIO & THE DEPARTMENT OF NATIONAL HEALTH & WELFARE

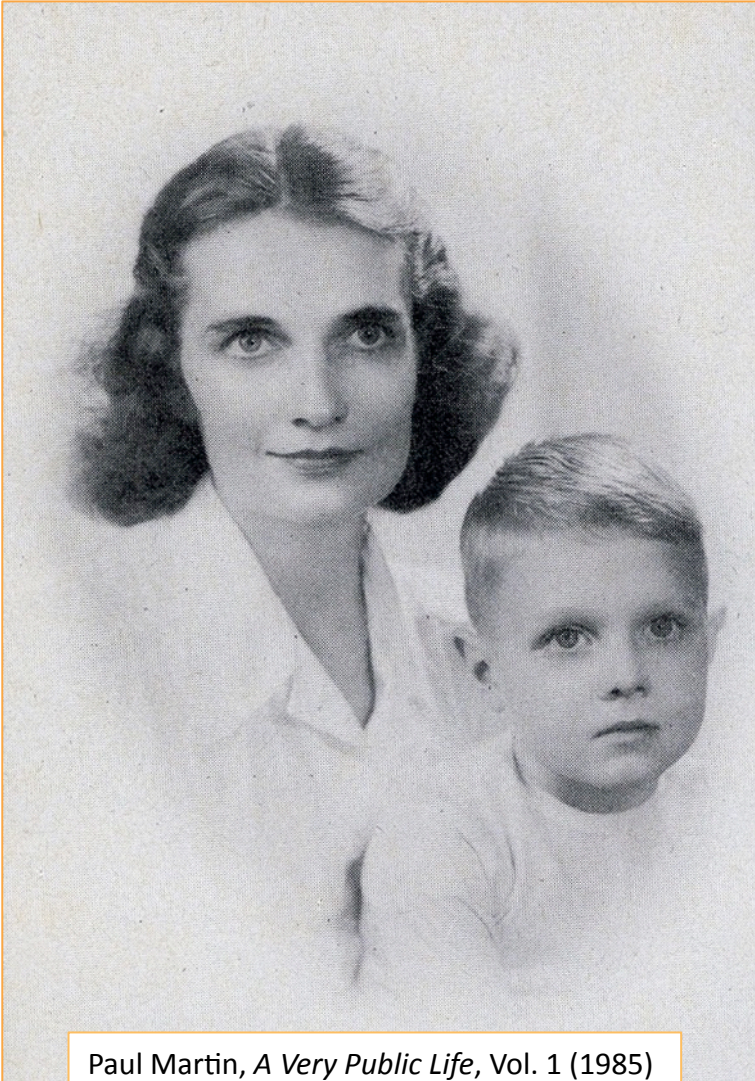


*With Louis St Laurent, Canada's minister of external affairs at Hyde Park, the home of Mrs Eleanor Roosevelt, 3 November 1946.*

- **1946-1948** – The end of World War II began a period of accelerating change in public health and biotechnology in Canada, fuelled by peacetime prosperity and a progressive federal government ready to take a leadership role in upgrading Canada's health care infrastructure held back by almost two decades of economic depression and war
- **Dec. 12, 1946** – Paul Martin was a key leader in this effort after he became Minister of National Health and Welfare
- **Aug. 1946** – Martin became Minister very soon after his 8-year-old son, Paul Jr., was stricken with polio



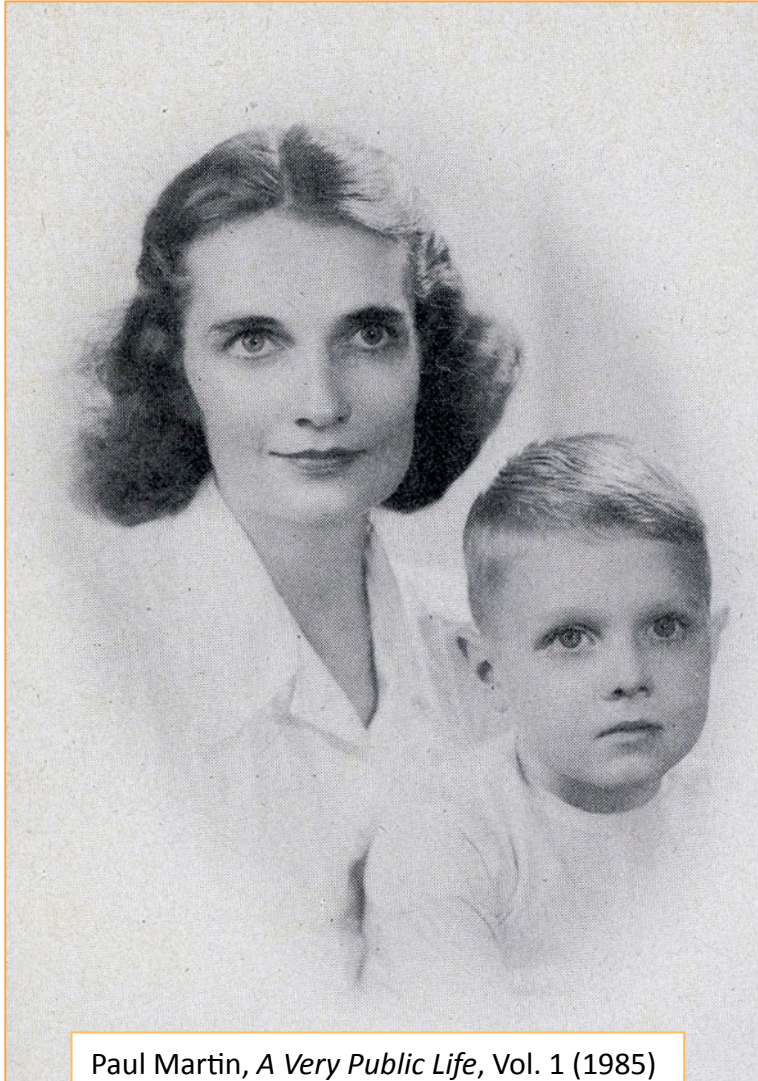
## PAUL MARTIN, POLIO & THE DEPARTMENT OF NATIONAL HEALTH & WELFARE



Paul Martin, *A Very Public Life*, Vol. 1 (1985)

- **1946** – There was a major resurgence of polio epidemics in Canada, and it was the worst polio year in the U.S. since 1916
- Quebec and Prince Edward Island hit with their worst ever polio epidemics; 1,612 cases and 115 deaths in Quebec (mostly in Montreal); 80 cases and 11 deaths in P.E.I
- Ontario also experienced significant polio incidence, including in Windsor, where Paul Martin’s wife, Eleanor, and their 8-year-old son, Paul Jr., lived while he served in Ottawa as a MP and Secretary of State in the Liberal government of Louis St. Laurent
- **Aug. 1946** - Martin was at a Cabinet meeting and received urgent phone call from his wife, who “was beside herself”; “Come home, come home, our son has polio!”

## PAUL MARTIN, POLIO & THE DEPARTMENT OF NATIONAL HEALTH & WELFARE

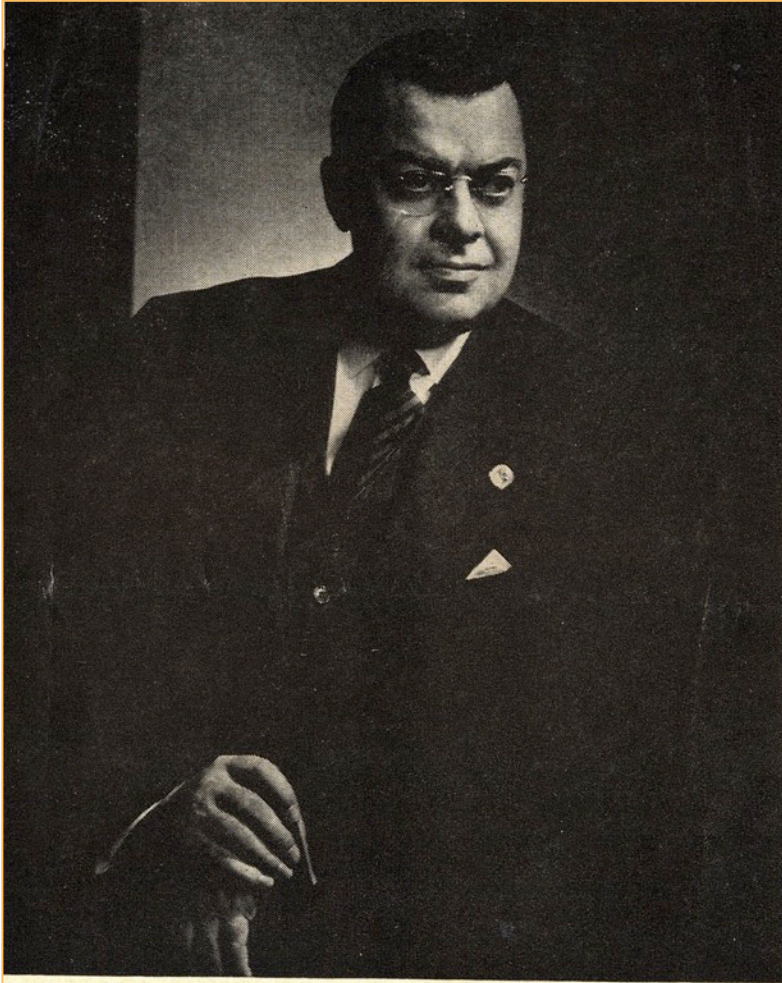


Paul Martin, *A Very Public Life*, Vol. 1 (1985)

- Martin later recalled, “At that instant, I knew just how my parents must have felt when I was taken ill as a boy”
- The Prime Minister would not let Martin stay for the rest of meeting and a fellow Minister, C.D. Howe “insisted that I go immediately and promised a government plane for the trip – a scarce and carefully husbanded resource in those days”
- Martin arrived in Windsor to find his son in an isolation ward “paralyzed in the throat and unable to speak. Mercifully, the crisis passed fairly quickly and Paul began to mend, even though it took almost a year before he recovered fully”
- This experience forced Martin to consider how medical science had progressed in the 40 years since he was struck by polio
- “But, as in my youth, I knew that advanced treatment was not available to all”



## PAUL MARTIN, POLIO & THE DEPARTMENT OF NATIONAL HEALTH & WELFARE



The Honourable Paul Martin

*Health*, April-May 1955, p. 13

- Martin's personal and family polio experience "would dictate the goals" that he would strive for when he became Minister of National Health and Welfare
- His personal experience helped bring new energy and sense of purpose to his Department in dealing with polio and clearly acted as a catalyst towards attaining his larger goal of universal health insurance for all Canadians



## PAUL MARTIN, POLIO & THE DEPARTMENT OF NATIONAL HEALTH & WELFARE

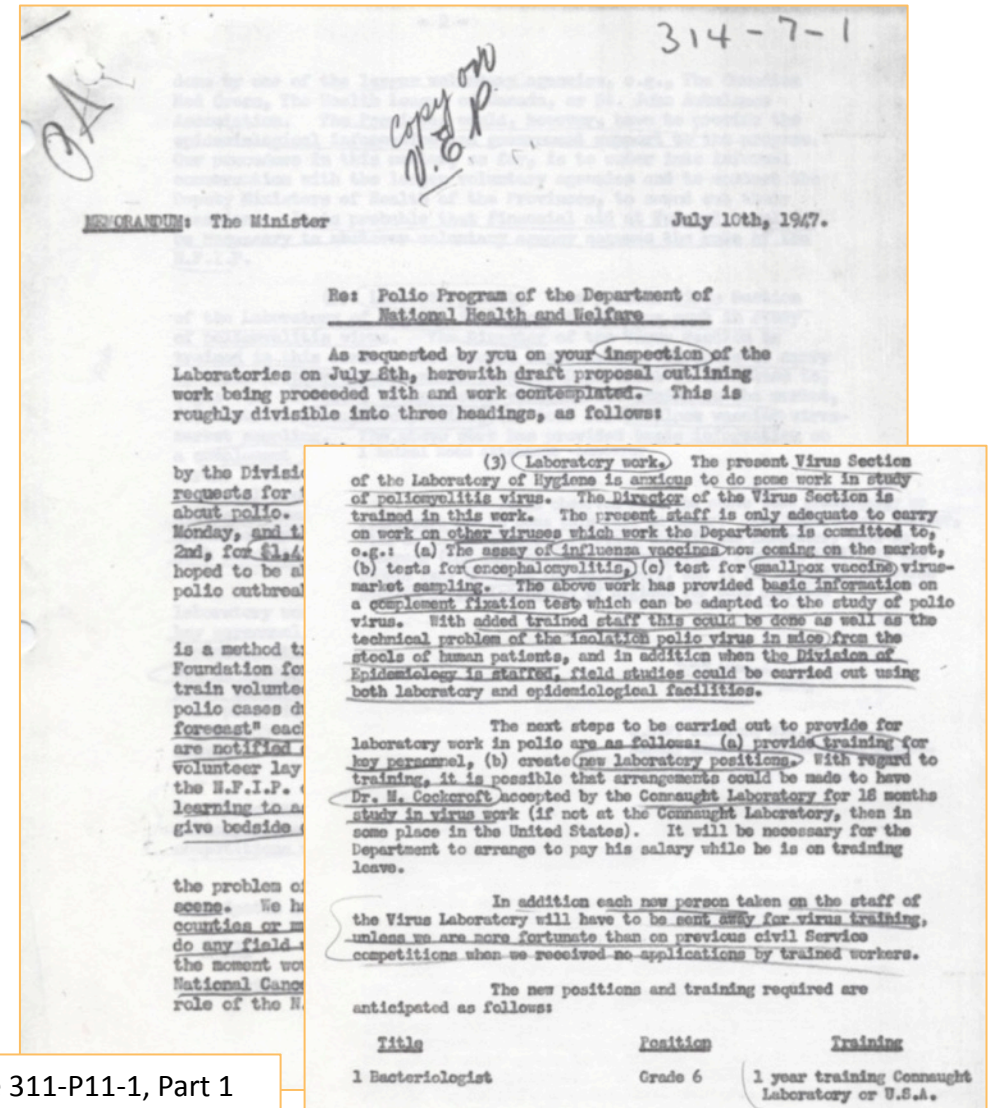
- Martin greatly assisted by Dr. George Donald West Cameron, who had recently been appointed Deputy Minister of Health as of July 24, 1946
- **1928-1939** - Cameron had worked at Connaught Laboratories as resident bacteriologist
- **1939-1946** – Cameron then joined the federal government, serving as Chief of the Laboratory of Hygiene and then Director of Health Services before becoming Deputy Minister of Health, a position he held until 1965
- **1946-1947** - In the wake of resurgent polio incidence, Cameron focused on improving the Department's laboratory capacity to handle viruses, especially poliovirus, and to conduct epidemiological investigations



Sanofi Pasteur Canada Archives

## PAUL MARTIN, POLIO & THE DEPARTMENT OF NATIONAL HEALTH & WELFARE

- **1946-1947** – In particular, the Laboratory of Hygiene only had 1 virologist, Dr. J.W. Fisher, who, like Cameron, had previously worked at Connaught Laboratories; Fisher was involved in Connaught's initial poliovirus studies during 1939-1942
- **July 10, 1947** – Cameron prepared an extensive memo for Martin assessing the Department's capacity to respond to worsening polio incidence in Canada and to recommend a stronger Polio Program, especially in its laboratories
- The key to implementing such a federal Polio Program was Connaught, which, coincidentally, was launching a considerably expanded poliovirus research program of its own



## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH



Sanofi Pasteur Canada Archives

- **July 1947** - Dr. Andrew J. Rhodes, a leading virologist specializing in polio, was recruited from the U.K. to lead a comprehensive research program at Connaught Medical Research Laboratories to investigate the virology, epidemiology and clinical diagnosis of polio
- Reflecting a broader post-war role, the new name, “Connaught Medical Research Laboratories” was introduced in May 1946



- Connaught had grown considerably during World War II, playing a major role in providing key biological health products for the Canadian and British militaries, including dried blood serum, gas gangrene antitoxin, influenza vaccine and especially penicillin



## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

### Research Grant

## Ottawa Aids Doctor Study Polio Cause

By HARVEY HICKEY

Ottawa, Dec. 28 (Staff).—Federal aid is being granted a Toronto scientist whose research may have a bearing on the transmission of poliomyelitis.

The scientist is Dr. Andrew J. Rhodes, research associate at the Connaught Medical Research Laboratories at Toronto and associate professor of virus infections at the University of Toronto's School of Hygiene.

Dr. Rhodes, an Englishman, who is ranked among the top experts in his field, is investigating neurotropic viruses. This is a virus which affects the nervous system and which, scientists think, may possibly have some relationship to the development of poliomyelitis.

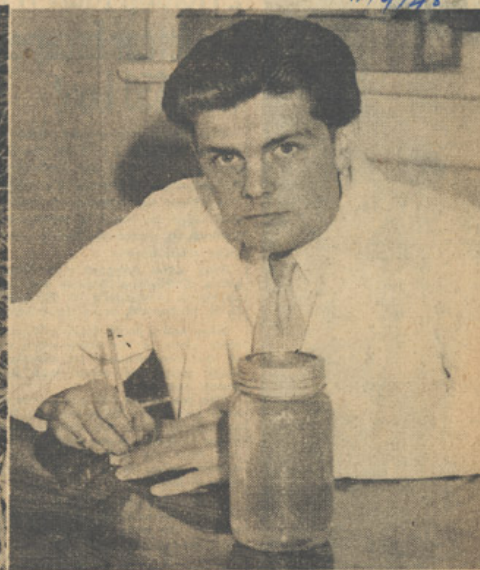
Doctors still don't know what causes polio. Neither do they know how the neurotropic virus is transmitted. One line of inquiry is whether it travels in sewage, and if so, how it is then picked up by

- **1947-1949** - Rhodes' research was funded by the National Foundation for Infantile Paralysis, Canadian Life Insurance Companies, and newly established Federal Public Health Research Grants
- Rhodes' team focused on developing better laboratory methods for the diagnosis of polio, and conducted epidemiological investigations of the poliovirus in rivers and sewage between outbreaks.

### Non-Tourist Dufferin County Chosen for 1948 Polio Research



Sanitary inspector of Dufferin County health unit, Harry Williams, is seen (left) taking sewage water samples from an open drain during study of poliomyelitis in the Dufferin County area. Check-back can be



made to sewage sources for possible points of contamination. At right, Mr. Williams prepares check samples to be sent to Connaught Laboratories for analysis.



Inspector Williams hangs fly trap to ceiling in building where the insects are numerous, as part of study.

## Trap Flies, Test Sewage, Seek Sources of Polio

Shelburne, Sept. 10 (Special).—An attempt to track down the source of poliomyelitis is being made by the Dufferin County Health Unit, which is co-operating with the Hospital for Sick Children. The program is financially supported by the Life Insurance Companies through a grant made by the health committee of the Canadian Life Insurance Officers' Association.

Harry Williams, sanitary engineer for the health unit, and Dr. F. H. Wilson, M.O.H., are taking active parts in the study, which embraces the entire county.

"We are placing fly traps and taking samples of sewage at fixed spots," Mr. Williams said. "These samples are sent to Connaught Laboratories, where they are tested for presence of the polio virus. We understand that it is possible that some humans can be polio carriers, just as some are TB carriers. In case of a polio outbreak in the county, with the help of the records established we should be able to trace back and locate the source of the outbreak."

"We are co-operating to the fullest extent in the furtherance of this important research work," Dr. Wilson said.

The announcement that the Dufferin County Health Unit would co-operate with the Hospital for Sick Children in the survey was made early in the season in Toronto by Dr. Nelles Silverthorne of the hospital staff, under whose direction the study is well into its second year.

It is emphasized that the county program involves no new technique, but consists of straight research in an effort to find a means of attacking the disease.

# CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

## *Canadian Journal of* **PUBLIC HEALTH**

VOLUME 39

TORONTO, JUNE 1948

NUMBER 6

### A National Health Program for Canada

THE HONOURABLE PAUL MARTIN  
*Minister of National Health and Welfare*  
*Ottawa, Canada*

#### 1. THE NATIONAL HEALTH PROGRAM

**A** NEW ERA has opened for public health in Canada. Greatly accelerated progress in our fight against disease has now been made possible by the National Health Program announced a few days ago by the Prime Minister. The Federal Government is going to take immediate action to put into effect this far-reaching plan for national health.

For some weeks I had been thinking about what I would say to the Canadian Public Health Association during this annual meeting at Vancouver. I had decided to speak to you about the future perspectives of public health in this country and to survey that final stage of public health progress in which our target would be a high level of health for all Canadians. But the rapid march of events last week has thrown my remarks into the discard. For the remote objectives about which I was to speak have now become *proximate* and *possible*.

Because of the vastly increased expenditures now possible for public health services, we stand on the threshold of a further and finer stage of our public health development.

In the history of public health in Canada, last Friday, May 14th, marked a memorable occasion. For it was on that day that the Prime Minister of Canada announced the three-point program to marshal the financial resources of this nation in support of the health campaigns so vigorously being carried on by each of the Canadian Provinces.

To you who have chosen the honoured profession of public health, this program is of vital importance. But it is important, too, for every citizen of this land because its long-range objective is no less than more healthful living for all Canadians. From this time forward, no picture of the Canadian way of life will be complete without reference to this Federal action to strengthen the already extensive and effective health services that have been developed in all our

An address presented at the thirty-sixth annual meeting of the Canadian Public Health Association, held in the Hotel Vancouver, Vancouver, B.C., May 17-20, 1948.

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- **May 1948** - Federal Public Health Research Grants were a key element in the federal government's ambitious Federal Health Grants Program, spearheaded by Martin
- The \$30 million annual Federal Health Grants program more than doubled the federal health budget from \$8,000,000 in 1947, to \$19,000,000 in 1948, to \$30,000,000 in 1949.
- The Program involved a variety of shared federal-provincial grants for general public health development, including public hospital construction, mental health, tuberculosis, venereal disease, cancer control and crippled children, in addition to public health research
- The Crippled Children's Grants helped support polio treatment, hospitalization and rehabilitation programs initiated in most provinces in the wake of major polio outbreaks



# CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

## The Canadian Medical Association Journal

Vol. 61                      OCTOBER, 1949                      No. 4

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**POLIOMYELITIS IN THE ARCTIC\***

**J. D. Adamson**  
*Director, Department of Medicine, University of Manitoba; Director, Department of Medicine, Deer Lodge Hospital (Department of Veterans' Affairs)*

**J. P. Moody**  
*Field Medical Officer, Eastern Arctic, Indian Health Services*

**A. F. W. Peart**  
*Chief, Division of Epidemiology, Department of National Health and Welfare*

**R. A. Smillie**  
*Major, R.C.A.M.C., Command Hygiene Officer*

**J. C. Wilt**  
*Assistant Pathologist, Winnipeg General Hospital*

and

**W. J. Wood**  
*Regional Superintendent, Indian Health Services*

their general knowledge of the Eskimo and familiarity with local conditions the important features of the epidemic could not have been discovered.

THE LOCALE

Reference to the map will show the area affected to be between 60 and 65° N. and between 90 and 100° W. Chesterfield Inlet is a thousand air miles north of Winnipeg. This is one of the most northerly epidemics of poliomyelitis on record and among the very few known to have occurred in Eskimos. Arne Hoygaard<sup>1</sup> refers to an epidemic in August-November, 1925, at Angmagssalik, East Greenland (65° N.) which caused 27 deaths among 800 Eskimos. He also refers to a report of an epidemic in West Greenland by A. Bertelson<sup>2</sup> in 1935.

It will be seen that the epidemic occurred during the coldest part of an unusually cold

DURING the autumn of 1948 and the winter of 1949 a widespread epidemic of acute anterior poliomyelitis occurred in the Eastern Arctic of Canada. This epidemic has attracted much attention since it was at its height during the winter in an isolated district, sparsely settled by Eskimos who had previously had no poliomyelitis. Thorough investigation was undertaken by Indian Health Services in the Federal Department of Health and Welfare, to whom this report is accordingly submitted.

Two trips in ski-equipped aircraft were arranged by the Royal Canadian Air Force, the first in the first week of March and the second in the first week of May. The party received most valuable assistance from members of the white settlement at Chesterfield. Without

\* This study was conducted under the direction of the Department of National Health and Welfare.

- **1949** – A polio outbreak of special concern to Dr. Rhodes and to the Department of National Health & Welfare struck during the winter of 1948-1949 in the Arctic region to the west of Hudson Bay, centred in the Chesterfield Inlet outpost; the Inuit population was severely affected
- By the end of March there had been some 60 polio cases, mostly adults, in an Inuit population of about 275 in the area, with 38 having definite paralysis and 13 died from respiratory complications
- Dr. Joseph P. Moody, Medical Officer of Health for the Eastern Arctic, took the unprecedented step of ordering the quarantine of 100,000 square kilometers, strictly restricting the movement of the area's mostly Inuit population, estimated to be 600; the quarantine lasted 9 months
- The Department's newly expanded Division of Epidemiology sent its Chief, Dr. A.F.W. Peart, along with several others, to investigate this highly unusual polio epidemic and collect specimens; very little about it fit what was known about polio at the time and lab confirmation was critical

## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

### An Outbreak of Poliomyelitis in Canadian Eskimos in Wintertime

#### LABORATORY INVESTIGATIONS\*

A. J. RHODES, M.D., F.R.C.P., Ed.<sup>1</sup>

EINA M. CLARK, B.Sc., M.A.<sup>1</sup>

ALICE GOODFELLOW, B.A., M.D.<sup>2</sup>

AND

W. L. DONOHUE, M.A., M.D.<sup>2</sup>

#### TECHNICAL METHODS

SEVERAL pathological specimens were obtained from Eskimos involved in an epidemic of poliomyelitis at Chesterfield Inlet which has been described elsewhere. The specimens were shipped by aeroplane in the frozen state, and were received in good condition; they were stored in the carbon dioxide ice chest until the time of examination. Some nervous tissue was also received in glycerol, and this was stored in the cold room.

It was decided to examine sufficient specimens by monkey inoculation to confirm the clinical diagnosis of poliomyelitis beyond reasonable doubt. Accordingly, the following 7 samples were selected as most suitable: preparations of brain and cord from 2 cases; stools from 3 cases; and throat washings from 2 cases.

Nervous tissue was prepared for inoculation by grinding in a mortar to constitute a 20 per cent suspension in broth. Penicillin (1,000 units per ml) and streptomycin (5 mg. per ml) were added, and the inoculations performed in rhesus monkeys by the cerebral route; the suspension was allowed to stand at room temperature for about 30 minutes before inoculation, to allow the antibiotics to act.

Bacteria-free extracts of 2 of the stool samples were prepared by shaking repeatedly with ether, without concentration of the contained virus. In the third case, virus in an aqueous suspension of stool was concentrated in the ultracentrifuge at approximately 39,000 r.p.m. Inoculations were made cerebrally and peritoneally in rhesus monkeys.

The throat washings were treated with penicillin and streptomycin without concentration of the virus, and inoculated cerebrally and peritoneally.

Monkeys were examined daily, and were killed when paralysis developed. Monkeys that did not develop paralysis were killed 4 weeks after inoculation. All animals were examined histologically.

\*Aided by a grant from the Department of National Health and Welfare, Ottawa.

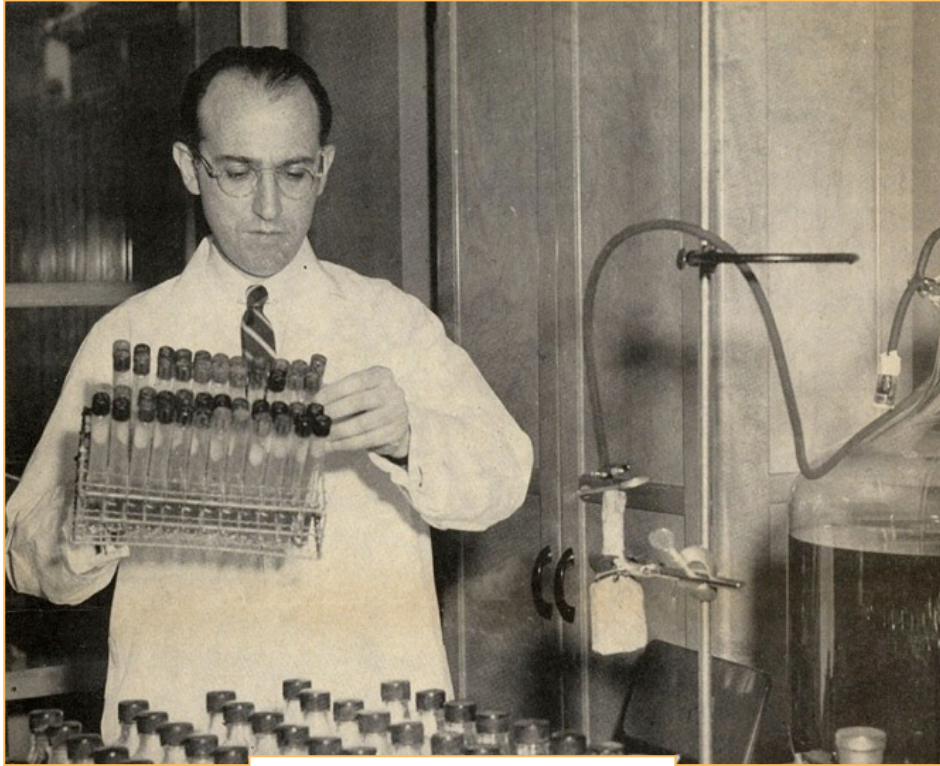
<sup>1</sup>Connaught Medical Research Laboratories, University of Toronto.

<sup>2</sup>Department of Pathology, Hospital for Sick Children, Toronto.

- The Department of National Health & Welfare's lab proved unable to expedite laboratory tests and thus turned to Rhodes at Connaught
- The unusual nature of this Arctic polio epidemic provided an important opportunity to learn much about polio's hitherto mysterious epidemiology and immunology
- It became clear to Rhodes that polio epidemics had very little to do with geography or a summer "polio season."
- Indeed, the Arctic polio experience underscored "that poliomyelitis antibody is universally present in human communities, and that by inference poliomyelitis virus is likewise widely distributed."
- But this distribution had significant demographic and geographic gaps in countries with the most advanced public health infrastructures, in which polio epidemics were generated
- Rhodes' Arctic polio studies, funded by Federal Public Health Research Grants, were significant to accelerating progress toward a polio vaccine



## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH



*Health*, April-May 1954, p. 10

- **1949** – Among the key advances made, a research team in Boston discovered a way to grow poliovirus in test tubes using non-nervous tissues; this discovery earned a Nobel Prize
- **1951** – Researchers at Johns Hopkins University confirmed that there were three immunologically distinct types of poliovirus
- **1951** - Dr. Jonas Salk, of the University of Pittsburgh, developed a precise method for reliably inactivating or killing the poliovirus with formaldehyde while retaining the virus' ability to stimulate an immune response; such an inactivated polio vaccine proved encouraging in laboratory monkeys
- However, a key new element was needed that would make it safe for Salk to proceed with human tests of the vaccine

# CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

Proceedings  
of the  
Society  
for  
Experimental Biology and Medicine

VOL. 73 JANUARY, 1950 No. 1

SECTION MEETINGS

CLEVELAND Western Reserve University	November 11 and 14, 1949
DISTRICT OF COLUMBIA George Washington University	December 1, 1949
MINNESOTA University of Minnesota	December 22, 1949
NEW YORK New York Academy of Medicine	December 14, 1949

Nutrition of Animal Cells in Tissue Culture. I. Initial Studies on a Synthetic Medium.\*† (17557)

JOSEPH F. MORGAN, HELEN J. MORTON, AND RAYMOND C. PARKER.  
From the Connaught Medical Research Laboratories, University of Toronto.

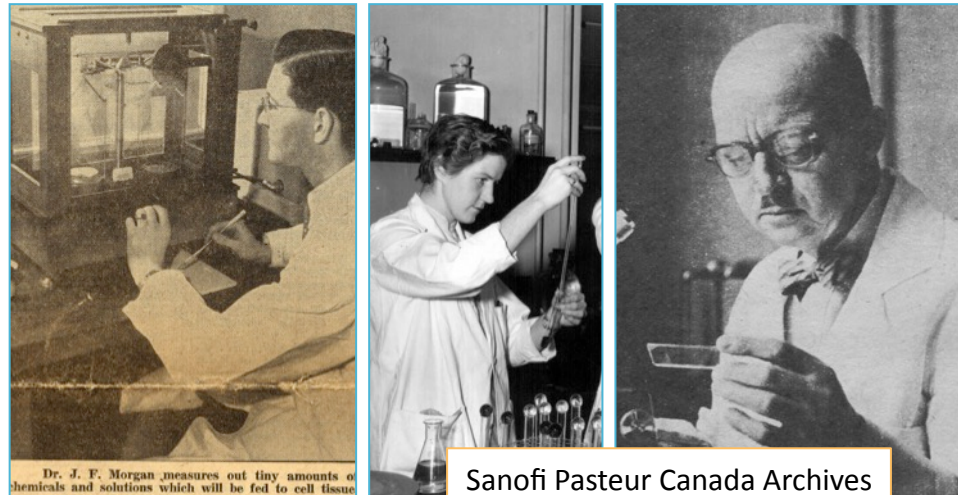
Over the past 30 years, the nutritive media that have been employed for the propagation of animal cells in tissue culture have been derived, directly or indirectly, from the organism and have consisted of blood plasma, blood serum, body exudates and extracts of various tissues and organs. But the complexity and variability of these natural substrates has made it almost impossible to employ them in experiments designed to determine the substances that are actually utilized by the cells for survival and multiplication. From time to time, attempts have been made to devise

nutritive media comprised of chemically-known ingredients. Thus, Vogelaar and Erlichman(1), Baker(2), and Baker and Ebeling(3), have reported feeding solutions for fibroblasts, epithelial cells and blood macrophages. These media consisted in part of chemically-defined substances, but the addition of serum or other natural substrates was necessary for cell multiplication and survival. Fischer and his associates(4) employed dialyzed plasma and dialyzed chick embryo extract as a base and devised supplementary solutions consisting of compounds of known

1. Vogelaar, J. P. M., and Erlichman, E., *Am. J. Cancer*, 1933, v18, 28.
2. Baker, L. E., *Science*, 1936, v83, 605.
3. Baker, L. E., and Ebeling, A. H., *J. Exp. Med.*, 1939, v69, 365.
4. Fischer, A., Astrup, T., Ehrensvar, G., and Oehlenschlaeger, V., *Proc. Soc. Exp. Biol. and Med.*, 1948, v67, 40.

\* This investigation was supported, in part, by grants from the National Cancer Institute of Canada, and the Ontario Cancer Treatment and Research Foundation.

† Grateful acknowledgment is made to Mrs. M. G. Pearce and Mrs. C. J. Porter for technical assistance.



Sanofi Pasteur Canada Archives

- **1949** – Meanwhile, a Connaught research team of Dr. Joseph F. Morgan, Helen Morton and Dr. Raymond C. Parker, developed “Medium 199,” the first chemically defined tissue culture medium, originally for nutritional studies of cancer cells
- Traditional nutrient media included animal-based ingredients that could not be precisely quantified, and thus could not be used in a human vaccine
- “Medium 199” was a precise blend of 60 ingredients that efficiently promoted continuous cell multiplication in the absence of any blood serum or embryonic extracts

TABLE II.  
Synthetic Mixture No. 199.\*

	Mg per 1000 ml
<i>l</i> -Arginine	70.0
<i>l</i> -Histidine	20.0
<i>l</i> -Lysine	70.0
<i>l</i> -Tyrosine	40.0
<i>dl</i> -Tryptophane	20.0
<i>dl</i> -Phenylalanine	50.0
<i>l</i> -Cystine	20.0
<i>dl</i> -Methionine	30.0
<i>dl</i> -Serine	50.0
<i>dl</i> -Threonine	60.0
<i>dl</i> -Leucine	120.0
<i>dl</i> -Isoleucine	40.0
<i>dl</i> -Valine	50.0
<i>dl</i> -Glutamic acid	150.0
<i>dl</i> -Aspartic acid	60.0
<i>dl</i> -Alanine	50.0



## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH



Sanofi Pasteur Canada Archives

- **June 1951** – Dr. Arthur E. Franklin (left), who had recently joined Rhodes’ polio research group, focused on cultivating the poliovirus in various tissues using the traditional nutrient media, but with limited success
- **Nov 1951** – After trying to modify the medium, Franklin happened to meet at a Connaught seminar, Dr. Joseph Morgan, the biochemist behind “Medium 199” and Morgan suggested Franklin try it for cultivating the poliovirus in tissue cultures
- It was quickly apparent that Medium 199 solved, quite spectacularly, most of the problems Franklin was having with cultivating the poliovirus, vastly improving the yields and purity of poliovirus cultures
- When Rhodes’ learned of Franklin’s remarkable results with 199, he jumped up on a chair and cheered
- When Salk heard about “199” he used it to prepare his inactivated polio vaccine for its first human trials, the results proving very encouraging

## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

- Salk's trials relied on small scale production of the vaccine, leaving the next major challenge of how to prepare it on a large enough scale for a definitive field trial
- **1952** - Recognizing Connaught's experience with biologicals production technologies, the National Foundation for Infantile Paralysis funded a pilot project to investigate cultivating poliovirus in large quantities
- Key to this effort was Dr. Leone N. Farrell, who had considerable experience with the large-scale production of vaccines using a deep culture method of "rocking" cell cultivation known as the "Toronto Method"
- **1953** - Farrell adapted the "Toronto Method" to the production of poliovirus fluids using Medium 199 to cultivate the virus in monkey kidney cells in large bottles that were incubated on custom-built rocking machines





## CONNAUGHT LABORATORIES & POLIOVIRUS RESEARCH

- **July 1953** – Encouraged by Salk’s and Connaught’s progress, the NFIP asked the Labs to provide all of the poliovirus fluids, some 3,000 litres, required for an unprecedented, triple-blind, placebo-controlled field trial of Salk’s inactivated polio vaccine that would involve some 1,800,000 children (grades 2-3) across the U.S. and begin in the spring of 1954
- The NFIP’s commitment to a large field trial followed the highest polio incidence levels yet experienced in the U.S., with 57,879 cases reported in 1952 and 3,145 deaths.
- The situation was clearly urgent in the U.S., as it was in Canada
- In early July 1953, it was clear that high polio incidence was likely in many parts of Canada after significant incidence was experienced in 1952



Sanofi Pasteur Canada Archives

# POLIO, 1953: SUMMER OF FEAR

*Canadian Journal of Public Health*, Aug. 1954, p. 337

## Poliomyelitis in the Yukon

J. D. ADAMSON, M.D.,<sup>1</sup> MALCOLM R. BOW, M.D.<sup>2</sup>  
AND E. H. LOSSING, M.D.<sup>3</sup>

THE YUKON is a sparsely settled Territory in the north-west extremity of Canada. It extends into the Arctic, lying between 60° and 40°N. longitude and between 130 and 140°W. latitude (see map). To the north is the Arctic Ocean, to the west, Alaska, to the south, British Columbia, and to the east, the Northwest Territories. The capital city, Whitehorse, lies 1,369 miles by the Alaska Highway north-west of Edmonton. The most northerly settlement,

is mountainous, with spruce and jack pine, which empties into the Eastern Sea. The annual mean temperature during the 10-year period 1941-50, was 32.4; 1943, 33.2; 1949, 30.8; 1950, 31.1; 1951, 31.4; 1952, 31.4; 1953, 31.4; 1954, 31.4; 1955, 31.4; 1956, 31.4; 1957, 31.4; 1958, 31.4; 1959, 31.4; 1960, 31.4.

## Canadian Journal of PUBLIC HEALTH

VOLUME 45 TORONTO, MAY 1954 NUMBER 5

### The Poliomyelitis Epidemic in Winnipeg, 1953

EPIDEMIOLOGICAL STUDY, INCLUDING THE USE OF GAMMA GLOBULIN

R. G. CADHAM, M.D., D.P.H.  
Deputy Medical Health Officer  
Winnipeg, Manitoba

DURING the summer months of 1953 the City of Winnipeg (population 243,000) experienced the second largest case rate of poliomyelitis ever to occur in North America in an urban population of over 200,000. A total of 763 cases was reported. The case rate was 318 per 100,000 population. Type I virus was identified in stool specimens from hospital patients. The only previous epidemic in a large urban centre in which this case rate was exceeded was in Newark, New Jersey, in 1916, with a case rate of 340 per 100,000 population. Other severe poliomyelitis epidemics with a high incidence of reported cases in American cities with populations in excess of 200,000 are as follows (1): Los Angeles (1934), 95; Providence (1935), 100; Buffalo (1944), 110; and Minneapolis (1946), 150.

In Table I are shown the number of reported cases and the case rate for epidemics of poliomyelitis which have occurred in Winnipeg. In the 1953

TABLE I  
POLIOMYELITIS—WINNIPEG  
Cases and Death Rates for Epidemic Years

Year	Cases	Case Rate Per 100,000 Population	Deaths	Case Fatality Rate
1928	279	138.	17	6.1
1936	107	48.	6	5.6
1941	264	117.	7	2.6
1947	156	67.	0	—
1952	131	55.	2	1.5
1953	763	318.	35	4.6

185

- **1953** - Canada's worst polio year began in the Yukon in May and continued through the winter into 1954, particularly in northern Alberta and even the North West Territories, where a small, but serious outbreak occurred; Newfoundland had its worst epidemic; Ontario, its worst since 1937
- However, from Manitoba west, each province felt the full effects of polio at record or near record levels, although it was Manitoba that faced the worst polio crisis in the country, if not in the history of the disease
- At the epidemic's peak, one hospital in Winnipeg had 92 patients reliant on iron lungs at the same time

THE B. SUN. 28.11.53  
**Manitoba Had Heaviest Polio Epidemic In World History**  
WINNIPEG (CP) — This year's technical advisory committee said "we know of no polio epidemic in the world of similar magnitude." struck nearly 2,300 persons and caused 82 deaths is believed to be the largest in world history. The 2,300 cases were 120 per cent more than in Manitoba's largest city, Ottawa.

Brandon Sun, Nov. 28, 1953

### National numbers:

- 9,000 cases (59.9 per 100,000)
- 500 deaths

### Manitoba:

- 2,317 cases (286.4 per 100,000)
- 91 deaths

### Winnipeg:

- 763 cases (318 per 100,000)



## POLIO, 1953: SUMMER OF FEAR

### Polio Now Major Issue Says Martin

OTTAWA (CP) — Poliomyelitis has assumed new prominence as a major public health problem in Canada, Hon. Paul Martin, health minister, said Wednesday in the Commons.

He said preliminary figures of 8,213 cases and 354 deaths "indicate that this year's outbreak will prove to be one of the most serious on record."

Replying to a question by E. G. McCullough (CCF—Moose Mountain) as to what federal assistance is being provided, Mr. Martin said the government has made more than \$1,500,000 available to the provinces under the national health plan.

Of this, more than \$730,000 was for the extension of research into the value of gamma globulin, for Red Cross blood banks and for helping in increased production of

Financial Post, Dec. 3, 1953, p. 1

- The financial costs of the 1953 polio epidemic in Canada were extremely high, leaving many wondering who would pay the bills
- The epidemic occurred within a context of rising interest in public health insurance, as well as a federal election in which it became an issue, including for Paul Martin



Riverview Health Centre Archive, Winnipeg

## CANADA AND THE SALK VACCINE TRIAL

Sanofi Pasteur Canada Archives



### One Million Shots

## Toronto Supplies Virus For Polio Vaccine Tests

By ALTON L. BLAKESLEE  
New York, Nov. 16 (AP). — The crucial test of a new polio vaccine will start Feb. 8 with shots for up to 1,000,000 school children. Most of the virus from which the vaccine is to be made will be grown at the Connaught Laboratories of the University of Toronto.

will be those which have had a high polio rate in the last five years, particularly among children of early school age. They will also represent a cross-section geographically and in economic-social status. Youngsters in public, private and parochial schools will be eligible. Parents must give written consent.

*Globe & Mail*, Nov. 17, 1953, p. 17

- **1953-1954** – While polio epidemics continued in several parts of Canada through 1953 and into 1954, Connaught undertook, as Salk described it to the Labs' Director, Dr. R.D. Defries, “the herculean task” of producing over 3,000 litres of poliovirus fluids that were shipped in station wagons to two U.S. pharmaceutical firms for inactivation, testing and filling for the field trial

- Paul Martin, however, was not fully aware of the field trial plans, especially the major Canadian role, until reading about it in the newspapers on November 18, 1953, when plans were formally announced; secrecy had been maintained, although Deputy Minister Cameron had been aware of the details

- Since the vaccine was untested and its safety not adequately established, Cameron advised Martin to watch the American scheme with interest for “They will provide the answers and we can benefit from them as quickly, if not more quickly, than any place else in the world.”



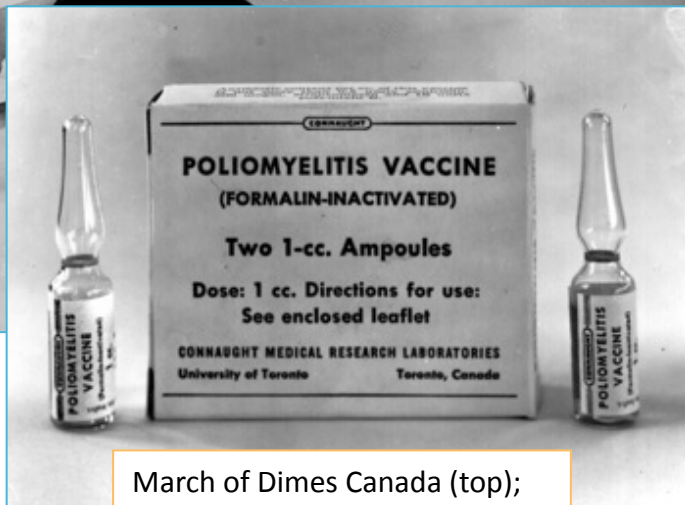
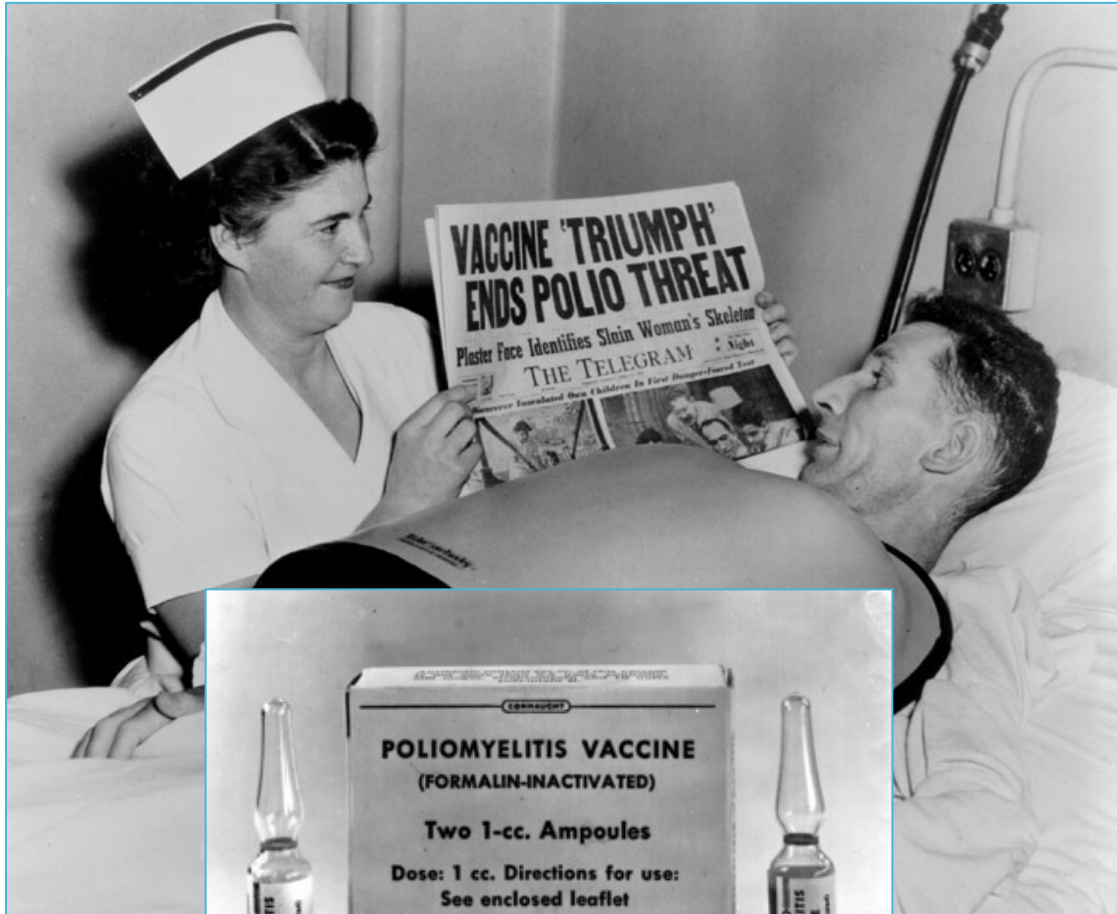
## CANADA AND THE SALK VACCINE TRIAL



*Time (Canadian Edition), March 29, 1954*

- **April 1954** – Soon after the field trial began in the U.S., some surplus vaccine enabled it to be extended to include Alberta, Manitoba and Halifax, as well as Helsinki, Finland
- Once the bulk of the virus fluids were produced for the field trial, Connaught focused on preparing the finished vaccine to ensure an anticipated Canadian supply following the announcement of the trial's results
- Connaught's leadership then worked closely with the federal and provincial governments to plan an all-Canadian observed-controlled trial of the vaccine that would start in April 1955
- Each batch of vaccine would be double-tested by Connaught and the Laboratory of Hygiene in Ottawa and then provided for free, initially to the most vulnerable age group (grades 1-3), through a 50-50 federal/provincial shared cost program

## CANADA AND THE SALK VACCINE TRIAL



March of Dimes Canada (top);  
Sanofi Pasteur Canada Archives

- **April 12, 1955** – Unprecedented media attention to announcement of field trial results in Ann Arbor, Michigan
- The vaccine proves to be 60-90% effective against the three types of poliovirus
- The vaccine is immediately licensed in U.S. and Canada
- After licensure by regulators in Washington, six U.S. vaccine producers rush-released their vaccines to meet the demand
- However, unlike in the field trial experience, the U.S. government did not test each batch of vaccine produced; the pharmaceutical companies were relied on to test and to submit their protocols to the government
- To ensure a large scale immunization program could begin immediately, the NFIP bought enough vaccine for 9,000,000 first and second graders to get it for free



## CANADA AND THE SALK VACCINE TRIAL

- **April 25, 1955** – However, there was a major setback when it was discovered that some batches of vaccine from one U.S. producer, Cutter Labs in California, were not fully inactivated, leading ultimately to 79 polio cases linked to the bad batches
- **May 7** – After first recalling all of Cutter’s vaccine, and then setting up a national polio surveillance system, the U.S. Surgeon General suspended the entire vaccine program

• North of the border, the burning question was what should Canada do?

### 8 Get Polio, Serum Held Up; 'Can't Happen in Canada'

By WHITNEY SHOEMAKER  
 Washington, April 27 (AP).—The U.S. Government ordered one of the companies making Salk vaccine to pull back all its shipments today after eight children inoculated against polio were reported hit by the disease. One death was listed.  
 Health authorities cautioned against a scare, however. They said there was no indication that the vaccine caused the disease, and that there was evidence to the contrary in some cases, at least.  
 The vaccine in question was made by Cutter Laboratories in Berkeley, Calif., which said it had made shipments for mass inoculations of school children in parts of California, in Arizona, New Mexico, Idaho, Nevada and Hawaii.  
 The Cutter firm also reported it had shipped relatively small

By KEN W. MacTAGGART  
 The chance of any child's getting polio after receiving Canadian-made Salk vaccine was doubted last night, and even termed by some medical authorities an impossibility.  
 In fact, local authorities' first

### Recall Salk Vaccine Made by One Firm

Continued from Page 1.

Cutter personnel in investigating the vaccine.  
 Dr. Scheele gave his explanation of the Government's withdrawal order:  
 "We heard of some cases and we felt it was safest to study the problem. This is no indictment of Cutter vaccine at all. It was an action of safety to protect the children who may be getting shots today and tomorrow until we can make an investigation."  
 No parent should keep his child from being inoculated, he said. He added his own second-grade youngster is due for a shot.  
 The public health service reported polio cases among Cutter-inoculated youngsters in Berkeley. They will work with

the gamma globulin as an antidote.  
 Cutter moved swiftly to recover its shipments. Six laboratories are producing the anti-polio vaccine, but Cutter is the only one in the West.  
 Dr. Scheele said studies indicate effective antibodies are not built up for more than a month after injections. In the six cases noted by the public health service, he said, even a wholly effective vaccine could not have been expected to create full immunity in the two weeks between inoculation and the flush of illness.  
 Inoculation in one case was given April 14, another, April 15, the other four April 18. The incubation period in polio is from three to 30 days, with the average around 14.

### Couldn't Happen In Canada, View

Continued from Page 1.

vaccine to be faulty," said one official.  
 "After the tests have been made, and to give the vaccine every opportunity to reveal any improper test effects, it is then retained for two months. Not until it has been seen what results occur, even after a delay considerably beyond normal probability of infection, is any of the vaccine released for use."  
 Medical authorities noted that reports from the U.S. indicated that only vaccine produced by Cutter Laboratories of Berkeley, Calif., had been withdrawn from use. None of this firm's vaccine has been licensed for entry into Canada. Only two firms, Eli Lilly and Co. (Canada) Ltd. and Parke Davis and Co. Ltd., both of which were pioneers with Connaught, have licenses to import the vaccine.  
 Dr. Andrew J. Rhodes, virologist who headed the Connaught Laboratories group which made possible mass production of polio virus for the Salk program, last night urged parents not to become panicky because of the developments in the U.S.  
 The Canadians closest to the work, he said, were aware of the methods used at Connaught Laboratories and were convinced that faulty vaccine could not find its way into use from this source.

Globe & Mail, April 28, 1955, p. 1

## CANADA AND THE SALK VACCINE TRIAL



Sanofi Pasteur Canada Archives

- **April 25, 1955** – While the U.S. launch of the Salk vaccine was suspended, after careful consideration and advice, especially from Connaught's leadership (but some resistance from the Prime Minister), Paul Martin decided that the Canadian launch of the vaccine should continue uninterrupted



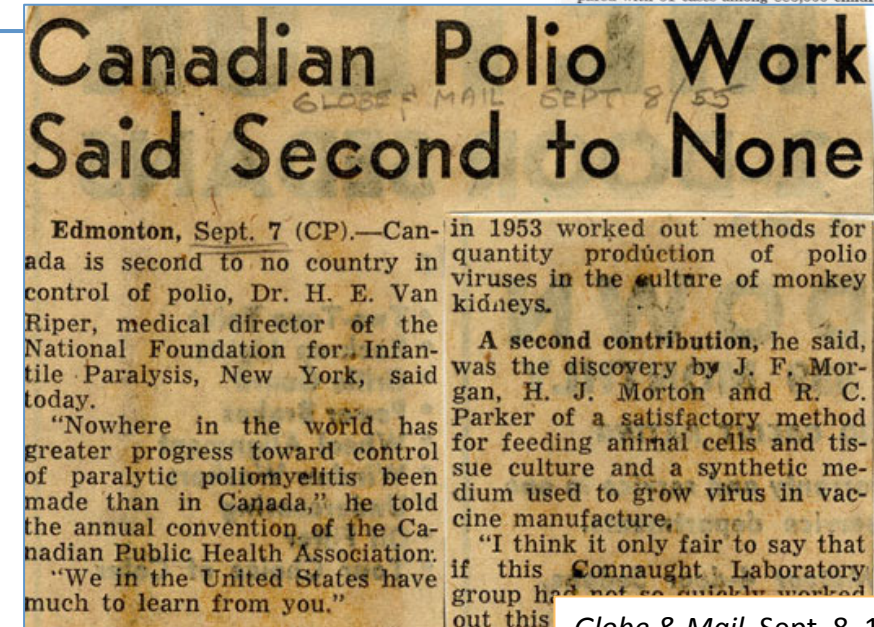
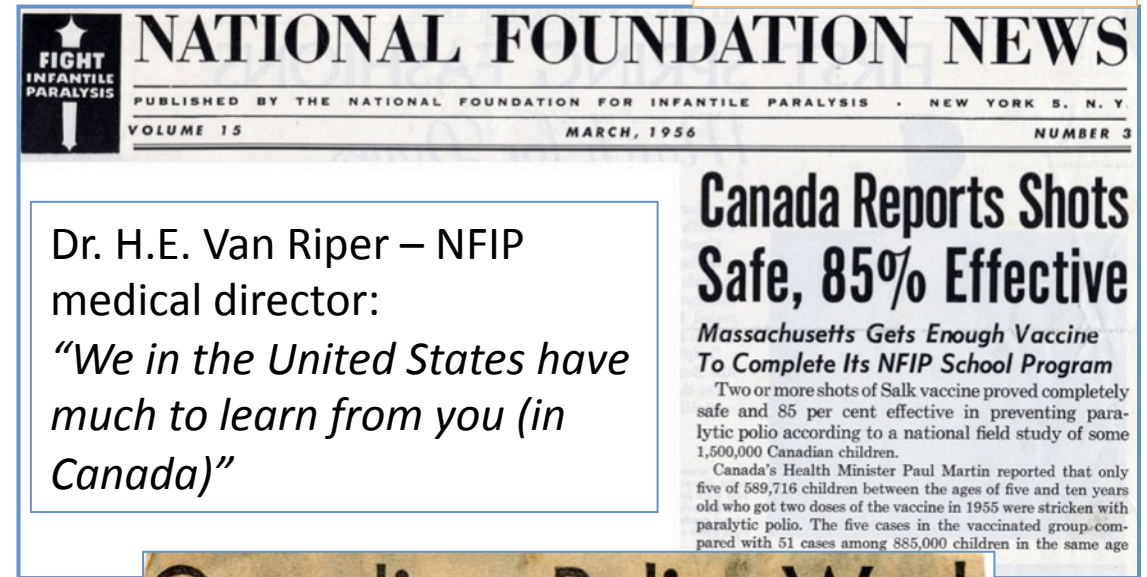
[Clip from CBC Prime Time News documentary, "Conquering The Crippler," Dec. 7, 1993](#)



## CANADA AND THE SALK VACCINE TRIAL

- With no incidents reported, the Canadian use and evaluation of the vaccine further demonstrated its safety and effectiveness.
- Canadian political and public health confidence in the vaccine during the “Cutter Crisis” meant a lot to Salk and helped pave the way for the resumption of the U.S. polio immunizations in July 1955.
- Considerable debate ensued over the different approaches to the vaccine between the two countries, in particular, highlighting the differing levels of government funding for public health between the two countries, and the contrasts in planning, testing, distributing and paying for the vaccine

Sanofi Pasteur Canada Archives

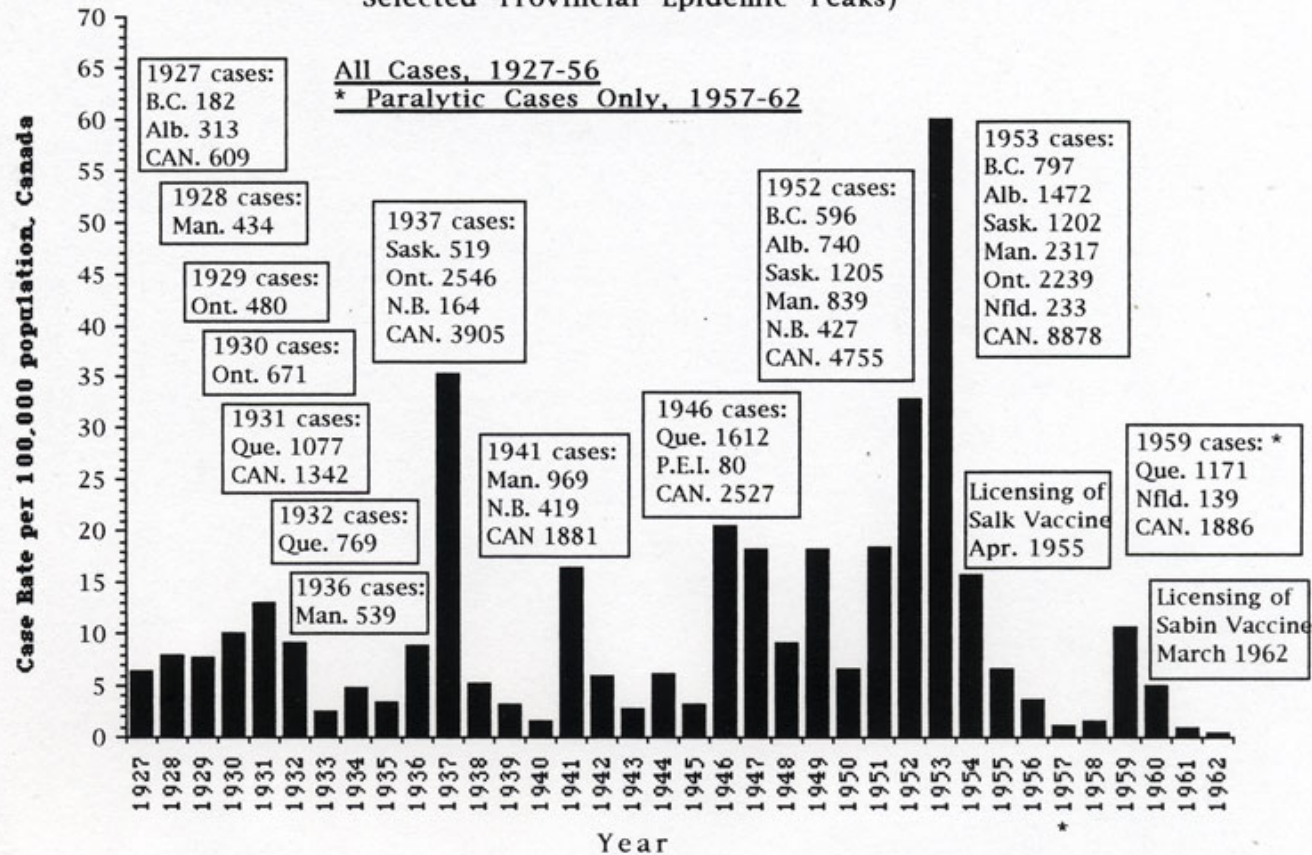


Globe & Mail, Sept. 8, 1955

## EPILOGUE & LEGACY

### Poliomyelitis Incidence in Canada, 1927-1962

(Case Rates per 100,000 Population & Selected Provincial Epidemic Peaks)

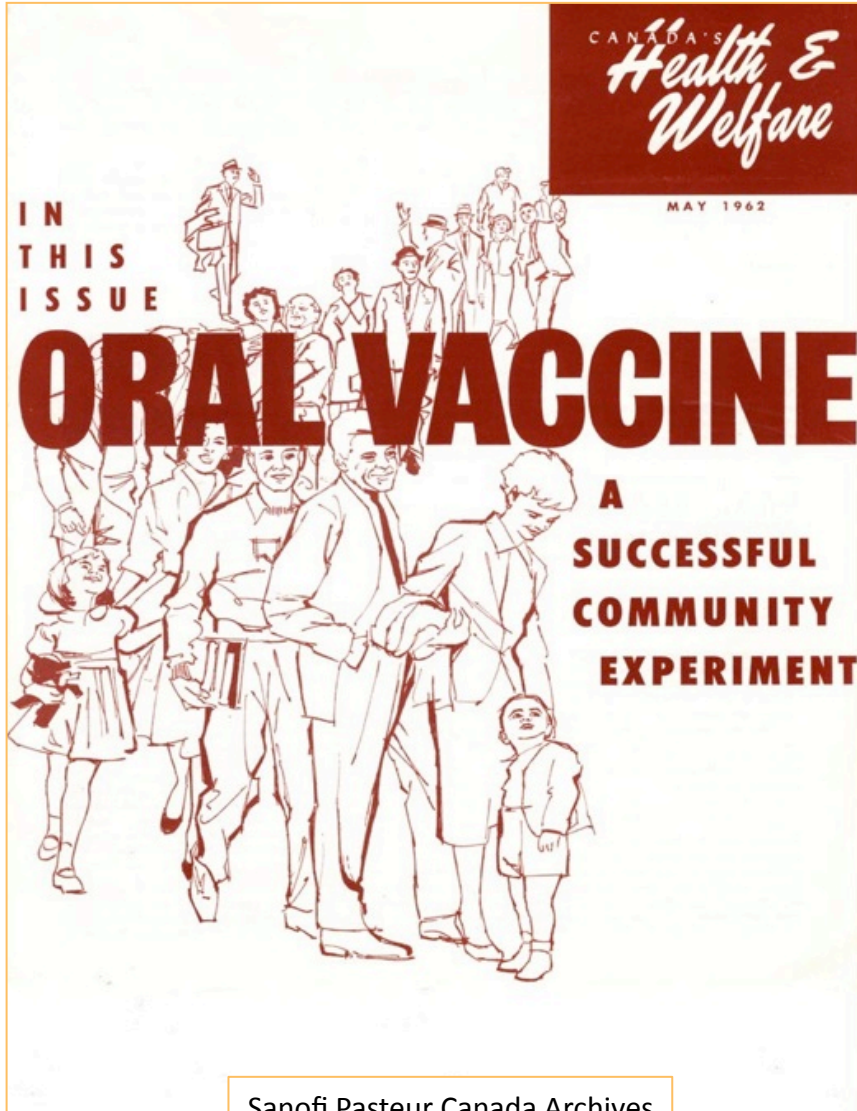


C.J. Ruddy, "Do Something! Do Anything! Poliomyelitis in Canada," Ph.D. Thesis, Dept. History, University of Toronto, 1995, p. 395

- The Canadian polio story and Paul Martin's and the Department of National Health & Welfare's role certainly did not end after Martin made his dramatic decision, but it marked a transition to another distinct chapter I don't have time to tell today
- But here are some of the key events:
- **1956-1957** – Martin and the Department funded expansion of Connaught's polio vaccine production capacity, as well as helped establish a polio vaccine production facility at Institut de microbiologie et d'hygiène at the Université de Montréal
- **April 1957** – Sufficient surplus vaccine produced in Canada enabled Martin to approve its export to many countries otherwise without polio protection



## EPILOGUE & LEGACY



Sanofi Pasteur Canada Archives

- **1959-1962** – After Martin left the Department of National Health & Welfare in June 1957, the Department played a strong leadership role, in partnership with Connaught Labs, in the careful evaluation of a second type of polio vaccine, the Sabin live attenuated oral polio vaccine (OPV)
- This was conducted through a series of sophisticated vaccine field “demonstrations” in several parts of the country, overseen by a “National Technical Advisory Committee on Live Poliomyelitis Vaccines,” which led to the licensing of Connaught’s Sabin OPV in March 1962
- With provinces using the Salk or Sabin vaccines, or both, polio incidence would remain very close to 0 after 1962
- **1988** – The last polio case in Canada struck a 10-month-old boy after family visitors unknowingly brought the poliovirus from India and the Middle East, where polio remained endemic

## EPILOGUE & LEGACY

OPINION

### We are on the cusp of ending polio



Former prime minister Paul Martin

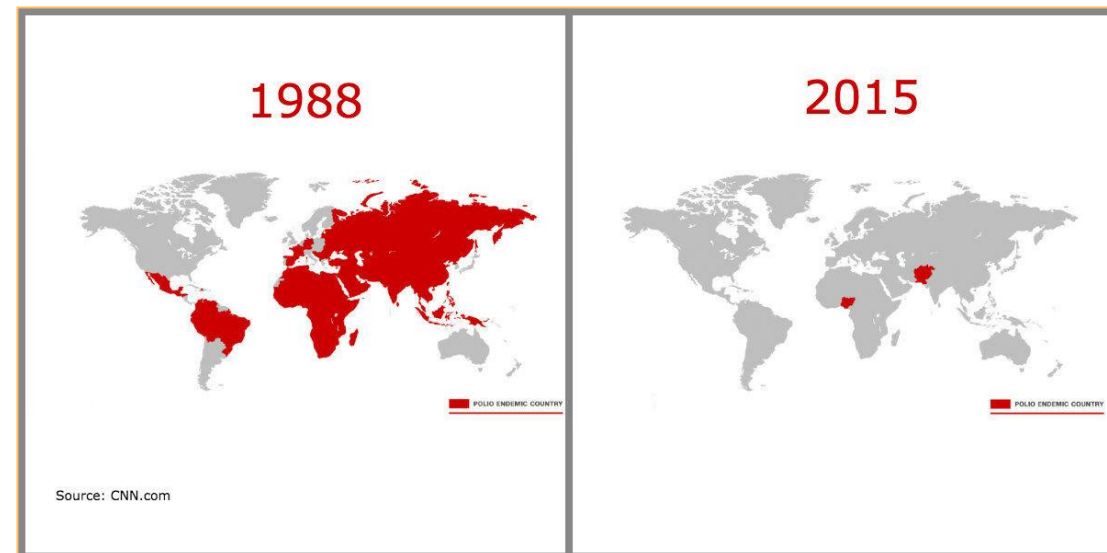
YVONNE BERG/THE GLOBE AND MAIL

**PAUL MARTIN**  
CONTRIBUTED TO THE GLOBE AND MAIL  
PUBLISHED OCTOBER 24, 2011  
UPDATED APRIL 10, 2018

Few Canadians remember a time when polio struck children across the country at whim. Yet, it is important to remember that this devastating disease continues to cripple children in countries such as India, Afghanistan, Nigeria and Pakistan.

But on this World Polio Day, we are on the verge of an incredible opportunity: the eradication of polio. Over the past two decades, polio cases have decreased by 99 per cent, dropping from 350,000 cases each year to fewer than 1,500 cases in 2010. Now is our chance to finally eliminate polio so no child ever has to suffer from this disease again. If we are successful, it would be a historic achievement. Finishing the job would make polio only the second disease, after smallpox, to be eliminated.

- **1988** – With some 300,000 polio cases globally, despite 2 vaccines, an initiative lead by Rotary International enabled the World Health Organization to launch a global polio eradication program
- Canada was one of the first nations to participate and remains a strong supporter
- Paul Martin Jr. has played a major personal role in supporting polio eradication, especially when Prime Minister, and ever since





## EPILOGUE & LEGACY



### THE PAUL MARTIN SR. SOCIETY®

The Honourable Paul Martin Sr. spent 39 years in federal politics and a lifetime serving Canadians.

The Paul Martin Sr. Society recognizes outstanding donors who follow the inspirational legacy of a great Canadian who, as Minister of Health and Welfare, introduced universal polio vaccination to Canada.

#### Categories of giving

MEMBER	\$5,000	-	\$9,999
PATRON	\$10,000	-	\$24,999
BENEFACTOR	\$25,000	-	\$49,999
INVESTOR	\$50,000	-	\$99,999

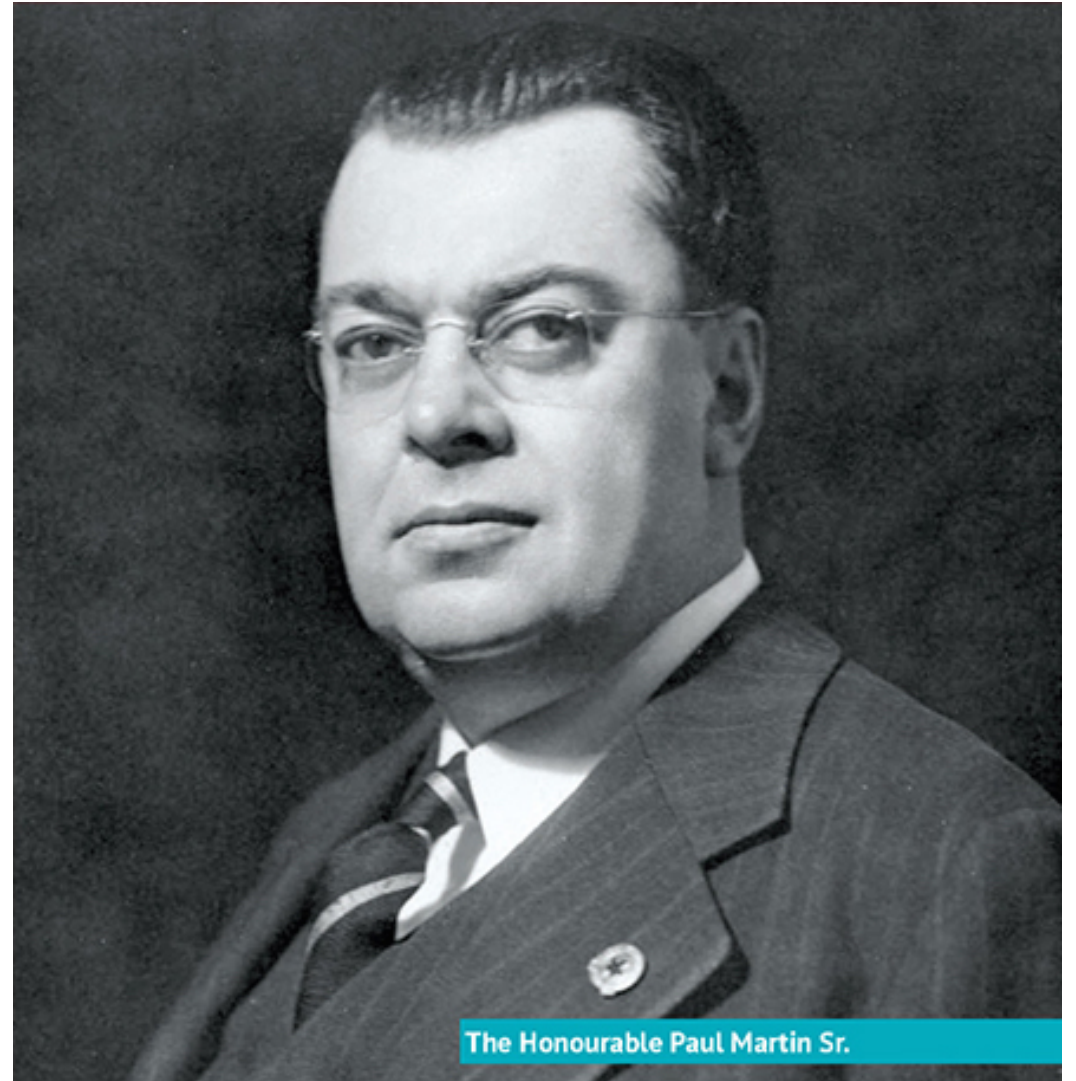


<https://www.marchofdimes.ca>

- Paul Martin Sr.'s significant legacy in the Canadian polio story has continued through several organizations
- **1994** – “The Right Hon. Paul Martin Sr. Biomedical and Rehabilitation Research Endowment Fund Grant” was established to fund research into the alleviation or prevention of a disabling condition
- **1999** – “The Paul Martin Sr. Society” of March of Dimes Canada was founded to honour his legacy in the polio story and recognize key partners whose contributions continue his vision of overcoming the challenges of physical disability

## EPILOGUE & LEGACY

- As we celebrate Health Canada's 100<sup>th</sup> anniversary, it is clear that facing and overcoming the unique public health challenges of polio was a defining element of Health Canada's evolution, especially during the tenure of its longest serving Minister, Paul Martin, Sr.
- He was clearly a man for whom facing and overcoming the challenges of polio was very much a personally defining part of his life and the legacy of his family.



The Honourable Paul Martin Sr.



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