



Making a Difference:
**Milestones in Public Health &
Biotechnology: Canadian Connections**

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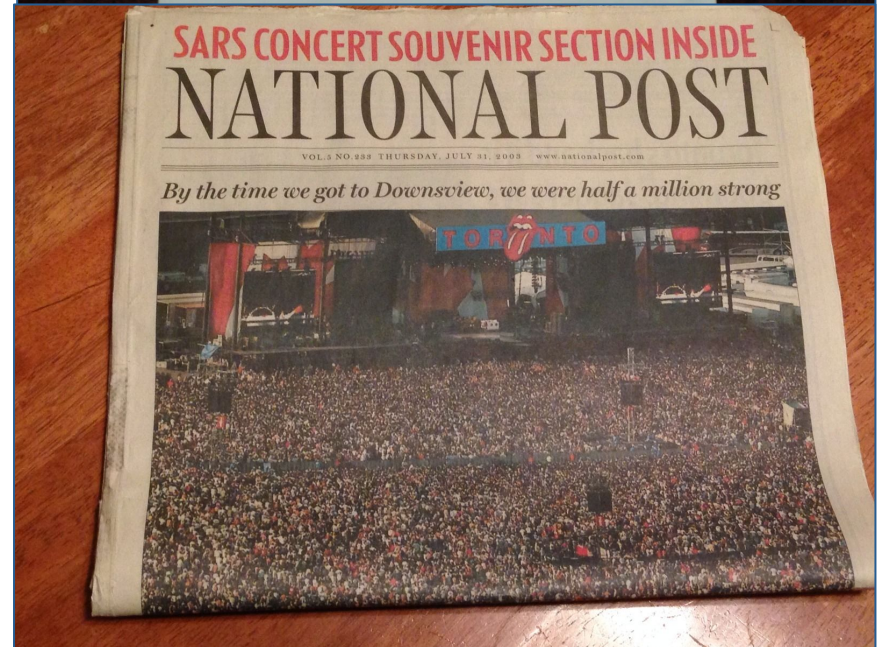
**Lecture #9 – New Threats & Strategies: From
AIDS to SARS (1980s-2000s)**

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Living and Learning in Retirement, Course E
Class #2, November 10, 2017
Glendon College, York U., Room A002



Previous lecture slides available via:
<http://healthheritageresearch.com/clients/LLiR/>

Introduction

- Class #9 traces the resurgence of infectious disease threats in Canada, beginning with AIDS in the early 1980s and ending with SARS in Toronto in 2003
- In between, meningitis outbreaks prompted emergency immunization efforts, deadly bacterial contamination threatened the water supply of Walkerton, ON, and smallpox re-emerged as a potential bioterrorist weapon after 9/11
- While vaccines to prevent AIDS and SARS were not forthcoming, a new smallpox vaccine for a Canadian stockpile was prepared from vaccine production materials frozen at Connaught Labs when smallpox was eradicated
- The SARS crisis showed that Canada's public health system was ill prepared for such an infectious disease threat...

THIS IS PUBLIC HEALTH: A CANADIAN HISTORY Executive Summary

This is Public Health, A Canadian History explores the evolution of public health from its early foundation before Canada was a country until 1986, when the Ottawa Charter for Health Promotion launched what many considered to be a new era in public health. During this time span, numerous public health milestones were achieved through organized community efforts to promote health and to prevent disease and injury, which have always been at the core of public health.

Canada, despite the tensions of jurisdictional boundaries. The struggle to eliminate disparities—between geographic regions, urban and isolated communities, Aboriginal and non-Aboriginal people—is a longstanding concern that continues to this day. Since its beginnings, public health has faced changes and challenges and has too frequently been undervalued. However, a number of remarkable advances in Canada over the past 100-plus years can be attributed to public health.

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The Public Health Journal

Public Health Journal, November 1917

This history has been compiled by the Canadian Public Health Association (CPHA), to mark its 2010 centenary. Like the field of public health, CPHA has much to celebrate in addressing ongoing challenges over 100 years as the national voice for a very diverse field. This narrative is dedicated to those public health advocates and activists who have “fought the good fight,” struggling to advance community health long before Canadian health systems were in place.

This history underlines the importance of federal leadership in the implementation of successful public health initiatives in

THE GOVERNMENT INSPECTOR'S OFFICE
Hours from 9 to 4

THE GOVERNMENT INSPECTOR'S OFFICE
The government inspector's office, 1850

Canadian Public Health Association 1

C.J. Ruty, *This is Public Health: A Canadian History* (Canadian Public Health Association eBook, 2010) - <https://www.cpha.ca/history-e-book>

A New Plague Emerges... AIDS' Impact in Canada

- **1981-84** – The first years of the AIDS epidemic, and the response to it in Canada, was described as “fragmented confusion”
- **June 5, 1981** – The first documented cases reported in US among homosexual men experiencing rare cancers; by Dec 10, 1981, 180 cases reported in US of mysterious condition
- **June 14, 1981** – Girl born in Montreal with what is later believed to be AIDS; Haitian mother dies 6-weeks later from AIDS-related symptoms

- **March 27, 1982** – First Canadian case of AIDS reported; 43-year-old gay Windsor man, ill since returning from Haiti, died of rare cancer Feb. 19, 1982
- **July 1982** – 4 cases of “gay plague” in Canada

Syndrome reduces immunity in gay men

BOSTON (AP) — A wave of pneumonia and cancer that is killing homosexual men across the United States has been traced to a mysterious breakdown in the body's disease-fighting system that turns harmless germs into killers, U.S. researchers say.

The condition — so new it does not have a name — has been reported in 180 people in 15 states since it was first spotted last July, and 75

Globe & Mail, Dec. 10, 1981, pT10; Aug. 11, 1981, p. 5

Young gays sensitive to rare cancer: study

By JOAN HOLLOBON

Young homosexual men appear susceptible to a rare cancer generally found in older men or in people taking drugs that suppress their body defence systems, according to studies in New York, Los Angeles and San Francisco.

This association has not yet been found in Toronto, but continent-wide studies are planned.

Dr. Bijan Safai, chief of dermatology at Memorial Sloan-Kettering Hospital in New York, said in a report in The Medical Post that his team has seen 10 cases of Kaposi's sarcoma in homosexual men, since the first case was diagnosed 18 months ago.

This compares with a total of 40 cases in non-homosexuals of all ages in six

causing it to swell and become visible.

"Often people will have them for a couple of years before they see a doctor. You know, if you get a bruise it sometimes develops some depth and takes a long time to go away? That's really what it (a Kaposi's tumor) looks like, so people really aren't concerned for long periods of time," Dr. Quirt said.

He said people generally seek medical advice because more of the skin growths develop, a characteristic of the tumor.

Dr. Quirt said that fortunately Kaposi's sarcoma is generally very sensitive to radiation treatments so anti-cancer drugs are usually unnecessary. In the rare cases where a growth progresses after radiation

Globe & Mail, March 13, 1982, p. 18

Disease an epidemic: MD

MONTREAL (CP) — A new syndrome primarily affecting homosexual men has reached epidemic proportions, says an immunologist attending a conference of the American Academy of Allergy here this week.

"It's like nothing we've ever seen before," said Dr. Andrew

spotted 2½ years ago now have died, he added, and the overall mortality rate is more than 40 per cent.

Dr. Saxon said examination of the patients' T-cells — the cells that normally fight off viruses, funguses and some unusual cellular parasites — shows they

tis carinii pneumonia), an unusual kind of skin cancer (Kaposi's sarcoma), and other uncommon diseases.

There is no treatment for the underlying problem, and the physician can only treat the infections as they occur. But most viruses are not treatable, and

THE GLOBE AND MAIL, THURSDAY, JUNE 9, 1983 25

AIDS spreading, MDs say

The deadly new disease Acquired Immune Deficiency Syndrome — AIDS — is spreading in Canada, says a report in the Canadian Medical Association Journal.

There now are 25 confirmed cases and signs that incidence of the disease is accelerating here as it has in the United States, say doctors from the Quebec AIDS Committee, Comité SIDA du Québec. There now are more than 800 confirmed

Noting that in the past three years there has been an exponential increase in the number of cases reported, the researchers say Canadian doctors should be aware of the signs and symptoms of the disease.

"Vigilance by physicians is of utmost importance," says the committee, led by Dr. N. J. Gilmore of Montreal's Royal Victoria Hospital.

They point out that while AIDS can be difficult failure to promptly can be

led to certain researchers say. account for 75 g abusers for into's to North —CP

A New Plague Emerges... AIDS' Impact in Canada

- **Aug 1982** – “AIDS” (Acquired Immune Deficiency Syndrome) first used to more accurately describe disease
- **Nov 1982** – AIDS discussed at First National Conference on Sexually Transmitted Diseases in Toronto; cause of AIDS unknown, but concerns about “poppers, promiscuity and specific sexual acts”
- Of the 14 reported cases in Canada, 10 fatal (none survived longer than 20 months); 11 cases in Montreal, 1 each in Vancouver, Windsor, Toronto

Toronto plots strategy for dealing with AIDS

By JOAN HOLLOBON

Toronto city health department has developed a seven-point strategy for dealing with AIDS, the mysterious killer disease primarily afflicting homosexual men.

The strategy was outlined at a press conference at City Hall called to announce two “walkathons” from Vancouver to Calgary and from Montreal to Toronto next October to raise \$1.8-million for social services for AIDS sufferers, public and professional education and research.

AIDS — acquired immune deficiency syndrome — is characterized by a breakdown in the body's natural defence system that makes individuals vulnerable to many infections, particularly potentially lethal diseases such as a rare form of

pneumonia and an equally rare kind of cancer.

There have been about 2,000 cases reported in the United States to date. More than 60 per cent of patients are dead within a year of diagnosis. Most vulnerable are homosexual men (particularly those with multiple sexual partners), who constitute 75 per cent of AIDS victims; non-homosexual intravenous drug abusers, 11 per cent; Haitian immigrants, who are not homosexual or drug abusers, 6 per cent; and hemophiliacs, 0.7 per cent.

Canada up to yesterday has had 29 reported cases of AIDS, with 17 deaths.

William R. Mindell, co-ordinator of community health information for the Toronto Health Department, outlined the city's seven-point strategy:

- Informing the male gay community of

risks and symptoms of AIDS through pamphlets and posters developed in collaboration with the Hassle Free Clinic, which will be ready within three weeks; and by an AIDS message on an “STD (sexually transmitted diseases) Hotline” at 947-7400;

- Informing health department staff how to advise the public on AIDS;

• Advising private and hospital laboratories to use protective procedures developed for handling specimens suspected of containing hepatitis B virus when handling samples from AIDS cases, reassuring laboratory staff “that extraordinary measures are not necessary”;

- Establishing liaison with hospitals to ensure appropriate guidelines for staff coming into contact with AIDS patients in hospital;

- Reassuring the public and the risk groups of the small actual risk of getting AIDS;

• Maintaining regular liaison with local, provincial and federal committees and officials on current AIDS developments and with the Canadian Red Cross Society on blood donation and utilization practices;

- Continuing to urge and support the Ontario Ministry of Health “to act on AIDS regarding promotion, reporting of cases and research.”

Mr. Mindell, supported by researcher Colin Sockoline of the University of Toronto, stressed that AIDS is not caught easily, like measles or chickenpox. Evidence indicates it is passed on only through body fluids, such as blood, semen or saliva, requiring intimate contact for transmission.

Estimates of the number of the gay community in Toronto range from 25,000 to 50,000. The health estimate of

Globe & Mail, July 1, 1983, p. 5

Disease victims relate stark tale

The devastating effects of AIDS was illustrated graphically yesterday when two of its victims described their experiences at a Toronto City Hall press conference.

Robert Cecchi, 41, from New York City, and Peter of Ottawa, who did not want his surname used, had come to Toronto primarily to attend a public forum on AIDS Wednesday.

Mr. Cecchi said his disease is “stabilized.” He no longer feels ill and exhausted but he is frequently reminded that he is still vulnerable — just recently he went swimming and contracted ear and throat infections.

He now spends his evenings selling and supporting t-shirts, many of whom are his friends and relatives will not for fear of contagion.

Peter, six feet three inches tall, with dark hair, is 28 years old, but looks like a 40-year-old. He weighs about 150 pounds, less than before he fell ill.

Peter had lived in Toronto for the previous

year. He fell ill last fall, doctors at first suspected tuberculosis. His symptoms included extreme fatigue, swollen glands, and heavy night sweats — “in the end I was changing the sheets five times a night.” Extreme dehydration through sweating, severe diarrhea and inability to keep anything down resulted in such exhaustion and debility that he sometimes had to crawl up the stairs to his second-floor flat on hands and knees.

Last December, his illness was diagnosed as AIDS — the first case diagnosed in England.

A gay doctor in London “who was

He had lost 45 pounds and all his hair had fallen out.

Peter denied being promiscuous. He believed he caught AIDS from a single sexual contact in San Francisco on a U.S. visit.

Like many AIDS sufferers, Peter has met some fear and rejection, although most of his friends and relatives have been supportive.

When he made a dental appointment, he told the dentist he had AIDS so that the dentist could take whatever precautionary measures he felt necessary. When he arrived for his appointment, the dentist told him — in front of nurses

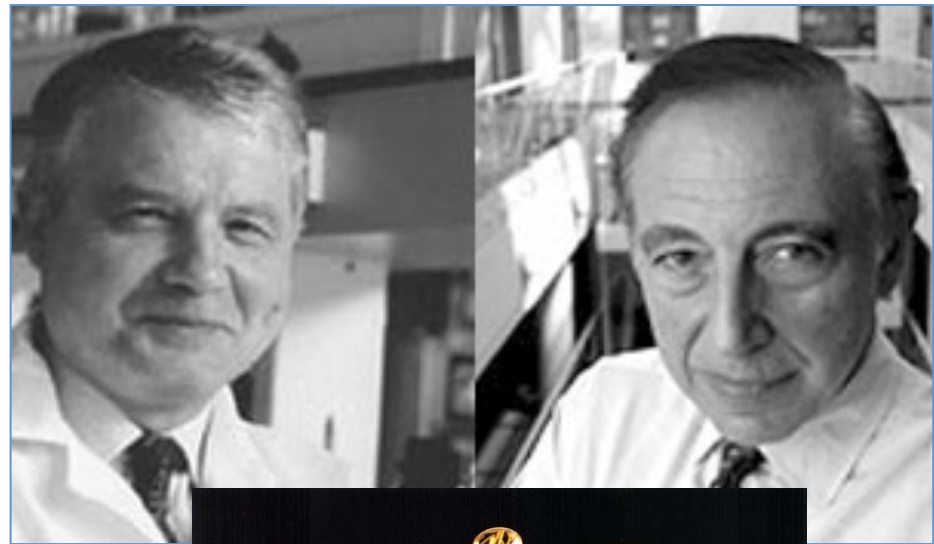


New York Historical Society

- **March 1983** – Despite uncertainty how AIDS transmitted, Canadian Red Cross asks “active” gays, bisexuals, IV drug users and Haitians to stop donating blood to curb spread

A New Plague Emerges... Discovering HIV

- **1983-85** - Not unlike other major discoveries, assigning credit can often be complex and characterized by personal and professional conflict
- **May 1983** – Team led by Dr. Luc Montagnier (left) at the Pasteur Institute in France isolated a new retrovirus (LAV) they believed was the cause of AIDS
- **May 1984** – Research team led by Dr. Robert Gallo (right) at the National Institute of Health in Washington, DC, discovered what turned out to be the same virus that he named HTLV-III
- **1985-86** – Further work focuses attention of virus all agree to call HIV (Human Immunodeficiency Virus)

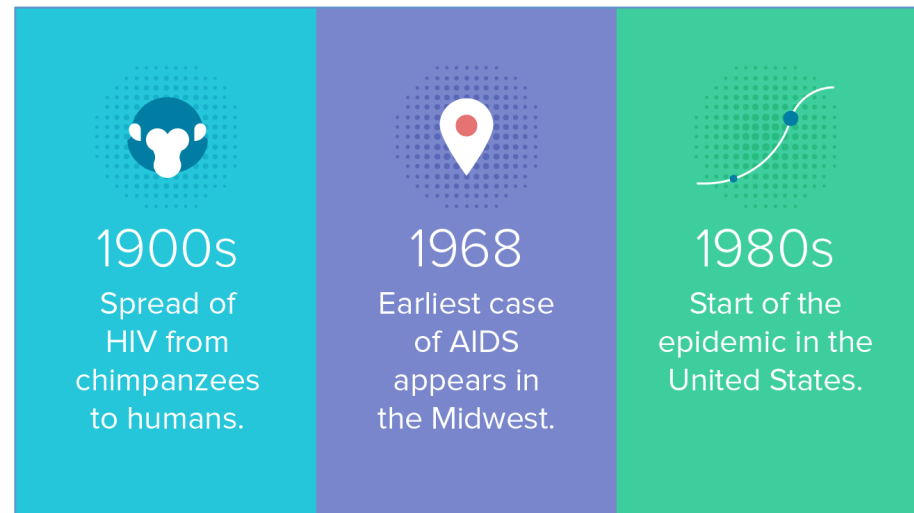


Sanofi Pasteur Canada Archives

A New Plague Emerges...

AIDS' Origins

- **1900-20s** – The origin of AIDS/HIV traced back to early 20th century west Africa and the transfer of a simian immunodeficiency virus (SIV) from chimpanzees to humans via infected blood
- Evidence of spread of HIV in Africa
- **1959** – Earliest AIDS case traced to Belgian Congo
- **1969** – Earliest case in the US, a 16-yr-old boy
- **1973** – Blood from 50 children in Uganda tested HIV positive
- **1976-79** – Norwegian sailor, Danish surgeon, Portuguese man, and German violinist: AIDS cases linked to African visits



AIDS in Canada: Slow Response

- 1982-86 – The public health and political response to AIDS in Canada was comparatively slow, lagging about 2 years behind the US
- Among the factors slowing the Canadian response:
 - A significant economic recession during the early 1980s, constraining funds for new public health initiatives
 - Downturn of public health interest in infectious diseases, particularly after the swine flu, Lassa fever, and polio scares of the late 1970s

AIDS on rise: 51 cases in 4 months, Ottawa says

By JOAN HOLLOBON

AIDS — ACQUIRED immune deficiency syndrome — is increasing rapidly in Canada.

Fifty-one male cases have been confirmed in the past four months, compared with 85 in the 33 months from February, 1982 to date.

Canada's total as of Nov. 13 stood at 147 cases — 136 male and 11 female. Nine of the women and 69 of the men are dead.

Dr. Gordon Jessamine, chief of epidemiology at the Laboratory Centre for Disease Control, Ottawa, said that seven cases were reported in one week alone this month. A year ago, cases were being found at the rate of one every two or three weeks.

Dr. Colin Soskolne of the University of Toronto, who heads a major AIDS research study, said that figures in Ontario and Toronto reflect the same rapid rise.

"People should not think AIDS is less serious this year than it was last year — to the contrary, it is more serious this year than last year when it got all the media attention," Dr. Soskolne said.

Dr. Jessamine agreed. He said male cases jumped from 85 on July 16 to 118 by Oct. 15 to 136 by Nov. 13. Female cases remained at 11 throughout.

Dr. Soskolne said that the 37 recorded cases in Ontario as of Oct. 15 had jumped to 48 cases by Nov. 2. By Nov. 16, there were officially 56 cases, but he personally knows of three or four more patients whose cases will be in the records before the month's end.

In the City of Toronto, three cases were confirmed in 1982, 10 in 1983 and another 22 so far this year.

Also, for every confirmed case of AIDS, the experts estimate there are 10 cases of AIDS-related illnesses.

The Canadian increase parallels a similar rise in the incidence rate in the United States.

Homosexuals, bisexuals and intravenous drug users are considered the groups at highest risk, but there is also some evidence now that AIDS may be capable of spreading to the general population through female prostitutes infected by bisexual men.

A San Francisco cancer specialist, Dr. Paul Volberding, told the American College of Surgeons meeting recently, he has seen two cases of AIDS in heterosexual men

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sexual partner that he has developed the condition and unwittingly exposed his partner to it.

The researchers will monitor the health of these volunteers every three months for up to three years. This will require five or six hours a year for each volunteer. Total compensation is guaranteed and professional help will be available for any participants who need help to cope with the anxiety following discovery of their exposure to AIDS.

The contact must be within commuting distance of Toronto, but the man who has developed AIDS could be anywhere in the world now. To participate or get further information, someone may call (416) 593-4940.

So Dr. Soskolne is now seeking the cooperation of AIDS patients throughout Canada and the United States who have a former sexual partner in Toronto, asking them to notify their Toronto friend and suggest he enter the study.

About 60 volunteers and 65 patients have been enrolled so far, but, unless it is clear by year end that enrollment is sufficient to ensure the total within a reasonable period, the research is likely to be terminated.

Dr. Soskolne said the present acceleration in Canada supports the original prediction that Canada is two years behind the real impact of the "epidemic curve." The rate of increase is also accelerating in the United States. The total in early November stood at 6,720 — a leap of 171 over last week, which averages 24 new cases a day, on 14 or 15 a day some months, 47 per cent of all patients with

immune system, so that sufferers fall prey to cancer and to severe infections. The virus has been found in semen, blood and saliva, but whether it can be transmitted by saliva remains unknown.

AIDS is a killing disease.

"None of the cases I have ever heard of with true classical AIDS has survived three years," Dr. Jessamine said.

However, not all the individuals exposed to AIDS seem to fall ill, and evidence also suggests that only 15 to 20 per cent of those who develop AIDS-related illnesses go on to develop the full syndrome.

Dr. Soskolne and his team want to find out why some people seem more susceptible to the illness than others and how accurate this 15 to 20 per cent figure is, so they are studying the sexual contacts of individuals with AIDS or AIDS-related conditions.

He said the study is unique: there are no other research projects in the world that are looking at AIDS victims' sexual contacts.

The team is seeking, through doctors and by direct approaches to the gay community, to enroll 420 Toronto-based men who have had sexual contact with men diagnosed as having AIDS or an AIDS-related condition during the year preceding the onset of his symptoms.

Recruitment has been difficult: for example, many contacts may not know that a former sexual partner has become ill or an AIDS patient may be loath to tell a former

sexual partner that he has developed the condition and unwittingly exposed his partner to it.

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altruism.

Now that AIDS threatens to move into the general population, the help of the gay community is essential if researchers are to come to grips with the disease, he said.

The gay community, which has often been discriminated against, now needs the support of society, too, which should be saying, "We need you now, you are the group most afflicted, please help us and we respect you for helping . . . I think now they have to be looked to as the potential source of solving the AIDS problem as well," said the researcher.

'None of the cases . . . with true classical AIDS has survived 3 years'

who were "regular users of prostitutes. No other risk factors could be found." A Medical Post report said that Dr. Volberding suggested prostitutes might also be at higher risk of AIDS because many are intravenous drug users (who spread infection through the sharing of needles).

The journal also reports a study by a Belgian physician, Dr. Nathan Clumeck, showing that AIDS is also prevalent throughout central Africa, where it is spread by heterosexual promiscuity and prostitution. He found no homosexuals, bisexuals or intravenous drug abusers.

AIDS is believed to be transmitted by a virus, discovered simultaneously last year by U.S. and French scientists, that affects the

Globe & Mail, Nov. 26, 1984, p. M9

TORONTO PWA* FOUNDATION

AIDS

*People With AIDS

AIDS in Canada: Slow Response

- There was a lack of co-ordination of the disparate efforts that were made at the local and voluntary agency level, often led by AIDS victims and the homosexual community
- Inadequate funding spread thinly among different branches of government and not sustained, and a diffusion of responsibility for action
- Of most importance, political reluctance to act at the national level due to the social tensions surrounding sexual orientation and fears of contagion

• “There seemed to be no safe ground in talking about homosexuality, condoms and needles at national or provincial levels. This reluctance resulted in footdragging and unclear messages about needed commitment to educational programs.”

FRIDAY, JULY 26, 1985

Globe & Mail, July 26, 1985, p. 13

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FEAR AND ABSTINENCE AIDS alters U.S. gays' habits; Canadians less cautious

By REGINA HICKL-SZABO

Fear of AIDS has driven thousands of U.S. homosexuals to dramatically reorder their lives, placing new emphasis on health and personal relationships and shunning impersonal sexual encounters. Many refer to current times as the Plague Years. But within Canada's gay community, reaction has been muted. In San Francisco these days, men with flashlights make rounds of the steam baths to make sure homosexuals

are practicing "safe sex." Doors on small private rooms in the darkened bathhouses have been removed and everyone knows that the "exchange of bodily fluids" is prohibited. That is the law in San Francisco, a city of 700,000, where more than 1,200 people have contracted the deadly disease AIDS in the past five years and where more than 600 have died of it. On the other side of the country, in New York City, where 3,700 men and 370 women have been diagnosed as having

acquired immune deficiency syndrome, the popularity of bathhouses has dwindled and given way to a host of parlors where men engage in mutual masturbation. "None of my friends or people I meet would dream of telling me they've been to a bathhouse," one New York gay said in a recent interview. "It's just not socially acceptable any more." U.S. doctors have noted a dramatic drop in the incidence of gonorrhea and syphilis among homosexuals; strong

evidence that many gays are engaging in safer sex and that some are probably abstaining. In San Francisco and New York, AIDS is said to be the biggest natural cause of death for men under 40. "Few have been unaffected by the loss," wrote journalist Robin Hardy this month in the Toronto newspaper The Body Politic, in an article about New York. "It's clear that the crisis is not yet GAYS — Page 15"

Shortage of money stirs AIDS scientists to think of quitting

By CAITLIN KELLY
The Globe and Mail

MONTREAL

Canadian AIDS researchers are ready to quit.

While researchers in the United States are running to join the well-financed and politically popular effort to cure, treat or simply understand the mechanism of acquired immune deficiency syndrome, few Canadians see it as a growth area.

In the United States, one federal agency alone provides \$120-million for AIDS research — 40 times more than four years ago. Canadians working in the field, most of them in Montreal, say they have access to far less money and political support.

Vote-conscious U.S. congressmen push the issue of AIDS research, and Congress every year has voted supplements for AIDS into the annual budget of the federal National Institutes of Health.

Canada's Health Minister Jake Epp made no comment when reached on this issue, but several sources within his ministry say he will announce increased financing for medical research on AIDS later this month.

Canada has since received an additional \$350,000 worth of the virus from Dr. Gallo's laboratory, he added.

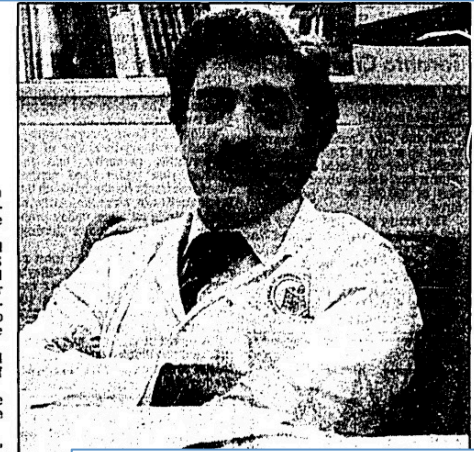
Mr. Epp has privately promised researchers more money for AIDS research, but none has appeared yet, says Dr. Dupuy, who is director of immunology at the Armand-Frappier Institute in Laval and who has conducted three studies of the disease.

There are 11 federally financed research projects on AIDS, most of them based in Montreal.

In Canada, 511 people so far have contracted AIDS. Of these, 235 have died.

Researchers in the United States, where the syndrome has killed 10,152, will receive more than \$120-million from the National Institutes of Health alone this year. It is just one of half a dozen federal agencies financing AIDS research, as do universities, hospitals and private foundations.

To raise money for AIDS research, Michel Roy, a Montreal businessman and former Liberal organizer, has formed the Foundation for Research for AIDS Quebec Inc. The group is holding a \$100-a-plate dinner in June to raise \$20,000. "Mr. Epp never says no, but the



Globe & Mail, Apr. 22, 1986, p. A15

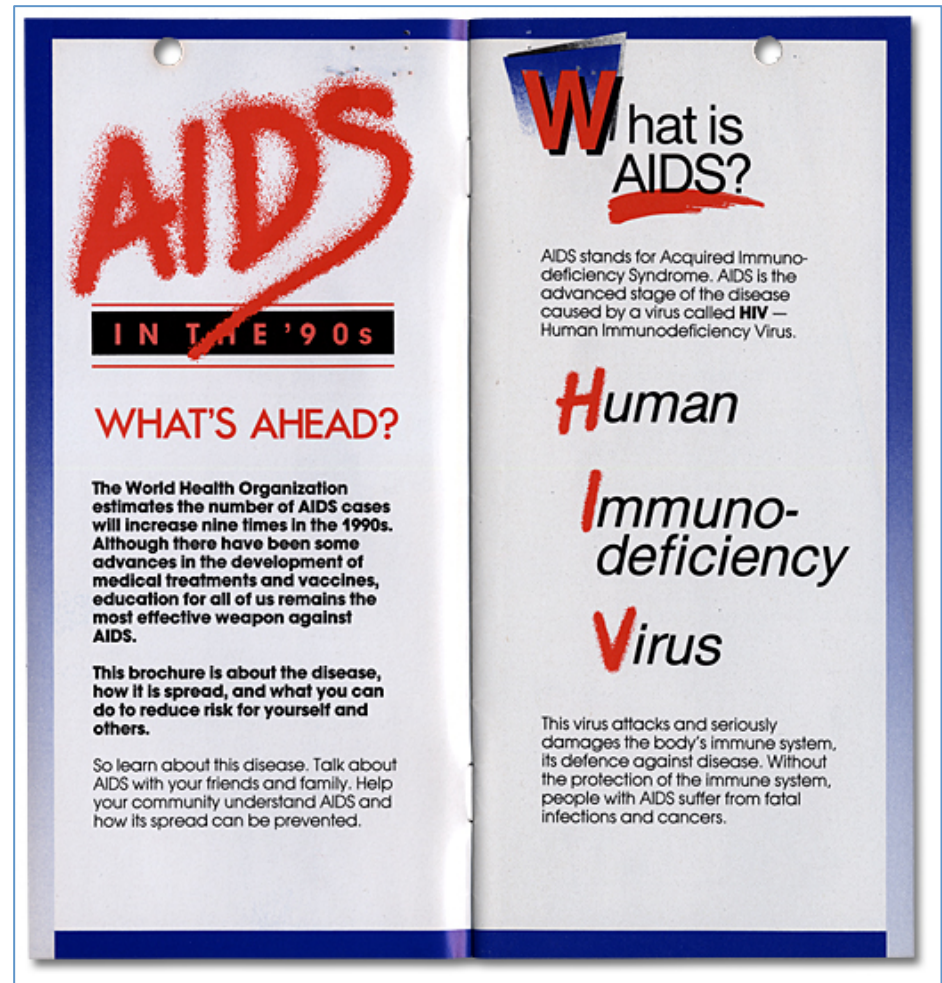
Lack of understanding exasperates Dr. Christopher Tsoukas

health-care workers, government officials, journalists and others hungry for up-to-date information? On a typical day recently, Dr. Norbert Gilmore, a Montreal immunologist who is chairman of the National Committee on AIDS, worked on a \$500,000 study of 2,500

is valued and will receive the funds necessary to continue. "It's very easy to get so far behind that you can't catch up," Dr. Dupuy says.

AIDS in Canada: Accelerating Response

- **1986** – The Canadian Public Health Association assumed a significant leadership role in a national AIDS educational campaign aimed at the public and health professionals
- CPHA program stressed health promotion, prevention and education through scientific symposia and public forums; distributed information on AIDS, such as *Facts on AIDS for the Public*; and launched a broad AIDS education and awareness campaign through the media



- **May 1, 1986** – Stepped up AIDS initiative launched by federal government, committing \$6.6 million for research and education in first year, then \$39 million for the next five years, much of it supporting the AIDS Education and Awareness Program led by CPHA in concert with federal and provincial governments, agencies and associations concerned about AIDS

AIDS in Canada: Accelerating Response

- CPHA had the only national mandate and budget for a mass media campaign “to issue a public media alert concentrating on the sexual spread of AIDS and advocating the use of condoms as the symbol and most readily available means of prevention”
- It was developed with a clear awareness that such material would be controversial, and with the cooperation of the CBC and other broadcasters, the public service announcements “did in fact achieve its objective which was to trigger the debate that Canadians had been avoiding for so long”
- Open discussions about AIDS and condom use and the need for “safe sex” as a prevention remained off-limits on American TV at the time
- Thus the CPHA campaign “was the first such effort to be carried by a national network in North America”

EDITORIAL

Canadian Journal of Public Health, Mar-Apr. 1987 p. 75

ETHICS, MORES AND VALUES — AND AIDS

In a previous editorial I raised the question of appropriate reactions to behaviors that are acceptable in some cultural settings but not in our own.¹ I gave child marriage and female circumcision as examples. There are many examples closer to home, some difficult to resolve, others apparently straightforward. The active role that CPHA is now playing in the campaign against AIDS in Canada,² and especially the preparation and dissemination of explicit messages for television, illustrates some of the issues. Indeed this is a perfect illustration of the ever-changing values that we have to reckon with when we attempt to set the goals of public health: it would have been unacceptable as recently as a decade ago to advocate condom use for sexual encounters between unmarried couples, on television or anywhere else in the mass media. The implicit assumption that sex outside marriage is acceptable was not part of the values of established authority back then. The AIDS epidemic has forced us to acknowledge that casual sexual encounters do occur — have always occurred. The AIDS epidemic, because of the fear it has generated about the risks of getting and dying of this disease, may be leading to some reduction in the scale of casual sexual encounters, but it is highly unlikely that it will put a stop to such activities.

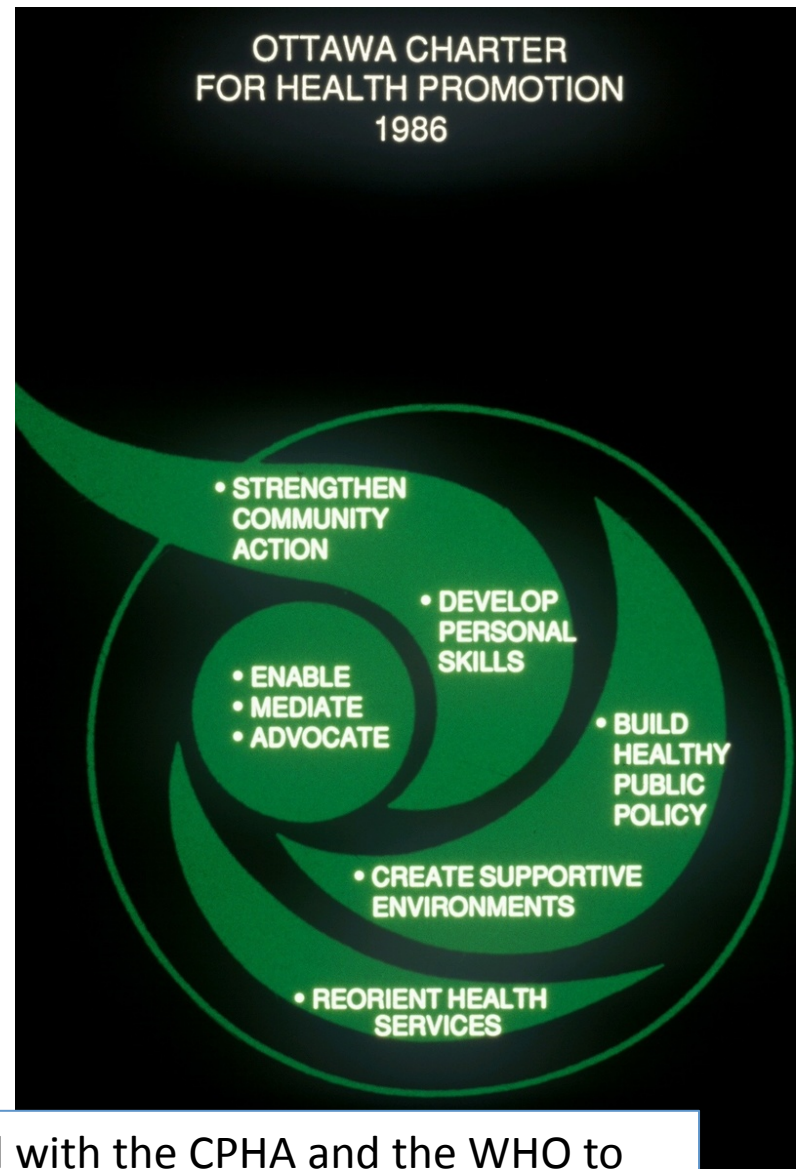
The messages about the spread and control of AIDS have to be directed at specific targets, notably at male homosexuals and all other persons who have multiple partners, and illicit drug users. These messages must be explicit, strongly worded, and expressed in terms familiar to these members of our society. The homosexual groups particularly deserve further discussion.

Two recent articles in the Journal^{3,4} described the sexual customs and practices of male homosexuals, giving some details about what they do, and with how many partners. Many of our readers probably had little prior knowledge of these matters, some may have found the information shocking. Was it proper for us to publish such material?

The New Public Health: Defining The Determinants of Health

- **1986** - Coincidental with the CPHA's AIDS education and awareness work, the Association played a central role on the international stage in the development of health promotion and the birth of the “new public health”
- **1981-85** – Seminal “Lalonde Report” of 1974 continued to attract international attention and drew leaders in public health promotion, particularly from the WHO's European Health Education Unit, to Canada, “the world's Mecca for health promotion”
- The success of ParticipACTION seemed to hold a particular fascination

- **Nov 1986** – Health and Welfare Canada worked with the CPHA and the WHO to organize the first International Conference on Health Promotion in Ottawa



The New Public Health: Defining The Determinants of Health

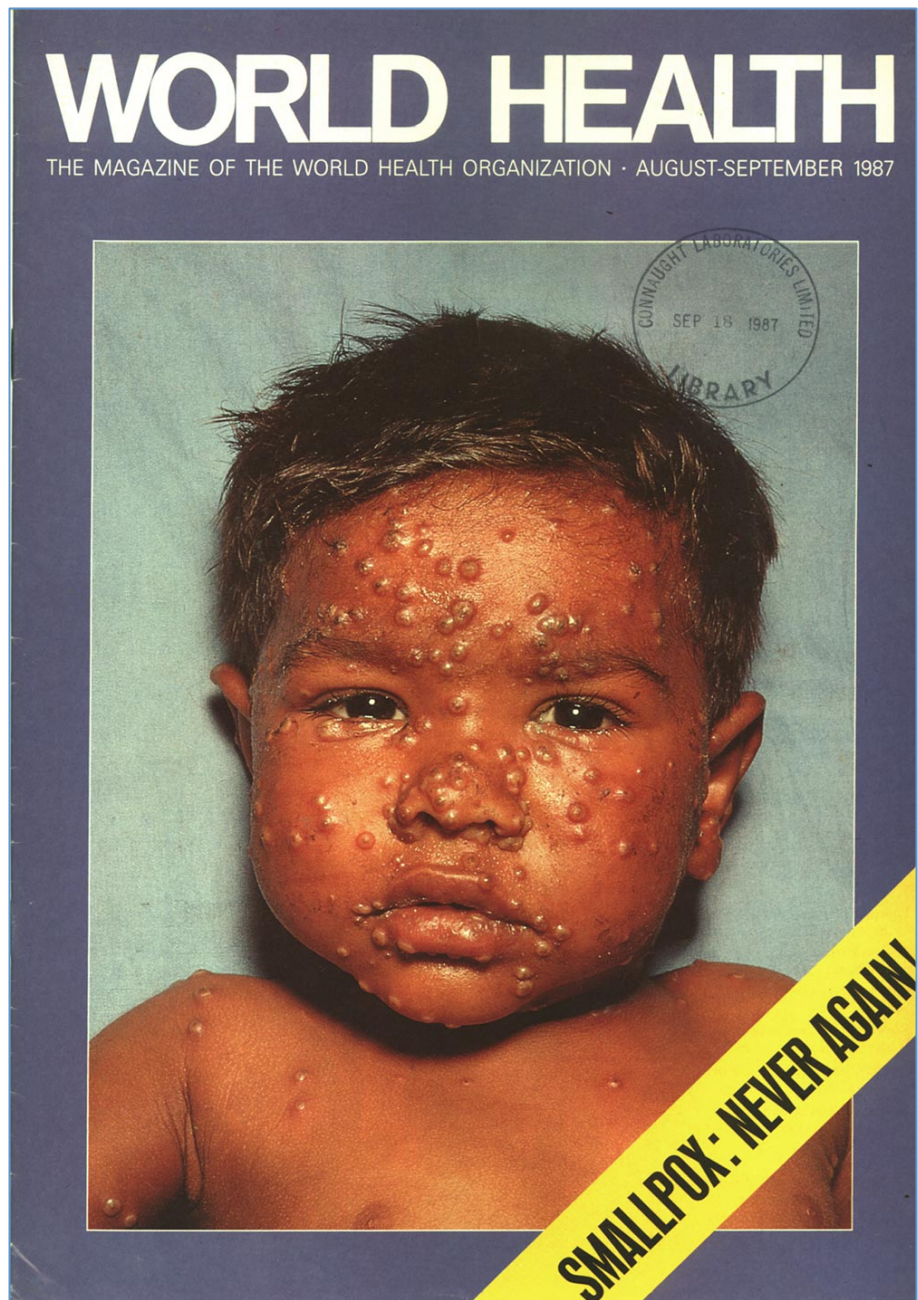
- **1986** –The Health Promotion conference brought together 212 invitees from 38 countries, including health and public health, governmental, academic and community representatives
- Goal was to build a framework, which became known as the “Ottawa Charter For Health Promotion”
- Ottawa Charter’s framework for health promotion involved enabling people to increase control over their health, a process in which individuals, communities, health professionals and institutions, and governments all had a role

- It recognized that health cannot be separated from people’s daily reality and the social and economic determinants of health, such as access to money, power and esteem



Next Eradication Target: From Smallpox to Polio

- **1979-86** – The Ottawa Charter and the “New Public Health” developed in a context of a growing focus on global health and the limits of western medicine in trying to improve it; the tenets of the determinants of health certainly applied everywhere
- The success of the smallpox eradication effort demonstrated what was possible in global health
- Yet there were still 5-10 million deaths and disabilities among children occurring each year across many parts of the world due to diphtheria, pertussis, tetanus, measles, tuberculosis and polio; all vaccine preventable, and one, polio, potentially eradicable like smallpox



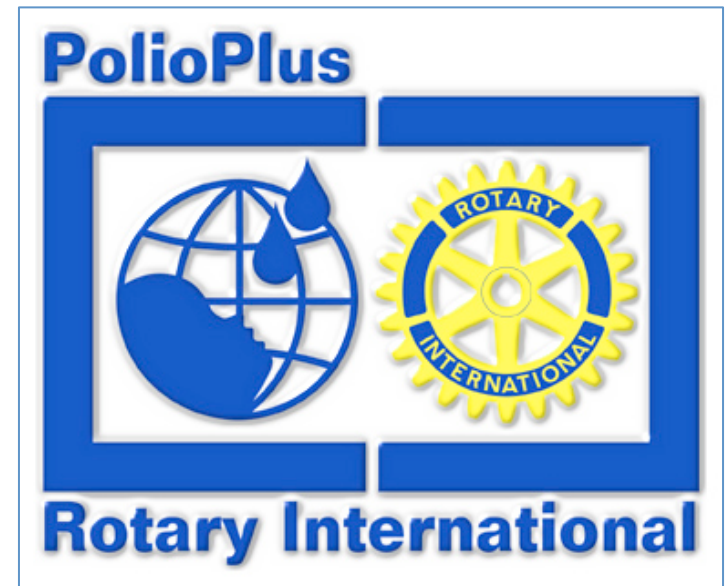
Next Eradication Target: From Smallpox to Polio

- **1979** – The initiative to eradicate polio grew out of the smallpox success story, coupled with the growth of the Expanded Program on Immunization (EPI), and the United Nations declaring that 1979 would be “The Year of the Child”
- This UN declaration inspired Rotary International to focus its humanitarian efforts on providing immunization, and increasingly on polio
- **1980s** - Canadian government and Connaught Laboratories played growing roles in funding EPI and collaborating with WHO and UNICEF in providing vaccines and/or facilitating local production, particularly polio vaccines



Next Eradication Target: From Smallpox to Polio

- **1985** - Building on EPI, Rotary International launched its PolioPlus program, just as the Pan American Health Association launched plan to eradicate polio from the America's by 1990
- Rotarians sought a common cause for all and decided to focus on eradicating one disease that everyone loved to hate
- Rotarians in North America, often with their own experience of epidemics, keenly recognized that polio's effects were particularly devastating in the developing world, where "The Crippler" still raged despite the availability of two effective polio vaccines

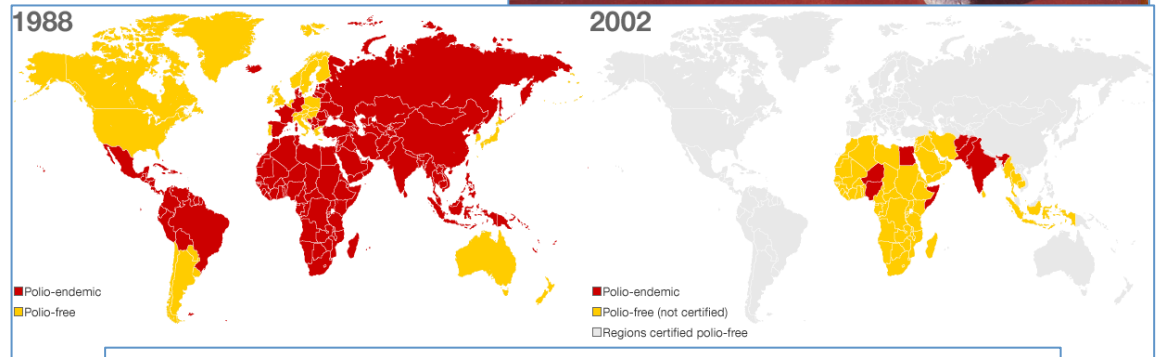


- There were some 350,000 polio cases each year globally when "PolioPlus" began

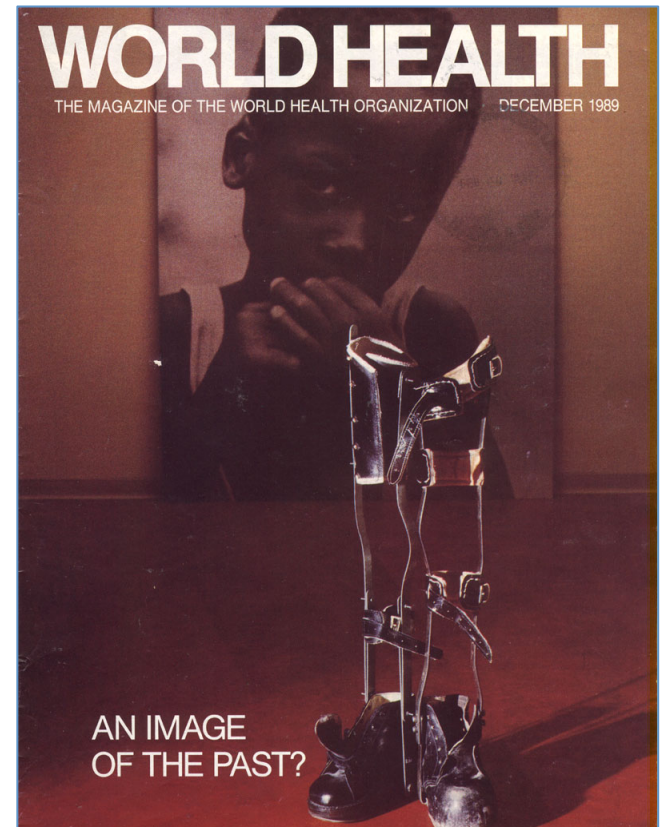
On the Long Road to Global Polio Eradication

- **1988** – Encouraged by raising \$219 million, almost double Rotary’s original target, the WHO pledged to expand the goal of polio eradication in the Americas to the entire planet by 2000
- Canada was one of the first nations to participate, providing Rotary International with \$2 million
- The challenge was more daunting than the WHO faced when it launched the smallpox eradication program in 1967; then smallpox was endemic in 28 countries

- **1988** - 35,225 paralytic polio cases reported in 127 countries, and a total of roughly 350,000 cases of polio reported globally

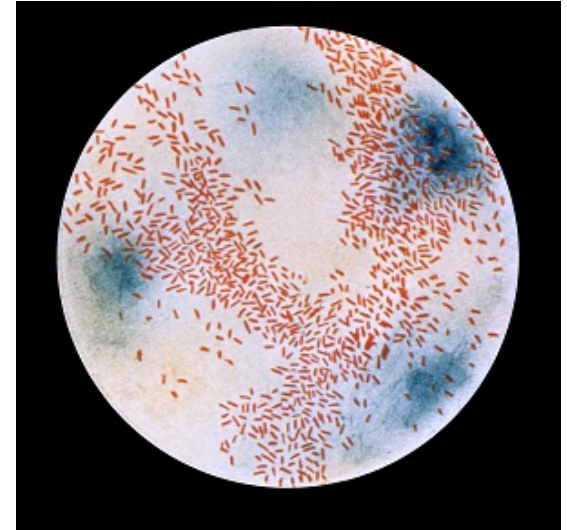


- **2002** – 1,918 cases reported in 7 countries



Targeting *Hib*: *Haemophilus Influenza b*

- **1988** – At about the same time as the polio eradication initiative began, another disabling childhood disease became vaccine preventable
- *Haemophilus influenzae type b* (Hib) is an invasive type of meningitis first identified in 1892
- Type b can strike children under 5, and is especially dangerous to infants and young children
- It's a cause of bacteremia, pneumonia, epiglottitis and acute bacterial meningitis, and can sometimes cause cellulitis, osteomyelitis and infectious arthritis
- *Hib* incidence was not especially high, but its impact was often long term, causing blindness, deafness, learning disabilities, mental health defects and physical handicaps, and it could also be fatal



Targeting *Hib*: *Haemophilus Influenza b*

- **1988** – Jessica, the 9-year-old daughter of Dr. Rob Van Exan (bottom right), a key figure in the development of Connaught Labs' newly launched ProHIBiT vaccine, gave a speech to her class about *Hib*:

“It causes your brain to swell, and that can cause blindness, deafness, mental retardation or death. Hib can also cause an infection of the lungs called pneumonia, or the throat or the bones or the joints. Hib is very sad because it mostly attacks children under two.”

Nine year old Jessica gives speech on Hib

This speech was presented to the Toronto Montessori School Upper Level Class by Jessica Van Exan, age 9.

Jessica is the daughter of Dr. Robert Van Exan, Manager, Technical Services - Domestic Marketing, and the following is a reprint of Jessica's speech.



Jessica and her brother Nicholas.

Hi my name is Jessica im studiung on (hee mo'filus) in-fluenzae type b or (hib) for short heemo'filus in-fluenzae is a germ or bacteria which can go into your brain and damage your nerve's.

It causes's your brain to swell and that can cause blindness, deffness, mental retardation or death. Hib can also cause an infection of the lungs called pneumonia, or the throat or

the bones or the joints. These infection's can also cause death. Hib is very sad because it mostly attacks children under 2.

Vaccine's are medicine to prevent diseas'es. the first vaccine for (hib) was in 1986. The first vaccine for (Hib) was very safe but did not stop all of it. It did not work for children under two because their immune systems are too young to respond.

The immune system is some-thing in your body that protects you from disease's but it need's to be turned on by some-thing like a vaccine. In young children this system is hard to turn on. That's why

the first vaccine didn't work on young children.

Now there's a new vaccine for (Hib). It is also very safe. Dr. Robert Van Exan said that it is one of the safest vaccine ever made. He also said the new vaccine is much stronger then the old one. This new vaccine can turn on the immune system even in young babies's. because the new vaccine works in children under two it can stop most of the (Hib) disease's. It took ten years to make this vaccine. scientists have been working on this since before I was born.

Thank you for listening to my speech and hope you enjoyed it.

Sanofi Pasteur Canada Archives

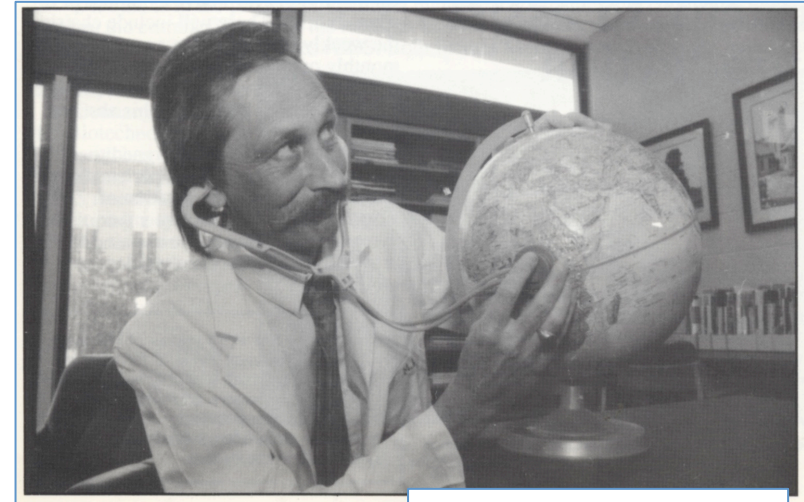


At the HIB press conference (l to r): Dr. Garry Humphreys, Dr. Ronald Gold (Hospital for Sick Children), Dr. William Cochrane and Dr. Rob Van Exan.

Cablegram, April 1988, p. 1

Targeting *Hib*: *Haemophilus Influenza b*

- **1984** - Four years earlier, Rob Van Exan began working with his Connaught colleagues on a *Hib* vaccine
- **1986** – The first *Hib* vaccine was not effective for children under two, since, as Jessica put it, “The immune system is something in your body that protects you from diseases, but it needs to be turned on by something like a vaccine. In young children, this system is hard to turn on.”
- **1988** – The improved *Hib* vaccine incorporated diphtheria or tetanus toxoid to, in effect, “turn on the immune system even in young babies,” Jessica wrote. “Because the new vaccine works in children under two, it can stop most of the (Hib) disease.”



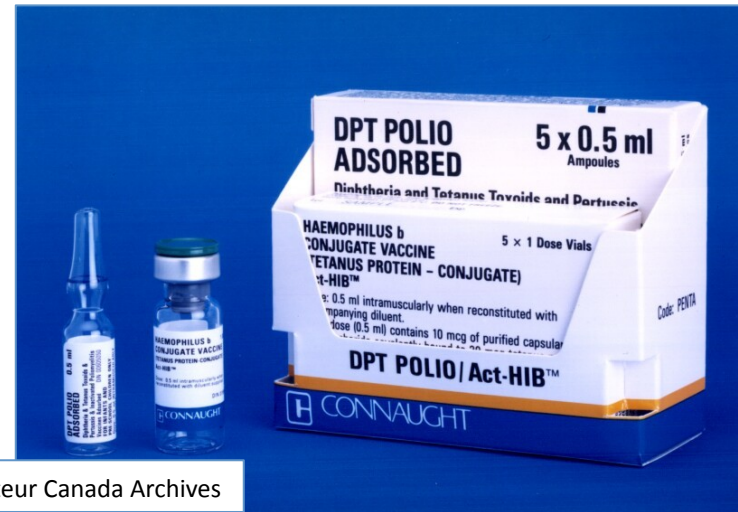
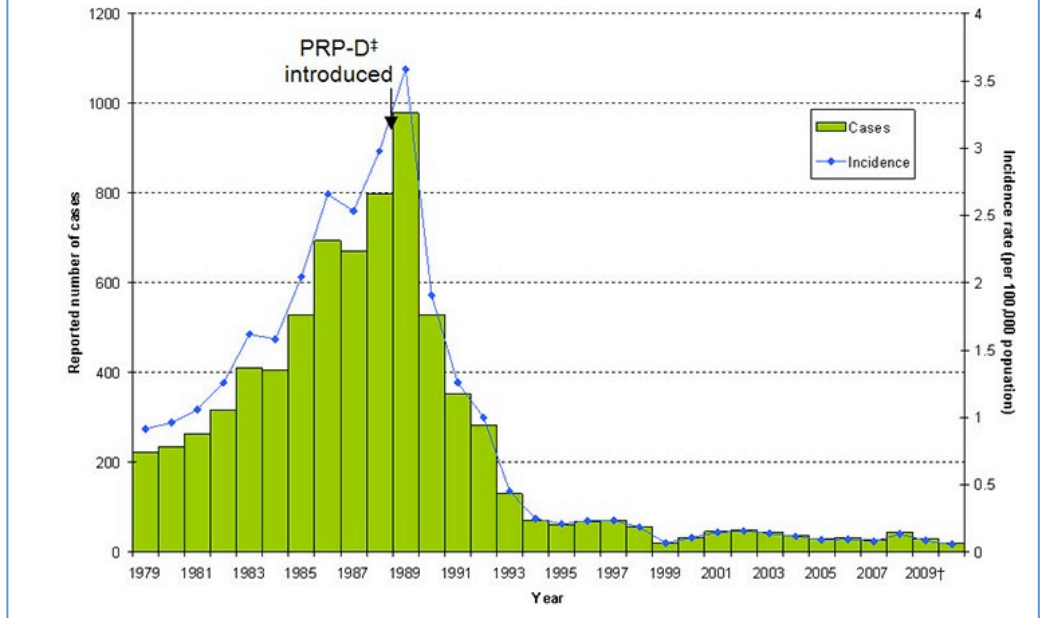
Sanofi Pasteur Canada Archives



Targeting *Hib*: *Haemophilus Influenza b*

- Indeed, since the introduction of *Hib* vaccine, the disease has been virtually eradicated in Canada
- **1992-94** - Connaught integrated the conjugate *Hib* vaccine with its line of pediatric combinations, such as Act-Hib+DPT and PENTA, which included Salk IPV

Figure 1: Reported cases[†] and incidence (per 100,000 population) of *Haemophilus influenzae* type b (Hib) in Canada by year, 1979 to 2010*.



Sanofi Pasteur Canada Archives

Managing the Meningitis Menace

- **Jan-Feb 1989** - Another type of meningitis -- meningococcal meningitis, caused by the *Neisseria meningitidis* bacteria -- was a more immediate threat when an unusually severe outbreak occurred in Victoria County near Lindsay, ON; a 10-year-old girl died and 10 children were sent to hospital
- Rob Van Exan, Manager of Domestic Marketing, facilitated Connaught's vital contribution to the Ontario Ministry of Health's bold response
- Connaught provided an initial 10,000 doses of vaccine for all children in the area from 6 months to 18-years-of age, and then an additional 12,000

Globe & Mail, Feb. 22, 1989, p. A1

10,000 to get meningitis inoculations

Outbreak in Ontario county prompts clinics for children

BY LAWRENCE SURTEES
The Globe and Mail

All children from 6 months to 18 years in three townships in Victoria County and in its main town, Lindsay, are to be vaccinated against bacterial meningitis, the Ontario Ministry of Health announced yesterday. One girl has died of the disease and 10 other children have been sent to hospital.

It is the first time public health officials have

taken such a step anywhere in Canada in more than 40 years. The clinics begin today.

The decision was made by Dr. Richard Schabas, the chief medical officer of health for Ontario, after the 11th case of meningococcal meningitis since Jan. 1 was reported in the county last Friday.

Local health officials plan to vaccinate 10,000 children from Lindsay and nearby Ops, Emily and Manvers townships, said Dr. Donald Mikel, the medical officer of health for the Haliburton,

Kawartha and Pine Ridge District Health Unit.

Children 6 months to 5 years of age will be vaccinated today and tomorrow at clinics in Lindsay and at schools in the three townships. Clinics for children 6 to 18 will be held from Friday to Tuesday at selected schools.

The Health Ministry is paying for the shots, which will cost \$80,000, a spokesman said.

The extraordinary measure is being taken

CHILDREN — Page A2

Swift response to meningitis outbreak

Connaught employees here and at CLI responded quickly and with concern this past February to meet the apparent Ontario health care crisis caused by the meningitis outbreak in Victoria County.

During the normal winter season in Canada an average of 200 cases of meningitis are reported.

However, during the first two months of 1989, in a small isolated area of Victoria County, Ontario, a meningitis outbreak occurred at 100 times the expected attack

rate for the disease.

The normal treatment in cases such as these is to treat afflicted individuals with antibiotics to halt the spread of the meningococcal bacteria. This treatment was not effective and the meningitis continued to spread.

On February 21, the Ontario Ministry of Health requested 10,000 doses of vaccine (3,000 shipped from CLL and the remainder of 7,000 from CLI) to immunize children between the ages of six months and 18 years.

Through the efforts

of CLL, an additional 12,000 doses were expedited from CLI's facilities, and made available for the Ministry of Health.

According to Dr. Rob Van Exan, of Domestic Marketing, it appears through the outstanding cooperation of all personnel involved, the initial immunizations appear to have been successful and the meningitis has not spread outside the original site.

Congratulations on a job well done to everyone at CLI and CLL who helped make this possible.

Cablegram, Apr. 1989, p. 1

Sanofi Pasteur Canada Archives

Managing the Meningitis Menace

- **1991-92** – A much more serious meningitis outbreak situation affected several parts of the country – P.E.I, Quebec, Ontario and B.C., and prompted an intensive response from provincial governments that relied heavily on Connaught to expedite the provision of some 550,000 doses of vaccine within a 3-week period

- **1992-93** – Further meningococcal outbreaks in Nova Scotia and efforts to prevent another in Quebec, led to a major effort at Connaught to supply vaccine for large scale immunization efforts in both provinces; Rob Van Exan (centre of photo), working closely with each

Globe & Mail, Jan. 13, 1992, p. A4

Mass inoculation planned

Ontario, Quebec hope to end 'panic' over meningitis

BY SCOTT FESCHUK
Special to The Globe and Mail
The Ontario and Quebec governments will announce today details of a mass inoculation aimed as much at easing fears about meningitis as pre-

announced Saturday that as many as 70,000 Outaouais youths would be given the vaccine. Two people in the region, including one teen-ager, have died from meningococcal disease in the past month. Four have

out of the question. Ms. Lankin said she waited for the advice of public health officials before acting. The officials told her Friday that widespread vaccination may be necessary.

ON GUARD / Experts say the decision to embark on mass inoculation is a prudent one. Globe & Mail, Jan. 14, 1992, p. A1

Provinces' vaccine blitz on meningitis lauded

BY ROD MICKLEBURGH
Health Policy Reporter
THE launching of the largest anti-meningitis immunization program in Canadian history may not provide complete protection against the disease. But it is the right thing to do at the right time, experts said yesterday, if only to quiet public concerns. "One of the functions of public health is to reassure the public," said Ronald Gold, head of the infectious

disease division at the Hospital for Sick Children in Toronto. "There certainly is a lot of panic. People are very scared. This is one of the most rapidly fatal infections we know of. That scares people. Justifiably." Meningococcal disease is a bacterial infection of the membranes surrounding the brain and spinal cord. In severe cases, it spreads rapidly throughout the body with potentially fatal consequences.

The disease is spread most commonly through sneezing and coughing. Mass immunization programs aimed mostly at children and teenagers have been organized in the Ottawa region of Ontario, several regions in Quebec and the whole of Prince Edward Island after an unusually severe outbreak of the disease in those areas. In the past month, four deaths have occurred from the disease in

the Ottawa area, three of them high-school students. Steve Corber, Ottawa's chief medical health officer, said additional cases are expected. Dr. Corber said the health department is recommending that high-school dances be postponed until the end of January, and that teen-agers try to avoid being in crowded areas for long periods of time. Please see IMMUNIZATION — A2 Editorial — A14

CONNTACT

FEBRUARY 1993

PAGE 4

Thank You Everyone - We couldn't have done it without you!!

In the January edition of CONNTACT, Connaught's recent response to the need for Meningococcal Vaccine in the Province of Quebec was the subject of one of the articles. The Quebec Ministry of Health had responded not only to several deaths in the province, but was also trying to avoid outbreaks similar to those during the winter of 1991. The result was the decision in late November to proceed with the immunization of 1.7 million residents...a formidable task!!

From the initial inquiries by the Quebec Ministry of Health starting in early November to the successful delivery of the first 500,000 doses, there was an enormous amount of effort put forth to make this venture a success. The result was an incredible cooperative undertaking by many groups in France, Ottawa and Willowdale. The individuals involved are to be commended for their commitment and tireless efforts.



(L-R) Dale Russel, Don Wilkins, Richard Robinson, Rob Van Exan, Irene Clement, Martha Madaleno, Azim Gilani.

Sanofi Pasteur Canada Archives

Connaught Labs, Sold Again: The French Connection

- **1989-93** – Connaught’s response to the meningitis outbreaks took place in the midst of another major transformation for the company
- Connaught’s supplying of vaccine during the Lindsay, Ontario area outbreak in early 1989 depended in large part on vaccine produced by Connaught’s Swiftwater site
- However, during the larger 1991-93 outbreaks Connaught also secured vaccine from Institut Merieux in Lyon, France, which became their new owner at the end of 1989

CONNTACT

CANADA
AWARDS FOR
BUSINESS
EXCELLENCE

F NEWS FOR THE EMPLOYEES OF CONNAUGHT LABORATORIES LIMITED

JANUARY 1990 VOLUME 3, NUMBER 1



Mérioux's new research building at the Marcy-L'Étoile complex near Lyon. The building opened in 1989.

Progress begins as part of the Mérioux organization

The process is now well under way. The ongoing collaboration between managers and staff of Connaught and our new parent company, the Institut Mérioux S.A., began early in 1990. Connaught President, Peter Campbell, flew to Lyon, France on New Year's Day for a full week of discussions with Jacques Francois Martin, Directeur Général of Mérioux.

Discussions continued the following week at Willowdale, Swiftwater, Marcy-L'Étoile, Lyon and Paris as key employees from both companies began the all-important process of learning more about each other's organizations, which together now form the largest vaccine manufacturer in the world.

Five special task forces have been established to deal with for-

Please see MÉRIOUX/page 2

New year, new decade, new phase in our future all began on January 1st: Peter J. Campbell

Connaught's President, Peter J. Campbell, travelled to Lyon, France on New Year's Day to meet with Jacques-Francois Martin, Directeur Général of Institut Mérioux.

"I wanted to start the New Year, the new decade and the new phase of our Company's future on a symbolic date – that's why I travelled on January 1, 1990," said Mr. Campbell.

Mr. Campbell's impressions of his visit follow:

"My business meetings with J.-F. Martin and his colleagues were very productive and amicable. We rapidly established a very comfortable working relationship that I believe will enable us to better maximize the potential for collaborative growth that exists in both organizations.

"Peter Wilson, Corporate Vice-President, International, and I also toured the Marcy-L'Étoile production facility with M. Galy, Directeur Général, Direction Des Opérations Bio-Industrielles. M. Galy is justifiably proud of the very impressive, large capacity, high quality product facility at Marcy-L'Étoile. Both Peter Wilson and I were impressed with the production, research and office facilities and the people we met. We were also very appreciative of our warm, cordial reception.

"Not only do I feel optimistic about the opportunities that exist in the combining of the capabilities and strengths of both organizations – I know that I will also enjoy working with my new business associates and that I will have an opportunity to make many new friends amongst our Mérioux colleagues," Mr. Campbell concluded.

Sanofi Pasteur Canada Archives

Connaught Labs, Sold Again: The French Connection

- **1984-87** – Connaught’s owner since 1972, the Canadian Development Corporation (CDC), divested some of its shares to the public, while Connaught privatized under the holding company, Connaught Biosciences Inc.
- **1986-87** - CDC unsuccessfully approached U.S. investors when Canadian buyers proved unwilling to invest in Connaught
- **July 1987** - CDC divested itself completely of remaining 25% of its Connaught shares; 1/2 going to Institut Merieux and 1/2 to Caisse de Depot et Placement du Quebec (Quebec Pension Plan)
- **1988-89** – Several attempts by Merieux to buy majority of Connaught shares, prompting some resistance on several fronts

Canada Development Corp. wants to go on its own but only if the market is ready to buy its shares. It doesn't want a repeat of the Britoil fiasco

CDC poised to shed Ottawa's lingering grasp

Connaught needs us, Mériex chief says

By Fred Lebolt Toronto Star
For Canada Development Corp., timing has become every-
government-created company, with funding interests ranging from oil and gas to high technology, is awaiting the start of Ottawa's promised sell-off of its 49-per-cent share in CDC.
"All other things being equal, the sooner the government sells its shares, the better," CDC chief executive said in a statement.

By James Rusk
The Globe and Mail
LYON, France
Connaught BioSciences Inc. of Toronto has little chance of making it as an independent company in the rapidly evolving world of vaccines, pharmaceuticals and biotechnology, says a top executive of the French company bidding for control of Connaught.
"I really believe it is a matter of survival," said Jacques Martin, general manager of Institut Merieux SA of Lyon, in an interview. "Connaught is a dead company for sure in 10 years."

Colin Macdonnell, Toronto Star

take "early or inappropriate" action because it might make it hard for CDC to raise new investment money in the market. "It's not in our interest to have a mess in the aftermarket," he says.

month loss this year to \$102 million, compared with a \$85-million profit during the same period last year.
By the end of the year, about 2,000 employees from CDC's various holdings will have been laid off, a CDC spokesman says, and for the first time the company will wind up a year on the losing side of the ledger.
The financial problems have been aggravated by escalating interest rates, says a top executive.

Connaught Biosciences Inc.					
	\$ million				
	1986	1987	1988	1989	1994
Revenue	224.3	224.0	185.5	121.5	94.9
Gross profit ‡	128.1	87.4	70.1	46.8	40.4
Research & Devel.	27.3	18.9	13.5	10.8	10.7
- % gross profit	21%	22%	19%	23%	26%
‡ Revenue minus cost of sales					
Source: Annual report					

Connaught Labs, Sold Again: The French Connection

• Sept-Dec 1989 - Merieux's offer subjected to intense review by Investment Canada and the Canadian media, but the deal for Connaught's Toronto and Swiftwater sites was finally accepted for \$943.5 million



Sanofi Pasteur Canada Archives

U of T, Merieux reportedly near a deal on Connaught dispute

BY JAMES RUSK
The Globe and Mail

The University of Toronto is considering whether to accept a deal with Institut Mérieux SA to guarantee increased medical research funds for the university if Mérieux's bid for Connaught BioSciences Inc. is successful.

A decision on the offer from Mérieux of France had been expected yesterday but James Keffer, the university's vice-president of research, was out of Toronto and unable to give final approval to the agreement, according to sources close to the negotiations.

Dr. Keffer will be in his office this morning and his decision on the proposal is expected later today, those

When the university launched a lawsuit in July seeking an injunction barring Connaught from carrying out an agreement to merge with Mérieux's human health business, Mérieux left the negotiations for a settlement with the university to Connaught, the sources said.

Since early September, however, when a Swiss-U.S. consortium bid \$30 a share for Connaught and Mérieux responded with its \$37-a-share offer, Mérieux officials have privately chafed at Connaught's inability to reach an understanding with the university, the sources said.

Mérieux's anxiety increased last week, when the university struck an agreement with Mérieux's rival,

for an injunction against Connaught that would reinstate the Connaught board, which has already accepted the Mérieux bid, from co-operating with the French company.

An agreement between the university and Mérieux would be similar to one reached earlier between the university and J.V. Vax, which is also bidding for the Toronto vaccine maker.

That agreement calls for Connaught, if owned by J.V. Vax, to finance \$15-million (in 1989 dollars) worth of medical research at the university over the next 10 years and an additional \$10-million at other Canadian universities and research institutes.

In return, the university gives Connaught, which has been giving it about \$400,000 a year for research support, the right of first refusal on the commercial.

The Ontario Supreme Court heard the application for an injunction in a two-day hearing last week and a ruling is expected shortly, perhaps as early as today.

While the university's lawyers conceded in court that they could not block Connaught shareholders from selling their shares to a foreign buyer, they argued that a 1973 agreement between the university and the federal government prevents the board from dealing with a foreign buyer.

In 1972, Connaught Laboratories Ltd., now a subsidiary of Connaught BioSciences, was sold by the uni-

Globe & Mail, July 17, 1989, p. 39

Broader-based Merieux measures up as Connaught of France

BY JAMES RUSK
The Globe and Mail

LYON, France
Institut Mérieux SA, the company trying to take over Connaught BioSciences Inc. of Toronto is, by most yardsticks, Connaught of France.

Not only does Lyon-based Mérieux occupy a corporate niche strikingly similar to that of Connaught, but the French feel about Mérieux much the same way Canadians feel about Connaught.

Mérieux's move on Connaught has provoked criticism both from Connaught shareholders who fear the deal is not in the company's best interests and from

that would prevent the proposed transaction and that Connaught will vigorously oppose the suit. He said without the merger, Connaught risks becoming a peripheral participant in the pharmaceutical and vaccine industry.

Mérieux's history is broadly similar to Connaught's. Founded by a disciple of Louis Pasteur, it is still in the Mérieux family. Its chairman, Alain Mérieux, is a grandson of the founder.

One of the company's proudest moments came in 1974 when it built a plant in just three months to produce 80 million doses of vaccine for Brazil, where a nationwide hepatitis epidemic had broken

by two businesses: veterinary medicine at 33 per cent of sales and poultry genetics at 11 per cent. A year ago, Mérieux bought Shaver Poultry Breeding Farm Ltd. of Cambridge, Ont., one of the world's top poultry breeding companies, from Cargill Inc. of Minneapolis.

Mérieux's human health business is not limited to vaccines. The company is one of the world's leading producers of medical products derived from human blood, which it obtains by separating (the process is called fractionation) more than a million litres of blood a year from placen-

tion Inc. of Cambridge, Mass.

Mérieux is also working with Dr. Jonas Salk, discoverer of the first polio vaccine, on a drug that may enhance the performance of AIDS vaccines and immune drugs.

In addition, the company has asked U.S. drug licensing authorities for permission to conduct the first U.S. trials of a promising herpes vaccine now being tested in France.

These developments could take Mérieux to the forefront in biotechnology. Mr. Martin said that if we succeed (with the merger with Connaught), we will develop the biotechnology industry in Cana-

support the kind of research and development budget needed to get into the biotechnology race. Connaught, the only North American company in the field not already part of a bigger group, was the obvious choice.

Later that year, when the Canada Development Corp., which then controlled Connaught, sold its 25.5 per cent interest, Mérieux picked up half the block along with Quebec's Caisse de Dépôt et Placement du Québec. Mérieux has a first-refusal agreement on the caisse's 19.95 per cent block.

But from the outset, Mr. Martin said, his goal was never a minority interest in

28th YEAR, NO. 7,030 ■ THURSDAY, DECEMBER 14, 1989

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Institut Mérieux wins bid for Connaught

After months, Ottawa gives nod to French firm

BY JAMES RUSK
The Globe and Mail

After one of the longest pursuits in Canadian corporate history, Institut Mérieux SA of France, a company controlled by the French government, yesterday won the battle for control of Connaught BioSciences Inc. of Toronto.

The stage for the French victory was set when Industry Minister Harvie Andre announced before markets opened in the morning that the bids of both Mérieux and its rival, J.V. Vax Inc., a Swiss-U.S. consortium, had been approved by Ottawa.

That threw the fate of the company into the hands of its shareholders, and the \$37-a-share offer from Mérieux appears certain to prevail over the \$30-a-share bid from J.V. Vax, controlled by Ciba-Geigy Ltd. of Switzerland and Chiron Corp. of Emeryville, Calif.

After the decision was announced, Connaught's shares, which for some weeks had been drifting in the mid-\$30s, about halfway between the two bids, shot up in price to just under the Mérieux price.

THE TWO BIDS		
	Institut Mérieux	J.V. Vax (Ciba-Geigy/Chiron)
Price per share	\$37	\$30
Total	\$942.5-million	\$764.2-million
Undertakings to Government		
R and D spending	\$32-million for 5 years (\$160-million total)	\$25-\$30-million for 8 years (\$200-\$240-million total)
University research	\$15-million over 10 years (\$9-million to U of T)	\$25-million over 10 years (\$15-million to U of T)
Wilowdale Biotechnology Centre	\$30-\$40-million operational in 7 years	Feasibility Study
Products	Some overlap between Connaught and Mérieux	New vaccines for Connaught
Board	10 member: 5 Cdn. 5 Mérieux (chosen after consultation with Cdn. governments)	Appointed by Ciba-Geigy Set up Cdn. Scientific Advisory Board
Shares to Canadians	Up to 49% Connaught shares Up to 49% Mérieux shares	Chiron listed in Canada
Priority for new company	Expand into Europe	R and D high level technology

Source: Lévesque Beaudin Inc.

On the Toronto Stock Exchange, they closed yesterday at \$36.87, up \$4.37, on volume of 339,750 shares. On the U.S. over-the-counter market, they were up \$3.50 (U.S.) to close at \$31.75, on volume of 188,000 shares.

Both bids expired yesterday

and, late in the afternoon, J.V. Vax issued a statement saying that Connaught shareholders "presumably and understandably" would prefer the Mérieux offer.

As a result, J.V. Vax, which has said for over two months that it would not raise its price, said it was letting its offer expire at



Jacques Martin, left, managing director of Mérieux of France, and Brian King, right, chairman of Connaught shares in Canadian vaccine maker rose after French firm's bid won out.

midnight last night.

The company did not say whether it would tender to Mérieux the 2,045,650 common shares, or 9.4 per cent of Connaught's shares, that it had acquired before making its offer in mid-September.

J.V. Vax officials said late yesterday afternoon that they were still discussing what to do with the bid.

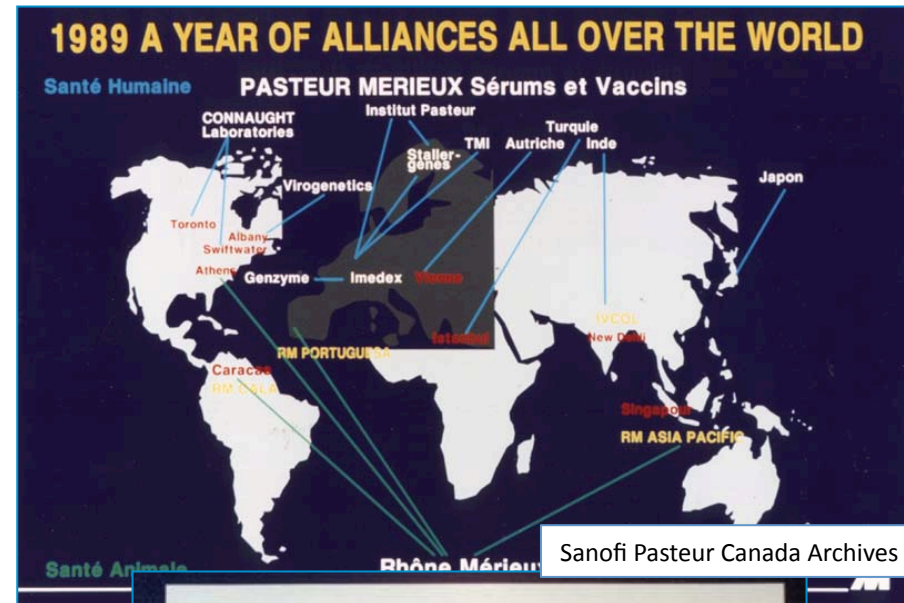
which they stand to make a gross profit of about \$14-million.

Richard Williams, J.V. Vax's chief financial officer, said he felt the consortium had been able to present Ottawa with a unique proposal to transfer top-drawer technology to Canada and make Connaught the worldwide headquarters of the vaccine company

Globe & Mail, Dec. 14, 1989, p. B1

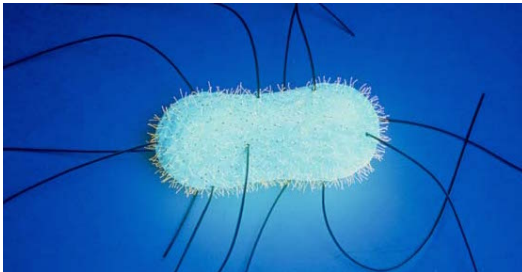
Connaught Labs, Sold Again: *The French Connection*

- **1897** - *Institut Merieux* (IM) created by Marcel Merieux, who had worked with Louis Pasteur; created same year as Swiftwater site
 - **1968** - *Rhone-Poulenc* acquired 51% of IM
 - **1974** - Pasteur Institute established *Pasteur Production* focused on vaccine production
 - **1985** - Pasteur Production acquired by IM to create Pasteur Vaccines
 - **1989** - IM acquires Connaught in Canada and US
- **1990** - *Pasteur Merieux Serums & Vaccines* (PMsv) created
 - **1996** - *Pasteur Merieux Connaught* (PMC) new name of PMsv



Persistent Pertussis: *Building the Next Generation Vaccine*

- **1987-96** – Amidst Connaught’s transformation into “Pasteur Merieux Connaught,” the major R&D focus in Toronto was on transforming pertussis vaccine
- **1970s-80s** - After several improvements in the production of the “whole cell” pertussis vaccine, concerns persisted about a possible connection between its use and rare adverse reactions
- Some parents declined to have their children immunized against pertussis, and some countries, such as Sweden and Japan, scaled back or suspended their pertussis immunization programs, inevitably resulting in significant spikes in pertussis incidence



Lawyers begin defence in infant vaccine case

Special to The Globe and Mail

MILTON

Lawyers for a drug manufacturer, the Ontario Government and two Burlington, Ont., doctors have begun presenting defences in a \$15-million lawsuit that alleges a boy's brain was permanently harmed because he was inoculated with whooping-cough vaccine.

Donna and Colin Rothwell, parents of Patrick Rothwell, are suing Connaught Laboratories Ltd., the vaccine manufacturer, the Government and the doctors for compensation for pain and suffering, health-care costs and the loss of their son's

DPTP vaccine caused a reaction that damaged Patrick's brain after three inoculations.

The position taken by William Dunlop, lawyer for the Rothwells, is that when medical authorities and governments make decisions that benefit the majority of society, they must compensate the minority that the decisions harm.

In the first of three suits, the Rothwells name their former family physician, Daniel Raes, and Connaught Laboratories.

They allege that the doctor was negligent in administering the vaccine by not warning them of possi-

Whooping Cough Vaccine Found Not to Be Linked to Brain Damage

New York Times, March 23, 1990, p. A19

By

A study has found no evidence that a widely used whooping cough vaccine causes brain damage, researchers say.

The vaccine, which is routinely administered to babies in the first three years of life, has been blamed for seizures and other problems in a few of the infants who receive it. In recent years, parent groups and lawyers have argued that some children who receive it suffer severe brain damage that is long-lasting, if not permanent.

The vaccine against whooping cough, also known as pertussis, is given along with vaccines against diphtheria and tetanus. The combination vaccine, known as D.P.T., is normally administered three times in the first two years of life. The seizures and other problems had been attributed to the pertussis portion of the vaccine.

In England, Japan and Sweden, fears about whooping cough vaccine led to a widespread decline in its use, and outbreaks of whooping cough and many deaths followed. In the United States, many school districts require children to receive the vaccine so it has been difficult for worried parents to avoid having their children vaccinated. The threat of lawsuits has led some manufacturers to stop making the vaccine.

But in the new study, being reported

sis vaccines are needed because some children react to the killed bacteria in the version now in use. These children can develop fevers, persistent crying, and temporary unresponsiveness. But Dr. Cherry said these reactions did not mean that the vaccine caused permanent damage.

The new study, by Dr. Marie R. Griffin of Vanderbilt University School of Medicine and her colleagues, examined the risks of seizures and neurological complications in 38,171 Tennessee children, all on Medicaid, who received a total of 107,154 D.P.T. shots. They found no serious, long-lasting neurological complications. A small percentage of the children had high fevers and some had fever-associated seizures after the vaccine, but there was no increase in the incidence of epilepsy or other

An 'enormously reassuring' finding, says a pediatrician.

Persistent Pertussis: Building the Next Generation Vaccine

- **Late 1980s** - While studies could not establish a direct connection, a research team at Connaught focused on developing a less potentially reactive and more effective “acellular” pertussis vaccine prepared from only the key components of the bacteria necessary to stimulate immunity
- The Connaught team first focused on isolating the pertussis toxin, the primary antigenic component of the *B. pertussis* bacterium
- They next developed methods to isolate four additional critical components of the bacterium and pioneered a more efficient method for final chemical detoxification of these components

A NOVEL PROCESS FOR PREPARING AN ACELLULAR PERTUSSIS VACCINE COMPOSED OF NON-PYROGENIC TOXOIDS OF PERTUSSIS TOXIN AND FILAMENTOUS HEMAGGLUTININ

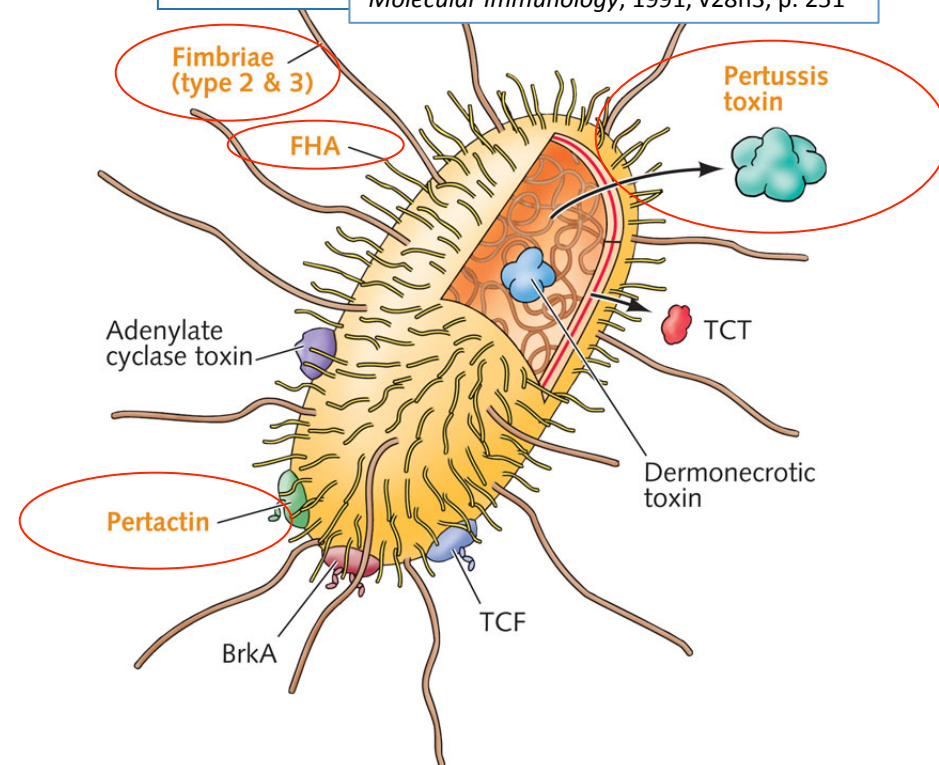
LARRY U. L. TAN,* RAAFAT E. F. FAHIM, GAIL JACKSON, KIMBERLY PHILLIPS,
PO WAH, DIRK ALKEMA, GLORIA ZOBRIEST, ANDREW HERBERT, LESLIE BOUX,
PELE CHONG, NADIR HARJEE, MICHEL KLEIN and JOHN VOSE

Connaught Laboratories Limited, 1755 Steeles Ave. West, Willowdale, Ontario, Canada M2R 3T4

(Accepted 1 May 1990)

Abstract—A novel process for preparing non-pyrogenic toxoids of pertussis toxin (PT) and filamentous hemagglutinin (FHA) is described. The process consists of chromatographies on perlite then on hydroxylapatite. Purification yields for PT and FHA are 62 and 68%, respectively. The purification process takes advantage of the novel use of perlite (a filter aid) for the simultaneous purification of PT and FHA. The hydroxylapatite, in addition to removing the remaining contaminants, also concentrates the antigens. The resulting PT and FHA are approximately 95% pure, and are non-pyrogenic as judged by the rabbit pyrogen test. The purification process is simple, inexpensive, and does not use blood components or toxic substances. The mild conditions in which the PT and FHA are purified ensure the recovery of native protein. The purified PT and FHA are detoxified in the presence of glycerol using glutaraldehyde and formaldehyde, respectively, to produce antigenic components of an acellular pertussis vaccine. The final PT and FHA toxoids are immunogenic in guinea-pigs and have been shown to be protective in the mouse intracerebral challenge test.

Molecular Immunology, 1991, v28n3, p. 251



Persistent Pertussis: *Building the Next Generation Vaccine*

- **1996** - After extensive clinical trials in several countries, Connaught's 5-component pertussis vaccine was licensed in Canada and soon exported globally
- Connaught's was among several similar acellular vaccines produced by vaccine companies, and administered in a variety of combination forms, such as Pentacel, which simultaneously prevents diphtheria, tetanus, polio, *Hib* and pertussis

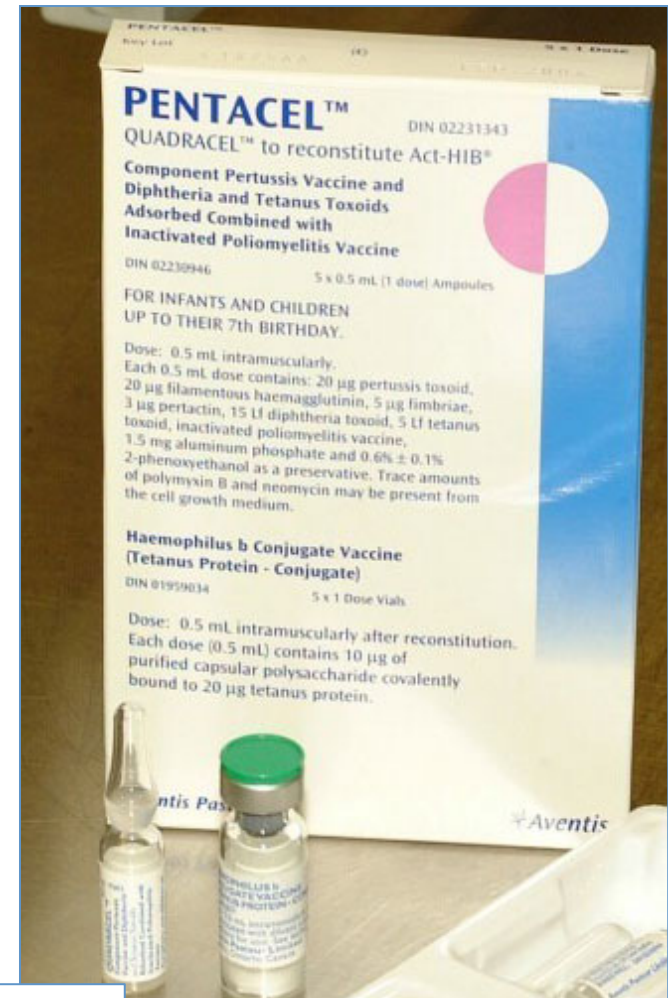
Dr. Raafat Fahim made the Component Pertussis announcement in the cafeteria and afterwards Mark Lievonen, Kathleen Seaver and Georges Hibon assisted with serving the cake.



Sanofi Pasteur Canada Archives

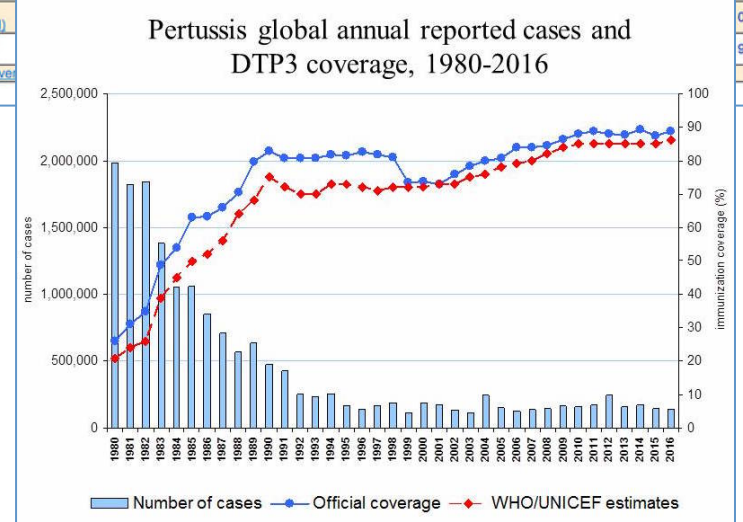
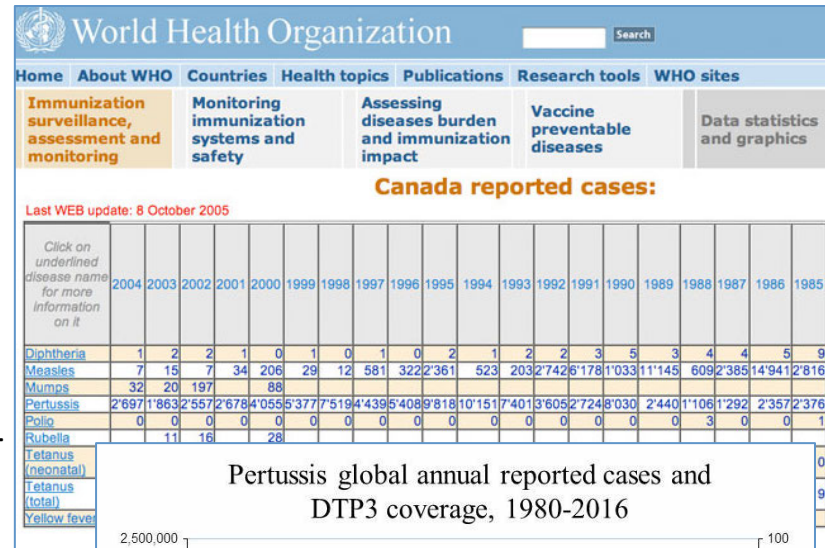
CONNAUGHT ACELLULAR PERTUSSIS VACCINE A HUGE SUCCESS IN CLINICAL TRIAL

Connaught's acellular pertussis vaccine proved to have the highest efficacy in a clinical trial in Sweden (85%). The Swedish announcement outlined the results which indicated that Connaught's five component vaccine also had fewer side effects than previous vaccines.



Persistent Pertussis: Building the Next Generation Vaccine

- Even with the new type of vaccine, pertussis has persisted in periodic outbreaks in Canada and elsewhere.
- **2015** - World wide, pertussis still affects some 24 million children yearly, resulting in nearly 90,000 deaths, although official reports total 142,000 cases and 89,000 deaths
- Adolescents and adults are significant sources of pertussis incidence as immunity fades over time, leaving older people vulnerable to pertussis infections transmitted to un-immunized infants
- **1999** - New combined booster vaccines for adolescents and adults, that include the new pertussis vaccine, along with tetanus and diphtheria, such as ADACEL, provide indirect protection to the very young, who are most vulnerable to the worst effects of the disease



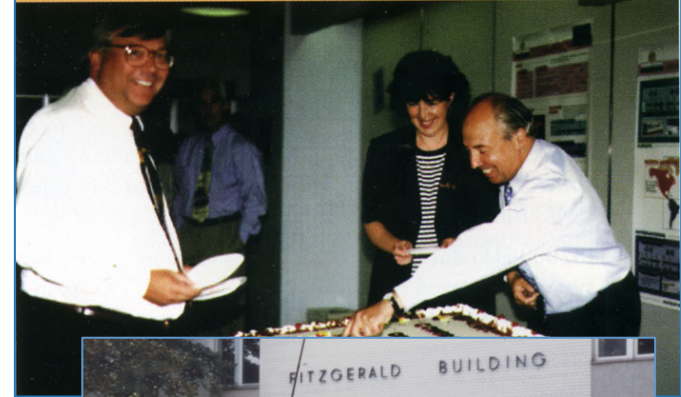
Sanofi Pasteur Canada Archives

Connaught's Leadership, And Another Transformation...

- Playing a key role in the launch of Connaught's component pertussis vaccine was Mark Lievonen, who then became President of PMC Canada in 1999, completing a long path at Connaught that began in 1983 when he joined the company as Assistant to the Director of Finance
- As President, Mark Lievonen would become Connaught's 2nd longest serving leader – the Lab's founder, Dr. J.G. FitzGerald served the longest (1914-40) -- holding the leadership position until his retirement in December 2016

- Mark is joining our class today and will participate in the Q&A session during the second half of the class

Dr. Raafat Fahim made the Component Pertussis announcement in the cafeteria and afterwards Mark Lievonen, Kathleen Seaver and Georges Hibon assisted with serving the cake.

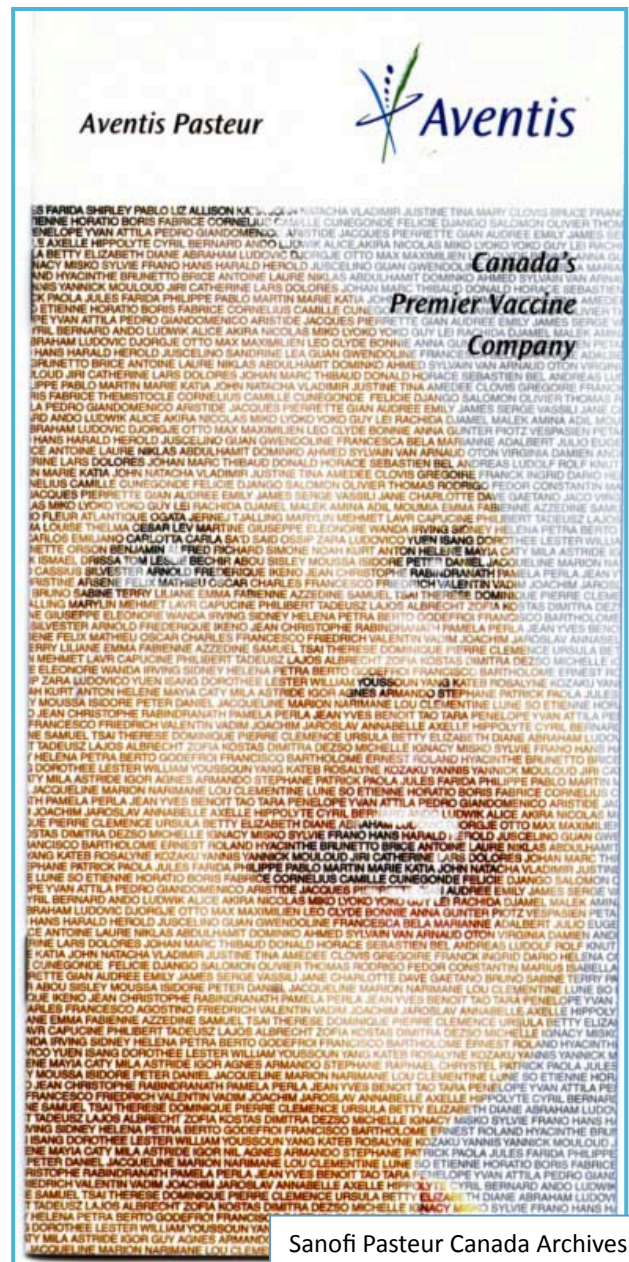


Sanofi Pasteur Canada Archives



Connaught's Leadership, And Another Transformation...

- **Dec 1999** – Mark Lievonen’s term as President began as the Connaught site underwent yet another major transformation
- This change was driven at the global level when Rhone Poulenc (RP), the parent company of Pasteur Merieux Connaught, completed a merger with Hoechst, a German life-sciences company, creating a new company to be called “Aventis”
- **1928** – Rhone Poulenc, a French chemical and pharmaceutical company founded
- **1863** – Hoechst founded near Frankfurt, Germany
- **1999-2000** – With the creation of Aventis, the human vaccines component, formerly known as Pasteur Merieux Connaught, became “Aventis Pasteur,” with the Toronto site becoming the “Connaught Campus”



What's In The Water...?

- **1996-2000** – While advancements in biotechnology transformed vaccine development, there was a clear drifting of attention away from infectious disease prevention and control among the public health community and provincial governments
- Exacerbating this drift were several policy directives by the Ontario government that included deep budget cuts to the Ministry of Health and local health units, as well as the Ministry of Environment, the latter involving the privatization of laboratory testing of local water supplies
- **May 2000** - The inevitable results of such drift and cuts surfaced in the small town of Walkerton, 150 km northwest of Toronto

Globe & Mail, Jan. 13, 1997, p. A1

Municipalities to pay more

Province to shift cost burden for welfare, child care, public health, care of elderly

BY MARTIN MITTELSTAEDT
Queen's Park Bureau

TORONTO — The Ontario government plans to shift a substantial portion of the costs for welfare, child care, public health, ambulance services and care for the elderly to municipalities.

Community and Social Services Minister Janet Ecker is expected to announce the changes today as part of a plan to re-examine the relationship between provincial and local governments.

Among the most sweeping actions Ms. Ecker will announce is that municipalities and the province will pay equal shares of Ontario's \$5.6-billion social assistance budget, according to a source familiar with the plan.

Currently, the province pays 40 to 50 new special-purpose regional bodies to administer welfare and workfare programs.

The source said child-care costs will be shared equally by the two tiers of government, and responsibility for licencing child-care facilities will be handed to municipalities.

The government will also hand local governments the responsibility for approximately \$1.7-billion in health costs, including a new arrangement to jointly finance long-term care for the elderly on a 50-50 basis.

Almost all long-term care currently is paid for by the Ontario province's population will lead to substantially higher costs, which now will be shifted in part to municipalities.

A new Crown agency with representatives from the province, municipalities and consumer groups will be selected to oversee the provision of long-term care, Ecker said.

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Toronto board of health defies order to cut budget

BY GAY ABBATE
The Globe and Mail

TORONTO — The Toronto board of health refused yesterday to make budget cuts ordered by the team in charge of amalgamating Metropolitan Toronto municipalities, saying that reductions of 15 per cent are not possible.

the population is aging and the situation for those on welfare is getting worse because of provincial cuts.

"It's just not rational to cut services."

Mr. Tabuns said that other boards of health will likely adopt the same

Globe & Mail, July 30, 1997, p. A5



What's In The Water...?

- **May 13, 2000** – In the town of Walkerton, many people started to fall ill, experiencing gastrointestinal upset and bloody diarrhoea, symptoms of what would soon be traced to *E. coli* infection via contaminated water (strain O157:H7)
- The Walkerton Public Utilities Commission, however, insisted that the water supply was “OK”, despite receiving lab tests from a private lab that showed evidence of contamination; not reported to Ministry of Environment
- **May 18-21** – Widening reports of illness across the community, from day cares to retirement homes, all with similar symptoms; the hospital overwhelmed with calls and many patients air-lifted to London; boil-water advisory issued
- **May 22** – The first death is reported, a toddler
- **May 24** – 3 more deaths; adults, two elderly; there would be a total of 7 deaths during the crisis

Bacterial outbreak kills four in Ontario

ESTANISLAO OZIEWICZ
The Globe and Mail, Walkerton, Ont.

What may be Canada's worst modern outbreak of bacterial infection from contaminated water has killed a toddler, an adult and two elderly women and left hundreds with bloody diarrhea and in some cases kidney failure.

More are expected to die in Walkerton, a western Ontario farm town



CTV News, May 26, 2000

A resident walks by a sign showing community feelings on a street in Walkerton, Ont. Friday May 26, 2000. (CP PHOTO/Kevin Frayer)

Out Of The Freezer: Remaking Smallpox Vaccine, Post 9/11

- **Sept 11, 2001** – Crisis management took on a whole new meaning after the terrorist attacks in the U.S. on “9/11”, with real and potential bioterrorist threats emerging in the attack’s aftermath
- **Oct 5, 2001** – Anthrax was distributed through the mail in contaminated letters to several U.S. media outlets leading to 11 people infected and 5 deaths
- **Sept 18, 2001** – A CNN report, only a week after 9/11, which pointed to the possibility of anthrax attacks, also suggested the potential use of smallpox as a bioterrorist weapon



Anthrax death raises fears of bioterror

BY CAROLYN ABRAHAM,
MEDICAL REPORTER

The 63-year-old man who died yesterday of anthrax in a Florida hospital lived along the same stretch of Palm Beach County where the Sept. 11 terrorists hid out and honed their aeronautical skills.

This is one of the disturbing coincidences nagging U.S. health officials as they struggle to explain their country's first case of inhalation anthrax in almost 24 years — a bacterial infection all too synonymous with bioterrorism.

Officials have no evidence linking this single anthrax case — unlike the more common form that infects through the skin — to a deliberate attack.

But since the orchestrated horrors wreaked on New York and Washington, they cannot afford to ignore coincidences.

See VICTIM on page A11

CNN.com / U.S.

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Biological attack threat real, but small

September 18, 2001 Posted: 1:22 AM EDT (0522 GMT)

By David Ensor
CNN Washington Bureau

WASHINGTON (CNN) — While U.S. officials say they have more evidence would-be terrorists remain in the United States and could be plotting more bombings, there is growing concern they may be trying to acquire biological weapons.

Many experts believe the United States is not fully prepared to deal with such an assault.

Experts say the most likely biological killer which terrorists might use is anthrax. Only 1 billionth of a gram -- the size of a speck of dust -- is lethal.

Agents made from anthrax first produce fever and stomach pains. A horrible death can occur within 24 to 36 hours of the onset of severe symptoms.

"It is spread -- let's say in a biological terrorism event -- it would go by aerosol. You dry it and spread it as a spray and let it drift over a long way," said D. A. Henderson, the director of the Center for Civilian Biodefense Studies at Johns Hopkins University.

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AMERICA'S - NEW WAR

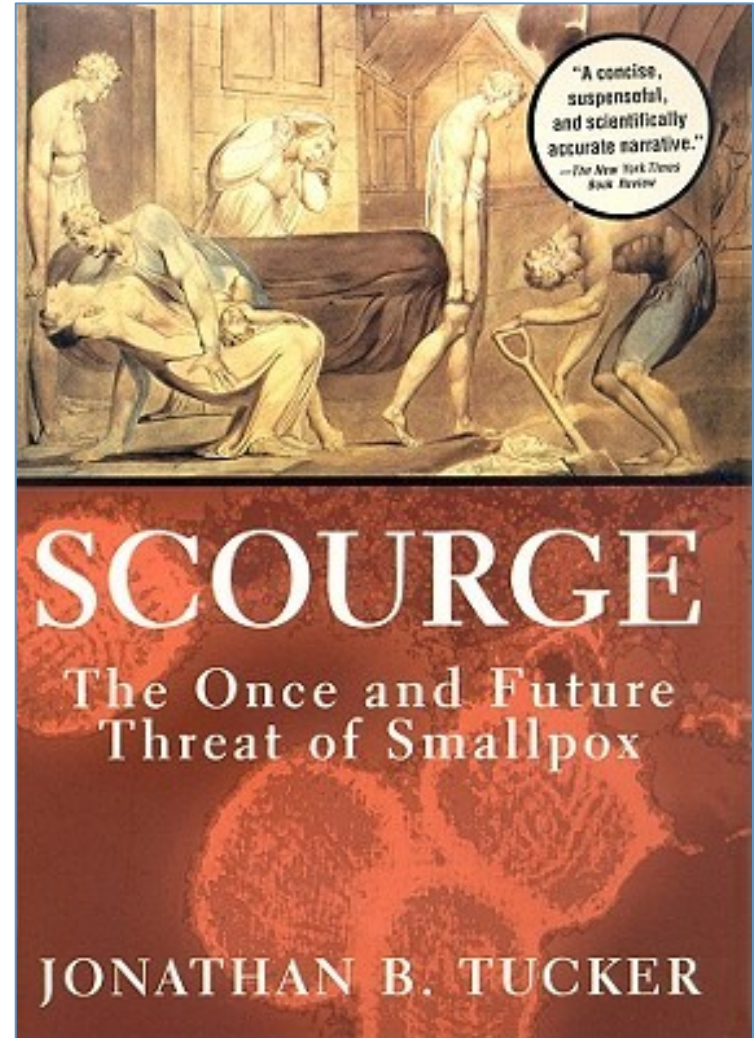
CNN.COM SPECIAL REPORT
VIDEO/AUDIO
Exclusive video of crash at WTC

CNN.com, Sept. 18, 2001

Out Of The Freezer:

Remaking Smallpox Vaccine, Post 9/11

- Fears of smallpox as a potential bioterrorist weapon drew on uncertainties about the security of two preserved samples of smallpox virus retained after its eradication in 1979, one in a US lab, and the other in a Russian lab
- Uncertainty related to the security of the Russian sample following the break-up of the Soviet Union
- Also reports that the Soviet Union undertook research to weaponize smallpox virus
- Fears that weaponized smallpox virus may fall into terrorist hands
- Smallpox fears drawn from 2001 book by Jonathan Tucker, *Scourge: The Once and Future Threat of Smallpox*, and media interviews with author



Out Of The Freezer: Remaking Smallpox Vaccine, Post 9/11

- **Oct-Nov 2001** – After initially scrambling to secure supplies of an Anthrax treatment, the Canadian government quickly turned to the potential smallpox threat and searched for smallpox vaccine
- Media coverage resurrected the story of Canada's last smallpox case, 14-yr-old Jimmy Orr, who, as we've discussed, sparked a major North American public health scare when he travelled from Brazil to Toronto via New York City, while ill with smallpox

Globe & Mail, Nov. 7, 2001, p. A1

Canada spearheads bioterror fight

BY BRIAN LAGHI, OTTAWA

Canada is playing a central role in an international effort to fight bioterrorism by having countries share detection skills, laboratory expertise and perhaps even vaccines that protect against smallpox.

Health Minister Allan Rock will play host to a meeting today in Ottawa with ministers from countries

including the United States, Britain and France to hammer out details of a plan to fight bioterrorism.

It will likely include how to cooperate in developing a smallpox vaccine that fights more strains than the existing one does and whether countries should get together to purchase medications in bulk.

"What they're likely to do [today] ... is mandate senior officials in

each country to follow up very quickly to flesh out the plan," a source said.

A joint statement, which officials are still drafting, would also include an agreement to share emergency and response plans, and promises to share high-tech lab testing and expand global disease surveillance.

See BIOTERROR on page A6

Spooked Canadians seeking smallpox vaccines from MDs

BY INGRID PERITZ, MONTREAL

Canadians are swamping doctors' offices and public-health departments with requests about obtaining smallpox vaccines, another measure of the nation's escalating anxiety over the menace of bioterrorism.

Canada has 380,000 flu shots a year, but smallpox is a secret. The secret is that the event is dreaded and the need for vaccination is urgent.

That has spooked Canadians and the threat of a smallpox attack from seeking a vaccine.

"A lot of people are asking, 'Where can I get a vaccine?' Toronto Public Health said yesterday that it doesn't even have a dozen doses left. People are often becoming ill because they don't have a vaccine. People are often becoming ill because they don't have a vaccine. People are often becoming ill because they don't have a vaccine."

Canadian officials are still drafting a joint statement, which officials are still drafting, would also include an agreement to share emergency and response plans, and promises to share high-tech lab testing and expand global disease surveillance.

but a handful of scientists who work with certain types of viruses.

"The vaccine is not available. There is no point in going and seeking a vaccination," Dr. Paul Gully, acting director-general for Health Canada's Centre for Infectious Diseases, said in an interview.

down with the disease after returning from Brazil. The last home-grown case in Canada was in 1946.

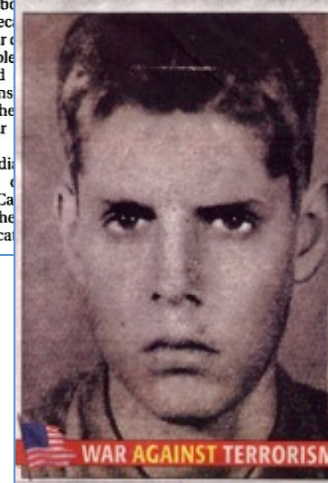
Worldwide, the last occurrence of smallpox was in Somalia in 1977; the disease was declared officially eradicated by the World Health Organization in 1980.

But smallpox is considered an ex- like and ded kills ped- that ated have



NOVEMBER 4, 2001 ■ 224 PAGES ■ 8 Sections ■ Vol. 29, No. 7 ■ TORONTO

SMALLPOX



Last Canadian case in '62 sparked widespread panic — could it happen again?

Special Report: Pages 29-32



DOTTY ORR-GUEDES holds a news clipping detailing the story of her brother Jim, pictured far left as a 14-year-old and inset today. Orr had the last confirmed case of the killer virus in Canada.

WAR AGAINST TERRORISM. PRESENTED BY YOUR ONTARIO FUEL DEALERS. Ready to GET YOURSELF ROLLING WITH 400 LITRES OF GAS FOR JUST 2¢ WITH ANY NEW VENTURE OR MONTANA VAN.

Toronto Sun, Nov. 4, 2001, p. 1

Out Of The Freezer:

Remaking Smallpox Vaccine, Post 9/11

- **Dec 2001** – Health Canada began the process to secure a supply of smallpox vaccine with its initial focus on potential U.S. producers
- **Nov 2002** – With bioterrorism fears easing and few options for expediting vaccine production, there was little news about smallpox vaccine for almost a year, until Health Canada announced Aventis Pasteur’s Canadian site (Connaught Campus) as the supplier

Ottawa starts talks over smallpox vaccine

BY BRIAN LAGHI, OTTAWA

The federal Health Department has begun the formal process of obtaining the vaccine that protects against smallpox with a request to drug manufacturers for information about cost and availability of the medicine.

Health Minister Allan Rock is ex-

THE GLOBE AND MAIL

CANADA'S NATIONAL NEWSPAPER ■ FOUNDED 1844 ■ GLOBEANDMAIL.COM ■ THURSDAY, NOVEMBER 28, 2002

Ottawa to buy smallpox vaccine

Terrorism fears prompt plan to stockpile enough doses to inoculate all Canadians

BY PETER CHENEY

Responding to the possibility of a terrorist attack with biological weapons, the federal government is buying enough smallpox vaccine to inoculate everyone in Canada.

"Given the heightened concern

about terrorism, we believe it's prudent to take steps to protect the Canadian public," Health Canada spokesman Paul Gully said.

Canada was named as a potential terrorist target two weeks ago by al-Qaeda leader Osama bin Laden in an audiotape warning of

attacks on Western countries.

Under the terms of a contract announced yesterday, the government will acquire 10 million doses of the vaccine. Each dose can be diluted, producing enough for 30 million inoculations.

"Considering the advice we've received, we believe this is the right amount," Dr. Gully said.

Some of the vaccine will be used for a carefully planned program designed to prevent a mass out-

break of smallpox. Five hundred people who have been identified as being at the highest risk of contracting or spreading the disease will be inoculated immediately, Dr. Gully said. Many of these 500 people will be doctors, nurses and others most likely to be exposed to the disease in the event of an outbreak.

The rest of the vaccine will be stored at a secret location, to be used for mass inoculations in the

event of what Dr. Gully referred to as "a national health emergency."

The contract announced yesterday calls for the vaccine to be supplied by Aventis Pasteur Ltd., an Ontario firm that is considered the only one in the country capable of filling the order. Other companies will have 15 days to contact Health Canada if they have a competitive proposal.

The cost of the vaccine will be negotiated once a decision is

made on who will be the supplier, Dr. Gully said. Observers say the cost of the Canadian vaccine will probably be comparable to the vaccine being acquired by the U.S. government, which paid \$509-million (U.S.) for 250 million doses. Based on that, the Health Canada stockpile will probably cost about \$30-million to \$40-million (Canadian).

See VACCINE on page A12

Out Of The Freezer:

Remaking Smallpox Vaccine, Post 9/11

- **1979-80** – As discussed at the end of Class #7, Connaught's final collection of 17 Vaccinia pulps and related materials were put in the deep freeze and kept undisturbed for 21+ years, until Health Canada's search for smallpox vaccine led to a freezer at Aventis Pasteur's Connaught Campus
- **2003** - After careful historical analysis of original production and quality control measures used in the preparation of the vaccinia pulps -- a project that I was involved with -- followed by extensive testing, most of the pulps were utilized to prepare a new Canadian smallpox vaccine stockpile
- Fortunately, there's been no smallpox attack...

Smallpox Vaccine (Frozen Liquid)

Summary of Findings on:

- (1) Experience with anaerobes during processing
- (2) General data relating to vaccine use
- (3) Data specific to stability for 28 days after vial opened
- (4) Data on adverse events during smallpox eradication programs



Sanofi Pasteur Canada Archives

**FOR EMERGENCY USE.
USAGE EN CAS D'URGENCE.** **SMALLPOX VACCINE (LIQUID) 0.25 mL**
Live Vaccinia Virus
Caution: Do not inject.
Directions for use: See leaflet.
VACCIN CONTRE LA VARIOLE
(LIQUIDE) Virus Vaccinal Vivant
Attention: Ne pas injecter.
Mode d'emploi: Voir feuillet.
Aventis Pasteur Limited, Toronto, Ontario, Canada

4882

Prepared by:
John Sparkes and Christopher Ruddy
Consultants to Aventis Pasteur Limited
Respectively on QA and Medical History
December 15, 2003

Surviving SARS

- **March 2003** – While work was underway at the Connaught Campus in Toronto to resurrect smallpox vaccine to prepare for the rather unlikely event of a smallpox bioterrorist attack, not far away, the unexpected arrival of a new infectious disease virus, known as “SARS”, was causing havoc in the city, not unlike a bioterrorist attack
- However, Toronto’s, Ontario’s and Canada’s, public health infrastructure proved to be unprepared



City of Toronto, Ontario


VOICE of the GTA

Thursday, March 25, 2003

TORONTO STAR

Mystery Bug Shuts Hospital Emergency Room

Janice Mawhinney and Phillip Mascoll, Staff Reporters



The emergency room at Scarborough Grace Hospital was temporarily closed to all new patients yesterday in the wake of an outbreak of Severe Acute Respiratory Syndrome.

The closing was part of an effort “to continue to contain SARS symptoms,” said public affairs director Adrienne Jackson, who also cited ongoing patient care as a factor in the decision. Ambulances will be rerouted to other ERs during the closure.

The hospital was the first in the city to admit a patient suffering from SARS, a pneumonia-type illness that has claimed the lives of three Toronto residents. At the moment, the hospital has no suspected cases.

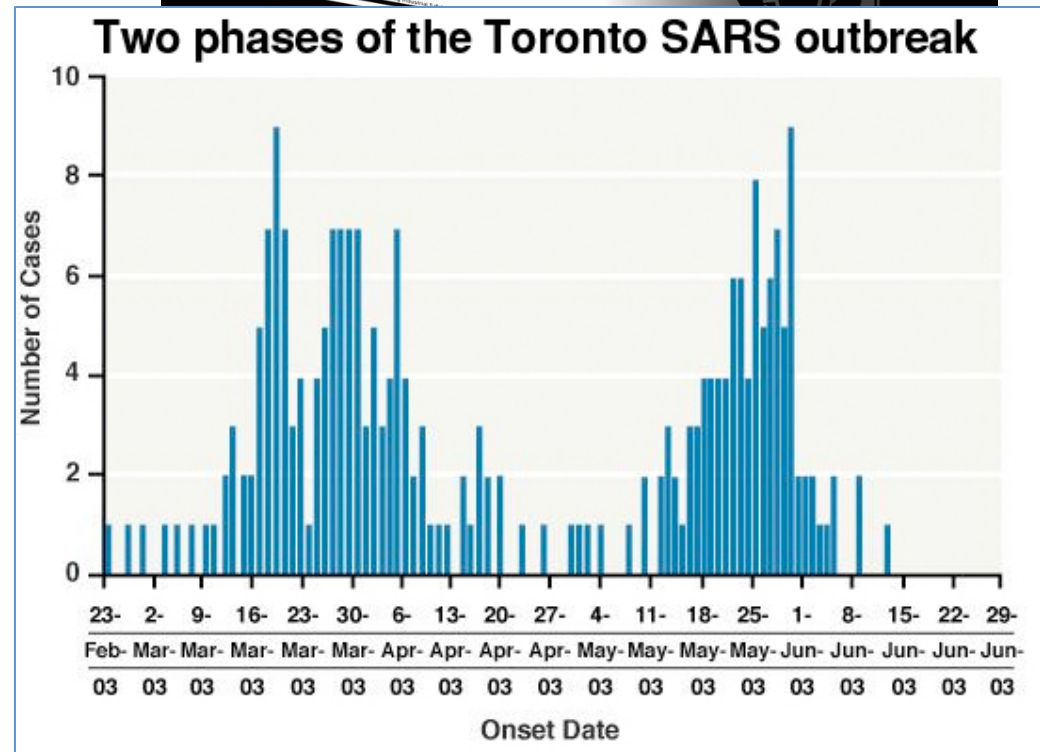
However, public health officials are monitoring a new cluster of some 12 people who appear to be showing symptoms of the disease, many being treated in voluntary isolation in several unspecified GTA hospitals.

Dr. Colin D’Cunha, Ontario’s commissioner of public health, had little to tell a Toronto news conference about the cluster yesterday, other than to say it had been identified and was being monitored.

City of Toronto

Surviving SARS

- The impact of an infectious disease in terms of its mortality does not have to be especially deadly, or its morbidity especially large, to give it public health and political potency.
- **2003** - As was demonstrated during the SARS outbreak, especially in Toronto from early March and the first death from the mysterious disease, through the 44th death in September, of most importance was how it struck (essentially, out of the blue), where it struck (primarily in hospitals), whom it affected (mostly health care workers), and perhaps of most importance, when it struck.



Surviving SARS

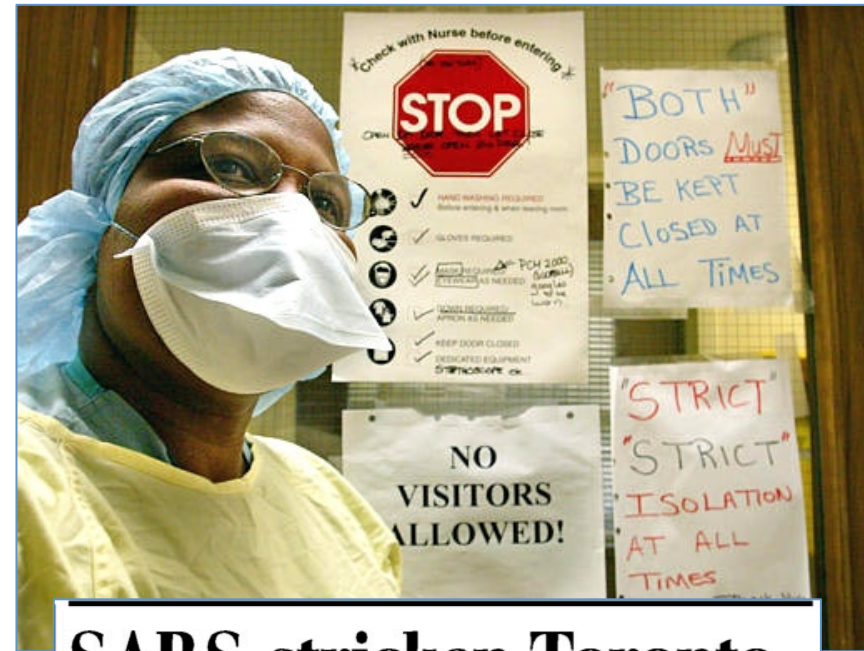
- **2003** - Ontario public health system was perhaps at its weakest and most vulnerable in the province's modern history, as the conclusions of several provincial and federal investigations into the SARS experience made very clear.
- The Walkerton water crisis inquiry had hinted at this weakness and vulnerability



- **March 25** - The Ontario government's response to SARS essentially began when Tony Clement, Minister of Health and Long Term Care, declared that it was a reportable, communicable and virulent disease
- Public health authorities had the power to track infected people and issue orders to stop them from doing anything that could transmit the still mysterious disease

Surviving SARS

- Between March 5, when the first SARS death occurred in Toronto, and March 25, two more deaths had occurred in Scarborough Grace Hospital linked to the first, prompting hospital to close
- There were also some 18 probable SARS cases in the province, 5 suspect cases and 25 others under investigation, while a dozen health care workers had been placed in isolation after coming in contact with a SARS victim
- There were also suspected SARS cases in British Columbia and Alberta
- After the public health emergency was declared in Ontario, the Ministry ordered thousands of people to quarantine themselves in their homes, while hospitals in Toronto began barring visitors



SARS-stricken Toronto likely back on WHO list

BY CAROLINE ALPHONSO, TORONTO

Toronto's SARS woes increased yesterday with news that eight new cases have been added to the latest outbreak, including two patients who have died — and expectations that the city will again land on the World Health Organization's list of areas where the disease is spreading.

Public-health officials classified the eight cases as probable SARS patients, including a 96-year-old

man and a 90-year-old woman who died recently. Until this point over the past few days, officials had declared only that they were watching people for symptoms.

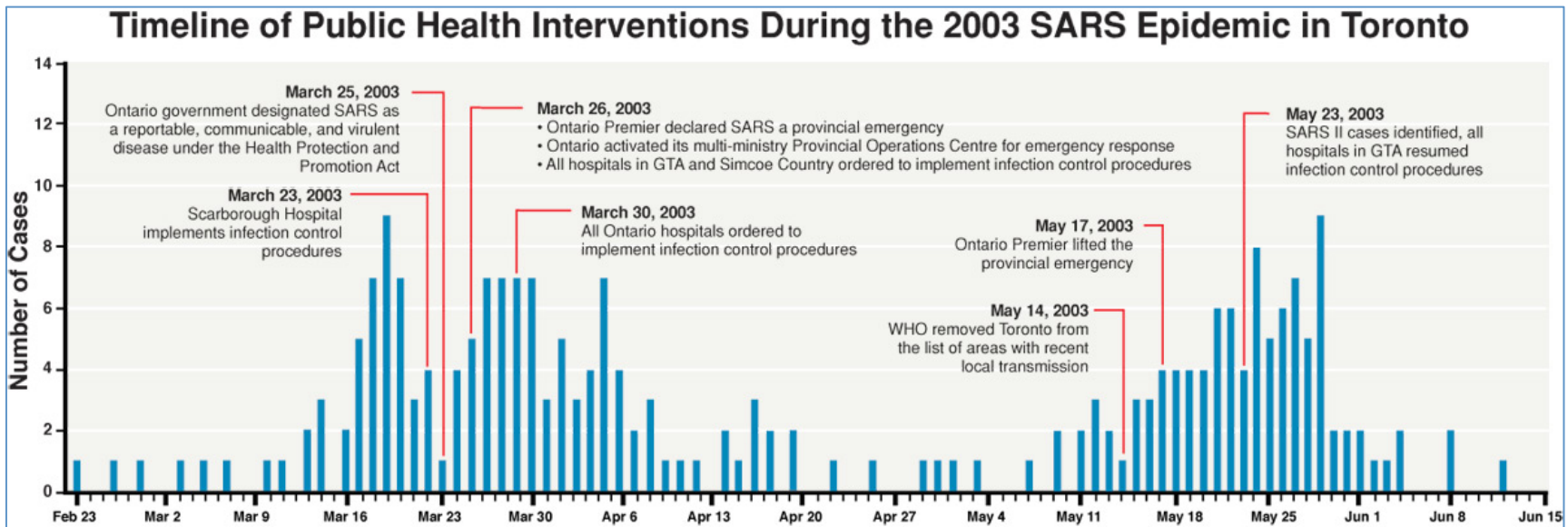
In addition, there are 26 suspected cases of SARS and at least eight other people under investigation in this new and disturbing cluster, stemming from an outbreak at North York General Hospital announced last week.

See SARS on page A6

Globe & Mail, May 26, 2003, p. A1

Surviving SARS

- **Feb 15, 2003** – SARS originated in China as an atypical pneumonia; 305 cases
- **Feb 23** – After visit to Hong Kong where she was exposed to the virus, 78-yr-old woman returned to Toronto with atypical pneumonia symptoms; she died March 5
- **March 13** – Her son is infected and died in Scarborough Hospital; source of hospital cases
- **March 21** – Canadian scientists isolated SARS virus
- **April 30** – SARS seemed under control in Toronto; WHO lifted travel advisory to Toronto
- **May 22** – Second wave of SARS cases hit Toronto



Surviving SARS

- **June 2** – Ontario nurses and their union asked Ontario government to call a public inquiry into how the health care system handled SARS outbreak; looking for an elaborate investigation similar to the Walkerton inquiry
- **June 10** – After resisting the idea, Ontario Premier Ernie Eaves agreed to a SARS inquiry headed by Superior Court Justice, Archie Campbell
- **June 12** – Report showed that Toronto tourism industry had lost \$190 million because of SARS outbreak; “The impact is profound”
- **June 13** – Ontario government offered a minimum of \$500 per person to compensate for income lost due to SARS

Globe & Mail, May 31, 2003, p. A1

SATURDAY SPECIAL

SARS: How the quest for a quick victory led to costly error

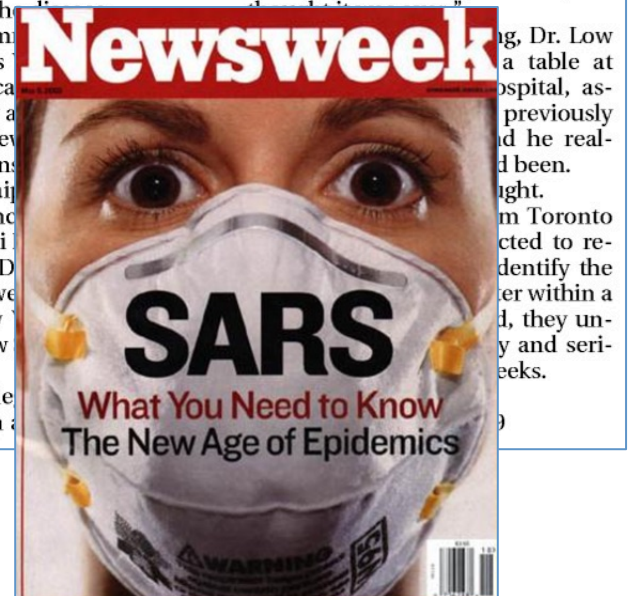
BY CAROLYN ABRAHAM
AND LISA PRIEST, TORONTO

Just two weeks ago, Toronto health officials were so convinced they had beaten SARS into submission that they dismantled key elements of their containment team while lead members took off on international tours to describe how the city defeated the

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cation. Toronto's medical officer of health, Sheela Basrur, flew to Jamaica for a rest before West Nile season hits. Epidemiologist Ian Johnson, who had been seconded by Ontario's Ministry of Health from the University of Toronto to track the disease, returned to the classroom: "I thought it was over," Dr. Johnson said. "Everyone



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Surviving SARS

- **May 28** – In an effort to help Toronto businesses and tourism recover from the impact of SARS, and before the Ontario government committed to funding supports, or a public inquiry, Toronto area federal MP, Dennis Mills, spearheaded a benefit concert to feature major Canadian musicians, although he hoped the Rolling Stones would headline
- **June 21** – The Stones declined, but the SARS Relief concert was a success, with the provincial government sponsoring and 70,000+ attending

Globe & Mail, June 11, 2003, p. A1

Quest for the Stones

A crusading MP's bluster and begging brings the big show to SARS Central

BY JAN WONG, TORONTO

Dennis Mills coughs. It's not SARS, the severe acute respiratory syndrome famously afflicting his favourite city. It's a common cold. But just in case, he keeps a bottle of antibacterial gel on his desk, beside a half-empty one of codeine syrup.

The SARS crisis has energized this Liberal MP for Toronto-Danforth. "When you live in the community, you feel the pain," Mr. Mills, 56, said, nursing a mug of herbal tea with ginger and lemon.

His constituents are in a free fall to bankruptcy. They include hotel staff, restaurant owners and film technicians in this multicultural enclave described, in red marquee

lights atop his constituency office, as "the heartbeat of the nation." And so Mr. Mills has embarked on a quixotic quest to bring the Rolling Stones to SARS Central.

"By the way, I'm not a Stones fan," he said, making sure a reporter observing him for the day got that straight. "I'm a Neil Diamond guy." He hastily added some Canadian content. "And a Jim Cuddy guy."

Depending on whom you talk to, Mr. Mills is a genius or a hustler. He once tried to swap Iraqi oil for Libyan cash to buy supplies from his riding for Iraq — until it was pointed out that both countries were under UN embargoes.

See MILLS on page A15



PAUL CHIASSON/CANADIAN PRESS

Jazz singer Diana Krall will be at the Air Canada Centre June 21 as one of the headliners of the Concert for Toronto.

The wages of SARS for stars

Eleven acts and an agent to reap big bucks at next week's concert, **JAMES ADAMS** says, but no money planned for SARS relief

It's going to be one of the biggest single paydays in Canadian music history. And it's all thanks to the SARS outbreak that's been preying on the minds and some of the bodies of Torontonians for the last three months.

It is the June 21 Concert for Toronto, sometimes called "Stars for SARS" after Ontario Premier Ernie Eves agreed to bankroll the event to the happy tune of more than \$5-million as part of the province's two-year, \$128-million SARS Assistance and Recovery Strategy.

For that layout of tax dollars, 70,000-plus music lovers get to see 11 Canadian musical performers — six at Toronto's SkyDome, five at the nearby Air Canada Centre — appear simultaneously over a six-hour span.

Each venue is to be linked by closed-circuit television to permit non-stop entertainment (so that after an act ends its set at SkyDome, the crowd there can catch an act performing over at ACC, and vice-versa).

It's a pricey exercise in feel-

good, not least because to entice top-drawer performers, maximize attendance and generate quick sales, the show's promoter, Clear Channel Entertainment, and Ontario's Ministry of Tourism and Recreation agreed the \$5-million should be used to keep ticket prices low, at \$29.50 and \$19.50, instead of the \$50 to \$80 they might command.

Many of the 11 artists — Avril Lavigne, the Tragically Hip, Bare-naked Ladies and Sarah McLachlan, among them — are at the peak of their popularity. In fact, according to industry insiders, several of them stand to gross between \$500,000 and \$600,000 each June 21 for individual performances that will last, at most, no more than 60 minutes.

No portion of the ticket price is earmarked for SARS relief, nor are the acts under any contractual obligation to donate part of their proceeds to SARS-affected agencies or institutions — although it's anticipated some will do so voluntarily. All the Toronto 11, in fact — from rising rappers Swollen Members, who will open the SkyDome performances with a 30-minute set at 3:30 p.m., to the Grammy-winning jazz chanteuse (and future Mrs. Elvis Costello) Diana Krall, appearing at ACC just before show-closer Sarah McLachlan — are represented by just one booking agency, Vancouver-based S.L. Feldman and Associates.

In fact, Feldman's firm also manages Krall's career as well as that of fellow Concert for Toronto

participants the Tragically Hip. With these two acts, the Feldman company scores a double payday June 21 since it will receive both the booking and the management slices of the artists' performance fees. It also will be a good day for another Vancouverite, Network Records founder Terry McBride, as he manages five members of the Toronto 11 (McLachlan, the Ladies, Lavigne, Swollen Members and Sum 41).

One shouldn't necessarily think there's any skulduggery in this. Shane Bourbonnais, senior vice-president of Clear Channel, said this week "it's just sheer coincidence" that all 11 performers are from just one source.

See CONCERT on page R9

Globe & Mail, June 12, 2003, p. R1

Surviving SARS

- **June 30** – With a commitment from the Rolling Stones finally in place, tickets went on sale for a much larger SARS benefit concert – “SARSSTOCK” – that would be sponsored by the federal and provincial government and take place at Downsview Park in Toronto on July 30



MOLSON CANADIAN ROCKS FOR TORONTO FEATURING

ROLLING STONES

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WITH SPECIAL GUESTS

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SAM ROBERTS, THE FLAMING LIPS, KATHLEEN EDWARDS, SASS JORDAN
THE ISLEY BROTHERS, LA CHICANE

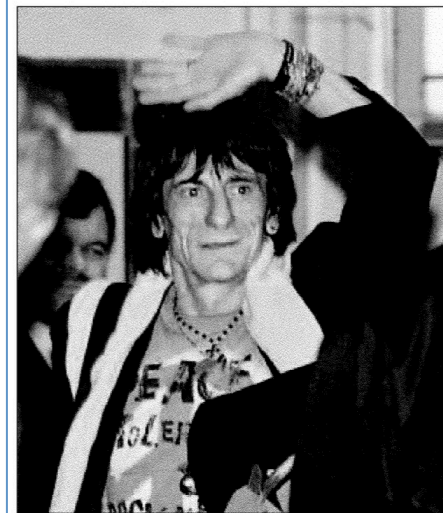
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Rolling Stones guitarist Ron Wood, surrounded by bodyguards, waves to fans after arriving at the Four Seasons Hotel in Toronto yesterday.

SARS funds get boost from Rolling Stones

Stones Watch

JOHN HEINZL

Counterfeit merchandise is always a problem at large events. Ms. McArthur said the Royal Canadian Mounted Police will be patrolling the area for unlicensed vendors selling knockoffs of licensed T-shirts.

The Rolling Stones have been telling Torontonians for weeks how much they love the city. Now, they're putting their money where their big, red lips are.

In a gesture aimed at helping workers hit by Toronto's SARS crisis, the band is donating 50 per cent of the net proceeds of licensed Stones merchandise sales at tomorrow's concert to two relief funds set up by sponsor Molson Breweries.

Organizers declined to estimate how much money the merchandise sales will raise, but let's do some rough math. If just 10 per cent of the expected 430,000 fans shell out \$30 for a Stones T-shirt, the gross proceeds will be nearly \$1.3-million.

Any way you slice it, it could add up to some serious do-re-mi.

But some vendors are hoping to cash in on the huge crowd without running afoul of the law.

Entrepreneurs Andrew Aitken, 24, and Paul Smith, 25, of Milton, Ont., printed up 5,000 T-shirts that read "SarsStock 2003. Survived the Outbreak. Toronto, Ontario. 07/30/03." The shirts feature a silhouette of Toronto's skyline.

As far as they know, nobody has trademarked the term SarsStock.

"We figured if there are 500,000 people coming to town it's a great opportunity to make a few bucks," Mr. Aitken said. They plan to sell the shirts, which cost about \$4 each to produce, for \$15 apiece or two for \$20.

"We have no Stones logo and we don't have the word Rolling Stones on the T-shirt itself so we don't think we'll have a problem," added Mr. Aitken, who has rented a couple of driveways near the concert venue to hawk the T-shirts.

Surviving SARS

- **July 30, 2003** - The “SARSSTOCK” concert was a major success, setting an attendance record – 490,000 – for a ticketed event
- Amidst the excitement and efforts to revive Toronto’s economy and public image, three inquiries were underway into investigating the SARS outbreak
- These federal and provincial reports would fuel a transformation in Canada’s public health system that still reverberates

• Telling this transformation story will be a major focus of the next class, which will be our last class...

Globe & Mail, Sept. 3, 2003, p. A7

Experts prescribe national health team

BY BRIAN LAGHI, OTTAWA

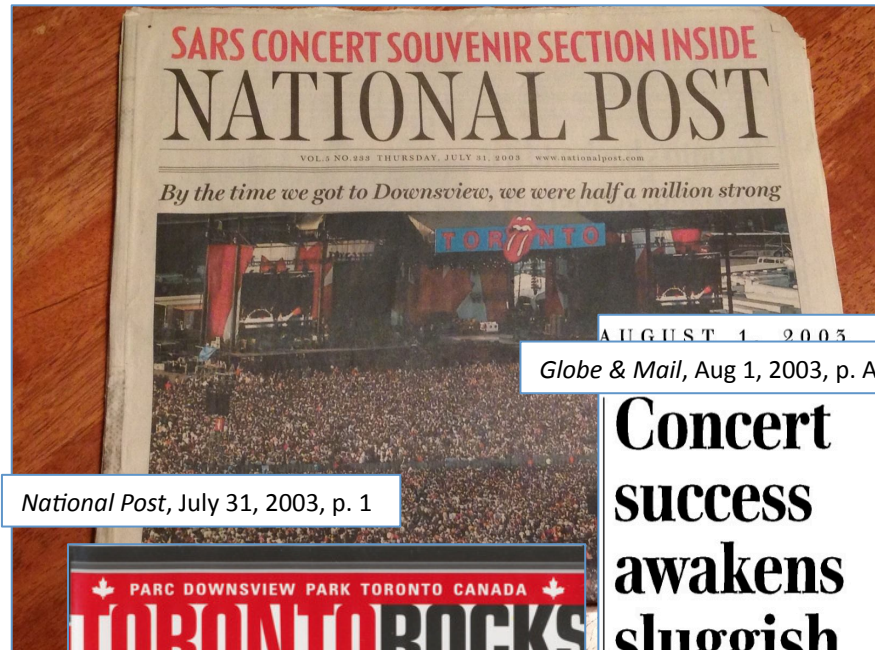
A blue-ribbon panel studying the fallout from the SARS crisis will recommend that Ottawa spend hundreds of millions of dollars on public health, including a national disease centre that could quickly co-ordinate responses to health emergencies, sources have told The Globe and Mail.

The improvements, which are part of a report to be outlined to Canada’s health ministers today, could ultimately run toward \$1-billion a year once provincial and territorial costs are included.

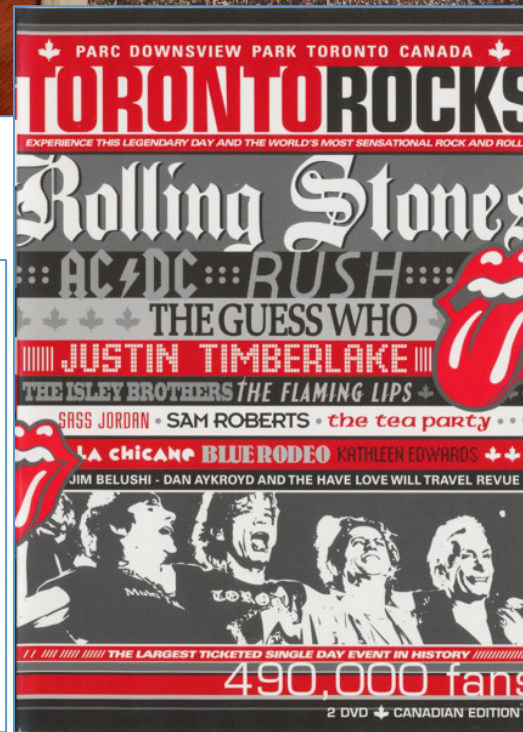
ment plan to move medical professionals to help cope with local emergencies.

However, he said the agency must also be augmented by more money for front-line workers employed in protecting the public from another SARS-type outbreak or crises such as the tainted-water tragedy in Walkerton, Ont. It could also have several other roles, including development of immunization programs and studying disease prevention.

Dr. Naylor, who is dean of medicine at the University of Toronto, noted that the Centers for Disease



National Post, July 31, 2003, p. 1



AUGUST 1 2003
Globe & Mail, Aug 1, 2003, p. A1

Concert success awakens sluggish tourism

BY GLORIA GALLOWAY, TORONTO

Toronto’s tourism industry is cautiously optimistic that Mick Jagger has provided an economic cure for SARS as the city basks in the blissful afterglow of a colossal concert that went astonishingly right.

Hotel bookings are up; the Rolling Stones lead singer’s pronouncement that Toronto “is back and it’s booming” has been heard across the United States; and the image of Torontonians as peaceful, fun-loving folk has been distributed worldwide via the Internet.

“We’re looking in U.S. dailies and on Web sites and all they are talking about is the great concert that happened,” Bruce MacMillan, president of Tourism Toronto, said yesterday.

“And the quote that Mick Jagger gave, that is precisely the message that needed to be told to the world.”