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Changing medical understandings of cervical cancer and the development of screening programs in post-war Ontario

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Changing Medical Understandings of Cervical Cancer and the Development of Screening Programs in Post-War Ontario

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Introduction

The history of cervical cancer has been a marginalised and neglected facet of medical history in Canada. My thesis examines changing understandings of the disease over the past 100 years, and, in particular, the rising incidence of cervical cancer and the lack of effective screening, primarily in Canada but also in the United States and the United Kingdom. While tracing the technological advances in screening for cervical cancer is important, there is more of a social aspect to this history that needs to be investigated. Attitudes about women, their health, and their lifestyles play an integral part in the historical development of the medical understanding of this disease. While screening programs have been organized internationally, including Canada, these vital services are still not reaching all women. Health Canada states that up to "15% of women have never been screened; 30% haven't been screened in the last 3 years...[and] the 5-year survival rate is only 74%."[1] By rediscovering the past medical constructions of the disease and tracing the development of screening programs on an international level, a clearer understanding of the problems plaguing programs today may be achieved.

While some medical historians do focus on cancer and women, and occasionally cervical cancer, there is little discussion of the changing medical understandings of the disease and its prevention. For example, Barbara Clow, in her study, *Negotiating Disease: Power and Cancer Care, 1900-1950,* discusses cancer care in Canada during the first half of the twentieth century, but does not mention the growing understanding of cervical cancer as a preventable disease during this century. Similarly, James T. Patterson, in his work, *The Dread Disease: Cancer and Modern American Life*, discusses the social implications of cancer and the increase in cancer

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[1] *Health Canada.* www.h-sc.gc.ca/hpb/lcdc/bc/updates/cervix_e.html

awareness in America during the twentieth century, but does not mention cervical cancer at all. Other historians writing on the social implications of cancer, often with a focus on breast cancer, such as Ellen Leopold and Barron H. Lerner, provide additional context for the discussion of cervical cancer, but do not specifically mention cervical cancer within their own works. In 2003 the *Canadian Bulletin of Medical History* published a special issue on cancer, which contributed to the literature on lung cancer, mammography, and the development of radium, but the only mention of cervical cancer is in Patricia Jasen's article, "Malignant Histories: Psychosomatic Medicine and the Female Cancer Patient in Postwar America." Other medical historians who focus on women's health and who briefly mention cervical cancer, do not discuss incidence rates and effective screening techniques. For example, Ann Dally's *Women Under The Knife: A History of Surgery* focusses on surgery for women in the nineteenth century and does briefly discuss the treatment options for women diagnosed with cervical cancer, but mentions nothing about the disease itself and the understanding of it prior to the twentieth century. Wendy Mitchinson, a renowned medical historian, has contributed much to women's medical history, but one of her major works, *The Nature of Their Bodies*, does not mention cervical cancer at all. Similarly, Edward Shorter discusses the social history of women's health in his book, *Women's Bodies: A Social History of Women's Encounter with Health, Ill-Health, and Medicine*, but does not contribute to the literature on cervical cancer.[2]

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[2] Full references for the books listed are as follows: Barbara Clow. *Negotiating Disease: Power and Cancer Care, 1900-1950.* (Montreal: McGill-Queen's University Press, 2001.), James T. Patterson. *The Dread Disease: Cancer and Modern American Life*. (Harvard University Press, 1987.), Ann Dally. *Women Under The Knife: A History of Surgery.* (New York: Routledge, 1991.), Edward Shorter. *Women's Bodies: A Social History of Women's Encounter with Health, Ill-Health, and Medicine*. (New Brunswick (USA): Transaction Publishers, 1991.), Patricia Jasen. "Breast Cancer and the Language of Risk, 1750-1950." *Social History of Medicine* vol. 15

One particular secondary source that stands out as important in the historical understanding of cervical cancer is Eftychia Vayena's PhD dissertation on the development of the Pap smear, and its implications for the prevention of cervical cancer. This is the only source dealing extensively with the history of cervical cancer. Not only does Vayena trace the discovery of the Pap test by George Papancolaou, but she also traces the brief history of screening in the United States and the reluctance of the medical community to accept the Pap test. As additional contextual information, she also briefly includes the history of cervical cancer screening in Britain and Greece.

Secondary sources were also used to trace the development of medicare in Canada. Ralph Sutherland and Jane Fulton's *Health Care in Canada: A Description and Analysis of Canadian Health Services*, David Naylor's *Canadian Health Care and the State,* Odette Madore's *The Canada Health Act: Overview and Options, Carolyn Bennett's Kill Or Cure? How Canadians Can Remake Their Health Care System,* among others, were all used to trace the development of Canada's health care system. It is important to discuss the organization of the Canadian health care system in order to understand how developing screening programs were funded and supported by their governments.

Several different types of primary sources were also used for this thesis. For example, various medical texts, journals, and manuals from the nineteenth and twentieth centuries were used in order to develop the discussion on the changing understandings of cervical cancer. More

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(2002): 17-43., Wendy Mitchinson. *The Nature of their Bodies: Women and Their Doctors in Victorian Canada*. (Toronto: University of Toronto Press, 1994.), Ellen Leopold. *A Darker Ribbon: Breast Cancer, Women and their Doctors in the Twentieth Century*. (Boston: Beacon Press, 1999.), and Barron H. Lerner. *The Breast Wars: Hope, Fear, and the Pursuit of a Cure in Twentieth-Century America.)*New York: Oxford University Press, 2001).

specifically, articles from journals such as *Obstetrics and Gynecology, Journal of the American Medical Association, Canadian Medical Journal, Cancer, International Journal of Cancer, Journal of the American Medical Women's Association,* and *The New England Journal of Medicine*, among others, were used as primary source material for studying the social and medical attitudes concerning cervical cancer in the 1960s, '70s, '80s, and '90s. Archival records were also utilized from both the *National Archives of Canada* and the *Archives of Ontario*, including government documents, minutes from Health Canada meetings focussing on cancer control, and various public health information documents meant to be distributed among Canadian women. In addition to archival and medical literature, I also interviewed seven women in Thunder Bay who were in their twenties during the period from 1950-1970.

Cancer of the cervix has two main stages of development, the preinvasive and invasive stages. Preinvasive, cancer-in-situ, or intraepithelial carcinoma (all different terms for the same stage) is the stage at which early diagnosis is extremely important. Drs, Taylor, Snegireff, and Gordon, in 1955, define preinvasive cell growth in the cervix as,

> ...a lesion in which the entire thickness of the squamous epithelial layer is replaced by cells microscopically indistinguishable from those of frank invasive cancer, with complete loss of stratification but with no invasive penetration of the basement membrane.[3]

This early stage of cervical cancer is asymptomatic and often goes unnoticed without regular screening. Screening for cervical cancer primarily focuses on discovering abnormal cellular activity prior to the development of cancerous cells. These precancerous conditions are treatable and, if detected in time, can prevent the development of cancer. However, if undetected,

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[3] Ruth Taylor, Leonid S. Snegireff, and John E. Gordon. "Cancer as Mass Disease." *American Journal of the Medical Sciences*. (Vol. 229, 1955): 328.

preinvasive cervical cancer develops into the invasive cancerous stage in which the likelihood of full recovery drops considerably. During this stage the cells surrounding a lesion, that increases cell change, in the cervix have undergone stratification and may potentially become fully invasive squamous cell carcinoma. The primary symptoms of invasive cervical cancer include vaginal bleeding and abnormal vaginal discharge.[4] During this stage, the stereotypical symptoms of cancer, like weight loss and general debility, can also occur.

Although the definition of the disease is important, it is not the focus of this thesis. The main focus of this thesis is the response of the government and the medical community, or their lack of response, to the rising cervical cancer rates in the twentieth century.[5] Ineffective screening techniques plagued many countries, such as Canada, the United States, and the United Kingdom. I argue that there was a noticeable increase in cancer awareness and cancer research in the twentieth century which eventually led to an increase in cervical cancer prevention. However, as the following chapters will demonstrate, it was some time before most governments in Canada, either federal or provincial, responded effectively.

In Chapter I of this thesis, the changing understanding of the disease through the nineteenth and twentieth centuries will be discussed. In order to understand why governments were reluctant to fund screening programs, I argue it is important to first trace the historical development of the medical understanding of the disease. Prevention was not an option during the first part of this period simply because physicians were just starting to develop an

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[4] Ibid, 329.

[5] There was a marked increase in mortality from cervical cancer from 1950 to 1955. There were also slight increases in the years 1957 and 1959. www.hc-sc.gc.ca/hpb/lcdc/bc/updates/cervix_e.html

epidemiological understanding of the disease. Various causes were initially focussed on, such as childbirth and infections. The medical community, despite having knowledge of the Pap Test as early as the 1930s, continued to battle increasing morbidity rates of cancer of the cervix. Medical texts that were used as late as the1940s mainly discussed the diagnosis of the disease and its treatment options, and not preventive measures.

Chapter II will discuss the moral and social implications of associating cervical cancer with contagious diseases. Even before the medical community completely understood the epidemiology of the disease, they started to focus on defining risk groups and how to effectively screen them. Various contagions were considered risk factors, including both penile infections and venereal diseases. Several studies were published attempting to demonstrate that prostitutes were more susceptible to cervical cancer because of their increased exposure to venereal diseases and poor living conditions. The result was the establishment of treatment facilities located in venereal disease clinics. These locations, however, did not encourage women to seek treatment for symptoms of cervical cancer.

Chapter III will demonstrate that, even with a growing understanding of the disease, an increase in cancer research, a recognition of the importance of cervical prevention on an international level, governments were still reluctant to financially support screening programs. British Columbia was the first Canadian province to institute a screening program for its province's female population. With new pressures on the federal government to establish state-run health care, there was hope that other provinces would mimic British Columbia's initiative in the 1960s. Unfortunately, there was little response to the British Columbia model. Despite the development of a cancer clinic at the Women's College Hospital in Toronto, and numerous public attempts at the promotion of healthy lifestyles, little was done to promote the prevention of cervical cancer in Canada until much later in the twentieth century. The disease continued to pose a serious health threat to Canadian women.

The final chapter of this thesis focuses primarily on various experiences of women dealing with the risks of cervical cancer. I used results from interviews that I conducted myself, in addition to various other studies done by researchers dealing with experiences related to cervical cancer. Major issues, such as accessibility to health care, understandings of the disease, physicians' attitudes, the stigma associated with the disease, and the men's role in risk are discussed in this chapter. While this chapter does not offer sweeping generalizations for all women's experiences, it does provide individual examples of how many women were reluctant to take part in regular screening activities.

This thesis has been structured in order to demonstrate, that even after years of medical breakthroughs, established funded health care systems, and an increase in public awareness, cervical cancer is still a medical problem. Currently, screening programs are not successful to the point that women are no longer dying from cervical cancer. I hope to provide some insight into the development of the understanding of cervical cancer, the establishment of preventive programs, and the underlying moral and social implications attached to this disease, so that we may begin to understand why, even today, women are still not being screening regularly.

Chapter I - Changing Approaches to Cervical Cancer, c. 1850-1950

This chapter will demonstrate that there was a change in the medical understanding of cervical cancer over the course of the nineteenth and twentieth centuries. Technological advances, namely the Pap smear, created an atmosphere for a shift in the medical attitudes towards cervical cancer. This disease became one that was potentially preventable, and finally, diagnosis and treatment were not the only concerns on the minds of medical researchers and physicians. It is important to understand the development of medical understandings of cervical cancer in order to provide some historical context for a discussion on the establishment of screening programs and any problems they may have faced.

For most of the nineteenth century the medical community believed cervical cancer to be a result of lacerations and inflammation to the cervix. Medical studies focussed on the numbers of children women had and the use of instruments during the birthing process as major precursors to the disease. Some researchers felt that instruments were a real problem due to the additional damage they caused to a cervix already under a large amount of stress. Heredity was also introduced as a possible cause, but was resisted because of a lack of epidemiological proof.

Prevention was not a solution for most physicians because of the lack of clear understanding of the causes of the disease. However, in the early twentieth century there was an international response to inform the public of the problem cervical cancer had become. Most of the pamphlets distributed focussed on women of the 'cancer age' (menopausal women) and the symptoms they were to watch for. There was additional mention of certain practices to avoid such as poor natal care and unhygienic living spaces. Syphilis, a disease often associated with poor living conditions, sexual behaviour, and lifestyle choices, was also a concern in the twentieth century as early as the 1930s. Researchers believed that viruses disrupted and further weakened the cervix, creating an environment for cancer cell development. When the Pap Test was introduced shortly thereafter, the medical community had what it needed, a reliable diagnostic tool, as well as a potential preventive tool to detect cervical cancer before it had a chance to be fatal.

During the late twentieth century the Pap smear was, as it still is, a vital tool in detecting precancerous cells in the cervix. Despite the obvious importance of the Pap smear, it was some time before the medical community embraced it as a preventive tool. Most doctors felt that treatment was much more reliable, and it was easier to convince a symptomatic woman to seek medical care, as opposed to a woman who felt perfectly healthy. The Pap smear had many technical problems that hindered its full acceptance into the medical world. Most funding agencies, government bodies, physicians, and female patients were reluctant to accept and support a procedure that did not appear to be medically sound and which required expensive procedures before someone was physically ill. Had it been a simple observational technique, not a smear with a direct need for laboratories, perhaps more women might have been interested.

I: Medical Understandings of Cervical Cancer c. 1850-1914

Around the turn of the twentieth century, the international medical community believed that there were two recognized types of cervical cancer: squamous-celled carcinoma and adenocarcinoma. With the recognition of cell differentiation earlier in the nineteenth century, different varieties of the disease could be identified. It was believed that the former carcinoma was the most common variety of the disease. A squamous-celled carcinoma was considered to be the glandular version and was not always found until the disease was very advanced.[6] The second variety, an adenocarcinoma, was considered less common, but was much harder to diagnose as it was believed to originate much deeper in the cervical epithelium, and became much more serious before any examination could lead to diagnosis.[7] Although this medical understanding remained consistent for some time, understandings and concerns about risk factors began to refocus as the century passed.

Most of the medical community agreed that lacerations and inflammation of the cervix were major precursors to the development of cervical cancer. Writing in 1907, Frederick McCann explained the importance of laceration and its association with genital cancer. He considered untreated lacerations to be "a chronic inflammatory condition of the cervix, which favours the growth and development of an atypical epithelium; and it is not only the one or two large fissures, but the innumerable small ones."[8] It was assumed that lacerations were possible results of improper medical treatment during birth, multiple births, and injury due to the use of instruments.

For most of the nineteenth and early twentieth centuries the discussion of the etiology of cervical cancer focussed on childbirth. Lacerations were primarily a result of trauma to the cervix, according to Arthur W. Edis, author of *Diseases of Women including their Pathology, Causation, Symptoms, Diagnosis and Treatment*, published in London in 1881. He offered an

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[6] C. Hubert Roberts. "Some Recent Points Bearing on the Etiology and Pathology of Malignant Disease of the Uterus." *Practitioner* vol. LXVIII (1902): 646.

[7] Ibid., 649.

[8] Frederick John McCann. *Cancer of the Womb: Its Symptoms, Diagnosis, Prognosis, and Treatment*. (London: 1907): 16.

etiological explanation by stating that, "injuries inflicted on the cervix during parturition, inflammatory conditions resulting from these, granular degeneration of the cervical mucous membrane and irritation from mechanical causes will also explain the tendency to malignant degeneration in women who have given birth to too many children."[9] Dr. I Winkel of Germany agreed that "difficult labours... are very frequently part of the history of these cases," but concluded that it is not necessarily the number of births a woman may have; it is simply the fact of whether she has ever given birth.[10] This was challenged by other physicians, like McCann, who believed that numerous births, especially amongst the poorer classes, increased the risk of developing cervical cancer. In his book, *Cancer of the Womb: Its Symptoms, Diagnosis, Prognosis, and Treatment*, McCann states that "...the increased prevalence of cancer of the cervix among the poor is probably due to frequent childbirth, lack of attention during and after labour, so that septic metritis is a frequent consequence, whilst the cervix is thickened, eroded, and damaged by numerous fissures..."[11] He gives five births as an average number for the cervical cancer patient, which is much higher than a couple, which is what most physicians believed.[12] Stephen Cullen, a medical writer in 1900, argued that a woman only had to have a few children to sustain injury to her cervix resulting in the development of cervical cancer. He believed that it was a

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[9] Arthur W Edis. *Diseases of Women including their Pathology, Causation, Symptoms, Diagnosis, and Treatment*. (London: Assistant Obstetric Physician to the Middlesex Hospital, 1881): 215.

[10] I. Winkel. *Diseases of Women: A Handbook for Physicians and Students*. (Phil.: P. Blakiston, 1887): 365.

[11] McCann, 14.

[12] Ibid., 15.

combination of trauma resulting from: 1) normal vaginal labour; 2) miscarriage; or 3) damage to the cervix from the use of instruments to dilate the cervical canal.[13]

Thomas Cullen, a medical researcher at the turn of the twentieth century, believed that the use of instruments during the birthing process often increased the risk of developing cancer.[14] Instruments were commonly used during the birthing process as an aid to furthering the baby down the cervical canal. However, instruments also created lacerations and increased the occurrence of trauma to the woman's cervix that was already under a large amount of stress. According to Ann Dally, it was believed in the nineteenth century that nearly all cases of cervical cancer were a result of trauma (i.e. the use of instruments) to the cervix. There were other factors that were considered in the nineteenth century, such as stress and living conditions, but trauma was a primary concern for most medical authorities.

In addition to what the doctors believed, women also identified the use of instruments as a cause of trauma to their cervixes. The use of instruments often caused long-term gynecological problems.[15] Forceps were believed to be used more often, and more carelessly, in poorer women than the wealthier classes. This carelessness resulted in excessive lacerations that were generally only seen in poorer women in the nineteenth century.[16] It was also believed by some women that poorly performed surgical repairs of the cervix by doctors was a result of the "doctor hurrying

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[13] Thomas Stephen Cullen. *Cancer of the Uterus: Its Pathology Symptomology, Diagnosis, and Treatment*. (1900): 651.

[14] Ibid., 651.

[15] Ann Dally, *Women Under The Knife: A History of Surgery*. (New York: Routledge, 1991): 123.

[16] Ibid., 446.

the birth, instead of giving nature a chance."[17] This sentiment was more often felt among the women of the poorer social classes because they simply could not afford highly trained physicians or pay for lengthy medical procedures.[18]

Mental stresses and "hysteria" were still concerns for various forms of cancer development at the turn of the twentieth century. Winkel proposed that cancer in general may be a result of the constant mental stresses, trouble, and sorrow that many women were often dealing with on a daily basis.[19] During the nineteenth century, diseases of the breast were also a serious concern for medical doctors. It was believed that breast disease was common in women who were experiencing types of hysteria and 'neurosis' caused by said daily stresses and sorrow.[20] Tumours that were believed to be benign were commonly referred to as "neuroses of the breast."[21] Later in the nineteenth century the rise in cancer rates was not only blamed on daily stresses but on the "luxurious habits of life," furthering the focus of high risk women beyond the poorer classes.[22]

There was a lot of controversy surrounding the issue of heredity in the causation of cervical cancer at the turn of the twentieth century, as was the case with breast cancer. There

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[17] Ibid., 124. Ann Dally's book offers several anecdotal stories about women's fears during the birthing process.

[18] James Pratt is discussing Thomas Aldis Emmet in his book, *Pioneer Surgeon of the Women's Hospital*. (Philadelphia: F.A. Davis, 1957): 84.

[19] Winkel, 366.

[20] Patricia Jasen. "Breast Cancer and the Language of Risk, 1750-1950." *Social History of Medicine* vol. 15/1 (2002): 33-34.

[21] Ibid.

[22] Ibid., 23.

were arguments on either side of the issue, but it appeared as though the majority of medical writers doubted its role. The physicians who did mention a possible connection, usually only mentioned heredity as having an effect on cancer in general and not specifically on cervical cancer.[23] It was believed by some physicians that, although there might be a connection between heredity and cervical cancer incidence rates, there was no epidemiological proof of heredity playing any significant role. One researcher who did discuss a direct connection between heredity and cervical cancer, was Thomas Stephen Cullen, who published *Cancer of the Uterus* in 1900. Cullen gives an example of three sisters suffering from the same diseases at the same time, appearing to support this hypothesis. He in turn used statistics to show that heredity played a much smaller role than he was originally proposing. His statistics showed that only 19% of all squamous-cell and adenocarcinomas showed any possible connection to a hereditary predisposition.[24] Cullen, like most other physicians at this time, was very ambiguous in his use of statistics.

Throughout the discussion of specific causes (e.g., trauma from lacerations and multiple births) there was no mention of the possible dangers of multiple partners. Prostitutes were not considered to be especially liable to uterine cancer.[25] There was discussion of whether a person's "dissolute habits" caused higher rates of cancer, but it was concluded that such behaviour did not

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[23] The few articles that were published in the nineteenth century that included heredity as a risk factor for cervical cancer consist of; Lawson Tait, *Diseases of Women 2nd Edition* (1879); Arthur W. Edis, *Diseases of Women Including Their Pathology, Causation, Symptoms, Diagnosis and Treatment*. London (1881); Alexander Skene. *Treatise on the Diseases on Women, for the Use of Students and Practitioners.* London (1889).

[24] Thomas Stephen Cullen. *Cancer of the Uterus*, 651.

[25] Winkel, *Diseases of Women*, 366.

necessarily affect cancer development.[26] One medical author pointed out that, "prostitutes usually die before 30 so that opportunity for investigation is lost."[27] It appears as though physicians during the nineteenth century were not particularly concerned with sexual practices in relation to cancer. It was not until later in the twentieth century that women who had multiple sex partners were considered to have a higher risk of developing cervical cancer.

Some critics believed that something drastic needed to be done in order to curb the continuously rising cervical cancer incidence rates. In 1907, one gynecologist observed that, "in England and Wales alone, 4000 women succumb to uterine cancer every year...and at the present time not less than 95 percent of all cases of cancer of the uterus come under observation when all prospect of permanent relief is out of the question."[28] It was pointed out by F.F. Simpson in 1904, an American physician, that "of every 28 women who pass the age of 30, one will be the victim of cancer of the uterus."[29] He even advised that women of the "cancer age" should be examined quarterly in order to detect the disease at the earliest possible stage.[30] The cancer age was considered to be approximately 40 to 70 years of age.

At the turn of the twentieth century, physicians in several countries responded to rising cervical cancer incidence rates with the publication of information pamphlets directed at both the

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[26] W.H. Walshe. *The Nature of Treatment of Cancer* (London, 1846): 434.

[27] Thomas Denman. *Observations on the Cause of Cancer*. (London, 1810): 39-40.

[28] Anstruther W. Milligan. "The Crusade Against Cancer of the Uterus." *Journal of Obstetrics and Gynaecology of the British Empire* vol. XI (1907): 45.

[29] Ibid., 52.

[30] Ibid.

patient and the doctor. In Germany, Dr. Winter, a pioneer in the movement toward fighting cancer of the uterus, called for an immediate response from physicians to make their patients more aware of the potential problems related to irregular bleeding and other primary symptoms often related to the first stages of cancer. He began this research as early as 1891 and published numerous articles discussing the problem of cancer of the uterus. In his article he "relates his various experiences, points out how the cause may be forwarded by doctors, midwives and the public, and suggests means to ensure the earlier diagnosis."[31] In 1902, Dr. Winter sent out pamphlets to all practising doctors in East Prussia "urging them, amongst other things, to make an internal examination in all suspicious cases. To midwives he sent a leaflet pointing out the symptoms of uterine cancer, and urging them to send onto their doctors all patients who presented any such symptoms."[32] He also sent out pamphlets to select groups of women urging them to talk to their doctors about any irregular bleeding and be more aware of their bodily functions that are both normal and abnormal.[33] It is unknown whether this valuable information ever reached the general public, as the onus was on the physician to communicate such information to their patients.

There were similar responses from physicians in England, Scotland, and the United States. In England, A.H. Lewers responded to the growing concern over carcinoma of the uterus by writing his own book, *Cancer of the Uterus*, with the intention of helping practitioners and patients to be more aware of the early signs of cancer. Lewers believed that bleeding was a

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[31] Ibid., 46-47.

[32] Ibid., 47.

[33] Ibid.

primary symptom in uterine cancer, and he reasoned that if women were aware of this symptom that "a considerable proportion of them would lose no time in seeking competent advice."[34] He argued that, in order to make the women more aware of such symptoms, some sort of leaflet should be produced and distributed by "medical men and matrons of hospitals." There is no evidence that such an undertaking was ever successful or even attempted by either Lewers or any other medical officials in England.[35]

In Scotland, referring to Lewers' suggestions, J.K. Kelly argued that the leaflets that he wanted to produce were insufficient in order to provide a solution to the problem of cancer of the uterus. Kelly was very adamant about continuing to educate the "medical man" to convince him to believe that, when cancer is diagnosed early enough, there is still hope of curing the patient. He argued that with continuously educating the physician, "and through him the public," an end to this disease would be in view.[36]

There were similar responses to English and Scottish suggestions of possible solutions to the growing problem of cervical cancer in the United States. In 1897 W.D. Haggard published a paper that laid "great stress on the importance of women thoroughly understanding all about menopause and its accompanying risks."[37] He believed that this would allow women to be able to recognize abnormal and normal bleeding that might occur at certain stages in their lives. Other

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[34] Ibid., 48.

[35] Ibid.

[36] Ibid., 50.

[37] Ibid., 51.

American physicians agreed with the need to continuously educate both the practising physician and women approaching menopausal age in order to reduce rising cervical cancer rates.[38]

It was believed that, when women approached menopause, they were more susceptible to developing uterine cancer and less likely to be diagnosed than were women under the common menopausal age. While women were reaching this stage in their lives, they were also entering the "cancer age" that concerned most physicians. Many doctors believed that "the reason(s) for patients seeking advice too late for the possibility of any radical operation ...seem to be the belief that irregular haemorrhages at or about the time of the menopause are normal events, and that with a little patience they will all clear up."[39] By recognizing a target age group (menopausal women), pamphlets could be developed and disseminated amongst this group.

Even with the dissemination of pamphlets to the believed-to-be appropriate high risk groups, doctors (primarily male) were encouraged to take a leading role in cancer prevention. Medical authorities motivated them to educate their patients about warning signs of cancer in order to decrease incidence rates. However, other medical practitioners, including the midwife, were not immune to accusations by the male physicians for the sorry state of cancer incidence rates. Midwives were often accused of persuading women that irregular bleeding was due to the "change of life" and that no attention should be paid to a natural process. Patients were being equally accused of "modesty [and] poverty," and simply not being properly informed by a medical

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[38] Milligan cites numerous other American doctors involved in the crusade against cancer of the uterus including: Mair, D.H. Craig, Sampson, and F.F. Simpson.

[39] Ibid., 46.

doctor.[40] Although it was believed that women were to be more active in controlling the state of their health, they still needed support from and encouragement from the male medical professionals who were beginning to play a larger role in their lives. This was an experience felt by many women well into the twentieth century.

II: Early Twentieth Century Medical Understandings of Cervical Cancer

Just as in the nineteenth century, twentieth-century physicians continued to believe that the primary cause of cervical cancer was trauma and irritation to the cervical walls. Along with new risk factors, childbirth continued to be a concern for physicians in the twentieth century. For example, a text printed in 1940, entitled *Neoplastic Disease: A Treatise on Tumors*, discusses the importance of childbirth in cervical cancer incidence. The author, Dr. James Ewing, a cancer expert, stated that "while carcinoma [in the cervix] seldom develops in scars, repeated cervical lacerations disturb the normal structure and functions of this tissue, interfere with its nutrition, and expose its weakened structure to chronic irritation and inflammation."[41] With irritation of the cervix a primary concern, it was the physician's job to define what the irritators were in order to prevent them.

The concern about chronic cervical inflammation and inflammation as a precursor to cervical cancer was also represented within medical journals printed during the 1940s and early 1950s. For example, P. Stock, a medical researcher in the early mid-twentieth century, published an article in 1955 discussing the problem of increased fertility rates during the post-war era as a

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[40] Ibid., 49.

[41] James Ewing. *Neoplastic Diseases: A Treatise on Tumors*. (Philadelphia and London: W.B. Saunders Company, 1940): 600.

precursor to cervical cancer. While discussing other factors, such as social class, hygiene, and age at marriage, he mentions fertility (referring to live children born) several times. Early childbirth as a result of early marriage was also a concern due to the fragility of the cervix.[42] Poorer social classes seem to have been a target of discussion in this article because of the assumption that lower-class families have more children in a less hygienic situation. With unhygienic homes, and generally more children, the lower class seemed to create an atmosphere very susceptible to infection and higher incidence rates of cervical cancer.

Hygiene was a common part of the discussion on prevention in some mid-twentieth century popular literature on women's health. An example of one such publication in which the role hygiene is believed to play in cancer prevention is Mildred A. Horn's book, *Mother and Daugther: A Digest for Women and Growing Girls, which Completely Covers the Field of Sex Hygiene*, published in Toronto in1946. Horn professed that it was the responsibility of the young woman to keep her genitals clean by the use of douches and enemas in order to ensure the prevention of infections. Leucorrhea[43], considered 'dirty' and infectious, is a condition that can be a result of unhygienic practices, "over activity," or "ungratified sexual excitement," according to Horn, and may further lead to cancerous growths both in the cervix and uterus.[44] According to Horn, growths were more common in older women, and were usually accompanied by a bloody

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[42] P. Stocks. "Cancer of the Uterine Cervix and Social Conditions." *British Journal of Cancer* vol. 9 (1955): 488.

[43] Leucorrhea is vaginal discharge and is common in most women.

[44] Mildred A. Horn. *Mother and Daughter: A Digest for Women and Growing Girls, which Completely Covers the Field of Sex Hygiene.* (Toronto: Hygienic Productions of Canada, 1946): 58-9.

discharge. She believed that bloody discharge in younger women was usually a result of inflammation or a miscarriage. She does, however, advise women to consult a physician if they have irregular menstruation as it is often the first symptom of a disease of the uterus.[45] All diseases, Horn believed, were a reflection of the level of hygiene a woman practised.

Prominent physicians believed that sexually transmitted diseases (STD) also played a predominant role in cervical cancer development. STDs, unlike childbirth, clearly located responsibility for prevention with the woman, and not her doctor. This is the beginning of a very important shift in medical understandings of the causes of cervical cancer. It was initially proposed that STDs often remain latent in the body, possibly throughout one's life, until "their carcinogenic function becomes active through the influence of some intrinsic or extrinsic factor and causes a steadily progressive autonomous and irreversible malignant growth."[46] There have been various theories about the role STDs may play in the development of cancer.[47] During the early 1940s, medical authorities believed that the cervical walls were very sensitive to infection. It was believed that lesions caused by venereal infections were predisposing factors to the development of cancer. If left untreated, neglected lesions caused severe inflammatory and chronic conditions.[48] Amputation of the cervix, total hysterectomy, and cauterisation of the cervix were the general types treatment for such conditions.[49]

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[45] Ibid., 70.

[46] Elizabeth Hurdon. *Cancer of the Uterus*. (London: Oxford University Press, 1942): 6.

[47] Ibid., 6-7.

[48] Ibid., 14.

[49] Ibid., 13.

Researchers in the twentieth century began to highlight the role syphilis and other venereal infections played in the development of cervical cancer. Despite its prevalence in the 1940s, the connection made between syphilis and cervical cancer was not new to the medical world. As early as 1931 studies demonstrated the significant correlation between the two. However, many of these studies were criticised for faulty data collection and evaluation. As M.L. Levin *et al* argued in their article published in 1942, often earlier studies "did not exclude the possibility that differences in age distribution, in colour, or in marital status between cervix uteri cases and the control series may account for the observed difference in syphilis prevalence."[50] They also argued that during the collection of the statistics, all cases concerning black women were excluded from the study "because of the high prevalence of syphilis in this group." There was also an obvious lack of experimentation to provide proof, despite the possibility "that tissue changes resulting from syphilitic infection may, under favouring circumstances, initiate the process of carcinogenesis."[51]

Despite the criticisms from medical researchers, syphilis continued to be considered a cause of cervical cancer well into the 1960s. During the mid-twentieth century, it appeared that " in women with cancer of the uterine cervix, syphilis [was] found approximately three times as frequently as in women with cancer of other sites."[52] Not only was there a concern for the role syphilitic lesions played in the development of cancer of the cervix, but also with regard to the

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[50] M.L. Levin *et al*., "Syphilis and Cancer." *New York State Journal of Medicine* vol. 42 (1942): 1740.

[51] Ibid.

[52] Ibid., 1739.

poor prognosis of infected cancer patients. One physician stated that, "regardless of the lack of objective data bearing upon this subject there is a widespread impression among radiologists that when cancer appears in a syphilitic patient the prognosis is very much less favourable than in the absence of a spirochetal infection."[53]

A major hygienic concern that the medical authorities had during the late nineteenth and twentieth centuries was male circumcision. The practice of circumcision was thought to be directly related to lower cervical cancer rates in Jewish women in comparison to women who had uncircumcised partners. One hypothesis proposed that penile cleanliness played a role in lowering cervical cancer incidence rates. The medical reasoning was that with the removal of the foreskin, the occurrence of smegma which is often retained under the uncircumcised foreskin and is considered to be a weak carcinogen, is thus avoided. Therefore, ritual circumcision and the additional penile cleanliness, were considered to be protective measures in preventing cervical cancer.[54] One author argued that the statistics were proof enough. It was found in Amsterdam in 1919-1920 that cervical cancer was occurring in 10 out of every 100,000 non-Jewish women, compared with only four (or less) in every 100,000 Jewish women.[55] These statistics demonstrate that cervical cancer occurred in Jewish women at half the rate that it occurred in non-Jewish women. Such a ratio could additionally be demonstrated in Fijians. One study concluded that from 1925-32 only three cases of cervical cancer were found in a hospital in Fiji. Among other

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[53] W.G.D Harding. "Influence of Syphilis in Cancer of the Cervix." *Cancer Research* vol. 2 (1942): 59.

[54] ? *Canadian Medical Association Journal* vol. 90 (1964): 1132.

[55] Sampson Handley. "The Prevention of Cancer." *The Lancet* (May, 1936): 987.

populations of women whose cultures did not practice circumcision like the Fijian culture, it was found that there was more than an eight times difference in higher incidence rates of cervical cancer.[56]

The Jewish immunity was often explained by married Jewish women's adherence to strict religious practices of constant cleansing and prohibition of sexual congress during times of menstruation.[57] Sorsby suggests that with careful consideration of the Jewish woman's adherence to strict cleanliness and avoidance of coitus during or for some time after menstruation, and a limited number of pregnancies, one might be able to decrease the risk of developing cancer. He stated that, "it is clear that married life in some form or other is the usual soil from which uterine cancer springs. It is therefore easy to see that a well-regulated sexual life might be a favourable factor in the avoidance of this disease."[58] Jewish women were generally considered to be "cleaner in body than the masses of non-Jewish women."[59] They were taught to believe that any sort of discharge, which soils the genitals and causes an increase in infections, is theologically "unclean."[60] Their immunity was also attributed to their generally poor living conditions and simpler lifestyle, consisting of very little recreation and interaction with other people.[61] The same

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[56] Ibid., 990.

[57] Hiram N. Vineberg. "The Relative Infrequency of Cancer of the Uterus in Women of the Hebrew Race." *Journal of the Mount Sinai Hospital* vol. 10 (1919): 37.

[58] Maurice Sorsby. *Cancer and Race: A Study of the Incidence of Cancer Among Jews.* (London: John Bale, Sons and Danielson Ltd., 1931): 86.

[59] Ibid., 87.

[60] Ibid., 88-89.

[61] Ibid., xiv.

explanation was used for the low incidence rates of cervical cancer among Fijian women. There was an automatic protection of the cervix from "mixed bacterial infections of the cervix during coition."[62]

On the opposite end of the spectrum to Jewish women, Native women had unusually high rates of cervical cancer, as reported in Canada in the late 1940s. In a report entitled "Cancer Among Canadian Indians," published in 1954, cancer was the number two cause of death next to tuberculosis in 1949.[63] In the five years of data collection, women made up approximately 62% of the deaths from cancer recorded. Cancer of the cervix was the cause of death in 40% of those cases. In comparison to breast cancer, cervical cancer was more than three times as likely to occur as the primary cause of death.[64] This article does not offer any concrete explanation for these statistics, other than it was found that cancer of the cervix tends to occur earlier in life in native women than it does among white women.[65] The authors speculate that this could be because of "the high birth rate and limited post-natal care"[66] common amongst native women in Canada.

By the 1950s the discussion of causation of cervical cancer had broadened. Childbirth was still considered significant, but newer factors were being emphasized. It was as though the

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[62] Handley, "The Prevention of Cancer," 990.

[63] O.H. Warwick and A.J. Phillips. "Cancer Among Canadian Indians." *The British Journal of Cancer* vol. VIII (1954): 225.

[64] Ibid., 226.

[65] Ibid., 228.

[66] Ibid., 229.

medical community was finally realizing that, in order to prevent such a common cancer among women, they needed to pinpoint the lifestyle practices that needed to be avoided.

III: The Development of the Pap Test

During the interwar period, there was a new development in regards to the diagnosis and prevention of cervical cancer that would change medical opinions. George Papanicolaou announced the discovery of the vaginal smear (Pap test) during the early twentieth century when medical officials were struggling to find a tool to fight rising cervical cancer rates. Initially the Pap Test was introduced by Papanicolaou as a diagnostic tool. He argued that it was more reliable that the process of taking a biopsy. The vaginal smear was met with serious reservations by surgeons and pathologists as they felt it was a threat to their established practice of biopsy and power over several medical specialities, such as, cancer diagnosis and research.[67] Since it was initially introduced as a diagnostic tool it was some time before it was used in the physician's office as a preventive procedure.

Its name would indicate that George Papanicolaou was the primary discoverer, but there was another individual who played a important role in its development. Aurel Babes was another researcher who published on cervical smears and their specific technique. As George Weid states in his article discussing the discovery of the Pap Test, "...in the field of diagnostic cytology there are few major 'firsts,' since essentially the entire field is an evolutionary one to which many researchers have contributed significant details which might have seemed too small to warrant

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[67] Eftychia Vayena. "Cancer Detectors: An International History of the Pap Test and Cervical Cancer Screening, 1928-1970." *PhD. University of Minnesota* (1999): 34-35.

tracing by medical historians."[68] In 1928, George Papanicolaou and Aurel Babes both published on the same topic, cervical smears, within months of each other, though neither mentioned the other's work. Papanicolaou presented his findings at a conference in January 1928, and Babes published an article that did not appear until April of the same year. Because both used different routes and ways of presenting their findings, it is very hard to assess who actually made the initial discovery.[69] Most literature written on the Pap test attributed its discovery to Papanicolaou, hence the name of the technique. Babes was continually referred to an fundamental part of its discovery, but was never formally labelled as a discoverer.

Although George Papanicolaou was primarily a researcher in zoology, some say that his discovery "in its significance in our fight against cancer stands unsurpassed in our century."[70] He believed that smaller female animals had to have some sort of reproductive cycle. In order to prove this, Papanicolaou purchased a small nasal speculum, and, after daily observation, he found that guinea pigs did have a regular menstrual period. In addition to his daily observations, he also took small vaginal smears in order to trace microscopic cell changes throughout the cycle. His examinations of his first slides of vaginal smears produced "an impressive wealth of diverse cell forms and a sequence of distinctive cytologic patterns."[71] With this discovery, Papanicolaou was

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[68] George Wied. "Pap-Test or Babes Method?" *Acta Cytologica* vol. 8 (1964): 173.

[69] Vayena. "Cancer Detectors," 18.

[70] Leopold G Koss. "George N. Papanicolaou." *Acta Cytologica* vol. 7 (1963): 145 quoted in, Carmichael, D. Erskine. *The Pap Smear: Life of George N. Papanicolaou*. (Springfield: Charles C. Thomas, 1973): xiii.

[71] D. Erskine Carmichael. *The Pap Smear: Life of George N. Papanicolaou*. (Springfield: Charles C. Thomas, 1973): 48.

offered an appointment as professor of Zoology by the Premier of Greece in the early 1920s. But, due to a variety of political matters, the offer disintegrated and Papanicolaou settled comfortably in the United States.[72] After numerous experiments with other rodents and some higher mammals such as opossums and monkeys, he turned to human subjects.

In order to understand the effectiveness of his discovery, Papanicolaou had to find human subjects on whom to experiment. Papanicolaou's first human subject was his wife. He continued to study her for 21 years. In addition to his wife, between the years of 1920 and 1925, he acquired several other subjects, mostly laboratory staff, and he obtained daily smears for two to three months from these women.[73] He also took several smears from pregnant women to analyse in order to submit his first article concerning vaginal smears entitled "Human Pregnancy Diagnosis by Vaginal Smear" in 1928.[74] Although he had been working on the morphological changes in the vaginal smears in order to reveal changes in the uterus and ovaries since 1925, his presentation and paper revealed some hesitation. In order to present a new method of cancer diagnosis, Papanicolaou was well aware that extensive clinical trials and more proof were needed.[75]

Throughout the 1930s, Papanicolaou continued his research with vaginal smears, but abandoned the idea of cancer diagnosis for a period. He continued research on the use of vaginal smears, but with a focus mostly on the endocrinology of the estrous cycle in female humans. He revived the idea of cancer diagnosis once he was teamed with Herbert Traut, an expert in

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[72] Ibid., 52-53.

[73] Ibid., 55.

[74] Ibid, 56.

[75] Vayena, "Cancer Detectors," 32.

gynecological pathology.[76] When the team of Papanicolaou and Traut became official in October of 1939, they were quick to set up a research agenda. The agenda had three simple focusses: "1) to develop the method [of diagnosis] and establish its validity, 2) to train others to use it, and 3) then to educate the profession and the public as to what it had to offer."[77] Papanicolaou did not publish another article with reference to cytologic cancer diagnosis until 1941.[78]

During the 1940s the medical community appeared to finally be accepting the use of the Pap Test as a diagnostic tool for cervical cancer. However, most medical researchers were not convinced that the Pap smear was sufficient enough to diagnose cancer on its own. They believed that the Pap smear was discussed only as an ""adjunct method in the diagnosis of cervical cancer, and not as an independent diagnostic test."[79] Even when it was clearly stated as the ideal tool to be used in cervical cancer detection, "efforts to replace the Pap smear with alternative diagnostic procedures have, since its inception, been constantly pursued."[80] By 1948, Drs. Papanicolaou, Traut and Marchetti (Chairman of Department of Obstetrics and Gynecology at Georgetown Medical Center) co-authored a book titled, *Epithelia of Woman's Reproductive Organs*, which added more credit to their claim of the Pap smear being a reliable and independent cancer

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[76] Ibid., 35-36.

[77] Ibid., 37.

[78] The article published in 1941 was entitled, "The Diagnostic Value of Vaginal Smears in Carcinoma of the Uterus." Wied., "Pap-Test or Babes Method?" 173.

[79] Vayena, "Cancer Detectors," 67.

[80] Monica J. Casper and Adele E. Clarke. "Making the Pap Smear into the 'Right Tool' for the Job: Cervical Cancer Screening in the USA, circa 1940-95." *Social Studies of Science* vol. 28, (1998): 257.

diagnosis tool. During scientific debates in the 1940s, Papanicolaou continued to stress the low cost and simplicity of the Pap test, especially when the discussion of applying it to the wider population came to the fore.[81] Papanicolaou used these basic arguments to further convince the medical community that what he had discovered was a valid tool to diagnose and, in the future, prevent cervical cancer.

Despite Papanicolaou's constant efforts, the validity of the Pap smear continued to be under a great deal of investigation early in its existence. As early as 1946 studies claimed that there were thousands of cases of gynecological cancers being diagnosed by the vaginal smear. However, not all of these studies had satisfactory results. There was a margin of error in all studies, labelled 'false negatives' or 'false positives', and in some cases upwards of five to seven percent.[82] The technical problems that caused the false negatives and positives included how closely the slides were read and if the proper cells were collected during the smear. These imprecise results allowed surgical pathologists to hold on to their objections about the Pap smear's validity.[83] Although some argued this percentage of error is not large enough to disregard the validity of the vaginal smear, it did, however, open the door for continued criticism from the medical community.

IV: Conclusion

Although there were some changes at the turn of the twentieth century, many of the beliefs about the causes of cervical cancer from the nineteenth century still held strong with

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[81] Ibid.., 76-78.

[82] Vayena, "Cancer Detectors," 67.

[83] Ibid., 71-72.

medical authorities. Trauma to the cervix was the main concern, and it was simply the matter of pinpointing what caused the trauma in order to find a way prevent it. With the realization that early detection and diagnosis were vital to a woman's health, treatment options became much more successful. However, it was recognized that women had to take a more active role in their own health. It was believed that, with some encouragement on behalf of the physician, women who were more aware of the early symptoms of potential cancer were more apt to survive the development of the disease. Such a revelation was the cornerstone in the development of the concept of preventing cervical cancer.

With the breakthrough of the Pap smear, there seemed to be a new hope in decreasing the continuously rising cervical cancer incidence rates. With its success in detecting pre-cancerous cells before the cancer cells even develop, one could easily assume that the Pap smear was implemented quickly as a prevention tool. But, the medical community was initially sceptical of its validity up until as late as the 1960s. Even though the Pap smear was said to detect "pre" cancerous cells, it was largely used within the physician's office during the 1940s and 1950s as a diagnostic tool. Scientific debates continued throughout much of the 1940s and 1950s focussing on the importance of the Pap smear as both a diagnostic tool and a screening tool. As will be discussed in the following chapter, even with another attempt at devising a screening technique in Ontario's first cancer clinic, very few women were approaching clinics to be screened for cervical cancer. It was a service that was not free, and women who felt perfectly healthy were not easily convinced of its importance.

As the following chapters will discuss, the public health sector needed to take a much larger role in ensuring that both women and physicians were well educated about the concept of prevention. Preventive screening programs were desperately needed nationwide, and it was the provincial and federal governments' responsibility to provide such services. This did not happen in Ontario until much later in the twentieth century, as the beliefs about causes of cervical cancer continued to change for several decades. New risk factors, such as sexual behaviour and contagion, were seriously considered by the medical community in the mid-twentieth century, resulting in both moral and social implications for women of all age groups.

Chapter II - Cervical Cancer and Contagion: The Medical, Moral, and Social Implications

By the 1950s, cervical cancer was understood to be preventable if caught in its precancerous stages. With the Pap Test being used more often within the physician's office, there was hope that there would be a decline in cervical cancer morbidity and mortality rates. By this time, there was no doubt in the minds of the medical community that irritation to the cervical walls and unhealed lacerations raised the risk of developing cancer of the cervix considerably. By treating chronic conditions of the cervix, like cervicitis, a woman's chances of developing cervical cancer appeared to decrease. This was a notion that was consistent both in the medical studies and the gynecologic texts being published.

This chapter will demonstrate that with the knowledge of the proper technique to screen women, researchers began to focus on trying to figure out who the high risk groups were and how they could effectively screen them. However, with an increasing post-war medical concern with the role sexual activity played in cervical cancer risk, there were serious medical, moral, and social implications for women. In addition to this shift in cervical cancer risk definitions, women became reluctant to respond to screening opportunities because of the fear of being labelled promiscuous. Despite what physicians maintained within their offices, research was concluding that married women who were nulliparous still had an increased risk of developing the disease, thus shifting the focus, again, to sexual activity. Studies were published with the sole purpose of providing an epidemiological explanation for this increased risk. Was a woman's choice of lifestyle and hygiene a medical risk? Was it the cleanliness of the penis that was the concern? Was it the increased exposure to carcinogens with multiple partners? Were nuns really immune to this disease because of their celibacy? It became medically and socially accepted that it was primarily promiscuous women who developed cervical cancer and that they needed to be treated accordingly. Why would a woman who felt perfectly healthy attend a venereal disease clinic to be screened for cervical cancer and risk being labelled infectious and promiscuous? The understandings of contagion and promiscuity served to undermine the hoped-for potential of the Pap Test to reduce cervical cancer mortality rates. This happened in two ways: physicians were inconsistent in talking to patients about the Pap Test unless the patient was perceived to be "promiscuous", and the stigma increasingly associated with cervical cancer and its treatment in venereal disease clinics discouraged women themselves from seeking tests on a regular basis. As will be further discussed in chapter three, the financial considerations also continued to hinder the Pap Test's validity from the perspective of governments who were being asked to subsidize preventative programs.

I: Cervical Cancer and Sexual Behaviour

Medical texts and articles during the mid-twentieth century argued that cervicitis was a potential problem for both parous and nulliparous women, but was more common among women who had given birth.[84] Cervicitis is a chronic condition of the cervix resulting from multiple unhealed lacerations and repeated trauma to the cervical walls. Lacerations typically occurred during childbirth, and as discussed in Chapter I, were one of the primary concerns for medical officials. Lacerations, if not treated promptly, developed into chronic conditions of the cervix, such as cervicitis, and increasingly caused concern for physicians. It was believed that these untreated lacerations would eventually develop into carcinoma of the cervix as "cancer does not

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[84] Louis E. Phaneuf. "Cancer of the Cervix in Nulliparous women: Report of Three Cases." *New England Journal of Medicine* vol. 206 (1932): 840-841.

commonly appear in a healthy organ."[85] The common treatments of lacerations to the cervix were cauterization, hysterectomy, or curettage. Despite these common treatments, there was an increasing interest in how to avoid such trauma to the cervix.[86] Lacerations during childbirth were inevitable, but additional irritation to the cervix was believed to be somewhat avoidable.

One possible irritation to the cervix considered in the mid-twentieth century was sexual intercourse. As earlier in the twentieth century, studies during this period concluded that cervical cancer was more prevalent among married women than single women, primarily focussing the concern on childbearing.[87] However, many studies started to look beyond childbearing within a marriage and more at the sexual intercourse as "a factor in the production of the disease."[88] Sexual intercourse appeared to play a much larger role in cervical cancer risk than previously realized, and medical researchers began to search for an epidemiological explanation.[89] Major

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[85] Fabien Gagnon. "Contribution to the Study of the Etiology and Prevention of Cancer of the Cervix of the Uterus." *American Journal of Obstetrics and Gynecology* vol. 60 (1950):516.

[86] Several text books and articles discuss this process. For example, see, Norman F. Miller. "Carcinoma of the Uterus, Ovary, and Tube." *Journal of American Medical Association* vol. 136 (1948): 163-169; A. Anderson, et al. "Sections on Obstetrics and Gynecology." *Proceedings of the Royal Society of Medicine.* vol. 44 (1951): 308-312; Stephen Thomas, Cullen. *Cancer of the Uterus: Its Pathology Symptomology, Diagnosis, and Treatment.* New York: D. Appleton, 1960; Hugh C, Mclaren. *The Prevention of Cervical Cancer.* London: English Universities Press, 1963.

[87] W.L. Harnett. "Statistical Report on 955 cases of cancer of the cervix uteri and 321 cases of the corpus uteri." *British Journal of Cancer* vol. 3 (1949): 433 and ? *Canadian Medical Association Journal* vol. 90 (1964): 1132.

[88] Armand J. Pereyra. "The Relationship of Sexual Activity to Cervical Cancer." *Obstetrics and Gynecology* vol.17 (1961): 154.

[89] Hugh M Shingleton and James W. Orr. *Cancer of the Cervix.* (Philadelphia: J.B. Lippincott Company, 1995): 3.

newspaper publications, such as the *Globe and Mail*, started to send out warning signals to women that a promiscuous lifestyle, or sexual activity at an early age, were precursors to the disease.[90] Some medical authorities believed that sexual intercourse was the primary risk factor for the development of cervical cancer.[91]

Initially, the focus in medical studies was on the role the penis played in causing irritation of the cervix during sexual intercourse. As was discussed in Chapter I, the penis, particularly if uncircumcised, was believed to be the cause of irritation to the cervical walls. Penal penetration could possibly cause lacerations on the cervix, which, if not treated promptly, could potentially become chronic cervicitis. A number of authors claimed that Jewish women, whose husbands were circumcised at birth, were generally free from cervical cancer.[92] The role sexual intercourse played in cancer risk was also discussed in popular literature "handbooks" on becoming a woman. For example, W. Gifford-Jones' book published in 1969, *On Being A Woman: The Modern Woman's Guide to Gynecology*, refers to the rarity of cervical cancer amongst Jewish women, particularly recognizing their adherence to specific religious practices that avoid uncircumcised penises and intercourse during particularly susceptible periods for the cervix. Gifford-Jones

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[90] *National Archives of Canada.* File # 311-C1-1."Sex and cancer Linked by 2 British Surveys." *Globe and Mail*, April 6, 1973.

[91] Unknown author. *Canadian Medical Association Journal* vol. 90 (1964): 1132.

[92] Paul A. Younge. "Cancer of the Cervix: A Preventable Disease." *Obstetrics and Gynecology* vol. 10 (1957): 470. Other authors claiming the same rarity among Jewish women include: Irwin Weiner *et al.* "Carcinoma of the Cervix in Jewish Women." *American Journal of Obstetrics and Gynecology* vol. 61/11 (1951): 418-422; E.L. Kennaway. "The Racial and Social Incidence of Cancer of the Uterus." *British Journal of Cancer* vol. 2 (1948): 178-212; Maurice Sorsby. *Cancer and Race: A Study of the Incidence of Cancer*. London: John Bale, Sons and Danielson Ltd, 1931; Jerome V. Treusch *et al.* "Infrequency of Carcinoma of the Uterine Cervix Among Jewish Women." *American Journal of Obstetrics and Gynecology* vol. 52 (1942): 162.

concluded that for every Jewish woman who develops cervical cancer, nine non-Jewish develop the disease.[93] It was an uncircumcised penis' foreskin that was believed to cause unnecessary irritation to the fragile cervical walls. This sort of irritation could also be mimicked by the use of tampons.[94] It was believed that any foreign object in the vagina was sure to cause harm by irritation and the possibility of carrying infections.[95]

In addition to penal penetration, transference of infection from the penis to the cervix during intercourse was also a concern for medical researchers. By having multiple exposures to several different partners, a woman's chance of contracting a contagious virus was greatly increased. Some researchers believed that the susceptible cells might lie dormant and with the proper "initiating agent," such as a virus, the exposed tissue could differentiate into a carcinoma.[96] Not all physicians agreed with a virus theory, and considered it only one hypothesis among many.

While the penis was often considered the primary source for carrying and transference of diseases onto a healthy cervix, it was the woman's sexual activity that had to be limited. Throughout the discussion of the virus theory and the single partner potentially being the carrier, there was never any suggestion of safe sex (condoms) or regulation of the partner through health checks. It was not until the understanding of the human papilloma virus (HPV) took shape in the

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[93] W. Gifford-Jones. *On Being A Woman: The Modern Woman's Guide to Gynecology*. (Toronto: McClelland and Stewart Limited, 1969):178.

[94] Elizabeth Parker. *The Seven Ages of Woman*. (Baltimore: The John Hopkins Press, 1960):64.

[95] Ibid.

[96] I.D. Rotkin. "Sexual Characteristics of Cervical Cancer Population." *American Journal of Public Health* vol. 57 (1967): 827-828.

latter part of the twentieth century that alternate forms of protection, for both the male and female, were considered as prevention of cervical cancer. These major disparities in the understanding of the role viruses play in cancer development would hinder progress in understanding and preventing the disease.

Many studies focussed on two control groups in order to provide objective statistics: nuns and prostitutes. The reasoning for the choice of these two groups is simple: the premise of any epidemiological study is to define the characteristics of population groups who develop, and those who do not develop, the disease in question.[97]Assuming that all nuns are celibate and prostitutes have many sexual partners, a clear comparison could be made for the purposes of demonstrating what appeared to be a high incidence rate of cervical cancer amongst prostitutes. Most studies, while developing their control groups, often purposely left unmarried women out as they were assumed to be not having sex and not exposed to irritators associated with sexual intercourse.[98] The risk of cervical cancer has been recognized as being very low among women in religious orders for several decades, and in response to this fact, prostitutes were targeted by the medical community as a high risk group.[99] Jorgen Røjel, a researcher from Copenhagen, found, in fact, that "there [was] a striking number of prostitutes in the series of cervical cancer. Since the social level of both materials is the same, it is reasonable to relate the high incidence of prostitutes

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[97] Ruth Taylor *et al.* "Mortality Among Women in 3 Catholic Religious Orders with Special Reference to Cancer." *Cancer* vol. 12 (1959): 1207.

[98] Gagnon. "Contribution to the Study of the Etiology," 517.

[99] Rotkin, "Sexual Characteristics," 827-828.

among the patients with cervical carcinoma and their sexual habits."[100] Syphilis was considered an "occupational disease"[101] for prostitutes and proved to be a serious risk factor for cervical cancer in Røjel's study. He also discovered that, even by excluding prostitutes from the study, there was still a preponderance of syphilis among cervical cancer patients. He concluded that there must be a "relationship which cannot be explained by the social findings."[102]

Some researchers did not bother to create control groups and simply went to prisons to find women who were already seen as delinquent and were assumed to have a past experience with prostitution. One study, published in 1961, attempted to "correlate cancer of the cervix with increased sexual activity and to establish a prevalence rate for this disease among a group of women with histories of prolonged scortatory practices."[103] Since these women were incarcerated, follow-up and repeated smears if ordered were easily obtained. It is questionable, however, whether all women involved in the study were willing subjects and readily subjected themselves to continuous examinations. Whether they were willing or not amplified the fact that the researchers considered these women delinquents and incompetent in regards to their own healthcare.

The majority of epidemiological studies discussing the relation between sexual activity and development of cervical cancer referred to two works considered to be the foundation of their

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[100] Jorgen Røjel. *Uterine Cancer and Syphilis*. (Copenhagen: NYT Nordisk Forlag Annold Busch, 1953): 52.

[101] Ibid., 50.

[102] Ibid., 58.

[103] Pereyra. "The Relationship of Sexual Activity," 155.

research: Fabian Gagnon's article, published in 1950, "Contribution to the Study of the Etiology and Prevention of Cancer of the Cervix of the Uterus," and an Italian medical study done in 1842 by Rigoni-Stern, "Giornale per Servire ai Progressi della Patlogia e della Terapeutica."[104] Gagnon was the first twentieth-century medical researcher to claim that he had found epidemiological evidence that concluded that cervical cancer is more common among prostitutes, thus directly correlating the disease withe excessive amounts of sexual activity. Without considering earlier theories of virus and contagion in the development of cervical cancer, Gagnon believed that continuous sexual activity with several partners increased a woman's risk of developing chronic conditions of the cervix and thus developing cervical cancer. Gagnon was clinging to earlier claims in the century that it was primarily the irritations by foreign objects that predisposes the cervix to a condition more susceptible to cervical cancer. He concluded that the cure of cervicitis would "bring about the disappearance of cancer of the cervix." He states that "in well over 4,000 cases of cervicitis, treated systematically during the last 17 years, both at the hospital and in private practice, I have no yet come across a single carcinoma of the cervix."[105] Although the Rigoni-Stern article had the same conclusions almost a century before Gagnon, the latter appeared to be more readily accepted by the medical community as epidemiological evidence.

According to Petr Skrabanek, a medical researcher attempting to disprove the low incidence rates of cervical cancer among nun populations, the authors who used the early

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[104] The English translation is, "The Journal to Serve the Progress of Pathology and Therapy."

[105] Gagnon, "Contribution to The Study," 521.

nineteenth century Italian medical study by Rigoni-Stern,[106] misused the study completely. He believed that early medical writers misquoted the Italian study by stating that "speculation on the relation of marriage to onset of cervical cancer goes back to 1842 [referring to Rigoni-Stern]..."[107] Authors gradually copied this speculation and, as Skrabanek points out, "embellished the nun's tale, adding various invented details."[108] In fact, Rigoni-Stern never mentioned the possible "rarity" of cervical cancer in nuns and did not even make any distinctions between cervical cancer and other cancers of the uterus. The Italian writer only recorded four deaths from uterine cancer in nuns, which was in contrast to the expected numbers, suggesting the under-diagnosis of the disease.[109] Although such a fault in the use of statistical data does not disprove the idea that sexual activity does have an effect on the risk of developing cervical cancer, Skrabanek is convinced that it should make one reconsider the conclusions of many medical studies during the mid-twentieth century.

In contrast to what many medical authors argue the nineteenth-century study concludes, Skrabanek's article claimed that cervical cancer in nuns could actually be parallelled to the general population with rates of incidence. He found that 13.2% of nuns developed cervical cancer

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[106] The Rigoni-Stern study is originally published in Italian and I have not read the original copy. However, Skrabanek offers an interesting discussion about its contents and how in fact it was misused by other researchers.

[107] Petr Skrabanek. "Cervical Cancer in Nuns and Prostitutes: A Plea for Scientific Continence." *Journal of Clinical Epidemiology* vol. 41 (1988): 577.

[108] Ibid.

[109] Ibid.

versus 13.4% of the general population.[110] Skrabanek claims that various other studies carried out in Britain in several different religious orders show that despite what the majority of medical writers conclude, carcinoma of the cervix does occur relatively frequently among nuns. He believes it is the "paucity of good data" that is the main problem in the literature that concludes a high rate of cervical cancer amongst prostitutes.[111] Throughout the literature that discusses the rates of cervical cancer amongst nuns and prostitutes, Skrabanek claims that the "evidence [used] is poor and should not be used as additional 'evidence' for a hypothesis which remains to be proved. Failure to distinguish hypotheses from facts delays clarification of the problem of the aetiology of cervical cancer."[112]

The clarification of the causes of cervical cancer can also be obscured by the ambiguous use of the label 'promiscuity.' There were serious social implications with associating promiscuity with the development of cervical cancer. The medical evidence seemed clear: irritation to the cervix via the use of tampons, viral infection, and penal penetration were all risk factors any woman during the twentieth century needed to be aware of. However, the task of managing public awareness and screening practices without discouraging women by labelling them either high risk or promiscuous was not an easy one. As will be discussed in the next section, screening facilities were at first located in venereal disease clinics in lower income communities, thus further

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[110] The study also concluded that, "the frequency of genital carcinoma in nuns and in the general population was the same (23.6 vs 24.7% of all cancers, respectively). Of seven genital cancers in nuns, for which the site was specified, one was cervical cancer, four were cancers of the corpus, and two were ovarian cancers." Ibid., 578.

[111] Ibid.

[112] Ibid., 580-581.

discouraging women from seeking help once symptoms appeared. Women were less likely to attend a clinic that was located in a VD clinic as the stigma of being infected was often quickly associated with doing so.

II: Cervical Cancer and Sexually Transmitted Diseases

Once the risk of developing cervical cancer was linked to sexual behaviour, venereal disease came under study. Prostitutes have been directly linked with the development and spread of venereal diseases for centuries. As Kevin Sienna demonstrates in his discussion of the sexual and social dangers of prostitution and the spread of venereal disease, as soon as disease is linked to sex, "it becomes linked to women. As a result, ideas about women's behaviour, women's character, and women's bodies played a central role in early modern venereology literature."[113]

Syphilis still played a dominant role in the post-war era for both venereal disease patients and cervical cancer patients. It had already been discovered earlier in the twentieth century that at an earlier age, syphilitic women generally have less favourable prognosis than non-syphilitic women.[114] Therefore, most medical officials believed that if they could curb the spread of venereal diseases, they could also control the incidence rate of cervical cancer.

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[113] Kevin Sienna. "Pollution, Promiscuity, and the Pox: English Venereology and the Early Modern Medical Discourse on Social and Sexual Danger." *Journal of the History of Sexuality* vol. 8 (1998): 557.

[114] For further details refer to Chapter 1 of this thesis and: W.G.D. Harding. "Influence of Syphilis in Cancer of the Cervix." *Cancer Research* vol.2 (1942): 59-61., M.L. Levin *et al.* "Syphilis and Cancer." *New York State Journal of Medicine* vol. 42 (1942): 1737-1745., W.G. Harding. "The Importance of Syphilis in Neoplasia: Analytical Review." *Journal of Cancer Research Community* vol. 7 (1936): 137-146., and J.I.M. Black. "Syphilis in Diagnosis and Prognosis of Cancer." *British Medical Journal* vol. 1 (1937): 1313-1314.

During the early twentieth century, venereal disease clinics were erected in accessible locations such as hospitals and general clinics. The idea was to cater to lower social-class communities where the assumed high-risk population resided. Hospital locations were preferred because diagnosed individuals could access treatment in other areas of the hospital immediately, and the clinic avoided relying on a recall system. It was believed by most clinic workers that people who were infected were apt to disappear and never return for follow-up appointments for proper treatment.[115] Most people made use of clinics as opposed to their family physician as it was the most efficient way of remaining anonymous. In addition to the anonymity, patients were assured free diagnosis, treatment, and drugs at a venereal disease clinic, as opposed to a physician who would charge for any service rendered. Most officials believed that these clinics would be useful because lower social classes, assumed to be most affected by venereal diseases, simply could not afford treatment from a private physician, unlike their counterparts in the middle and upper classes.[116]

Despite the services being free of charge at most of the VD clinics during this time, the location posed a real problem for many women. While most of the clinics were located in area hospitals where a large portion of the community could be seen, many lower-class women were reluctant to degrade themselves by being seen in a VD clinic. Despite this obvious problem of location, medical experts continued to believe that lower-class women were simply reluctant to receive treatment. One may ask why they were reluctant to seek treatment? Were they treated

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[115] Jay Cassel. *The Secret Plague: Venereal Disease in Canada 1838-1939.* (Toronto: University of Toronto Press: 1987): 179-80.

[116] Ibid., 177.

with dignity, respect and care? It was believed that, "...women were naturally averse to seeking medical aid for venereal disease..." when in reality their reluctance was due to the social stigmatization that they must be promiscuous if they were infected.[117] Society during the post-war period expected women to control their sexuality and remain loyal to their husband. Sexual intercourse before marriage was not socially accepted, and women who were single and infected with a venereal disease were frowned upon.

Women with symptoms relating to cervical cancer were also reluctant to be seen in such clinics, but the belief that women who attended venereal disease clinics were promiscuous only encouraged medical officials to focus their early screening programs on these types of facilities. For example, already accepting the importance of the Pap smear and screening for cervical cancer, medical experts in England decided to screen all female patients over the age of 25 in the late 1950s and early 1960s who attended venereal disease clinics. Venereal disease clinics claimed that they were finding double the number of cases of carcinoma of the cervix, carcinoma *in situ*, and suspicious smears than expected from the general population.[118] The results of one study revealed that out of 235 women examined for cervical cancer, "4 were reported to be highly suggestive of carcinoma and two contained suspicious cells."[119] Another study reported 1.1.% positive smears and 5.8% suspicious smears. Under the premise that women who attend venereal

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[117] Ibid., 186.

[118] Arthur J. Lucas and Denis R. Williams. "Cervical Cytology of Patients Attending a Venereal Disease Clinic." *Journal of Obstetrics and Gynaecology of the British Commonwealth* vol. 74 (1967): 104.

[119] C.J. Farrer and P.H. Tatham. "Screening for Carcinoma of the Uterine Cervix in a V.D. clinic." *British Journal of Venereal Diseases* vol. 38 (1962): 230.

disease clinics are more sexually active than the general population, such a focus was believed to be more economical and practical than attempting to screen the general population.

During the 1960s and 1970s epidemiologic studies were primarily treating cervical cancer as a venereal disease. Researchers believed that the "observed relationships of cervical cancer to coital practice, circumcision, syphilis, prostitution, and low socioeconomic class led a number of investigators to suggest the possibility of a venereally transmitted viral etiology for this neoplasm."[120] The herpesvirus type 2 (specific to genital infection only) was isolated from human cancer cells found in the cervix and, although not initially conclusive, the findings strengthened the evidence of viruses causing cervical cancer.[121] Researchers at the Emory School of Medicine at the Sutav Stern Symposium on Perspectives in Virology in 1970 stated that,

> our findings so far demonstrate that the pattern of genital herpetic infection fits very well that established for cervical cancer, including the greater prevalence of both entities in lower socio-economic groups, their apparent venereal mode of transmission, their higher incidence in sexually promiscuous women and in those with early coital experience and contact with uncircumcised males.[122]

Researchers also believed that the developmental patterns of cervical cancer suggest that the introduction of a virus would assume "different biologic properties, including carcinogenicity" in

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[120] Irving I. Kessler. "Human Cervical Cancer as a Venereal Disease." *Cancer Research* vol. 36 (1976):786.

[121] *National Archives*, file # 311-C1-8. "Herpes Virus, Cancer of the Cervix, may be linked, U.S. doctor finds." *Globe and Mail.* November 18, 1971.

[122] *National Archives of Canada*. File# 311-C1-8. Gustav Stern Virology Symposium. "Cervical Cancer, Herpes Virus Are Linked." *Medical Tribune*. March 5, 1970: 1.

an otherwise healthy cervix.[123] Several diseases can be considered to be venereal in nature. These include spirochetal and bacterial diseases and a number of viral protozoal, fungal and parasitic conditions; the herpes simplex virus is part of the latter.[124]

The herpesvirus hominis type 2 has been thought to be responsible for all genital infections and has been very rarely demonstrated in other sites. The only exception in location for the herpetic infection is in newborn infants that have been exposed to a genital infection maternally.[125] Herpesvirus hominis, as a result of laboratory studies in both Europe and United States, has been divided into two antigenic types: herpesvirus hominis type 1 (HVH 1) and herpesvirus hominis type 2 (HVH 2). HVH 2 is characteristically different from HVH 1 in that it is specific to genital tract infections in both female and males. The majority of cases of HVH 2 are a result of venereal transmission.[126] For well over a decade, during the latter part of the twentieth century, researchers focussed on the role of herpesvirus type 2 and its potential role in the development of cervical cancer. Genital herpesvirus type 2 has been found to be a venereal disease affecting individuals in their early adulthood and adolescence. It is also very rare in children and nuns and is very common in prostitutes. These are, as discussed earlier, all attributes similar to cervical cancer. Numerically, "these observations indicated that there are more than enough cases of

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[123] William Josey *et al.* "Genital Infection with Type 2 Herpesevirus Hominis." *American Journal of Obstetrics and Gynecology* vol. 101 (1968): 718.

[124] Kessler, "Human Cervical Cancer," 783.

[125] Scott Jordan *et al.* "Ethnic Distribution of Cytologically Diagnosed Herpes Simplex Genital Infections in a Cervical Screening Program." *Acta Cytologica* vol. 16/4 (1972): 363.

[126] William E. Josey *et al.* "Genital Infection with type 2 herpesvirus hominis." *American Journal of Obstetrics and Gynecology* vol. 101 (1968): 718-719.

genital herpetic infection to account for every case of cervical anaplasia."[127] André J. Nahmais, a medical researcher in the 1970s, believed that while many epidemiological studies were hindered by various laboratory, histopathological, and statistical problems,[128] each study allowed researchers to further understand risk factors for cervical cancer. In addition to recognizing the methodological faults of these studies, it is also important to realize that researchers that recognized the potential role of the herpesvirus type 2 were only a step away from understanding the role other viruses played in the risk of this disease.

While several studies were published regarding the connection between herpesvirus type 2 and cervical cancer, none of them provided convincing proof. Most researchers were quick to recognize the limitations within their own studies and discussed options for further research. For example, in an article published in the journal *Cancer Research* in 1973 entitled, "An Analysis of Seroepidemiological Studies of Herpesvirus Type 2 and Carcinoma of the Cervix.", the authors began by explaining their article with the two major limitations to their study's conclusions:

> There are 2 aspects of the seroepidemiological studies of herpesvirus type 2 and cervical cancer that imposed limitations upon the interpretation of the data. One aspect is the antibody assay systems; the degree of accuracy with which the present assay systems detect past infections with herpesvirus type 2 is not known. The 2nd problem is the difficulty in controlling for the attributes of sexual behaviour that appear to affect he risk of cervical cancer.[129]

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[127] André J. Nahmais *et al.* "Epidemiological Studies Relating Genital Herpetic Infection to Cervical Carcinoma." *Cancer Research* vol. 34 (1974): 1112.

[128] Ibid., 1111.

[129] William E. Rawls, *et al.* "An Analysis of Seroepidemiological Studies of Herpesvirus Type 2 and Carcinoma of the Cervix." *Cancer Research* vol. 33 (1973): 1477.

Other problems related to obtaining "uniform histopathological criteria" included the inability to define appropriate controls and "determining the best methods for analyzing data." The first study to demonstrate an increased rate of cervical carcinoma in women with cytologically positive herpetic infection was Nahmias, Naib and Josey's article, "Epidemiological Studies Relating Genital Herpetic Infection to Cervical Carcinoma" published in 1974 in Atlanta, Georgia.[130] However, this study was also guilty of the same methodological problems others had experienced.

While medical researchers focussed on herpesvirus type 2 and syphilis as risk factors, they were also furthering the association of promiscuity and uncleanliness with women diagnosed with cervical cancer. By providing screening services in venereal disease clinics and labelling most cervical cancer patients promiscuous, women were much less likely than before to seek help. Screening is much more successful when asymptomatic women attend clinics by their own free will; however, why would a woman who feels perfectly healthy attend a VD clinic to be screened and risk being labelled either infected or promiscuous? Despite these moral and social implications, researchers were very close to a medical discovery of a virus that would be revolutionary in the fight against cervical cancer.

III: Cervical Cancer and HPV

The recent discovery of a new risk factor for the development of cervical cancer involves the human papillomavirus (HPV). Researchers have proven that "these viruses are able to integrate into the human genome, and by a variety of mechanism including viral protein production and binding of human suppressor p53 and retinoblastoma proteins, lead to unregulated

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[130] Nahmias, *et al.* "Epidemiological Studies," 1111-1117.

cell growth, accumulation of chromosomal mutations, and finally to malignant transformation."[131] There are over 70 different strains of the HPV that have been identified both as cutaneous and mucosal types.[132] Specific types of the HPV, however, are associated with cancer development.[133] Data, mostly experimental, suggest that type 16, 18, 31, 33, and 35 all have been identified in penile, vulvar, and cervical cancer specimens, indicating that both male and female humans can be affected by the HPV.[134]

As was discussed earlier, syphilis, herpesvirus type 2, and various other infections have all been considered risk factors for cervical cancer since the 1900s. However, the ability to distinguish the specific agent was questionable until a more reliable biological understanding had been made available.[135] HPV has been connected with the development of cervical cancer since the 1980s. A consensus panel convened by the World Health Organization International Agency for Research on Cancer in 1995 concluded that there is enough "compelling evidence, from both the biological and the epidemiological standpoints, to consider certain papillomaviruses as

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[131] Alice Lytwyn and John W. Sellors. "Sexually Transmitted HPVs: Current Concepts and Control Issues." *The Canadian Journal of Human Sexuality* vol. 6/2 (1997): 2.

[132] Cutaneous HPV infection refers to infection of the skin and mucosal HPV refers to the infection of a mucous membrane.

[133] Luisa Lina Villa. "Human Papillomaviruses and Cervical Cancer." *Advances in Cancer Research* vol. 71 (1997): 322.

[134] E.-M. DeVilliers *et al.* "Human Papillomavirus Infections in Women With and Without Abnormal Cervical Cytology." *The Lancet* vol. ? (September 26, 1987): 703.

[135] Susanne K. Kjaer, et al. "Human Papillomavirus – The Most Significant Risk Determinant for Cervical Intraepithelial Neoplasia." *International Journal of Cancer* vol. 65 (1996): 601.

carcinogenic in humans."[136] By 2000, medical articles were confidently stating that "HPV is thought to be the primary cause of cervical intraepithelial neoplasia and cervical cancer."[137]

Studies on risk factors for cervical cancer have almost always focussed on the sexual behaviour of the woman, and seldom considered the partner in the discussion of risk. It was not until the 1980s that epidemiologists began to wonder if the sexual histories of the male partners might be a determinant of cervical cancer risk.[138] It had been found that married women are more likely than single women to develop cervical cancer, and, with the discovery of the role HPV infection plays in cancer development, finally the partner, primarily male, has quickly become part of the cancer equation. An article published in the Kitchener-Waterloo, Ontario daily newspaper, *The Record,* in 1996, is particularly interesting as a professor from John Hopkins University School of Medicine claims that "male behaviour is the important thing in this cancer [cervical]." A study done in Spain concluded that "risk of cervical cancer was increased 11 times for wives of men who had 21 or more sex partners. The cervical cancer risk was eight times greater among wives of men who frequented prostitutes."[139] With the recognition that both partners play a part in the development of the disease, additional preventive measure could now be taken to reduce morbidity and mortality rates.

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[136] Villa. "Human Papillomaviruses,"321.

[137] John W. Sellers *et al.* "Prevalence and Predictors of Human Papillomavirus Infection in Women in Ontario, Canada." *Canadian Medical Association Journal* vol. 163/5 (2000): 503.

[138] Nancy Lovejoy. "Precancerous and Cancerous Cervical Lesions: The Multicultural "Male" Risk Factor." *Oncology Nursing Forum* vol. 21 (1994): 497.

[139] "Cervical Cancer Blamed on Straying Husbands, lovers." *The Record.* Wednesday, August 7th, 1996.

IV: Conclusion

Post-war explanations of cervical cancer risk factors were generally focussed on sexual activity and living conditions. Many studies during this time attempted to show that prostitutes were more susceptible to cancer because of their promiscuous lifestyles and repeated exposures to venereal diseases. By associating lack of education and proper living conditions, susceptibility to venereal diseases, and promiscuous lifestyles with cervical cancer risk, lower-class women were targeted as high-risk groups in desperate need of regulation and screening. Statistics were showing that lower-class women were, in fact, largely contributing to the high cervical cancer incidence rates. By targeting these groups of women, there were serious medical, moral, and social, ramifications for women in general. Why would a woman who felt perfectly healthy attend a venereal disease clinic to be screened and risk being labelled promiscuous? As the next chapter will show, the late development of a state-run health care system in Canada had a detrimental effect on the promotion of preventive programs that could have decreased cervical cancer rates drastically. Even with the increase in public education about promoting healthy lifestyles and public pressure for a shift in the health care culture from a curative approach to a more preventive one, it was still some time before the Canadian federal and provincial governments realized the growing public health issue cervical cancer was becoming.

Chapter III - The Development of Cervical Cancer Prevention Programs

The purpose of this chapter is to trace the development of screening programs in Canada, in conjunction with similar developments in the U.S. and the U.K. While each country responded differently to the rising concern with cervical cancer, all are vital to the discussion of why it was not until late in the twentieth century there was any attempt to establish an organized screening program for women. Up to this point, this thesis has demonstrated that by the mid-twentieth century, the medical community understood cervical cancer as a potentially preventable disease, but only if there are properly organized screening programs in place. As has been demonstrated in the previous chapters, once the knowledge about the disease was established, there should have been a prompt response on the part of health and government officials with the development of screening programs. This chapter will demonstrate that this was not the case in several provinces in Canada, even with a role model for screening in BC as early as the 1950s. In Canada, before the existence of a funded healthcare system, women had to pay for their cancer screening. It was extremely difficult for health officials to convince women who felt perfectly healthy to pay for cancer screening. Once a fully funded healthcare system was in place in the 1960s, the prevention of cervical cancer seemed easier and more financially feasible for all Canadian women. However, women were still reluctant to be screened, physicians were not active in educating and encouraging their female patients to be screened, and recall/follow-ups were difficult to obtain. Without government funded and monitored programs specifically devoted to screening, quality laboratory screen reading could not be guaranteed.

With the founding of the Canadian Cancer Society in 1938 and the development of the National Cancer Institute of Canada in 1947, there was an increase in cancer research, public cancer awareness, and interest in why the government was not funding screening programs. Internationally, both the U.K. and the United States showed real initiative in funding and focussing on cancer research. In Canada, national conferences were being held as early as the 1940s with the sole purpose of discussing cancer research, mortality and morbidity rates, and eventually the prevention of cancer. However, there was very little focus on cervical cancer until as late as the 1960s, except for the extraordinarily early development of a central cytology laboratory and screening program in British Columbia in the 1940s and '50s. Various discoveries, such as the understanding of the importance of the human papilloma virus, moved cervical cancer awareness in the right direction. The post-war transition of focus from a curative approach to a more preventive one proved that prevention was on the minds of medical officials and researchers, but effective screening would require recall/follow-up systems, the monitoring of laboratory technicians and screening techniques, and increasing public awareness of the disease. Finally, in the 1990s Ontario released a proposal for a cervical cancer screening program that appeared optimistic about the likelihood of its success. This chapter will demonstrate that once there was a funded health care system, and eventual co-operation between health care providers and government funding bodies, cervical cancer screening could be set up in a way that promotes accessibility to all women at risk.

I: The Evolution of Federal and Provincial Government Health Care

In 1867, the British North American Act (BNA) devised a plan to properly distribute health care responsibilities among all levels of government. For the most part, health care has been a provincial government responsibility. Provincial governments are directly responsible for "priority setting, policy selection, planning, financing, regulating, administration, resource allocation, evaluation, standard setting, and delivery of any type of health service."[140] Types of health service can include health promotion and education, assurance of quality care, and cancer screening programs. Provincial governments are also in charge of the allocation of responsibilities to municipal governments and the negotiation of budgets and fee scales. Therefore, there are numerous variations in involvement in health care concerns in municipalities from province to province.[141] Financially, for the most part, public funds pay for Canadian health care. Most public hospitals receive their money directly from the government. This is consistent with the BNA.[142]

According to the BNA, federal responsibilities include all matters that are of national concern. Ottawa was, and still is, concerned with marine hospital and care, health services for aboriginal peoples, and the armed forces.[143] In addition to these primary responsibilities, the federal government has several agencies that are involved in the delivery of health care, such as National Health and Welfare (Health and Welfare Canada), the Centre for Disease Control (CDC), and the Medical Research Council (MRC).[144] The federal government can also use its

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[140] Ralph Sutherland and M. Jane Fulton. *Health Care in Canada: A Description and Analysis of Canadian Health Services*. (Ottawa, The Health Group: 1988): 54.

[141] Ibid., 59.

[142] E. Vaydo and Raisa Deber. "The Canadian Health-Care System: A Developmental Overview." in David Naylor. *Canadian Health Care and the State*. (Montreal: McGill-Queen's University Press,1992): 125-126.

[143] Ibid., 125-126.

[144] Sutherland and Fulton, *Health Care in Canada*., 49.

spending power to make financial contributions to certain programs that are already under provincial jurisdiction.[145]

Despite the fact that Canadian federal and provincial governments were playing various roles in their country's healthcare in the post-war period, most Canadians were still financially responsible for using any health service up until the late 1950s. Paying for health care had become a hardship for many Canadian families. In response to this rising health care crisis, the CCF, which came into power in 1944 in Saskatchewan under the leadership of Tommy Douglas,[146] passed the *Hospitalization Act* in 1947. Saskatchewan was the first province to offer any hospital insurance coverage in the country.[147] The National Health Service (NHS) in Britain was a model for the development of Canadian medicare. The NHS was started in 1948 under the mandate that, "with minor exceptions, everybody in Britain is entitled to any kind of required medical treatment for any condition, free of charge."[148] If any residents of Britain decided to purchase private insurance they were still part of the universal system and subsequently paid twice for health insurance.[149] The model of the NHS universal health care system seemed a logical

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[145] Odette Madore. *The Canada Health Act: Overview and Options*. (Library of Parliament, Parliamentary Research Branch: Government of Canada, 2000): 3.

[146] J.L. Finlay and D.N. Sprague. *The Structure of Canadian History, Third Ed.* (Scarborough: Prentice-Hall Canada Inc., 1989), 417.

[147] Pat and Hugh Armstrong with Claudia Fegan. *Universal Health Care: What the United States Can Learn From the Canadian Experience*. (The New Press: New York, 1998): 8.

[148] Ake Blomquist. *The Health Care Business: International Evidence on Private Versus Public Health Care Systems.* (The Fraser Institute: British Columbia, 1979): 68.

[149] Ibid.

choice for the Canadian provincial and federal governments. Other provinces would eventually follow Saskatchewan's lead.

With Saskatchewan providing a provincial model of health insurance, the federal government passed health acts that covered hospital services and, eventually, various other health services. In 1957, the federal government of John Diefenbaker brought in the *Hospital Insurance and Diagnostic Services Act*. This Act stated that Ottawa was responsible for the coverage of half the cost of any provincial hospital insurance program. Each provincial program was forced to be "comprehensive, universal, and accessible, and its coverage was [to be] portable."[150] It also introduced the *Hospitalization Act*, which funded public insurance for all hospital care.[151] Douglas was a frontrunner again in 1962 when he included doctor's office visits in the tax-supported insurance scheme.[152] An additional act, the *Medical Care Act* of 1966, was passed forcing provinces to ensure that hospital and physician services complied with certain requirements and that the provinces funded at least half of the cost of insured health services.[153] It was not until 1971, nearing the end of Pierre Trudeau's first term, that the foundation of our current system was put into place. This newly formed universal health care system covered 99 percent of all services rendered in a hospital or doctor's office across the country.[154]

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[150] Vaydo and Deber, "The Canadian Health-Care System: A Developmental Overview." 126-127.

[151] Carolyn Bennett. *Kill or Cure? How Canadians Can Remake Their Health Care System*. (Toronto: Harper Collins, 2000): 13.

[152] Ibid.

[153] Madore, *The Canada Health Act.*, 4.

[154] Bennett, *Kill or Cure?*, 13-14.

The Canadian system was further reinforced in 1984 with the passing of the *Canada Health Act* that banned any extra-billing. The *Canada Health Act* was a combination of the two previous Acts, outlining in further detail the specifics of various principles and providing definitions of penalties for any province caught allowing extra billing. When the *Canada Health Act* was introduced by the Liberal government it was passed unanimously. This legislation brought together hospital and medical insurance and allowed commitment to the five principles provided in earlier legislation: "public administration, comprehensiveness, universality, portability, and accessibility."[155] Provinces were no longer able to apply additional fees to certain health services, and everyone, regardless of their ability to pay or not, was to be covered for "all medically necessary hospital and doctor services."[156]

What is particularly interesting about the *Canada Health Act* is that, in addition to clarifying the five principles, it was also designed to shift the focus away from a primarily curative approach to preventive strategies to health care. Within the Act, health promotion "was established as a public concern."[157] *The Canada Health Act* reflected the promotion of healthy

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[155] Armstrong and Armstrong, *Universal Health Care*., 30.

[156] Ibid.

[157] Ibid., 31. For further reference on the development of the health care system in Canada see: Anne Crichton *et al.* "Doctors and Patients Negotiate The System of Care: Readings," in *The Canadian Health Care System vol. 1*.(Ottawa: Canadian Hospital Association, 1984.), Pat and Hugh Armstrong. *Wasting Away: The Undermining of Canadian Health Care*. (Toronto: Oxford University Press, 1996.), Arnold and Orvill Bennett Adams (eds). *Looking North for Health: What We Can Learn From Canada's Health Care System.* (San Francisco: Jossey-Bass Publishers, 1993.), Howard C. Shillington. *The Road to Medicare in Canada*. (Toronto: Del Graphics Publishing Deptartment, 1972), and Anne Crichton and David Hsu. *Canada's Health Care System: Its Funding and Organization*. (Ottawa: Canadian Hospital Association Press, 1990).

living in addition to treating sickness and disability.[158] Canadians began to demand the re-allocation of government resources to prevention and early intervention, and there was a recognition of "the need for greater communication, education, participation and empowerment related to health."[159] The increasing focus on preventive medicine would provide the context for greater attention to cancer screening programs.

II: Cancer Research and Control in Post-War Canada

Cancer research and control in North America have been supported by a variety of government and publicly-funded bodies. As early as the 1930s, societies were created with the sole purpose of furthering cancer research and improving treatment. The Canadian Cancer Society and the American Cancer Society were developed with a focus on furthering research into cancer treatment and preventive measures so that the population of North America could ease their growing cancer fears. Bodies such as National Health and Welfare in Canada, the National Cancer Institute of Canada, the National Cancer Institute in the US, and various provincial agencies, such as the Ontario Cancer Institute, were all critical in the battle against cancer. These agencies funded research programs, helped to build research facilities, organized and funded conferences specific to cancer control, and were instrumental in maintaining global communication of current research and discoveries. Internationally, bodies such as the Imperial Cancer Research Fund in the UK continually contributed to cancer research.

In the UK the Imperial Cancer Research Fund (ICRF) was developed in 1902 under the aegis of the Royal Colleges of Physicians and Surgeons of London. The main goal of the ICRF

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[158] Armstrong and Armstrong. *Universal Health Care*, 31.

[159] Ibid., 42.

was to undertake experimental cancer research within its own laboratories. The ICRF was instrumental in increasing the funds allocated solely for cancer research. The ICRF's focus was on institute-centred research which "lent itself to the introduction of versatile research programmes combining statistical, geographical, and ethnographic inquiry with extensive laboratory investigations in bacteriology, embryology, immunology, and cell metabolism."[160] The ICRF, although vital to the progress of cancer research, experienced many decades of financial and internal turmoil. During the inter-war period, there was a growing interest in cancer research programs in the U.S. and the ICRF felt threatened by their new-found money and organizations. The Mohonk Conference was created in the mid 1920s in order to ensure that the ICRF was a part of any international development in cancer research.[161] Even during the post-war period when treatment centres were in a very poor state, the ICRF continued to provide ample funds to clinical and human investigations while attempting to build new laboratories independent from the NHS.[162] Other important developments during the 1960s and 1970s were supported by the ICRF, such as the increase in breast cancer research and trials, and the development of cancer clinics within hospitals.[163] During the latter part of the century the ICRF produced a "constant stream of new findings and introduced increasingly complex ideas and concepts" in cancer research.[164]

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[160] Joan Austoker. *A History of the Imperial Cancer Research Fund: 1902-1986.* (Oxford University Press: Oxford, 1988): 1.

[161] Ibid., 163.

[162] Ibid., 228.

[163] Ibid., 246-247.

[164] Ibid., 321.

In the late 1930s and early 1940s, two societies were established that would prove to be instrumental in cancer care, research, and prevention in North America: the Canadian Cancer Society and the American Cancer Society. Both entities developed from separate earlier groups that focused on cancer research. Once each society was developed, there was more focus on raising money for cancer care and prevention programs to screen and educate the public than on research. The Canadian Cancer Society sponsored several conferences, along with Health and Welfare Canada, in the following decades that would also prove to be vital to the state of cancer care in Canada.

The American Cancer Society (ACS) was developed in 1944. Before the development of the ACS, the American Society for the Control of Cancer (ASCC) was developed in 1913. Surgeons realized early in the twentieth century that when a tumour was found and removed early enough, the patient had a much better chance of survival.[165] In 1942, leading figures in advertising in the United States, Mary and Albert Lasker, became increasingly interested in the control and prevention of cancer. In 1944 the Laskers joined the ASCC and later that year formed the "ultimately powerful American Cancer Society." The Laskers had extensive experience in advertising and public relations, which in turn helped to raise money and "develop efficient projects and up-to-date fund-raising campaigns." The message that they struggled to convey was that cancer control required research and research required money. In 1945, the first fund-raising campaign raised 4 million dollars, with one million of the money raised going directly to cancer research.[166] With only a quarter of the money raised going to research, the ACS

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[165] Vayena, "Cancer Detectors," 113.

[166] Ibid., 111-112.

focussed more on developing educational programs, screening facilities, and various other public initiatives.

Another important body, the National Cancer Institute (NCI), was more concerned with funding cancer research and left educating the public to the ACS. The NCI was developed in 1937 when the American Society for the Control of Cancer unanimously voted to pass the National Cancer Institute Act. The Act authorized annual funding for cancer research and was expected to "break new theoretical ground by conducting its own research, promoting research in other institutions and coordinating cancer-related projects and activities."[167] The NCI's funding increased during the Eisenhower years from $18 to $110 million.[168] However, the NCI's work did not go without criticism. Many scientists complained that the NCI "devoted too much of its money to 'narrow' laboratory work, thereby neglecting efforts on behalf of cancer control."[169] These critical scientists expected the NCI to focus less on laboratory researchers and well-placed surgeons, radiologists, and chemotherapists, and more on "epidemiological studies, investigations into environmental and occupational exposures, subsidies for the training of clinicians and public-health workers, and financing of public health clinics."[170] Despite these complaints, cancer

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[167] "Closing in on Cancer: The National Cancer Institute is Founded, 1930-1950." http://press2.nci.nih.gov/sciencebehind/cioc/nci/nci.htm (Official government site for the NCI).

[168] James T. Patterson. *The Dread Disease: Cancer and Modern American Life.* (Harvard University Press, 1987): 183.

[169] Ibid., 184.

[170] Ibid., 185.

research soared in the mid-1950s. In 1956 alone, 9015 original articles about cancer were published.[171]

In Canada, the Canadian Cancer Society (CCS) developed in a manner similar to the ACS. The CCS was formed in 1938 with "the mandate to spread important information about the early warning signs of cancer to the Canadian public."[172] Its chartered objectives included coordinating the efforts to reduce cancer mortality, disseminating information on cancer, aiding in the investigation of cancer cures, supporting research, and raising funds to meet all its objectives. The mission statement of the CCS (as updated in 1989) was "the eradication of cancer and the enhancement of quality of life of people coping with cancer."[173] The CCS headed most cancer-related public health initiatives in the country. It received a considerable amount of funding from the King George V Jubilee Cancer Fund to aid in its work. Despite national support from National Health and Welfare and the CCS, each province was responsible for creating its own public health education.[174]

The National Cancer Institute of Canada (NCIC) was developed in 1947 through a joint initiative of the CCS and National Health and Welfare. The mission statement of the NCIC is "to undertake and support cancer research related programs in Canada that will lead to the reduction

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[171] Ibid.

[172] www.cancer.ca/ccs/internet/standard/0,2939,3172_14980_langId-en,00.html

[173] *The Proceedings of Cancer 2000, April 1992.A Report on the work of a National Task Force, Cancer 2000: Strategies for Cancer Control in Canada.* (Smithkline Breecham Pharma Inc.): 67.

[174] Official Canadian Cancer Society Website. www.cancer.ca/ccs/internet/standard/0,2939,3172_14980_langId-en,00.html

of the incidence, morbidity and mortality from cancer." Objectives were set in order for the Institute to achieve its mission, which included supporting cancer research through grants and other mechanisms, offering programs for training and development of personnel in cancer research, disseminating information relating to cancer research and control, facilitating and participating in activities sponsored by related agencies, and acting in concert with the CCS.[175] Since the beginning of the partnership between the CCS and the NCIC, the CCS has contributed more than $800 million to cancer research.[176]

There is evidence that the development of the National Cancer Institute of Canada encouraged researchers to focus on cervical cancer. For example, in 1947, Dr. Ernest Ayre, a Canadian medical doctor and researcher, applied for a Grant-in-Aid from the NCIC. He needed funding in order to validate further the use of the Pap smear in the battle against cervical cancer. He proposed to "investigate squamous carcinoma of the cervix in an effort to accumulate correlated evidence regarding cell metabolism, cell behaviour, and cell morphology."[177] He wanted to set up an extensive laboratory with expert staff to study cell behaviour and cell metabolism from cytology smears and scrapings. Furthermore, he hypothesized that "a vitamin B deficiency factor in uterine cancer cases coupled with intensive nutritional and hormonal studies in this disease" could be proven.[178] Dr. Ayre also proposed that,

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[175] Official National Cancer Institute of Canada Website. www.ncic.cancer.ca

[176] CCS Website, updated 2004. www.cancer.ca/ccs/

[177] *National Archives of Canada.* File # RG 29 – 311-C1-31 vol. 1180. "National Research Council of Canada – Advisory Committee on Medical Research."submitted by Dr. Ernest Ayre (1947-48): 1.

[178] Ibid.

> a rounded-out programme be organized in which correlated clinical studies on human cancer patients, clinical cytology studies, nutritional and endocrine biochemical studies, and tissue culture studies be made in an effort to accumulate as much evidence and information as may be available through a combined clinical and laboratory approach to the problem.[179]

The total request of funds for Ayre's proposal was $14,800.[180] Although this research was important to validate the Pap smear, money was also needed to conduct more exploratory research in this area. Evidence of researchers needing money is apparent; whether or not these individuals received continued funding from national health agencies or not is another question. The archival documentation in Health Canada records does not provide such an answer.

Cancer research and control in Canada were also promoted through cancer conferences. In January, 1947, "Cancer Control in Canada" was the topic of discussion at the Cancer Conference held in Ottawa, sponsored by the NCIC and CCS. It was understood that "for the person that has cancer today the greatest hope lies in early accurate diagnosis and treatment by an expert."[181] Overall, it was clear that cancer prevention and cervical cancer were not a focus at the cancer conference, even with the Pap smear being well known throughout the medical community. There were five main topics for discussion at the conference: lay education, professional education (including fellowships), diagnosis and treatment, clinical research, and fundamental research. The first three of these topics are of particular interest as they would potentially pertain to cervical cancer screening. Discussions at the conference stressed that,

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[179] Ibid.

[180] Ibid.

[181] *National Archives of Canada*. File # RG 29 – 311-C1-37 vol. 1183 "Cancer Conference - Ottawa" (1947): 1.

according to the constitutional division of legislative authority, "the health of the citizen is a provincial responsibility, with certain exceptions...it seems proper, therefore, to regard the provision of diagnostic and treatment services as a provincial responsibility to be organized on a provincial basis."[182]

One province did take responsibility for the health of its female population in the 1940s, and its successes would provide inspiration at future conferences. British Columbia was the first province in Canada to develop a provincially-organized cervical cytology service based on one large central laboratory. In 1949, the government of British Columbia developed a program that began as a diagnostic laboratory. This program expanded to full population screening in the 1950s with additional support from the CCS.[183] During this period, there was an increase in the number of diagnosed cases of in-situ carcinomas from 12.3 per 100,000 in 1955 to 133.6 per 100,000 in 1985,[184] but British Columbia consistently had the lowest cervical cancer incidence rates in Canada until the early 1990s. Their mortality rates were also low in comparison to other provinces.[185] It was apparent that screening was making a difference in mortality and morbidity rates, and more focus on developing organized screening programs was essential. However, it would be some time before other provinces followed BC's early initiative.

Ontario was not as focussed on cancer prevention as BC; however, they did establish a cancer clinic in a highly populated part of the province. In 1948, Ontario opened a cancer

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[182] Ibid., 4.

[183] "The Walton Report". *Canadian Medical Association Journal* vol. 114 (1976): 12.

[184] *Health Canada Website*, www.h-sc.gc.ca/hpb/lcdc/bc/updates/cervix_e.html, page 3.

[185] Ibid.

detection clinic in Toronto located at the Women's College Hospital. The idea was to examine "well women" in order to detect cancer. Although the idea of the clinic was the diagnosis of cancer and not necessarily prevention, it was an important part of Ontario's activity in cancer control. The clinic was originally opened with the support of a provincial grant and later funded by the Ontario Cancer Research and Treatment Foundation (OCRTF). Within two decades of its establishment, asymptomatic and symptomatic women and men were being examined and treated at the clinic.[186] All patients had to be referred to the clinic by their own physicians, the clinic simply did not "take patients off the street." At this time, the onus was still on the primary care physician to recommend such examinations.[187] The OCRTF could no longer subsidize the clinic after a short while, and fees were required of all their patients. Eventually the cost per patient reached as high as $19.13. This fee included the doctors' fees, x-ray, laboratory fees, a nurse, supplies, and administration.[188] This clinic was reaching only a small portion of Ontario's female population – one that happened to live in the Toronto area and had the funds to pay for such a health service.

Another cancer conference was held in 1967 in Montreal, sponsored by the National Cancer Institute of Canada, with the purpose of discussing prevention and control of cancer. In comparison with conferences in the past, the meeting was under the direction of doctors from British Columbia and Ontario, the majority being from British Columbia. This conference

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[186] *Women's College Hospital Archives.* N4-Container 45. "History of the Cancer Detection Clinic." 2.

[187] *Women's College Hospital Archives.* N4-Container 59-File 1. "History of the Cancer Detection Clinic – Women's College Hospital." 2.

[188] Ibid.

focussed more on cervical cancer screening options and the impact of mass screening on incidence and mortality rates. As was mentioned above, British Columbia was the first province to develop a central cervical cytology lab and screening program available to the entire population of the province. Their representation at such conferences was instrumental in educating and convincing other provinces of the need for organized screening programs. In general, it was believed that "the meeting had been worthwhile in that it had achieved its purpose of stimulating frank and informal discussion of certain aspects of the problem of cancer. It was hoped that the conference might stimulate interest in this area on the part of younger members of the medical staff of teaching hospitals."[189] Finally, an open discussion about the importance of cervical cancer screening occurred. This was important for a few reasons: to help bring about change in other provinces besides BC, to demonstrate that change is very much an option, and force evaluation of the other provinces and their poor response.

More specifically, during this conference, Dr. D.A. Boyes, from British Columbia, reported on the impact that a mass screening program has on cervical cancer rates. He reported that, "the fall in morbidity from invasive cervical carcinoma in the Province [British Columbia] was shown to be about 50% when two thirds of the female population 20 years and over had been examined."[190] Mortality rates from cervical cancer had shown little change in the rest of the country – a result, Dr. Boyes believed, of a lack of organized screening programs in other

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[189] *National Archives of Canada*. File # RG 311-C1-8. "The Role of Mass Surveys in The Detection of Cancer." 1.

[190] Ibid., 2.

provinces. Dr. Boyes also discussed the benefits of having a central laboratory as opposed to several private labs, as "the large volume of specimens also keeps down the cost per specimen."[191]

The idea of self-sampling Pap smears was also discussed. Dr. Anderson from the Ottawa Civic Hospital announced that the "accuracy of the resulting screening was lower than for cervical scrapes."[192] Although the technique was questionable, it was agreed at the conference that it might have potential success in communities where medical personnel were available to take specimens during a pelvic examination. Despite this discussion, it was eventually concluded that self-sampling has no place in an area where appropriate medical personnel were available.[193] Self-sampling had also been proposed a few years prior to this conference by the Minister of Health in 1964. Dr. M.B. Dymond (Minister of Health at the time) discussed the option of self-sampling as opposed to the costly Pap smear being done in the physician's office. He believed that it was a great way to save money for the provincial government, even though the procedure was often questioned because of the numbers of false-negatives. In a memorandum from Dr. W.G. Brown, Deputy Minister, to Dr. M.B. Dymond in 1964, he concluded that any shift in the direction of a do-it-yourself examination program would be a mistake and would hinder the progress of an organized provincial program screening program.[194]

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[191] Ibid., 2.

[192] Ibid., 3.

[193] Ibid.

[194] *Provincial Archives of Ontario.* File # RG 10-1-1-3.40 "Cancer Research - Pap Smear, 1964."

In order to gain a better understanding of the health issue of cervical cancer, provincial governments all over Canada sought to establish task forces with a reporting responsibility to the Minister of Health in each province. In 1973, at the Conference of Provincial Ministers of Health in Charlottetown, Prince Edward Island, many provinces did in fact establish task forces. For example, the Quebec minister proposed the establishment of several expert task forces to study the screening and therapeutic programs that would be useful in battling cervical cancer across the country. Each task force had specific instructions, and in their report in June of 1976, the following recommendations were made:

> 1. Health authorities should encourage and support screening programs for cancer of the cervix;
> 2. women should be informed of their degree of risk of developing cancer;
> 3. a schedule of screening should be designed according to degree of risk;
> 4. quality control in laboratories should be encouraged; and
> 5. registries should be maintained for follow-up, and designed to permit inter-registry comparison.[195]

As will be demonstrated in the next section, it would be many years before these recommendations would be put into place in Canada, as was the case in other countries.

III: Developments in Cervical Cancer Screening and Public Information

There is a definite difference between cervical cancer screening and an organized cervical cancer screening program. For the most part, it can be said, that since the inception of the Pap smear in 1928, screening has been in place in many countries as doctors eventually started to use the technique to screen women for cervical cancer. However, it has been proven that, without proper recall systems, consistency in reading of smears, laboratory quality assurance, and

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[195] *National Archives of Canada*. File# RG 29 - 311-C1-21 vol. 1180. National Cancer Institute of Canada. "Briefing Notes for the Minister - Cervical Cancer Screening." 2.

monitoring of public information, screening does not reach its full potential. As will be demonstrated in the UK, US, and in Canada, funding is required to assure quality screening programs with all the above mentioned criteria.

In the United Kingdom, screening for cervical cancer has been in place since the 1960s. In 1964, a small group of women in Stoke Newington, in association with the local Family Planning Association, began the process of establishing the National Cervical Cancer Prevention Campaign (NCCPC). The inaugural meeting of the NCCPC was held in March of 1965 at the House of Commons where a constitution was created and passed. Alderman Joyce Butler, of Stoke Newington, was the president of the NCCPC and female members of parliament were vice-presidents of the Campaign. The main goals of the NCCPC were to properly train technicians to read smears, provide a screening service, and educate and encourage women to participate.[196]

Within the NCCPC there were various different associations represented. These groups had a chance at the NCCPC meetings to voice their concerns. For example, in February of 1965, Mrs. Miller of the Patients' Association spoke about her concerns regarding general practitioners' "cancerphobia" attitude. Mr. Newton Fenbow, from the Association for Improvement in Maternity Services, voiced another direct concern about the ignorance of general practitioners. He was troubled by the fact that many general practitioners felt that only women with symptoms should be screened – thus defeating the whole principle of preventive medicine and the goals of the NCCPC.[197] The Women's Group on Public Welfare also spoke out publicly about "the so-

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[196] *Wellcome Institute, Britain*. F13-file SA- NWF - F13 - 1. "Medical Women's Federation." 1.

[197] Ibid., 2.

called resistance of women accepting the test."[198] This speaker argued that during her two years in a new town, she felt that, in fact, as many as 80% of women there were under the age 40 and were actively seeking the preventive test. This particular group felt that if any resistance existed, it would be more consistently from the 50 plus age group.[199]

In November of 1967 the NCCPC's name was changed to the Women's National Cancer Control Campaign (WNCCC), reflecting the fact that its constitution has been revised to include other cancers within its mandate.[200] The Campaign continued to promote screening and to educate women about its importance. Various publications and media sources were used in order to increase awareness of cancer screening, and the Campaign released a promotional video entitled "For Your Information." It focussed on reaching women in their child-bearing years, reflecting the medical community's concern with the effects of childbirth on cervical cancer incidence rates. According to the statistics in this video, 3500 women died yearly of cervical and uterine cancer in Britain. Ten percent of these women were under the age of 40. There was an additional focus on the problem of the "death leaving a young family motherless."[201] Thus, if a mother was unaware of the risk factors of cervical cancer and did not take a active role in personal prevention, the father could be left with sole responsibility for the family.

Outside the efforts of the Campaign, a group of women in Gloucester City raised money for a caravan to travel around and reach women in remote communities in their homes and at their

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[198] Ibid.

[199] Ibid.

[200] Ibid., 4.

[201] Ibid., 2-3.

workplaces. It was believed that many women did not make the trip into a town clinic for screening simply because they did not have any child care. As Dr. Dorothy Davy stated at the time, "[we] are reaching a group of women that, frankly, we didn't know were there...in some of the remoter Fenland villages, it is impossible for a woman to go to a clinic as far away as Cambridge – who would look after the children.?"[202]

In 1972, a government publication, edited by John Wakefield in Britain, released a study that focussed on "how women learn of the test and what brings them to have it; where they choose to go to have it done; why they prefer one place to another; why some don't have it done at all, and other fail to come back for regular repeat tests. What encourages them? What puts them off?"[203] The contributors concluded that "every woman does not know about the test. Very many do not know what it is for. Some have a hazy idea, but think of it – because that is the way most publicity has labelled it – as a cancer test."[204] Wakefield believed that if public information services referred to the screening test as a "cancer test", it would become a self-defeating exercise, for women would be reluctant to subject themselves to a test that was primarily associated with cancer. A survey done in a Manchester working-class area, which was considered to be a high risk area for cervical cancer in 1967, demonstrated a remarkable lack of knowledge of the existence of a screening test for cervical cancer in addition to the obvious lack of available

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[202] Ibid., 6.

[203] John Wakfield (ed). *Seek Wisely to Prevent: Studies of Attitudes and Action in a Cervical Cytology Programme*. (London: Her Majesty's Stationary Office, 1972): vii.

[204] Ibid., 4.

information.[205] Wakefield's discussion demonstrates that even with an organized health care system and specific groups interested in the development of screening programs in Britain, there was very little public awareness of the disease and its prevention.

Despite a long history of screening campaigns and caravans reaching remote communities, attempts at organizing screening did not have a real sense of coherence until1988. In that year, the NHS set up a Cervical Screening Programme National Coordinating Network (CSPNCN) that enlarged the target population and increasingly reached women who were considered the most at risk.[206] Even with such organized efforts by the NHS, there was not a recorded reduction in the overall incidence of invasive cervical cancer until after 1988. Only a very small reduction in mortality was apparent in the cancer records up until the late 1980s.[207] Joan Austoker, the director of CRC Primary Care Education Research Group and the Department of Public Health and Primary Care at the University of Oxford, asserted that through extensive examination it was agreed that the apparent failure of the national screening program, established in the 1960s, in the UK , was "not so much one of money or skill but of organization, accountability, and commitment."[208] After the 1988 program was set into place, with several positive changes to the program, there was a recorded 42% decrease in cervical cancer incidence rates between the years 1990 and 1996. As Jeremy Laurance asserted in his article published in *The Independent* in

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[205] Ibid., 5.

[206] Joan Austoker. *Cancer Prevention in Primary Care*. (BMJ Publishing Group: London, 1995): 95.

[207] Ibid., 99.

[208] Ibid.

November of 1999, "cervical cancer is declining at such a rate in Britain that it has now become one of the rarest of main cancers." The Office of National Statistics revealed that the rate of cervical cancer was as low as 8.9 cases per 100,000 in 1996. According to Laurance, a series of scandals involving the program did not deter it from successfully saving the lives of 800 women under the age of 50 in 1997.[209] The British program demonstrated that with adjustments and organization, screening for cervical cancer does dramatically decrease incidence rates.

American screening programs developed very differently from those in the UK. In 1947, the Strang Cancer Prevention Clinic in New York was the first clinic to provide complete physical examination of well people as a means of cancer prevention in the United States. Vaginal and cervical smears were taken as part of routine testing on women who made appointments. Women were often recommended to repeat full examinations on a yearly basis. Between 1948 and 1950, 16,246 women were screened and 45 of them were diagnosed with uterine cancer. These numbers suggest that the Pap test was a useful screening tool. This clinic's main purpose was to validate screening for cervical cancer through cytological examination.[210]

In the 1960s the NCI launched several screening programs in various different locations across the country. The programs originally started as part of a much larger program, but by 1960 they were entirely a separate operation. The programs varied in size and were implemented in states such as Kentucky, California, Ohio, and Tennessee.[211] The programs were established

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[209] Jeremy Laurance. "Cervical Cancer Cases Fall 42 per cent in Six Years." *The Independent* November 3, 1999, 1-2. www.juliet-trust.org.uk

[210] Vayena. "Cancer Detectors.", 168-171.

[211] Ibid., 173.

based on the same principles and standards, and a central laboratory supplied private physicians with Pap test kits, and read and reported the findings of each specimen taken. Although the structure of the programs appeared to be clear and functional, there were still many needs that the NCI could not meet. For example, one major issue the NCI had was how to educate women and encourage them to take part in a screening program. The ACS had always been in charge of public cancer education, but had limited funding to continue such a wide-scale project. There was collaboration between private physicians and the ACS in order to inform female patients of the importance of a Pap test. This, however, created a serious limitation with regard to which women were told about the Pap test, as the majority who could be reached within the clinics already had medical reasons for visiting the doctor or clinic.[212]

The results of most of the programs set up across the country were similar. All the programs' conclusions supported the importance of the Pap test in cancer screening. It was found that after repeated and regular screenings there was a decrease in invasive cancers and an increase in diagnosing preinvasive cases. However, despite the positive response to the programs, there was a realization that a much larger, more organized, program was needed. In addition to the need for more coordination and organization, there was a need for a larger central laboratory in order to handle the numbers of smears being taken. [213] By the late 1960s screening options depended heavily on private physicians. Physicians simply recommended the test, and women had to pay for it. There was the odd screening program designed to reach "high-risk groups," and

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[212] Ibid., 177-178.

[213] Ibid., 181.

these were usually free for the women who attended.[214] However, the question of who would and who would not attend these services remained unsolved.

In 1990, the U.S. government passed the *Breast and Cervical Cancer Mortality Prevention Act*. The purpose of this law was to establish "a nationwide program to provide screening and follow-up for all women, and especially older, low-income, uninsured, and minority women."[215] Other strategies, such as community outreach and various medical campaigns, focussed on specific demographic groups in order to increase public acceptance of the use of mammograms and Pap tests.[216] A survey was conducted in 1992 to see if such a program was successful in decreasing the mortality rates from both breast and cervical cancer. Significant gains were made in how many women were using mammogram screening in that "women 40 and older who had ever had a mammogram increased from 36% to 67%, and more than twice as many women reported having a recent mammogram in 1992 (29%) compared with 1987 (14%)."[217] There were additional dramatic results when it came to cervical cancer screening. In 1992, 91% (88.7% in 1987) of women 18 years and older reported ever having a Pap smear, and 43% (38% in 1987) reported that they had had a Pap smear within the last year.[218]

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[214] Ibid., 204.

[215] Linda M. Martin *et al.* "Comparison of Mammography and Pap Test Use From the 1987 and 1992 National Health Interview Surveys: Are We Closing the Gaps?" *American Journal of Preventive Medicine* vol. 12/2 (1996): 82.

[216] Ibid.

[217] Ibid., 83.

[218] Ibid., 86.

Screening in Canada originated in one province and eventually, over several years, spanned the entire country. As mentioned earlier, British Columbia was a frontrunner in developing Canada's earliest cervical cytology lab and organized screening program. Other provinces in Canada were slow to react to B.C.'s initiative. Provinces were aware that proper screening and organized programs were necessary in battling cervical cancer rates, but did not react with the necessary organization and funding. Dr. Ernest Ayre, a dominant figure in cytological work in the mid-twentieth century, spent time informing clinics across Canada of the importance of cervical smears in decreasing the incidence of cervical cancer. For example, in 1948, Dr. Ayre sent correspondence to Dr. A.W. Blair, the director of the Regina Cancer Clinic, informing him that routine cervical scrapings were necessary in all clinics. Dr. Ayre had figures to prove that 500 routine scrapings "in the free gynecological clinics, 11 cancers were detected that were missed by routine examination."[219]

Ontario was one of the many provinces slow in their response to the rising national cervical cancer problem, although, during the 1960s, there were various attempts to pressure the provincial government to develop a funded and organized cervical cancer screening program. For example, a proposal was sent to the provincial government on behalf of the Municipality of Kitchener-Waterloo requesting financial assistance in support of such a program. M.B. Dymond, Minister of Health in 1963, responded negatively to the request, by stating that he was "becoming steadily and increasingly befuddled about the place and function of municipal government."[220]

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[219] *National Archives of Canada.* File #RG 29 vol. 1174 file# 311 C1-1 (part 1): 2.

[220] *Archives of Ontario.* RG 10-1-1-3.40. Personal letter addressed to Hon. J.W. Spooner from M.B. Dymond, Minister of Health., December 23, 1963.

There were several other municipalities across Ontario who supported such a proposal, but Dymond continued to respond to the heap of letters being sent to his office by writing to J.W. Spooner, Minister of Municipal Affairs,

> Commenting on the resolution, I would say that city councils know nothing about this. Historically, Ontario has done more in this field than all the rest of Canada put together, and, indeed, when people need the latest treatment for cancer, they come to Ontario. I don't know if you ever have an opportunity to tell municipal councils in a kindly but firm way to "tend to their knitting", but it seems to me they need to be told this, and soon, I realize it is a difficult matter but, then, I never underestimate your powers![221]

It appears by Mr. Dymond's response that, because Ontario had a prestigious cancer clinic, the Cancer Clinic in Toronto at the Women's College Hospital, there was no real cancer problem. He did not seem to realize that the availability of screening was very much limited, hence the outcry from municipalities across the province. The municipalities were not asking for an increase in cancer treatment services; they were focussing on services dealing with prevention.

In addition to the municipalities in Ontario pressuring the government, there is evidence that professionals were also making organized efforts to convince the province to establish organized screening. In 1965, Dr. Erwin A. Crawford submitted a proposal entitled, "A Cytology Screening Programme For Cancer of the Cervix in the Province of Ontario." It is unclear where this proposal was submitted, what the response was, or who in fact this particular doctor was, but this draft proposal is quite significant for various reasons. The proposal includes an extensive analysis of statistical data regarding mortality and morbidity rates and the state of cervical cancer screening procedures in Ontario up to 1965. It is noted on the first page of the proposal that in Ontario there were 1, 244, 000 women between the ages 25-54. Assuming that at least one sixth

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[221] Ibid.

of these women had a hysterectomy, that left about 1 million women in Ontario between the ages 25-54. Around 2.2% of this group would develop carcinoma of the cervix and half of those would die if they developed invasive cancer of the cervix.[222] The proposal then clearly stated that,

> If all of these cases could be detected in the stage 1 cancer of the cervix, 80% could be cured,, but if they all could be detected in the pre-invasive stage and treated, the deaths from cancer of the cervix could virtually be reduced to a zero quantity.[223]

This proposal demonstrates that there was still a need, during the 1960s, to pressure the provincial government to aid in the development of organized screening.

In 1973, all provincial Ministers of Health met to discuss what could be done about increasing screening services for cervical cancer in Canada. As a result of this meeting, the decision to establish a task force on cervical cancer screening programs in Canada was made. It was intended to be "the first of a series of task forces that would produce state of the art reports on certain programs and health care activities whose effectiveness was in doubt."[224] R.J. Walton was the chairman of this task force and helped to publish the official report only 3 years after its establishment. According to his report, since 1969 most provinces had reported all incidence rates of cervical cancer to the National Cancer Reporting System. Ontario data was not published within the report because it was never correctly collected and reported, despite specific

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[222] *Archives of Ontario*. File # RG 10-71-4-5, 1965. "A Cytology Screening Programme For Cancer of the Cervix in the Province of Ontario." Draft. 1.

[223] Ibid.

[224] Walton, R.J. "The Task Force on Cervical Cancer Screening Programs." *Canadian Medical Association Journal* vol. 114 (1976): 30.

recommendations. Unpublished data from 1966 was included in the report so that they could be included to some degree in the National Survey.[225]

The Walton Report states the importance of preventive cancer screening programs. As reported,

> it should be recognized that screening for cancer of the cervix has a particularly important advantage over screening for many other malignant conditions. The procedure is based on the detection of precursors of the truly invasive condition...Therefore, this is one of the instances in which screening can be expected to result in a reduction of incidence of clinical disease...One can expect prevention of invasive cancer of the cervix, not merely early diagnosis.[226]

The Walton report was not only meant to announce publicly that cervical cancer was a serious problem, it was also meant to convince the population of women in Canada of the importance of getting themselves screened on a regular basis. Unfortunately, despite the amount of attention the Walton Report received, government-funded screening programs were still not initiated.[227]

Just two and a half years after the publication of the Walton Report, Health and Welfare Canada created and sent out a questionnaire to health departments, agencies and associations that might potentially have been affected by the Walton Report (see appendix A).[228] The initial questions asked focussed on the direct effect the Report might have had on the department,

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[225] "The Walton Report". *Canadian Medical Association Journal* vol. 114 (1976): 2.

[226] Ibid., 12.

[227] "The Walton Report" is being used in this thesis as a primary text to provide historical evidence of what was happening in the 1970s, in Canada, with regards to cervical cancer screening.

[228] *National Archives of Canada*. File # RG 29-6030-75-1 *Health and Welfare Canada* – "Questionnaire on the Impact of the Walton Report on Cervical Cancer Screening Programs:" 1-4.

agency or association filling out the questionnaire and the changes they instituted as a result. For example, "[i]n the last two years, has your health department, agency, or association instituted ways to: I) inform women of their degree of risk of developing carcinoma of the cervix...[or] ii)persuade women at risk to participate in the screening program?"[229] More specifically, the questionnaire asked about how physicians might have changed the frequency with which they recommended smear examinations and how many local laboratories were responsible for processing the smears.[230] It is apparent that, with the specific questions asked, the authors of the Walton Report were hoping for substantial results with its publication. Not only were changes hoped for in the efficiency of laboratories and data collection, but local training institutions were to be affected in that recommendations of the Walton Report were to be incorporated into their curricula.[231] These hopes were lost as reports surfaced all around the province that few of the recommendations were implemented.

Only 30 questionnaires were sent out, and every province and territory was represented by at least one respondent. The Yukon and Northwest Territories did not have their own laboratories, and the federal government's Medical Service Branch was responsible for the maternal and child health care services in these regions. The results in each province were interesting. Newfoundland, Nova Scotia, Quebec, and British Columbia had "instituted concrete

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[229] Ibid., 1.

[230] Ibid., 2.

[231] Ibid., 3.

modifications in their official screening programs."[232] Such modifications included notifying physicians if a patient's smear was out of date, introducing a province-wide central cytology registry, and the alteration of the recommended frequency of smear examination.[233] In Ontario, sporadic press releases were created to persuade assumed high-risk women to be screened. Despite a few small changes, Ontario really did not institute enough changes within their screening practices to make a large difference in mortality and morbidity rates. Ontario also reported that "a registry did not exist in a completely provincial sense and...it had no plans to set one up" in the future. In contrast to Ontario, PEI, Nova Scotia, and Quebec all set up province-wide registries after 1976.[234] In addition to individual provincial responses, the federal government attempted to inform women of their degree of risk by inserting an information pamphlet in the envelope containing family allowance cheques. With the addition of the pamphlet and the distribution of the Walton Report, they felt they were sufficiently informing women of their inherent cervical cancer risk.[235]

A study was carried out in Thunder Bay in 1988 on the effectiveness of cervical cancer screening in Northwestern Ontario. Northwestern Ontario is an excellent location to carry out such a study because it is remote, and surrounding communities have little access to medical services that provide screening. The study was done by Drs. Jaro Kotalik, Eric J. Holloway,

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[232] Eve Kassirer. "Impact of the Walton Report on Cervical Cancer Screening Programs in Canada." *Canadian Medical Association Journal* vol. 122 (1980): 419.

[233] Ibid.

[234] Ibid., 422.

[235] Ibid.,420.

Nicolas G. Escott, Van C. Nguyen, and Jan Large and Virginia Hunter. The study was funded by the Ontario Cancer Treatment and Research Foundation along with additional support from the Thunder Bay Regional Cancer Centre.[236]

It is known that invasive cervical cancer (ICC) rates were much higher in Northwestern Ontario (NW) as compared to the rest of the province's regions during the late 1907's to the mid 1980's. For example, "for NW, over the period of 1974 to 1986, the standardized incidence ratio ICC was 1.15 (p=0.04) and the standardized mortality ratio was 1.27 (p=0.03), compared to the province as a whole."[237] With these striking statistics, the medical team proposes that the "sub-optimal performance"[238] of screening programs in this particular area are a large contributing factor. Through preliminary statistical analysis, the study report states that "the risk of developing invasive cervical cancer for never screened women was three times higher than for ever screened women. 41% of all ICC in the region [Thunder Bay and area] was attributable to the failure of women to ever be screened."[239] It appeared that although screening was a common practice within the physician's office, Northwestern Ontario had additional problems that did not allow a screening program to be successful. Up until 1988, it was impossible to evaluate the state of cervical cancer screening activity because "pap smear records [were] scattered among several sources and [were] incomplete." Despite this major shortcoming of statistical data, the study's

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[236] Kotalik et al. "The Effectiveness of Cervical Cancer Screening in Northwestern Ontario." Draft of report. From Dr. J. Kotalik's personal files that were gathered during the study in the late 1980s: 1.

[237] Ibid., 3.

[238] Ibid.

[239] Ibid., 2.

conclusions were not very different from the studies executed during the decades prior to this study. Conclusions of the study were as follows:

> 1. There is an appreciable risk of ICC associated with inadequate performance of the cervical cancer screening programme in North-Western Ontario; 2. There is no good evidence that this performance is improving over time; 3. It is difficult to evaluate the existing programme - the databases are difficult to access and incomplete.[240]

As clear as these conclusions appeared to be, it was some time before a consistent effort was shown in the establishment of a funded program to remedy the issues demonstrated in the Thunder Bay study.

During the mid to late twentieth century, screening in Ontario commonly occurred when women visited their family physicians for unrelated problems. Even with this unorganized approach to screening, there was a recorded 46% decrease in cervical cancer incidence rates between 1971 and 1999. This was probably a result of the increase in the regular use of the Pap smear in physicians' offices. There may have been an increase in the regular use of the Pap smear, but it must be kept in mind that the Pap smear was not formally introduced to Ontario and regularly used in physician's offices until the 1960s.[241] The decrease in the incidence of cervical cancer was hindered by the different incidence trends according to the morphologic type of cervical cancer. For example, "declines are restricted to invasive squamous cell carcinoma.

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[240] Dr. J. Kotalik. "A Case-Control Study of the Effectiveness of Cervical Cytology Screening in North-Western Ontario." Presentation notes found amongst Dr. Kotalik's personal collection of files.

[241] Loraine D. Marrett et al. *Cervical Cancer in Ontario: 1971-1996.* (Cancer Care Ontario – Surveillance Unit and the Ontario Screening Program Division of Preventive Oncology: 1999), 2.

Incidence of the other major morphologic types, adenocarcinoma and adenosquamous carcinoma, increased by 5.8% per year."[242] Although the decrease in incidence rates was considered a success, the Ontario provincial government finally realized in the late 1990s that a more organized approach to screening for cervical cancer was needed in order to continue this declining trend.

IV: Ontario Cervical Screening Program

Cancer Care Ontario (CCO) is the major organization responsible for creating and launching an organized cervical cancer screening program in Ontario. The creation of Cancer Care Ontario was announced in late April of 1997 by Premier Harris and the Deputy Minister of Health. CCO was developed from several recommendations by the Provincial Cancer Network (PCN) that reviewed the status of cancer services during the mid-1990s in Ontario. Their conclusion was that "while individual services are excellent, the cancer care system is not well organized. Patients are required to navigate the complex patchwork of cancer care services on their own, and are often unaware of various options for treatment and support services that are available." The PCN believed that with the creation of a central, single agency these challenges would be overcome. The PCN submitted their report in January of 1997 and CCO was announced only 3 months later.[243]

Early in its existence, CCO received approved funding from the Ministry of Health and Long-Term Care to develop an organized screening program in Ontario.[244] It took three years of

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[242] Ibid., iii.

[243] Cancer Care Ontario. "Building an integrated cancer care system: How Cancer Care Ontario is Taking Shape." CCO newsletter, Fall, 1997.

[244] "Ontario Cervical Screening Program: Program Report 1997-2000." *Cancer Care Ontario*, 6.

planning and organizing to create a program that was ready to launch. In June of 2000, CCO launched a province-wide cervical screening program to which all women living in Ontario would have access. Cancer Care Ontario was expecting to build on already existing services to provide leadership to initiate a coordinated approach to cervical screening in Ontario.[245] There were five key components to the Ontario Cervical Screening Program (OCSP) plan: education and communication, recruitment of women, provincial cervical screening information system, recall and follow-up, and quality assurance and improvement.

The first two components, "Education and Communications" and "Recruitment of Women," focused mainly on educating women about the importance of screening in order to decrease the percentage of women who had never been screened. The second component, "Recruitment of Women," focused on increasing "the coverage of the target population of women by identifying and recruiting populations not currently being screened." This component was developed as a result of Canada's 1996-97 National Population Health Survey that indicated that approximately 11% of women had never been screened. Also, it was found that the majority of the women who made up the 11% of unscreened, or under-screened women, consisted mostly of "disadvantaged, less educated, and older" women. The OCSP aimed to improve the quality of information that was available to the general public about the importance of screening for cervical cancer. They also aimed to reach the professionals involved in cancer screening in order to create

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[245] "Ontario Cervical Screening Program: Strategic Plan." *Division of Preventive Oncology Cancer Care Ontario*: 1999, 1.

an increase in knowledge and awareness of screening practice guidelines, such as the follow-up and management of women with abnormal smears.[246]

The third component, "Provincial Cervical Screening Information System", aimed to create a population-based information system in order to maintain the key components of the OCSP. It has been shown that, in order for a comprehensive screening program to be successful, a population-based information system was necessary. With such a system in place, the "follow-up and timely recall of women; quality assurance; monitoring, evaluation and research activities; tracking of program utilization; identification of unscreened and underscreened women and compliance with established protocols."[247]

The fourth and fifth components of the OCSP focused on quality assurance and improvement and the commitment of constant evaluation and research by medical officials and health educators. The OCSP believed that, by assuring quality and improvement across all laboratories in Ontario, an organized screening program will flourish. In addition to the request for a Laboratory Proficiency Testing Program (LPTP), "monitoring and evaluating the OCSP will serve a number of functions, such as, to inform policy decisions; to assess program effectiveness and efficiencies; and to continuously review quality and standards of service delivery and to support revision of standards, if necessary."[248]

The Ontario Cervical Screening Collaborative Group (OCSCG) served as an advisory committee to the CCO and any other organizations that are represented in its membership. The

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[246] Ibid., 2.

[247] Ibid.

[248] Ibid., 3.

OCSCG was funded by both public and private sector organizations. These organizations include "health professional associations, consumer representatives, researchers, CCS, and the Ontario Ministry of Health." In addition to private interest groups, the Ministry of Health has provided $700,000 in annual funding to CCO since April 1997. It was estimated that approximately $3 million in annual funding was necessary to fully support this initiative and to ensure that all key components were operational by April 2002.[249] The main goal of the OCSGG was to reduce the incidence and mortality rates from cervical cancer by 50 percent by the year 2005.[250]

As of 2000, the OCSP had been both successful and unsuccessful. It had been demonstrated through analysis into OHIP data that an organized approach to screening was more successful at decreasing the number of diagnosed cervical cancer cases each year. Even at its genesis, while recognizing the benefits and successes of their new program, the OCSP realized its limitations and set goals for future direction. For example, recruitment of women to be screened was still on a much lower scale than the program would have liked to see. In order to break access barriers to the general population and specific risk populations the OCSP needed to identify and resolve such barriers. As the report states, "effective promotion of cervical screening requires a broad-based general population approach, augmented by a community development process and specific messages targeted to risk groups."[251] Even with the OCSP's increase in public service announcements, better distribution of posters and brochures, packages for public

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[249] Ibid., 5.

[250] Ibid.

[251] "Ontario Cervical Screening Program: Program Report 1997-2000." *Cancer Care Ontario.*, 8.

health units, a resource catalogue, and a more comprehensive website, the OCSP still did not have and increase in numbers of women being screened.[252] Other challenges that the OCSP faced were the inability to develop a comprehensive information system/registry that was stable and cost-effective. Various "technical, systemic, and legislative barriers continue to impede data collection, follow-up and recall."[253]

V: Conclusion

With the development of health care in Canada in the 1960s, interest peaked about how to deal with cervical cancer mortality rates. There were numerous attempts to survey and discuss the situation (i.e. the Walton Report and various cancer conferences), but few seemed to solidify into a workable solution. British Columbia was the frontrunner in screening programs by developing their program for all women in the province as early as the 1950s. Other provinces were much slower in responding to cervical cancer mortality rates within their own jurisdictions. Ontario, a focus for this chapter, realized only in the 1990s that an organized screening program was much more successful than leaving it to family physicians and patients themselves to be pro-active in cervical cancer screening. Remote areas, such as Thunder Bay, were hardest hit by the lack of provincial support of screening programs as late as the 1980s and 1990s. As Cancer Care Ontario demonstrated in the early 1990s, even an organized screening program faced challenges such as a problematic recall system, consistency within physicians' offices, and laboratory technician training. As a result of these problems, Cancer Care Ontario developed media resources that were available to all women, including internet and information pamphlets. It has

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[252] Ibid.

[253] Ibid., 9.

been demonstrated that since 1971, cervical cancer incidence and mortality rates have decreased about 46%, however, this decline has slowed since the early 1980s. According to a public health survey done in 1996/97, one in six Canadian women over the age of 17 had never had a Pap test.[254] Between the years 1994 and 1998, 842 Ontario women died from cervical cancer.[255] Cervical cancer is still ranked the eighth most common cancer diagnosed among Ontario women, and ranks eleventh in cancer deaths.[256] There needed to be an improvement in the delivery of screening programs, organization and training of technicians, a more reliable data collection system, and a recall system that consistently informed women of the importance of regular screening.

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[254] "Effectiveness of Strategies to Increase Cervical Cancer Screening." *Public Health Research, Education, and Development Program*. Published by Ontario Ministry of Health., 1.

[255] www.cancercare.on.ca/reports_211.htm "Women over 50 still need Pap tests." *Ontario Cancer Facts.*, October 2001.

[256] "Effectiveness of Strategies." 1.

Chapter IV - Women's Experience

Cervical cancer is frequently intimidating not only because it is a disease that is often understood to be incurable, but also because it is so closely associated with lifestyle choice and sexual activity. It is a disease that invades both one's body and one's private sexual history. While traditional sources, such as medical texts and articles, provide a glimpse into the medical response to cervical cancer, they do not include the patients' responses to the disease. Historical research is often limited and does not always provide an opportunity for the voices of the past to be heard. This chapter will examine women's past experiences and understandings of cervical cancer with the understanding that "multiple methods reflect the desire to be responsive to the people being studied."[257] In the case of this thesis, multiple methods provide an insight into the recorded government documents, medical texts and journals, attitudes of the bodies in power, in addition to the personal lived experience. My intention in this chapter is to provide a small glimpse into the individual lived experience of women who were dealing with the reality of cervical cancer risk in the twentieth century; a much deeper understanding is being left for a future project. I believe that oral history is important because it provides a different voice among the dominant voices of the past. Women's voices have often been silenced in historical texts, especially ones dealing with major health issues. While reading this chapter it must be remembered that this supplementary research is attempting to provide only examples of lived experience, and I am not attempting to provide sweeping generalizations for all women's lived experience.

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[257] Shulamith Reinharz. "Feminist Multiple Methods Research." in *Feminist Methods in Social Research*. (Oxford: Oxford University Press, 1992): 197.

The supplementary research for this thesis consists of interviews with seven women ranging in age from 50 to 85. All of the women whom I interviewed currently live in Thunder Bay. The interview setting was informal, and often the interviewees felt comfortable enough to add comments beyond the structured questions.[258] In addition to the interviews that I personally conducted, within this chapter I will also be using the findings from other studies. Tina Posner and Martin Vessey started interviewing their subjects in 1983, in England, with a focus on the impact of the medical process on women following a positive smear, how prevention is approached within a practice, and the possibility of unnecessary morbidity in terms of psychosocial, psychosexual, or physical distress resulting from medical intervention.[259] Their conclusions are very important to the process of rediscovering women's experience in the past with respect to the prevention or treatment of cervical cancer. I will also be using conclusions from an American researcher, Linda McKie, and her study on the "white male working-class discourse on cervical screening."[260] Her study involved using nine discussion groups. The final study I will be drawing conclusions from is Alexandra Howson's research, done in the late 1990s, on 23 women living in south-east Scotland.

By taking the time to recognize individual behaviour and experience and connecting these within social frameworks, researchers are often able to link past and present histories. These four

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[258] Refer to Appendices A and B for the cover letter and consent form given to interviewees. Although I started each interview with a basic set of questions, the setting was left open-ended and all women were left to lead the discussion on their own if they so desired.

[259] Tina Posner and Martin Vessey. *Prevention of Cervical Cancer: The Patient's View.* (London: King Edwards' Hospital Fund for London, 1988): 9.

[260] Linda McKie. "The art of reasonable surveillance or reasonable prevention? The case of cervical screening." *Sociology of Health and Illness* vol. 17/4 (1995): 441.

studies all have re-occurring themes that are part of this chapter's focus. While there are obvious similarities in all of these studies, their differences also need to be recognized. Were women reluctant to take part in a screening program for fear of being labelled promiscuous? Were they reluctant to be screened because they had little understanding of the disease? They demonstrate that age, gender, education, marriage, and parity are all contributing factors that influence women's understanding of the disease. It has also been found that the gender of the physician plays a role in women's participation in screening programs. Whether it was male physicians' discomfort in performing pelvic examinations, their lack of training in preventive health, or their fear of asking for patients' personal sexual histories remains to be demonstrated by researchers. Once the discovery of the connection between the human papilloma virus (HPV) and the development of cervical cancer was made, there was a shift in the focus of medical researchers to the male sexual partner as a potential risk factor. These questions and recurring themes bridge the past and present history of women's experiences with cervical cancer screening.

During the mid-twentieth century, cancer was not a topic for discussion at the dinner table. Betty, a woman interviewed for this thesis, asserted, "I don't ever remember ever hearing the word *cancer* when I was growing up."[261] Betty was a teenager in the 1960s. With the lack of access to health care facilities and no discussion within the family units, women really had nowhere to go for information about cancer. Even women who attended university did not remember seeing readily available information about cancer.[262] General public health care facilities were scarce in the mid-twentieth century. As one woman recalls, "the extent of public

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[261] Interview #2, 3.

[262] Interview #4, 1.

health [facilities] were VD clinics, and you kind of didn't let anybody see you go, well, I mean, I didn't go in but, you know, that was the reason that anybody would use [such a] facility."[263] If women did have any general understanding of cancer it was usually because there was a history of cancer within their family.[264]

The discussion of cervical cancer was also silenced during much of the twentieth century because of its close association with sexual activity. Physicians and researchers directly related the development of cervical cancer with women's sexual histories. As was discussed in Chapter II of this thesis, both medical texts and articles reinforced the belief that women at risk for developing the disease were ones who led carefree and sexually indiscriminate lifestyles. The definition of promiscuity used in medical studies regarding the role sexual activity may play in cervical cancer risk was often construed to fit within the context of the study. For example, the label of promiscuity was variously used in order to generalize about women who did not fit within the sexual norms. Promiscuous sex was generally defined as having more than one partner. Some other medical authorities defined promiscuous sex as sex with more than two partners. It can also be defined as indiscriminate sex in several different types of relationships. The definition of promiscuous sex has often appeared to be simply more sex than the investigator's personal definition.[265] Such heterogeneity in the use of the term creates skepticism of the studies that rely on it as a variable. During Linda McKie's research, one woman would not disclose to the researcher that she had once had a positive smear for the fear that the other study group

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[263] Interview #3, 4.

[264] Interview #3, 4.

[265] Skrabanek, "Cervical Cancer in Nuns," 579.

participants would think that “either my husband or myself [had] been sleeping around.”[266] This woman did have a sense that her male partner may have had a role in her risk of developing cervical cancer. A woman in Posner and Vessey’s study remembers feeling “dirty because of [a] documentary on TV...talking about permissive society and cervical cancer reaching epidemic proportions. I was worried that everybody would think I’d been sleeping around.”[267] Why would a woman risk being labeled promiscuous if she participated in a screening program and was diagnosed with cervical cancer?

The women interviewed for this thesis believed that the focus on promiscuity as a risk factor for developing cervical cancer was not consistently addressed within the physician’s office. There was often very little discussion about the risk factors of the disease between women and their physicians. Few women felt that they could simply ask their physician questions. Many women grew up believing that “teachers and doctors were little gods and you never questioned [them].”[268] In addition to the women I personally interviewed, many of the women who participated in Posner and Vessey’s study responded in the same way. One woman whom they interviewed remembered her doctor even discouraging questions.[269] A woman I interviewed did ask her physician directly about how regular she should be having a Pap smear and the response was,“if you’re not screwing around, it’s not an issue,”[270] thus leading her to believe that she was

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[266] Linda McKie, . “The art of reasonable surveillance.” 449.

[267] Posner and Vessey, *Preventing Cervical Cancer.*, 67.

[268] Interview #6, 7.

[269] Posner and Vessey, *Preventing Cervical Cancer.*, 94.

[270] Interview #1, 2.

only to worry if she was having promiscuous sex, not a stable sexual relationship with one partner. All of the women interviewed felt that they were not comfortable asking their own physicians questions, and they often felt there was no other means of seeking information regarding their preventive health care or cancer treatment.

Although women generally had difficulty asking their physicians in the past about cervical cancer risk factors, doctors often required women to disclose personal information regarding their sex lives. As Posner and Vessey found, when women are asked about their sexual histories, they often feel a "sense of the invasion of 'privacy.'" Even the women who realized the importance of disclosing such information still felt uncomfortable about such an exchange with their physicians. These researchers believe that "in questioning women about their sexual history, doctors are using their authority to gain access to privileged information, and may be extracting a 'confession' without giving 'absolution.'" They believe that "if the information is not clinically necessary – will not alter treatment – then it is suggested that no good will come of collecting it." Vessey and Posner believe that if there is an absolute need for collecting such information, then the patient should be properly informed about the relevance of the exchange of such privileged information and be given the chance to decline the request.[271]

A line was drawn between married and single women and the information they were required to give within their physicians' offices. Married women were rarely questioned about their sexual history during routine examinations. It was believed by the medical community that once a woman was in a stable relationship with one partner her cervical cancer risk supposedly decreased. Women who had no children and were in their twenties were more likely to be asked

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[271] Posner and Vessey, *Preventing Cervical Cancer*., 94-95.

about their sexual histories, such as the age at first intercourse and the number of sexual partners. Usually, at the point of asking about their sexual histories, physicians mention HIV and the use of the contraceptive pill. This, as Alexandra Howson believes, "almost certainly reflects medical assumptions about youth, morality, and femininity," and she argues that there is a sense that physicians are more interested in reducing pregnancy than attempting to minimize the occurrence of disease.[272]

Until much later in the twentieth century, the Pap test was not a standard protocol and was primarily done on a subset of women who were considered most at risk. A woman who was interviewed for this thesis was asked how often it was recommended that she have a Pap smear in her early twenties and she replied,

> I don't remember my doctor recommending it because actually, in those days if you weren't sexually active, you weren't of course, it wasn't necessary for you to get a Pap smear, so of course those of us who were sexually active when we shouldn't have been – that is, outside of marriage – um, you were pretty quiet about the actual process of getting a Pap smear.[273]

Many women interviewed remember having their first Pap smear once they had their first child, and even then they were still often unaware of what the procedure was actually for. Jean, a woman interviewed for this thesis, actually went to a gynecologist herself to request a Pap smear years after her children were born in the later 1970s. She remembers, "I don't think I had them [Pap tests] until after I had my kids...and it was years after that that I had been reading about Pap smears and things like that, and I went to a gynecologist after and told them I'd never had

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[272] Alexandra Howson. "Surveillance, knowledge and risk: the embodied experience of cervical cancer." *Health* vol. 2/2 (1998): 202.

[273] Interview #4, 2-3.

anything like that."[274] One woman believed that because she was "healthy" she did not need to have annual Pap smears. June remembers having Pap smears after her son was born in the 1960s. She recalls, "the doctors told me to make sure I had a, you know, check up and a Pap smear once a year or whatever," but she believed that it was "not necessary, I didn't go unless, you know, [I was] not really feeling that good. I was lucky if I got there probably every three or four years." June was not convinced that without symptoms it was worth her time to participate in annual screening.[275] Even if women were being screened on a regular basis, many of them had no understanding of the Pap test and that it was a screening tool for cancer. Betty remembers never really being educated about the importance of a regular Pap smear, let alone what it even was. She remembered, "you know you went in [for a Pap smear], you had your check up, the checkup's fine. They didn't tell you what they checked for."[276] There was never really any information available for her to be pro-active in her own preventive health care.

Age also played an important part in women's choice of being screened on a regular basis. Many of the older women interviewed, in all four studies used in this chapter, experienced anxieties about the timing and regularity of Pap smears. One woman whom Howson interviewed, Margaret, finally was persuaded at 59 to have her first Pap smear. Her smear was found to be abnormal and she was referred for a colposcopy. Margaret felt that her doctor was defining her entitlement to a smear on the basis of her age, because she assumed that she would not receive any further screening. She stated, "I mean 60, that'll be your last, that'll be you. Who's to say

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[274] Interview #6, 5.

[275] Interview #,3, 3.

[276] Interview #2, 4.

what'll happen after you're 60? So I think I myself would go and make another appointment for a smear test even if I'm 62,65, or whatever."[277] Margaret was resisting the rigid boundaries set on who needs a smear and who does not have to worry about it. Originally she was resisting the screen itself, and she then began to resist being defined on the basis of her age. In Britain, during the 1960s, it was understood that it was the 50 plus age group that was least at risk. Once women passed their "child-bearing years" their risk of developing the disease supposedly dropped.[278] The Ministry of Health accepted a policy in Britain, under the NHS, that there should be "routine screening for women at risk" defined as women aged 35-50.[279] Using Margaret as an example, this age range was obviously not consistent in the development of the disease.

An additional variable that also discouraged many women from asking questions was the gender of the physician. In Posner and Vessey's study, one woman stated that "male doctors always tend to be in a rush," and that she felt much more comfortable asking a female physician any questions she may have had. In some of the cases, the women felt that they did not even have to ask questions while being examined because the female doctors "explained and answered before you had to ask."[280] In the past, however, having a female physician was not always an option. Many women had a male physician and did not always have pleasant experiences. For example, in the 1960s, a woman was quoted stating that her male doctor was "clumsy and rude, I

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[277] Howson, "Surveillance, knowledge." 205.

[278] *Wellcome Institute, Britain.* F13-file SA-NWF-F13-1. "Medical Women's Federation." 2.

[279] Ibid., 3.

[280] Posner and Vessey, *Preventing Cervical Cancer*., 92.

wouldn't go [back]."[281] One woman, Debbie, whom I interviewed for this thesis, did have a female physician in the 1950s and she described her as, "extremely severe, extremely professional, extremely uptight...[and] not a very warm person...one of the boys."[282] Although Debbie did have a female physician during a time period when it was not a common occurrence, she still framed her experience with this particular physician as if she were male. Debbie does not remember discussing cervical cancer, or any cancer for that matter, with her physician.[283]

More current evidence concludes that women are more likely to be screened on a regular basis for both breast and cervical cancer if their physician is female. One of the most common reasons women give for not participating in regular annual screening is that it was not recommended by their physician. The patient's "knowledge, attitude, and beliefs about the disease" are irrelevant if their physician does not encourage and recommend a Pap smear.[284] It has been shown that female physicians tend to be more consistent with regular visit tasks such as taking a history of the patient's preventive health. Some researchers argue that female physicians often feel a sense of personal responsibility for ensuring screening if a patient is seeing two or more physicians.[285]

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[281] *Wellcome Institute, Britain*. F6-file SA-NWF-F13-9. "Medical Women's Federation." 10.

[282] Interview #4, 1-2.

[283] Ibid., 1.

[284] Nicole Lurie, Jonathan Slater *et al.* "Preventive Care For Women: Does the Sex of the Physician Matter?" *The New England Journal of Medicine* vol. 329/7 (1993): 478.

[285] Ibid., 478-479.

Determining why female physicians are more likely to recommend Pap smears than their male counterparts is a challenging task. Factors such as age may play an important part, as female physicians are younger on average and they may have had more emphasis on preventive health while they were in training. Older physicians often have older patients who may not be as concerned with cervical cancer screening as younger women.[286] The majority of the women interviewed preferred a female physician. There was a sense of comfort when discussing personal sexual histories with another woman. There is also a sense that female physicians tend to understand women's health issues. As one woman stated, "Fellas don't understand women's health problems."[287]

Women's general understanding of cervical cancer and the Pap test certainly influenced their attitudes about regular screening practices. As more public health information became available to women, and physicians started to communicate with their female patients, women's understanding of the disease improved during the latter part of the twentieth century. Posner and Vessey asked their interview participants what factors they considered in the development of cervical cancer and they listed: promiscuity, contraceptive pill, early first intercourse, HPV, infection, smoking, and semen or sperm.[288] However, women who were in their 20s in the 1950s and 1960s did not have the same understanding of the disease. This relates back to the lack of communication with their physicians. As one woman interviewed remembers, "I know a lot of people talk about cancers. Cancer's something I don't like talking about. My daughter-in-law had

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[286] Ibid.

[287] Linda McKie. "The art of surveillance or reasonable prevention," 451.

[288] Posner and Vessey, *Preventing Cervical Cancer.*, 90.

cervical cancer...now I don't know too much about this...whether it is the cancer where she can't have children...I don't know."[289] Debbie, another woman interviewed, does not recall being worried about any another other risk factors for the disease other than sexual activity. She stated, "we never, in those days, heard anything about papilloma virus...I simply didn't now about it or else it wasn't around."[290]

The association between cervical cancer and heterosexual activity is not a new concept. As was demonstrated earlier, this disease has been directly connected with a woman's sexual lifestyle for decades. There has long been a sense that regulating a woman's sexual activity reduces her risk for developing cervical cancer. Until the latter part of the twentieth century, men were rarely considered to play a role in cervical cancer risk. Once it was discovered that certain strains of the human papilloma virus contributed to the development of invasive cervical cancer, men were more seriously considered as playing a role in cancer risk. For the most part, if men are infected with HPV, they may have little or no reaction to it. Infected men may potentially develop genital warts but otherwise they usually do not even realize that they are carriers of the virus, whereas, in women, the HPV infection may potentially develop into cancer.[291] The lack of symptoms in men may contribute to the lack of focus on men as a factor in cervical cancer development in medical studies. Even with the discovery of the role HPV plays in cancer development, the male sex partner is still rarely examined, let alone regulated. In a bold

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[289] Interview # 5, 5.

[290] Interview # 4, 3.

[291] Robin Harvey. "Safe Sex Won't Prevent Cervical Cancer." *The Record*, Kitchener, Ontario, January 13, 2000.

statement in *The Record*, in Kitchener Ontario, in 1996, this rarely discussed issue was brought to the forefront of attention. "Unfaithful husbands may give their wives cancer" is the very first statement of the published article. The conclusion of a professional study was that women are up to 11 times more likely to develop cervical cancer if their men frequent prostitutes or have many sexual partners.[292] The article was using the HPV virus as the focus, and was considering the role of the male partner's sexual activity as opposed to the woman's.

The women who were interviewed for this thesis made no mention of the possibility of a male role in the development of cervical cancer. This may be a result of the time period in which they grew up, and the limited access to health care facilities and educational material regarding the disease and its prevention. In Posner and Vessey's study, they found similar conclusions about the interviewees' lack of awareness of the possibility of a male role in cervical cancer development. One woman, however, did recall her physician making reference to the possibility of her male partner playing a part in the abnormal condition of her cervix and she remembers her physician asking, "I don't know if you or your husband have different partners..."[293] Posner and Vessey stated that in comparison to the awareness of the contraceptive pill and smoking as risk factors, there was "much less knowledge of the protective effect of barrier methods of contraception and almost no mention of the role of the male partner's previous sexual behaviour."[294]

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[292] "Cervical Cancer Blamed on Straying Husbands, Lovers." *The Record*, Kitchener Ontario, Wednesday, August 7th, 1996.

[293] Posner and Vessey, *Preventing Cervical Cancer.*, 67.

[294] Ibid., 92.

Poor communication, technical inconsistencies, and poor understanding of cervical cancer all played a part in the poor response to screening in the past. Not only were women used as examples in this chapter as being not comfortable asking their physicians questions about the disease, but they simply did not like to talk about cancer even with the interviewer. Discussions of cervical cancer were additionally silenced because it was a "below-the-belt"[295] cancer that is often immediately connected with a woman's sexual activity. Women from all of the studies used in this chapter felt that their physicians, particularly male, did not invite questions or offer information about cervical cancer or the Pap test. When there was any open communication between the doctor and patient, the physician was usually young and female. It was often believed that female physicians simply understand "women's problems" and could provide empathy to their female patients, but having a female physician was not always an option. Many of the women interviewed had a sense that problems in the past still resonate in today's cervical cancer discourse.

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[295] www.eyesontheprize.org – Cathy B. tells her story about developing cervical cancer. In her article she refers to cervical cancer as the "below-the-belt" cancer and how it is silenced because of its origin.

Conclusion

At the turn of the twentieth century, the medical understanding of cervical cancer was still in its infancy. For the most part, physicians and researchers understood the cause of the disease to be irritation to the cervical walls, inflammation, and parity. The understood cause of cervical cancer shifted in the twentieth century from general irritation to sexual activity. Medical researchers began trying to figure out why married women who were nulliparous, still had a higher incidence rate of cervical cancer than single women. Also, studies were starting to demonstrate that nuns were much more unlikely to develop the disease than prostitutes. Conclusions surfaced in medical literature during the twentieth century that included sexually transmitted diseases and generally unclean and unhealthy lifestyles as major causes of cervical cancer. However, as was demonstrated in Chapter II, these conclusions had serious medical, moral, and social implications for women. Women were reluctant to participate in screening programs because initially screening was made available in STD clinics, causing women to fear being labelled promiscuous and that they would be treated as though they were simply infected with an infectious disease. Government bodies responsible for their population's healthcare eventually responded to the need for screening with the establishment of properly situated and organized screening programs.

As was demonstrated in Chapter III, during the twentieth century progress occurred in both cervical cancer screening techniques and program organization. Through the efforts of both health officials and government bodies, there has been both an increase in cancer awareness, and an attempt at controlling the different types of cancer. James Patterson argues that the increase in public awareness of cancer often created a fear of the disease, thus causing turmoil in people who needed to seek treatment and screening. For the most part, during the early to mid-twentieth century, cancer was referred to in general terms, and cervical cancer was seldom directly discussed. It was not until much later in the twentieth century that cervical cancer was a topic of discussion at cancer conferences and public health programs. It was fifty years after George Papanicolaou discovered the cervical smear that a considerable decrease in incidence and mortality rates of cervical cancer was recorded. Despite this progress, some would argue that since cervical cancer is, for the most part, a preventable disease, women should not be dying from it at all.

Effective screening, making proper use of the Pap smear, did not happen in some provinces in Canada until the 1960s or later. British Columbia was the front-runner in both data collection and central laboratories. Organized programs were set up in BC as early as the 1950s. Ontario was late in its response in comparison to BC, with the Ontario Cancer Screening Program only being established in the 1990s. This program proved to be one that would eventually be successful, even when it was plagued with technological troubles early in its existence. The United States and the United Kingdom developed programs that were troubled with the same technical problems, and it was well into the twentieth century before they were remedied.

Cervical cancer was frightening for many women because of the misunderstandings and stigma attached to it. In the early to mid-twentieth century, cervical cancer was associated with contagion and sexual activity, and a stigma of promiscuity was often attached to women being treated for symptoms of cervical cancer. The term promiscuity was problematic in many studies as its definition was often construed to fit within the context of the medical study. Alexandra Howson believes that there were problems with the use of the term as "the notion of promiscuity plays a significant role in identifying categories of women in terms of risk. Promiscuity [was] rarely, if ever, defined in the technical and policy literature, yet it [was] clearly implied and deployed in the context of cervical examination."[296] Past misconceptions about women's sexuality still resonate in today's doctor's offices and women's understandings of cervical cancer.

With an increase in public awareness of cervical cancer, screening programs, and the use of the Pap smear within physicians' offices, the stigma attached to the disease began breaking down. However, this positive response to screening did not happen until much later in the twentieth century. As Chapter 4 of this thesis briefly demonstrates, the women that were interviewed in the various studies were reluctant to be screened and knew little about the disease during the mid-twentieth century. The experience of women patients is significant because, as Kathryn Strother Ratcliff argues, "women's voices are important in changing cancer research, policy, and treatment...Women's voices are also important in the doctor's office. Asking questions during an exam has been shown to be an important way for women to provide options for themselves."[297] A more extensive study needs to be done, expanding on the basis of this final chapter. By using a greater collection of oral histories, one may be able to provide more evidence of how women have diversely responded to the changes in knowledge, policies, and social attitudes surrounding cervical cancer.

And finally, the idea that a woman's health needs to be under surveillance is also something that should be further researched. Alexandra Howson argues that by encouraging surveillance of women bodies, society's attempt to control women's sexuality will continue.

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[296] Alexandra Howson, "Surveillance." 202.

[297] Ibid., 110.

Linda McKie also believes that screening is simply another type of surveillance of the body and a further means of policing women's sexuality. She argues that screening defines the cervix as "a site for state, professional and male surveillance and control, through a preventive service which many feel obligated to participate in."[298] While Canada takes pride in a funded, organized, health care system and decreasing cervical cancer rates, it is a country that needs to further examine what screening programs are really telling women. Should women be held responsible for subjecting themselves to annual invasive screening when they risk being labelled promiscuous? Are physicians communicating, without judgement, with their female patients about the preventive measures for cervical cancer? Has there been any change in women's understanding of the disease? The controversy surrounding surveillance is a very real and current issue. This is also a controversy that may never disappear. While maintaining the belief that cervical cancer is a preventable disease, continuing surveillance of women is needed. Screening will continue to require healthy, asymptomatic women to participate in programs that are set up.

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[298] McKie, "The Art of Surveillance." 441-442.

Appendix A - Cover Letter

Dear Participant:

My name is Mandy Hadenko, and I am a History/Women's Studies Master's Degree student at Lakehead University. I am currently researching the development of cervical cancer screening programs in Ontario in the post-War era, circa 1945-1970. I am very interested to find out how often Pap smears were ordered from family physicians, how often your doctor communicated preventive measures regarding cervical cancer, and how comfortable you were discussing such matters with your family physicians. Very little has been written regarding the development of cervical cancer programs in Ontario, and I am looking to remedy this historical problem.

To accomplish this goal, I would like to formally interview you, at your own convieneince, to gain a more realistic understanding of what it was like to be a woman in post-war Ontario, what sort of public awareness was available to you in regards to statistics, preventive measures, and the attitudes surrounding cervical cancer. With you permission, the interview will be tape-recorded and transcribed for later analysis. Your name will not be used in publications form the project unless your written permission is identified. This is strictly a volunteer interview and you may withdraw at any time. All files will be coded and will remain confidential and securely stored at Lakehead University during my research. Upon completion of the project all tapes will be destroyed. However, the findings of this research will be made available to you at your request upon the completion of my dissertation.

If you have any questions concerning this study I can be reached at the following number: 807-766-9802. If you have any questions or concerns about my own research that I am unable to answer, please feel free to contact my thesis supervisor at the school here in Thunder Bay: Dr. P. Jasen, Department of History Chair and Thesis Supervisor (807-343-8033).

Thank you for your cooperation,

Sincerely,

Mandy L. Hadenko – Candidate for the M.A. in History/Women's Studies, Lakehead University

Appendix B - Consent Form

My signature on this sheet indicates that I agree to participate in an interview conducted by Mandy Hadenko, on the development of cervical cancer screening programs in post-war Canada, circa 1945-1970.

My signature also indicates the following:

1. I am a volunteer and can withdraw at any time from the study.
2. There is no apparent risk of physical of psychological harm.
3. The data I provide will be confidential.
4. I will receive a summary of the research project, upon request, following its completion.

I have received explanations about the nature of this study, its purpose, and procedures.

Signature of Participant *Date*

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