

The History of Cancer Treatment in Nova Scotia

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Inequality in health care access, mistrust of physicians and their institutions, general lack of understanding of cancer, stigma of disease, and the plethora of 'miracle' cures were all factors complicating cancer care a century ago. Scientific advances such as the discovery of x-rays and radium and the opening of public hospitals led to improved delivery of cancer services. Several individuals and groups have made key contributions to maintaining and improving effective treatment for cancer patients in Nova Scotia throughout the last century.

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Introduction

The organization of cancer care in Nova Scotia began due to the personal agenda of several clinicians who practiced in Halifax early last century. Personal physicians in people's homes, private hospitals, charity organizations and religious groups provided health care at this time.^{1,2} The quality of care was often directly related to the size of one's pocket book.^{1,2,3} Hospitals had reputations as 'death houses' due to the poor sanitation and lack of effective treatments.^{1,4} Further, the diagnosis of cancer was almost synonymous with a death sentence.^{3,5} The main therapy for cancer at that time was surgical excision.^{6,7,8} The fear of surgery kept many from pursuing the option.^{1,3,6}

Surgery carried excessively high mortality rates due to the infancy of aseptic techniques, absence of blood and fluid replacements, and the frequency of complications.¹ Quackery flourished as a welcome alternative to visiting an expensive physician or worse, a deadly hospital.^{2,3,5,9} The cure-alls offered hope and seemed viable options to the prescribed medical remedies for cancer at that time. Moreover, many people remained at home in the care of their families with their true diagnosis unacknowledged since cancer held the same connotations as leprosy in biblical times.^{2,3,5} Inequality in health care access, mistrust of physicians and their institutions, general lack of understanding of cancer, stigma of disease, and the plethora of 'miracle' cures were all factors complicating cancer care. This atmosphere of confusion persisted to various degrees throughout the province.

By the middle of the 1900's, health care had changed entirely from its early roots. Scientists made significant advances on many fronts, not the least of which was cancer therapeutics. Patients entered government hospitals expecting uniform care and surrendered much of their autonomy to the new-found status of physicians and their technologies. During the 1950's, the hospital became centralized, departmentalized, and all too often a dehumanized institution.²

At the beginning of the 21st century, health care is experiencing a quiet revolution with an unyielding movement towards patient focused care. Measures such as the quality-of-life-year have forced medicine to look at the outcomes that are of importance to patients. With the power of the Internet, patient advocacy and support groups, physicians no longer hold a monopoly on scientific knowledge. Physicians and patients are now on a more equal footing and decision-making is a shared partnership. These transitions of society and technology over the past century are exemplified by the evolution of Nova Scotia's cancer care system.

The Canadian Experience

During the first half of the 20th century, cancer had such dire outcomes and questionable moral connotations that physicians generally avoided the diagnosis. For instance, the mortality statistics for the province of Manitoba suggested that in 1930 the general practitioner was likely to see a case of breast cancer once in nine years.¹⁰ Physicians were not recording cancer diagnoses even on death certificates, for fear of damaging the reputations of their patients.¹⁰ At this time, medicine was still searching for a single cause of cancer and assumed that there would be a single cure as well.⁸ Throughout the country, as in Nova Scotia, individual physicians were pursuing cancer treatments with surgery, x-rays and radium therapies but the approach to cancer on national scale did not begin until 1931.¹⁰

It was at this time that the Canadian Medical Association (CMA) became alarmed by the high mortality of cancer even with the new treatments available. It was decided by the CMA Board to strike a committee to study the issue. The Committee took as its mission the study of cancer incidence by site, application of new therapies, and increasing the early diagnosis of cancer. The CMA advocated the idea of "cancer study groups" for any hospital with more than a hundred beds. These groups were to keep accurate records of the cases they treated, hold meetings reviewing the cases at their site and forward these records to the central cancer study group at the CMA. In this manner, the CMA established the first organized national program for cancer research and treatment. By 1933, there were provincially funded diagnostic clinics and radium installations in eight provinces, including Nova Scotia. When the Great Depression hit, funds for further enhancements of this first cancer effort were not forthcoming.¹⁰

Fortunately, this stagnation was relieved by the enthusiasm of the Countess of Bessborough, Lady Roberta Neuflyze who took up the cancer cause. The Countess came to Canada in 1931 as the wife of the newly appointed Governor General, Vere Brazbazon Ponsonby. It was her miraculous feat during these harsh economic times to raise \$420,589.49 donated by 320,154 persons for the cause of cancer. The Governor General announced the sum on June 3, 1935 and christened it the "King George V Silver Jubilee Cancer Fund" to be used to "provide relief from the high mortality rate from cancer in Canada."¹⁰

The fund remained relatively unfruitful until 1937 when the CMA's Committee on Cancer convinced the fund's trustees to release the annual income of \$14,000 to further their efforts. The trustees of the fund relinquished the money with the instruction that the CMA organize a group of "laymen

and physicians to combat the cancer scourge." They were instructed to use half the income on professional education and half on the formation of a "Canadian Society for the Control of Cancer".¹⁰

With this mandate, the CMA formed the Department of Cancer Control with a board of members from across the country including Dr. N. H. Gosse from Halifax. Through this Department, the latter half of the promise was fulfilled in 1938 with the incorporation of the Canadian Society for the Control of Cancer with 1,800 original members throughout the provinces. The price of membership at that time was \$2.00 a year. It was this Society which was renamed the Canadian Cancer Society in 1945.¹⁰

The Nova Scotian Experience

The physicians of Nova Scotia were greatly impressed by the scientific discoveries of x-rays and radium in the 1890's and showed great determination in acquiring these therapeutic techniques for cancer. These two great advances were both largely discovered by accident. X-ray devices were easily produced with common materials whereas radium was only produced through a complex series of chemical manipulations from pitchblende making it quite costly.¹¹

The first x-ray equipment in our provincial hospital, the Victoria General, was installed in 1904 and run by Charles Puttner, the hospital pharmacist. His successor was Dr. W. Eager in 1918, who possessed formal instruction in radiology. WWI saw the replacement of glass x-ray plates with film, and an increased knowledge of x-rays due to the enormous application the technology received during the war. A new X-ray department was opened in 1921 to handle the volume of patients being treated.² Subsequent to this, the diagnostic and therapeutic utility of x-rays in cancer increased immensely.

Several Haligonians made it part of their personal agenda to procure the new element radium for the province when its cancer treating properties were revealed. After serving in WWI, Dartmouth physician Steven Johnston joined the Victoria General Hospital Radiology Department.¹⁶ Johnston was to lobby for the public purchase of radium for years before a supply was finally obtained in 1925.^{12,13} Nova Scotia was the second province after Quebec to obtain a public supply of radium.^{12,14,15}

Several elements were essential to Johnston's success at this time: the desire of the Victoria General Hospital (VGH) to offer the prestigious treatment; the promise of its profitability to the hospital; and the existence of a cancer fund donated by James T. Hamilton. Mr. Hamilton was a former mayor of Halifax who left his estate to the Halifax Visiting Dispensary in 1902. The Halifax Visiting Dispensary was begun in 1856 and provided medical care to those who could not afford to pay for such services. Mr. Hamilton's will stipulated that the money be spent "to alleviate the sickness and suffering of the deserving poor in the city of Halifax, with special attention to the relief of malignant diseases of the poor". The Board of Directors at the Dispensary was a cautious and thrifty group who spent six years considering the purchase of radium as proposed by Johnston.¹²

The Victoria General Hospital Board, through Johnston's efforts, came to recognize the usefulness of an adequate supply of radium both therapeutically and to earn the esteem of other centres. It was also becoming apparent that offering radium therapy to paying patients would generate revenue. With the hospital board backing him, Johnston approached the province and convinced the Premier that radium should be acquired. The province of Nova Scotia agreed to put forth \$9,000 for the purchase in April of 1925. Unfortunately, this sum would not buy the weight of radium needed to serve the population and the hospital refused the insufficient amount.¹²

In October of 1925, Johnston proposed a joint purchase of

Year	Event
1895	Discovery of X-rays by Roentgen
1898	Discovery of radium by the Curies ¹
1902	Mayor Hamilton donates estate to Halifax Visiting Dispensary intended for "malignant diseases of the poor"
1904	X-ray equipment installed at the VGH
1926	First radium treatments administered at VGH
1932	First cancer committee & clinic at VGH
1937	Canadian Society for the Control of Cancer established by CMA
1946	National Cancer Institute of Canada established to promote research
1946	Research released on the successful use of nitrogen mustards in cancer
1953	Nova Scotia Tumor Clinic established
1964	Nova Scotia Cancer Registry established
1981	Cancer Research & Treatment Foundation established
1998	Cancer Care Nova Scotia established
1998	Cape Breton Cancer Centre established

Table 1. Timeline of events in the history of Cancer Care Nova Scotia.

radium for use by both the VGH and Halifax Visiting Dispensary patients. The Dispensary agreed and forwarded \$7,500 in November of 1925.¹² Combined with the provincial sum already offered, this was enough to acquire 210 milligrams of radium.^{12,13,15} Johnston went to New York, bought the radium and received instruction on its usage. The radium clinic of the VGH administered its first treatment in May 1926.¹²

In 1951, Johnston was called upon by Dr. Bethune to retire. Johnston, true to his stubborn character, claimed he was not yet 65 years old and the church holding his birth records had been destroyed by fire.² Under much persuasion, Johnston eventually gave in to a successor, but his contribution to the treatment of Nova Scotians with cancer remains noteworthy.

Another leader in the area of cancer care on the provincial scene was Dr. John Stewart. By the request of the Nova Scotia Medical Society (NSMS), Stewart presented to them a summary of the American Society for the Control of Cancer and its activities. Stewart himself was a member of the American group and submitted that Nova Scotians could benefit by participating in an education campaign held for one week each year.¹⁶ The NSMS endorsed this plan and the first "Cancer Week" was held November 12th to 18th of 1922.¹⁷ A report in the Nova Scotia Medical Bulletin stated that more than 30 public lectures were delivered across the province, several viewings of an educational cancer film titled, "The Reward of Courage" occurred and three diagnostic clinics were held in rural areas.¹⁸

The year 1927 saw the addition of Dr. Norman H. Gosse to

the Victoria General Hospital. Described as "a surgeon with an interest in cancer" Gosse had a strong personal vision of an organized cancer management system that he worked towards throughout his career.² In a 1932 Bulletin of the NSMS, he wrote in support of a government proposed "cancer institute".¹⁹ Gosse oversaw the formation of this first cancer clinic in the VGH that same year. Patients diagnosed were treated using surgery, x-ray, radium, or some combination. In line with the CMA recommendations, the clinic kept records of its cases and treatment outcomes and sent a summary letter to the family physician.²⁰ During the Great Depression, Nova Scotia's hospital programs received little monetary attention. A national health survey during 1948 stated, "by modern standards there is no cancer clinic at the Victoria General Hospital."¹⁰

In 1953, the Nova Scotia Tumor Clinic headed by Gosse was begun to remedy the existing situation. In the post war years, the economy had improved and federal money had been released to provincial health care institutes. The Tumor Clinic was meant to become a referral center for the province of Nova Scotia. Although this new clinic was originally conceived to function in a multidisciplinary fashion, it was run by surgeons. At this time, radiation oncologists were responsible for nuclear medicine, medical oncology and radiation therapy, when consulted by the surgeons. This system remained in place long after Gosse's departure in 1964.^{21,22}

The year 1963 was memorable for the inception of the Nova Scotia Cancer Registry. In this year it became mandatory to report cancer diagnoses, making accurate cancer statistics available for the first time. This Registry was run by the NSMS. Although much data was accumulated, its use in the study of cancer was limited.^{21,22}

In 1981, the Registry was taken over by the newly formed Cancer Treatment and Research Foundation (CTRF). The CTRF was formed in response to a series of reviews dating from the middle to late 1970's. These reports called for reforms to the clinical cancer system, administration of the system and a rehaul of the physical structure. The CTRF represented a union of the radiotherapy department and tumor clinic located in the VGH, the radiotherapy department of the Halifax Infirmary, and the Nova Scotia Cancer Registry.²³

The internal and external examination of the cancer care system, now administered by the CTRF, continued throughout the next decade and a half. This deliberation resulted in the establishment of Cancer Care Nova Scotia (CCNS) in the fall of 1998. This year was also memorable for the official opening of the Cape Breton Cancer Centre. CCNS is held accountable to a board of 35 members from across the province, which includes oncologists, researchers, health care professionals, general physicians, and volunteers in the hospital system and survivors of cancer.

Conclusion

The input of individuals who have experienced the system first hand as cancer patients has proved essential to the positive change we have seen over the past 30 years. The continued and increased involvement of cancer survivors in decision-making processes may be the strongest asset of our present cancer system model. Cancer care is no longer driven by the vision of a few individuals, it is rooted in the experiences of many and shows the promise of growth in response to need.

References

1. Agnew HG. Canadian hospitals, 1920 to 1970, a dramatic half century. University of Toronto Press. Toronto: 1974.
2. Howell C. A century of care: a history of the Victoria General Hospital in Halifax 1887-1987. Halifax: Victoria General Hospital. 1988.

3. Granshaw L, Porter R. Eds. The hospital in history. New York: Routledge. 1989.
4. Marble A. To consummate that great desideratum - a general hospital. J Royal NS Historical Soc 1999; 2: 167-201.
5. Cumley RW. The first twenty years of the University of Texas M.D. Anderson Hospital and Tumor Institute. Houston: 1964.
6. Watson TA. The 1974 Gordon Memorial Richards lecture: trends in the organization of cancer services. 1975; 26(4): 223-230.
7. Stewart J. Cancer. NSMB 1923; 2 (5):16-17.
8. Peller S. Cancer research since 1900: an evaluation. Philosophical Library. New York: 1979.
9. Meeting with the Minister of Health. NSMB 1932; 11(9): 572.
10. Kelly AD. The cancer movement in Canada: 1930-1950. Toronto: National Institute of Canada. 1971.
11. Curie M. Pierre Curie. New York: Dover. 1923.
12. Hayter CRR. To the relief of malignant diseases of the poor - the acquisition of radium for Halifax, 1916-1926. J Royal NS Historical Soc. 1998; 2: 130-143.
13. Using radium at hospital with marked success. Halifax Herald Aug. 18, 1926.
14. Hayter CRR. Historical origins of current problems in cancer control. CMAJ 1998; 158(13): 1735-40.
15. Johnston SR. Cancer report of the Victoria General Hospital. NSMB 1932; 11:11-20.
16. Stewart J. Cancer control. NSMB 1922; 1(5): 11-13.
17. Cancer control campaign. NSMB 1922; 1(5): 24.
18. Cancer week. NSMB 1922; 1(5):6.
19. Gosse NH. A cancer institute. NSMB 1932; 11(4): 190-191.
20. Special cancer committee. The cancer problem. NSMB; 11(6): 359-62.
21. Dickson C, Tupper C, Stewart CB. Report of the Nova Scotia Oncology Planning Committee. 1979.
22. Rider WD. Halifax Review of Radiation Oncology. 1975.
23. Applied Management Consultants. Final Report of the Operational Review of the Cancer Treatment and Research Foundation of Nova Scotia. 1993.
1. Agnew HG. Canadian hospitals, 1920 to 1970, a dramatic half century. University of Toronto Press. Toronto: 1974.
2. Howell C. A century of care: a history of the Victoria General Hospital in Halifax 1887-1987. Halifax: Victoria General Hospital. 1988.
3. Granshaw L, Porter R. Eds. The hospital in history. New York: Routledge. 1989.
4. Marble A. To consummate that great desideratum - a general hospital. J Royal NS Historical Soc 1999; 2: 167-201.
5. Cumley RW. The first twenty years of the University of Texas M.D. Anderson Hospital and Tumor Institute. Houston: 1964.
6. Watson TA. The 1974 Gordon Memorial Richards lecture: trends in the organization of cancer services. 1975; 26(4): 223-230.
7. Stewart J. Cancer. NSMB 1923; 2 (5):16-17.
8. Peller S. Cancer research since 1900: an evaluation. Philosophical Library. New York: 1979.
9. Meeting with the Minister of Health. NSMB 1932; 11(9): 572.
10. Kelly AD. The cancer movement in Canada: 1930-1950. Toronto: National Institute of Canada. 1971.
11. Curie M. Pierre Curie. New York: Dover. 1923.
12. Hayter CRR. To the relief of malignant diseases of the poor - the acquisition of radium for Halifax, 1916-1926. J Royal NS Historical Soc. 1998; 2: 130-143.
13. Using radium at hospital with marked success. Halifax Herald Aug. 18, 1926.
14. Hayter CRR. Historical origins of current problems in cancer control. CMAJ 1998; 158(13): 1735-40.
15. Johnston SR. Cancer report of the Victoria General Hospital. NSMB 1932; 11:11-20.
16. Stewart J. Cancer control. NSMB 1922; 1(5): 11-13.
17. Cancer control campaign. NSMB 1922; 1(5): 24.
18. Cancer week. NSMB 1922; 1(5):6.
19. Gosse NH. A cancer institute. NSMB 1932; 11(4): 190-191.
20. Special cancer committee. The cancer problem. NSMB; 11(6): 359-62.
21. Dickson C, Tupper C, Stewart CB. Report of the Nova Scotia Oncology Planning Committee. 1979.
22. Rider WD. Halifax Review of Radiation Oncology. 1975.
23. Applied Management Consultants. Final Report of the Operational Review of the Cancer Treatment and Research Foundation of Nova Scotia. 1993.