

HALDIMAND-NORFOLK

Cancer Report



Message from the Acting Medical Officer of Health

April, 2008.

At first glance, this report may appear as “just another statistical analysis.” However, it was commissioned with the objectives of addressing the questions, “What is going on in Haldimand and Norfolk counties with respect to cancer?” And perhaps more importantly, whether there are any identifiable trends. If trends are apparent, then can we logically proceed to the next question, “Why?”

This cancer report focuses a lens on area malignancy rates in our counties, as well as identifying lifestyle practices that may contribute to, or affect, occurrence. The report also reviews screening procedures for the most prominently occurring diseases.

Following on from “what,” we can now move to “so what?” The understanding of time-sensitive trends for cancers allows health professionals to build insights into disease occurrences. We accomplish this by subdividing data categories such as age grouping, gender, etc. Such analysis assists us in identifying any determinants of disease, suggests modifiable conditions, and highlights “clustering” effects, if present. We may also identify areas requiring further study for the development and delivery of effective health programs. The whole can provide us with evidence-based arguments in our efforts to secure funding for identified programs likely to improve community health. Indeed, data such as this place us “on the radar,” portraying us as leaders in cancer research for our communities, as well as providing important political visibility for available funding.

We move forward to the “Now what?” The main outcome of the report for public health is two-fold, namely, cancer prevention, as a primary outcome, and early detection. For these two goals to be effective, partnerships have to be formed with other regions, provincially and nationally in order to pool data and experiences. From these data, effective screening programs can be proposed, developed or expanded to enable early detection and diagnosis. In turn, these initiatives will encourage early implementation of treatments, which will have significant impacts on cancer cure and survival. Our ultimate goal is to eradicate these diseases.

The report results conclude a major first-time study for the Haldimand-Norfolk Health Unit cancer incidence, which I hope you will find time to peruse if even cursorily. If you do, I believe that our report will provide you with at least a brief insight into the demographics of cancer in our communities, as well as stimulating your personal interest to enquire into the topic further.

Finally, I would like to acknowledge the professionalism and tenacity of our staff in the compilation of this report, and commend them on satisfactorily completing a highly detailed and comprehensive study.



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Acknowledgements

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Executive Summary

The Haldimand and Norfolk Cancer Report 2007 is the first focused cancer report to be completed for Haldimand and Norfolk. This report provides an overview of all cancers, selected types of cancers, screening practices and selected lifestyle behaviours/risk factors in Haldimand and Norfolk compared to Ontario. The report is an important document for understanding cancer trends over a period of time as well as screening practices and lifestyle behaviours in Haldimand and Norfolk compared to Ontario. Age-standardized incidence rates and mortality rates from 1986 to 2003 were examined. For selected types of cancer, age-specific rates were used. An overview of the Haldimand-Norfolk Health Unit's chronic disease prevention programs, with a particular emphasis on cancer, is included in this report. It is intended to provide physicians, health-care professionals, local politicians, members of the media, and Health Units with useful information for the purpose of cancer prevention. The executive summary lists some of the key highlights of the report. The complete report may be downloaded from the Health Unit's web-site at <http://www.hnhu.org>.

Cancer Incidence Rates and Screening Practices

All Cancer Sites Combined

- The average age-standardized incidence rate for all cancer sites for males was higher in Haldimand and Norfolk (477.7/100,000) than in Ontario (462.2/100,000).
- The age-specific rate for all cancer sites among males in Haldimand and Norfolk was highest in males age 75 to 79.
- The average age-standardized incidence rate (1986 to 2003) for all cancer sites for females was higher in Haldimand and Norfolk (350.4/100,000) than in Ontario (348.1/100,000).
- The age-specific rate for all cancer sites among females in Haldimand and Norfolk was highest in females age 70 to 74
- Overall, similar to Ontario, the average age-standardized rate in Haldimand and Norfolk was higher among males than females

Prostate Cancer

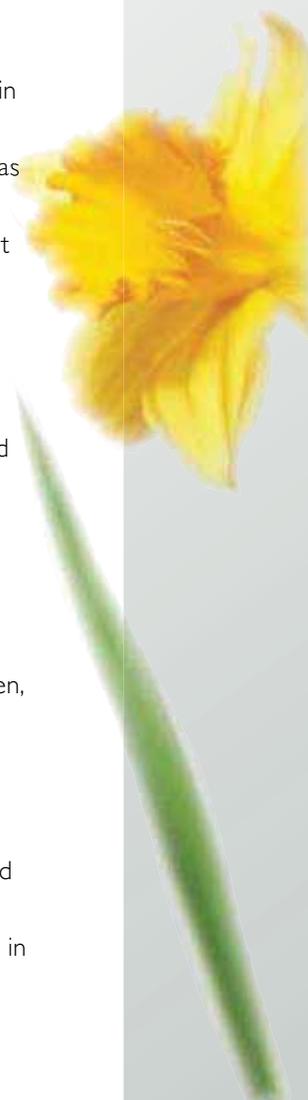
- The average age-standardized incidence rate for prostate cancer was higher in Haldimand and Norfolk (124.4/100,000) than in Ontario (114.1/100,000).
- The age-specific rate for prostate cancer in Haldimand and Norfolk was highest in males age 80 to 84. In Haldimand and Norfolk, the age-specific rate increased for males age 65 to 84.

Female Breast Cancer

- In 2005, 88.1% \pm 8.6% of Haldimand and Norfolk women age 50 to 69 reported being screened for breast cancer with a mammogram compared to 87.1% \pm 1.5% of Ontario women, but not significantly.
- Over half the population for both Haldimand and Norfolk (54.3% \pm 10.7%) and Ontario (53.5% \pm 2.1%) received routine screening for breast cancer with a mammogram within the last two years.
- The average age-standardized incidence rate for breast cancer was slightly lower in Haldimand and Norfolk (98.3/100,000) than in Ontario (99.2/100,000).
- The age-specific rate for breast cancer among females in Haldimand and Norfolk was highest in females age 85 and older.

Lung Cancer

- The average age-standardized incidence rate for lung cancer was slightly higher in Haldimand



and Norfolk (56.7/100,000) than in Ontario (56.2/100,000).

- The age-specific rate for lung cancer in Haldimand and Norfolk was highest in persons age 75 to 79.
- The average age-standardized incidence rate for lung cancer among males was higher in Haldimand and Norfolk (81.4/100,000) than in Ontario (78.5/100,000).
- The average age-standardized incidence rate for lung cancer among females was lower in Haldimand and Norfolk (36.9/100,000) than in Ontario (39.2/100,000).
- The overall incidence rate of lung cancer was at least double among males (81.4/100,000) in Haldimand and Norfolk and Ontario compared to females (36.9/100,000).

Colorectal Cancer

- In 2005, a lower proportion of Haldimand and Norfolk residents age 50 and older reported having been screened for colorectal cancer with a Fecal Occult Blood Test (FOBT) (30.7% \pm 7.0%) compared to Ontario (34.9% \pm 1.1%).
- Over half the population in Haldimand and Norfolk and Ontario have never had an FOBT.
- For both Haldimand and Norfolk males and females, the proportion of persons age 50 and older who reported having an FOBT was lower than Ontario, but not significantly.
- A higher proportion of Haldimand and Norfolk males (32.5% \pm 9.9%) than females (29.0% \pm 8.3%) reported having an FOBT.
- The average age-standardized incidence rate for colorectal cancer was higher in Haldimand and Norfolk (55.3/100,000) than in Ontario (52.2/100,000).
- In 2003, the age-specific rate for colorectal cancer in Haldimand and Norfolk was highest in persons age 75 to 79.
- The average age-standardized incidence rate for colorectal cancer among males was higher in Haldimand and Norfolk (65.5/100,000) than in Ontario (62.5/100,000).
- The average age-standardized incidence rate for colorectal cancer among females was slightly higher in Haldimand and Norfolk (47.1/100,000) than in Ontario (44.0/100,000).
- Overall, in Haldimand and Norfolk, the average incidence rate for colorectal cancer was higher among males (65.5/100,000) than females (47.1/100,000).

Uterine Cancer

- The average age-standardized incidence rate for uterine cancer was higher in Haldimand and Norfolk (25.0/100,000) than in Ontario (19.6/100,000).

Bladder Cancer

- The average age-standardized incidence rate for bladder cancer was higher in Haldimand and Norfolk (16.5/100,000) compared to Ontario (14.5/100,000).

Non-Hodgkin's Lymphoma (NHL)

- The average age-standardized incidence rate for NHL was lower in Haldimand and Norfolk (13.6/100,000) than in Ontario (15.7/100,000).

Malignant Melanoma

- The average age-standardized incidence rate for malignant melanoma was higher in Haldimand and Norfolk (13.3/100,000) than in Ontario (11.9/100,000).

Leukemia

- The average age-standardized incidence rate for leukemia was slightly higher in Haldimand and Norfolk (12.2/100,000) than in Ontario (11.8/100,000).

Oral Cavity and Pharynx

- The average age-standardized incidence rate for cancer of the oral cavity and pharynx was higher in Haldimand and Norfolk (11.3/100,000) than in Ontario (10.3/100,000).

Kidney Cancer

- The average age-standardized incidence rate for kidney cancer was relatively the same in Haldimand and Norfolk and Ontario (10.7/100,000 and 10.8/100,000 respectively).

Pancreatic Cancer

- The average age-standardized incidence rate for pancreatic cancer was slightly lower in Haldimand and Norfolk (8.5/100,000) than in Ontario (9.0/100,000).

Brain and Other Specified Parts of the Central Nervous System

- The average age-standardized incidence rate for brain cancer and cancer of the central nervous system was lower in Haldimand and Norfolk (6.9/100,000) than in Ontario (7.4/100,000).

Cervical Cancer

- In 2005, a higher percentage of Haldimand and Norfolk women age 18 to 29 reported having had a Pap test in their lifetime (80.3% ± 12.9%) compared to Ontario (68.1% ± 2.5%), but not significantly.
- A higher proportion of Haldimand and Norfolk women reported having a Pap test within the last three years (74.9% ± 14.0%) compared to Ontario (66.1% ± 2.5%), but not significantly.
- In 2005, a higher percentage of Haldimand and Norfolk women age 30 to 70 reported having had a Pap test in their lifetime (93.4% ± 5.3%) compared to Ontario (91.7% ± 0.9%), but not significantly.
- A lower proportion of Haldimand and Norfolk women age 30 to 70 reported having a Pap test within the last three years (70.6% ± 7.8%) compared to Ontario (75.2% ± 1.2%).

Cancer Mortality Rates

All Cancer Sites Combined

- The average age-standardized mortality rate among males for all cancer sites combined was higher in Haldimand and Norfolk (238.8/100,000) than in Ontario (229.6/100,000).
- The average age-standardized mortality rate among females for all cancer sites combined was higher in Haldimand and Norfolk (154.6/100,000) than in Ontario (151.1/100,000).
- Similar to Ontario, the average age-standardized mortality rate for all malignant cancer sites in Haldimand and Norfolk was higher for males (238.8/100,000) than females (154.6/100,000).

Lung Cancer

- The average age-standardized mortality rate for lung cancer was higher in Haldimand and Norfolk (48.9/100,000) than in Ontario (45.4/100,000).
- The average age-standardized mortality rate for lung cancer among males was higher in Haldimand and Norfolk (73.9/100,000) than in Ontario (66.6/100,000).
- The average age-standardized mortality rate for lung cancer among females was slightly lower in Haldimand and Norfolk (29.3/100,000) than in Ontario (29.9/100,000).
- Similar to Ontario, the average age-standardized mortality rate in Haldimand and Norfolk was more than double among males (73.9/100,000) than females (29.3/100,000).

Prostate Cancer

- The average age-standardized mortality rate for prostate cancer was higher in Haldimand and

Norfolk (32.4/100,000) than in Ontario (28.1/100,000).

Female Breast Cancer

- The average age-standardized mortality rate for female breast cancer was slightly higher in Haldimand and Norfolk (30.4/100,000) than in Ontario (29.0/100,000).

Colorectal Cancer

- The average age-standardized mortality rate for colorectal cancer was slightly lower in Haldimand and Norfolk (19.7/100,000) than in Ontario (19.9/100,000).
- Among males, the average age-standardized mortality rate for colorectal cancer was slightly lower in Haldimand and Norfolk (24.9/100,000) than in Ontario (25.2/100,000).
- Among females, the average age-standardized mortality rate for colorectal cancer was slightly lower in Haldimand and Norfolk (15.7/100,000) than in Ontario (16.0/100,000).
- Similar to Ontario, the average age-standardized mortality rate in Haldimand and Norfolk was higher among males (24.9/100,000) than females (15.7/100,000).

Pancreatic Cancer

- The average age-standardized mortality rate for pancreatic cancer was slightly lower in Haldimand and Norfolk (8.7/100,000) than in Ontario (8.9/100,000).

Lifestyle Behaviours/Risk Factors

Vegetables and Fruit Consumption

- Over half of Haldimand and Norfolk residents age 12 and older (58.3% ± 4.6%) consumed fewer than five daily servings of vegetables and fruit.
- Compared to Ontario, Haldimand and Norfolk had a higher percentage of residents age 12 and older that consumed fewer than five daily servings of vegetables and fruit, but not significantly.
- Over half of Haldimand and Norfolk males age 12 and older (65.0% ± 6.0%) consumed fewer than five daily servings of vegetables and fruit.
- Compared to Ontario, Haldimand and Norfolk had a higher percentage of males age 12 and older that consumed fewer than five daily servings of vegetables and fruit, but not significantly.
- Over half of Haldimand and Norfolk females age 12 and older (51.4% ± 7.0%) consumed fewer than five daily servings of vegetables and fruit.
- Compared to Ontario, Haldimand and Norfolk had a higher percentage of females age 12 and older that consumed fewer than five daily servings of vegetables and fruit, but not significantly.
- Similar to Ontario, in Haldimand and Norfolk, a higher proportion of males (65.0% ± 6.0%) than females (51.4% ± 7.0%) consumed fewer than five servings of vegetables and fruit daily.

Leisure-Time Physical Activity

- In Haldimand and Norfolk, a higher proportion of persons age 12 and older were physically active and moderately active (51.1% ± 4.7%), while 45.9% (± 4.8%) were inactive.
- Compared to Ontario, the same proportion of persons age 12 and older in Haldimand and Norfolk were inactive.
- A higher proportion of Haldimand and Norfolk males age 12 and older were physically active or moderately active (49.1% ± 6.9%) than inactive (47.7% ± 6.9%).
- Compared to Ontario, a higher proportion of Haldimand and Norfolk males age 12 and older were inactive, but not significantly.
- In Haldimand and Norfolk, a higher proportion of females age 12 and older were physically active and moderately active (53.2% ± 6.1%) than inactive (44.1% ± 6.3%).

- Compared to Ontario, a higher proportion of Haldimand and Norfolk females age 12 and older were physically active and moderately active, while a lower proportion were inactive, but not significantly.

Overweight/Obesity

- In 2005, more than half of Haldimand and Norfolk residents age 18 years and older (53.4% \pm 5.4%) were considered overweight or obese, while 39.8% (\pm 5.2%) were considered normal weight.
- A higher proportion of Haldimand and Norfolk adults age 18 and older were classified as either overweight or obese compared to Ontario, but not significantly.
- In accordance with the health risk classification, slightly more than half of Haldimand and Norfolk residents were at an increased risk to an extremely high risk of developing health problems.

Smoking

- In Haldimand and Norfolk, a higher proportion of persons age 19 and older reported being former smokers (42.4% \pm 5.2%), while 30.4% (\pm 5.0%) reported being current smokers and 27.1% (\pm 3.1%) never smoked.
- In Haldimand and Norfolk, a significantly higher proportion of persons age 19 and older smoked daily or occasionally compared to Ontario.
- For Haldimand and Norfolk males age 19 and older, a higher proportion reported being former smokers (44.2% \pm 7.8%), while 35.8% (\pm 8.2%) reported being current smokers and 19.7% (\pm 5.0%) reported never having smoked.
- Compared to Ontario, a significantly higher proportion of Haldimand and Norfolk males were current smokers.
- A higher proportion of Haldimand and Norfolk females age 19 years and older reported being former smokers (40.7% \pm 6.5), while 34.4% (\pm 5.9%) never smoked and 25.0% (\pm 5.6%) were current smokers.
- Compared to Ontario, a higher percentage of Haldimand and Norfolk females were current smokers, but not significantly.
- Overall, similar to Ontario, a higher proportion of Haldimand and Norfolk males were current smokers (35.8% \pm 8.2%) than Haldimand and Norfolk females (25.0% \pm 5.6%).

Exposure to Second-Hand Smoke

- Overall, 89.7% (\pm 3.2%) of households in Haldimand and Norfolk were smoke-free.
- The proportion of smoke-free homes in Haldimand and Norfolk was lower than in Ontario
- Overall, a high proportion of Haldimand and Norfolk residents were not exposed to second-hand smoke in a car or private vehicle in the past month (91.5% \pm 2.8%).
- The proportion of smoke-free vehicles was slightly lower in Haldimand and Norfolk than in Ontario, but not significantly.

Alcohol Consumption

- Of the proportion of persons age 20 and older who reported drinking alcohol in the past 12 months, a significantly higher proportion of Haldimand and Norfolk (53.2% \pm 5.4%) residents reported binge drinking compared to their Ontario counterparts (45.2% \pm 0.9%).
- A significantly higher proportion of Haldimand and Norfolk females (40.7% \pm 6.9%) reported having at least one occasion of binge drinking in the past year compared to Ontario (32.6% \pm 1.1%).

- A higher proportion of Haldimand and Norfolk males ($64.3\% \pm 7.9\%$) reported binge drinking compared to Ontario ($56.9\% \pm 1.2\%$).
- A significantly higher proportion of Haldimand and Norfolk males ($64.3\% \pm 7.9\%$) than Haldimand and Norfolk females reported binge drinking ($40.7\% \pm 6.9\%$).

Cancer Prevention Programs

Many of the programs offered by the Health Unit use a comprehensive approach with a multifaceted range of activities that employ more than one health promotion strategy and address the prevention of more than one chronic illness. Specific health promotion initiatives vary from year to year or by season depending on community resources, availability of staff and community priorities. The cancer prevention health promotion initiatives and programs offered at the Health Unit include the following topic areas:

- Nutrition.
- Tobacco Use Prevention.
- Physical Activity Promotion.
- Substance Misuse Prevention.
- Multi-risk Factor Programs.
- Cancer Screening Promotion.
- Sun Safety.

Introduction

Current Incidence and Mortality in Canada

This report provides an overview of all cancers, selected types of cancer, screening practices and selected lifestyle behaviours/risk factors in Haldimand and Norfolk compared to Ontario. Cancer is one of the major chronic diseases.¹ According to the *Canadian Cancer Statistics Report (2007)*, an estimated 159,900 new cases of cancer and 72,700 deaths from cancer will occur in Canada in 2007.² Estimated cancer incidence rates and death rates for 2007 are projected to be higher among men than women.² In 2007, it is estimated that three types of cancers will account for at least 55% of new cases in each sex: breast, lung and colorectal cancers in females, and prostate, lung and colorectal cancers in males.² In 2007, it is estimated that lung cancer will continue to be the leading cause of cancer deaths for both Canadian women and men.²

Screening Practices

According to the *Ontario Cancer Plan: 2006-07 Annual Progress Report*, early detection through cancer screening and treatment of specific types of cancer can reduce morbidity (particularly of breast, cervical, colorectal and prostate cancers), and early identification and treatment can increase the likelihood of survival.³ Particularly interesting, 50% of cancers can either be detected early or prevented before they become a serious health concern.⁴

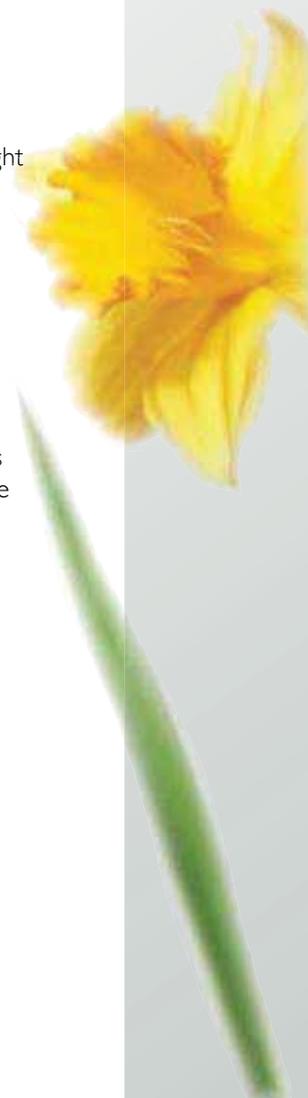
Lifestyle Behaviours and Risk Factors

Lifestyle behaviours such as tobacco use, poor diet, physical inactivity and alcohol consumption are modifiable risk factors that are positively associated with cancer.¹ Moreover, being overweight or obese are also risk factors for chronic disease.⁵

Structure of the Report

Age-standardized cancer incidence and mortality rates were examined from 1986 to 2003 for Haldimand and Norfolk and Ontario. Moreover, age-specific rates were examined for the year 2003 for all cancer sites for males and females as well as selected types of cancer, namely prostate, female breast, lung and colorectal. This report consists of four chapters: Cancer Incidence Rates and Screening Practices, Cancer Mortality Rates, Lifestyle Behaviours/Risk Factors and Cancer Prevention Programs. All cancer sites and selected types of cancer are presented in this report. The most common types of selected cancers are presented from highest to lowest. The selected types of cancers are as follows:

- Cancer sites combined.
- Prostate.
- Female Breast.
- Lung.
- Colorectal.
- Uterine.
- Bladder.
- Non-Hodgkin's Lymphoma.
- Malignant Melanoma.
- Leukemia.
- Oral Cavity and Pharynx.
- Kidney.



- Pancreatic.
- Brain and Other Specified Parts of the Central Nervous System.

Screening practices were also examined for the calendar year 2005 for both Haldimand and Norfolk and Ontario. The early detection of screening practices in this report are as follows:

- Female breast cancer.
- Colorectal cancer.
- Cervical cancer.

Lifestyle behaviours and risk factors were examined for Haldimand and Norfolk and Ontario for the calendar year 2005. Body Mass Index data is also presented in this chapter.

The selected lifestyle behaviours presented in this report are as follows:

- Vegetables and Fruit Consumption.
- Leisure-Time Physical Activity.
- Overweight/Obesity.
- Smoking.
- Exposure to Second-Hand Smoke.
- Alcohol Consumption.

Mandatory Health Program and Service Guidelines

The types of cancers examined in this report were in part based on incidence rates and in accordance with the *Mandatory Health Program Service Guidelines (1997, December)*. In accordance with the *Mandatory Health Program Service Guidelines (1997, December)* under the umbrella of Chronic Disease Prevention, the goal of chronic disease prevention is "to reduce the premature mortality and morbidity from preventable chronic diseases, to include cancer." Specifically, the long-term objectives are:

1. To slow the rise in incidence of lung cancer.
2. To reduce the incidence of oral cancer by 10% by the year 2010.
3. To slow the rise in incidence of skin cancers.

The goal of early detection of cancer is to reduce mortality from breast cancer and cervical cancer by increasing early detection. The long-term objectives are:

1. To reduce female breast cancer mortality by 10% by 2010.
2. To increase to 70% the proportion of women age 50 to 69 who receive screening mammography through the Ontario Breast Screening Program (OBSP) by 2010.
3. To reduce the mortality for cervical cancer by 50% by 2005.
4. To increase the proportion of women screened according to the guidelines of the Ontario Cervical Screening Collaborative Group to 85% and to increase the proportion of women ever screened to 95% by 2010.

Since there is a positive association between chronic disease and poor lifestyle behaviours, the following behavioural objectives are targeted at achieving the above desired disease objectives in relation to cancer:

1. To reduce the proportion of 12 to 19 year olds who smoke daily by 10% by 2010.
2. To reduce the proportion of adult women and men who smoke daily by 15% by 2010.
3. To increase the proportion of smoke-free homes by 2010.

4. To reduce dietary fat intake to an average of 30% of calories or less among people age 18 and older by 2010.
5. To increase to 75% the proportion of the population age four and older consuming five or more servings of vegetables and fruit daily by 2010.
6. To slow the decrease in the proportion of adults age 20 to 64 with healthy weight status (Body Mass Index 20 to 27) by 2010.
7. To increase to 40% the proportion of all adults who include at least 30 minutes of accumulated, moderate physical activity on most, if not all, days of the week by 2010.
8. To increase to 60% the proportion of youth who include at least 30 minutes of accumulated, moderate physical activity on most, if not all, days of the week by 2010.
9. To increase the proportion of children who are active.
10. To increase the proportion of the population of all ages who limit sun exposure, use protective clothing and sunscreen when exposed to sunlight and avoid artificial sources of ultraviolet light (e.g., sun lamps, tanning booths).

The goal of this report is to provide professionals with useful information for the purpose of cancer prevention programming in relation to the above *Mandatory Health Program and Service Guidelines*. Although this report provides new information, it does not provide data for all of the long-term objectives as outlined in the *Mandatory Health Program and Service Guidelines*. Both time constraints and data constraints prohibited further examination of additional types of cancer as well as lifestyle behaviours. Moreover, since one year of data was presented for the Lifestyle Behaviours/Risk Factor chapter, the report provides baseline data for comparison in the future. In a broad sense, environmental factors which focus on the agents in the environment that cause cancer was not also explored in this report. It is important to note that at the time of writing this document, the *Ontario Public Health Standards (2007, April)* were drafted to replace the Mandatory Health Program Service Guidelines, although these new standards have not been finalized.

Report Overview

Chapter 1: Cancer Incidence Rates and Screening Practices

The first chapter provides an overview of age-standardized incidence rates for selected types of cancer from 1986 to 2003 in Haldimand and Norfolk compared to Ontario. To date, the most current data for age-standardized incidence rates is from 2003. For selected types of cancer, gender differences were reported. Age-specific rates for selected types of cancers were examined for the calendar year 2003 to include all cancer sites, prostate, female breast, lung and colorectal cancer. The types of cancer were selected based on inquiry from program planners. Screening practices were also examined for Haldimand and Norfolk compared to Ontario for the calendar year 2005. To date, the most current data for cancer screening practices is from 2005. Cancer screening practices for female breast, colorectal and cervical cancer were investigated.

Chapter 2: Cancer Mortality Rates

The second chapter of this report provides an overview of age-standardized mortality rates for selected types of cancer from 1986 to 2003 in Haldimand and Norfolk compared to Ontario. Cancer deaths for all cancer sites, lung, prostate, female breast, colorectal and pancreatic cancer were reported. For selected types of cancer, gender differences were reported. To date, the most current data for age-standardized mortality rates is 2003. Due to data constraints, small cell counts prohibited further examination of other selected types of cancers.

Chapter 3: Lifestyle Behaviours/Risk Factors

The third chapter features lifestyle behaviour and risk factor data in Haldimand and Norfolk compared to Ontario. Data on vegetables and fruit consumption, leisure-time physical activity, overweight/obesity, smoking, exposure to second-hand smoke and alcohol consumption were reported. To date, the most current data for lifestyle behaviours is 2005. Baseline estimates were used from the Report on Cancer 2020 action plan to monitor progress based on the Cancer 2020 targets.

Chapter 4: Cancer Prevention Programs

The fourth chapter provides a summary of cancer prevention programs offered by the Health Unit. Many of the programs offered at the Health Unit use a comprehensive approach with a multifaceted range of activities that employ more than one health promotion strategy and address the prevention of more than one chronic disease. The cancer prevention health promotion initiatives and programs offered at the Health Unit include the following topic areas:

- Nutrition.
- Tobacco Use Prevention.
- Physical Activity Promotion.
- Substance Misuse Prevention.
- Multi-risk Factor Programs.
- Cancer Screening Promotion.
- Sun safety.

Data Interpretation

Age-standardized Rates (SRATE)

For chapters one and two, age-standardized (SRATE) incidence and mortality rates were used. Age-standardized rate is a single summary rate that allows a comparison of cancer rates among populations or within populations over time.⁶ SRATE represents a rate if the age structure and sex distributions were the same as those of the selected standard population.⁶ The standard population used in cancer surveillance is the 1991 adjusted Canadian population. Sex and age-standardized rates are based on sex and age-specific rates in the population studied and the age distribution of the standard population.⁶ For example, if the average age-standardized rate for lung cancer in Haldimand and Norfolk is 56.7/100,000 (1986 to 2003), this means that on average, 57 cases per 100,000 per year were newly diagnosed with lung cancer from 1986 to 2003.

Age-Specific Rates

Age-specific rates were also used to determine the rate for a particular age group. The numerator and the denominator refer to the same age group. For example, if the age-specific rate for breast cancer was 130.6/100,000 among Haldimand and Norfolk females age 40 to 44, this means that 131 females age 40 to 44 in that age group per 100,000 people were diagnosed with breast cancer for that particular year (2003).

Surveillance Epidemiology and End Results (SEER STAT) Database

Surveillance Epidemiology and End Results (SEER STAT) database was used to extract age-standardized incidence and mortality rates. Data from the Ontario Cancer Registry (OCR) is disseminated through SEER STAT.⁶ The OCR is an electronic registry of newly diagnosed cases of cancer and cancer deaths in Ontario.⁷ It includes all cancers except non-melanoma skin cancer.⁷ Information from Cancer Care Ontario is based on five major data sources:

1. Pathology reports with mention of cancer.
2. Hospital discharge summaries that include diagnosis of cancer.
3. Same-day procedures, emergency department visits and clinic visits.
4. Records of patients referred to CCO's eight Regional Cancer Centres or the Princess Margaret Hospital.
5. Death certificates with cancer as the underlying cause of death.⁶

Cancer sites are coded using the International Disease Classification of Disease, Ninth (ICD-9) and Tenth (ICD-10) Revision, as well as primary site and histology data fields. The values of SEER site recode variables are also available, which are based on the primary and histology data fields submitted to SEER by the registries. This is the major cancer site that is used in the reporting of cancer incidence data. Primarily, the site recode variable is added as a convenience to the researchers. For this report, either ICD-10 (mortality), Primary Site Code (incidence) or SEER site recode was used, based on disease classification groups. Since there are inconsistencies in the type of data field used, the data field is identified with each figure. SEER STAT data from 1986 to 2002 were extracted from the SEER STAT 2002 database, and for the year 2003, data were extracted from the SEER STAT 2003 database. This may be perceived as a limitation since SEER STAT 2003 contains updated data. Due to time restrictions, it was not plausible to conduct the analysis from the SEER STAT 2003 database.

The Canadian Community Health Survey

The Canadian Community Health Survey (2005) (CCHS) data source was used to extract data on lifestyle behaviours and cancer screening methods.⁸ The CCHS is a national population household survey conducted by Statistics Canada that provides timely, regular, cross-sectional estimates of health status, health determinants and health system utilization across Canada. The CCHS excludes populations on Indian Reserves, Canadian Forces Bases and some remote areas.

Bootstrap weights were used to estimate precision.⁸ Bootstrap is a method used to create a mean value for a point estimate, calculate the point estimate using 500 different weights and calculate the variance and 95% confidence interval for that estimate.⁸ A confidence interval is an interval within the true value of the variable in which the proportion, rate and mean are contained. In this report, this is calculated as a 95% probability. If the confidence bounds between point estimates do not overlap, then the difference between the estimates being compared are most likely statistically significant. The bootstrapping method also produces the coefficient of variation (CV), which is used to determine if the point estimate is releasable.⁸ Data with a CV between 16.6% and 33.3% should be determined with caution.⁸ Data with a CV greater than 33.3% are not reportable due to extreme sampling variability and are therefore suppressed.⁸ Missing variables (not stated, refuse and don't know) were collapsed to mean not stated. Based on the principles of proportion, non-applicable responses were removed from the data set.

Data Quality Issues

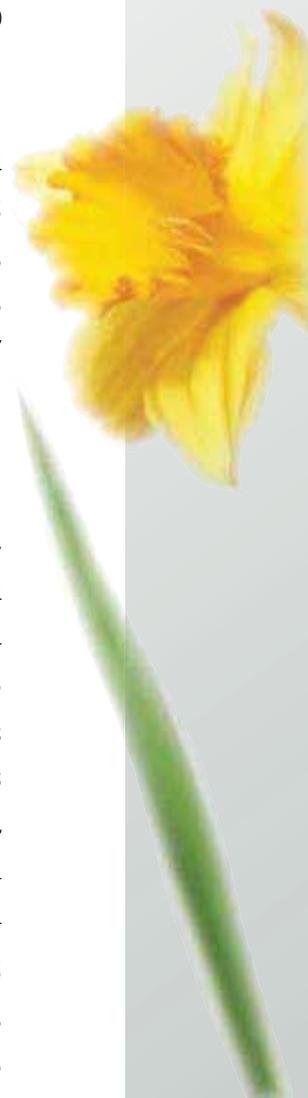
There are several limitations in this report related to classification, completeness and coding, and validity of the data for age-standardized cancer incidence and mortality rates.^{9, 10} First, cancer of the colon and rectum, bladder, ovary, malignant neoplasms and Non-Hodgkin's lymphoma coding and classifications were inconsistent over time, therefore the reliability of the data may be compromised.⁶ With respect to leukemia, due to the number of cases with an unspecified cell type, trends and patterns could not be interpreted reliably.⁶ Moreover, liver cancer rates are a common secondary site and need to be interpreted with care.⁶ Although ovarian and liver cancer were not included as selected types of cancer investigated in this report, they are included in the rate for all cancer sites.

Secondly, there may be gaps in underreporting of cancer cases. Incompleteness of the data may compromise the validity of the data.⁶

Lastly, there are differences between ICD-9 and ICD-10 codes. As a result, there can be differences in trending, and the reliability of the data may be compromised.⁶

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Cancer Incidence Rates and Screening Practices

This chapter provides an overview of cancer incidence rates in Haldimand and Norfolk compared to Ontario from 1986 to 2003. All cancer sites, as well as selected types of cancer, are included in this chapter. All cancer sites are collapsed with the exception of non-melanoma skin cancer. The selected types of cancer include the following: all cancer sites, prostate, female breast, lung, colorectal, uterine, bladder; Non-Hodgkin’s Lymphoma, malignant melanoma, leukemia, oral cavity and pharynx, kidney, pancreatic and brain and other parts of the central nervous system.

Other types of cancers including ovarian, stomach, esophageal and cervical cancer, were excluded because cell counts were too small and therefore not releasable. Age-standardized incidence rates were used. Age-specific rates for all cancer sites, prostate, female breast, lung and colorectal cancer were also reported, for the calendar year 2003 for Haldimand and Norfolk compared to Ontario. Screening practices for female breast, colorectal cancer and cervical cancer were included for the calendar year 2005 for Haldimand and Norfolk compared to Ontario.

In order to fully understand the following chapter, estimated new cases of cancer by sex for both Canada and Ontario are summarized in the table below for all cancers and the leading types of cancer (see Table 1 and Table 2). When comparing new cases to age-standardized rates, the order of leading types of cancer may vary slightly.

Table 1: Estimated Leading New Cases of Cancer, by Sex, Canada, 2007

CANADA		
Total	Males	Females
1. Lung	1. Prostate	1. Breast
2. Breast	2. Lung	2. Lung
3. Prostate	3. Colorectal	3. Colorectal

Source: Canadian Cancer Statistics 2007.

Table 2: Estimated Leading New Cases of Cancer, Ontario, 2007

ONTARIO		
Total	Males	Females
1. Lung	1. Prostate	1. Breast
2. Colorectal	2. Colorectal	2. Lung

Source: Canadian Cancer Society 2007.

All Cancer Sites Combined

All Cancer Sites Combined Incidence - Overview

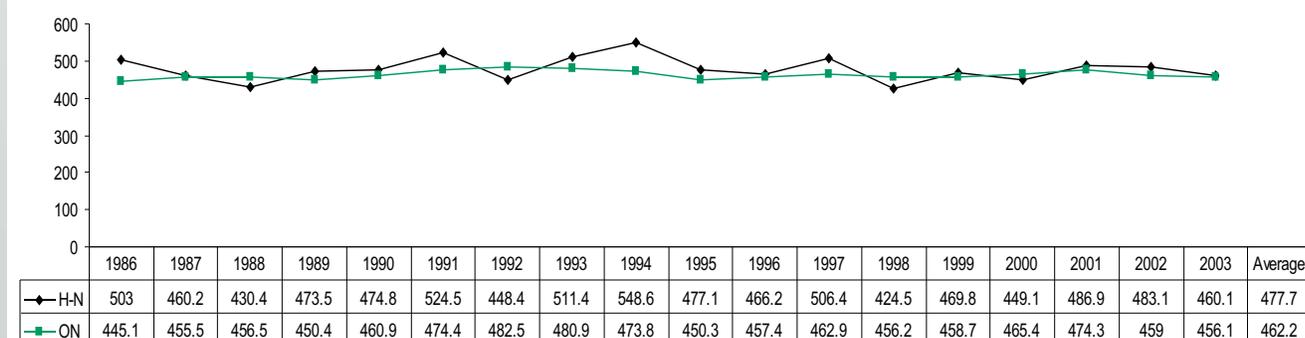
In 2007, according to the *Canadian Cancer Statistics Report (2007)*, it is projected that there will be 159,900 new cases of cancer in Canada.² This represents an additional 6,800 cases over the estimate in 2006, of which approximately 1,600 will be prostate cancer, 800 will be colorectal cancer and 600 will be lung cancer.² In Canada, in 2007, it is estimated that men will have a higher percentage of new cases of cancer.² In Canada, despite the stability of age-standardized incidence rates for all cancers from 1978 to 2007, the number of new cases continues to rise slowly as the population increases and ages.² This cancer burden negatively affects the health care system and the population as a whole.²

All Cancer Sites Combined Incidence - Age-standardized Incidence Rates Data and Interpretation

All Cancer Sites Combined Incidence - Males

As shown in Figure 1, the average age-standardized incidence rate for all cancer sites for males was higher in Haldimand and Norfolk (477.7/100,000) than in Ontario (462.2/100,000). From 1986 to 2003, the age-standardized incidence rates for all cancers among males in Haldimand and Norfolk fluctuated and peaked in 1994 (548.6/100,000).

Figure 1: Age-Standardized Incidence Rates for all Cancer Sites per 100,000 for Males, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	228	209	202	225	236	265	232	268	293	262	256	285	243	276	268	301	303	295
ON	CASES	17,668	18,639	19,229	19,571	20,608	21,788	22,777	23,286	23,538	22,819	23,724	24,660	24,903	25,671	26,723	27,965	27,743	28,494

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

All Cancers: Site Recode (1986-2003).

All Male Cancer Sites Combined - Age-Specific Rates

As shown in Table 3, the age-specific rate for all cancer sites among males in Haldimand and Norfolk was highest in males age 75 to 79 (3609.3/100,000). Particularly interesting, the age-specific rate more than doubled from males age 55 to 59 (711.4/100,000) to males age 60 to 64 (1445.0/100,000).

Table 3: Age-Specific Rates (per 100,000) for All Cancer Sites per 100,000 Males, Haldimand and Norfolk, 2003

Age Group	Haldimand and Norfolk Rate	Haldimand and Norfolk Count
0-4	0.0	0
5-9	*	*
10-14	*	*
15-19	*	*
20-24	0.0	0
25-29	*	*
30-34	*	*
35-39	*	*
40-44	108.3	5
45-49	260.9	12
50-54	620.7	25
55-59	711.4	25
60-64	1445.0	39
65-69	1851.0	42
70-74	2144.6	43
75-79	3609.3	51
80-84	2818.5	25
85+	2884.6	15

Data Notes: Cell counts for males age five to nine and 25 to 39 could not be released (*) since cell counts were less than five in a given year. There were zero cell counts for males age zero to four and 20 to 24.

Data Source: SEER STAT 2003; SEER Recode.

All Cancer Sites Combined Incidence - Females

As shown in Figure 2, the average age-standardized incidence rate for all cancer sites for females was higher in Haldimand and Norfolk (350.4/100,000) compared to Ontario (348.1/100,000). From 1986 to 2003, the age-standardized incidence rates for all cancers in Haldimand and Norfolk fluctuated. The highest incidence rates were found in 1988 (413.3/100,000), while the lowest were found in 1986 (276.3/100,000). Overall, similar to Ontario, the average age-standardized rate in Haldimand and Norfolk was higher among males (477.7/100,000) than females (350.4/100,000). (See Figure 1 and Figure 2.)

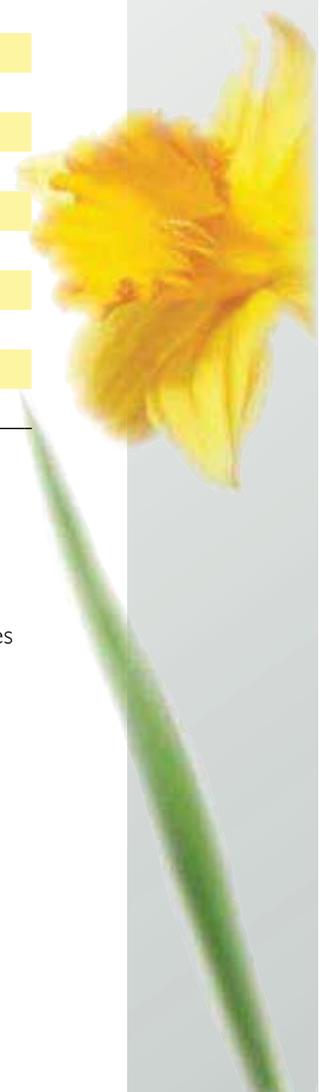
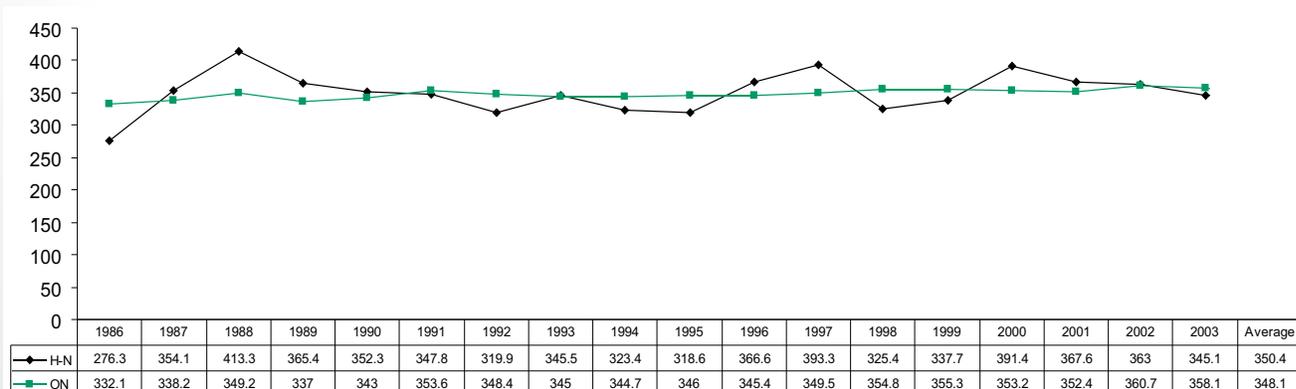


Figure 2: Age-Standardized Incidence Rates for all Cancer Sites per 100,000 for Females, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	148	189	226	206	203	208	191	208	206	201	239	257	220	228	266	261	253	245
ON CASES	16,725	17,577	18,590	18,492	19,276	20,344	20,443	20,764	21,194	21,688	22,142	22,909	23,798	24,318	24,826	25,339	26,434	26,801

Data Source: SEER STAT 2002 (1986-2002), SEER STAT (2003).

All Cancers: Site Recode (1986-2003).

All Female Cancer Sites Combined - Age-Specific Rates

As shown in Table 4, the age-specific rate for all cancer sites among females in Haldimand and Norfolk was highest in females age 70 to 74 (1729.0/100,000). In Haldimand and Norfolk, the age-specific rate successively increased for females age 30 to 74. Overall, the age-specific rate was highest in males age 75 to 79 (3609.3/100,000) and highest in females age 70 to 74 and older (1729.0/100,000). (See Table 3 and Table 4.)



Table 4: Age-Specific Rates for All Cancer Sites per 100,000 Females, Haldimand and Norfolk, 2003

Age Group	Haldimand and Norfolk Rate	Haldimand and Norfolk Count
0-4	*	*
5-9	*	*
10-14	0.0	0
15-19	*	*
20-24	0.0	0
25-29	*	*
30-34	194.2	6
35-39	231.9	9
40-44	239.5	11
45-49	368.0	16
50-54	655.8	25
55-59	536.5	18
60-64	731.5	20
65-69	1227.0	28
70-74	1729.0	37
75-79	1522.6	28
80-84	1481.0	21
85+	1579.8	20

Data Notes: Cell counts for males age zero to nine, 15 to 19 and 25 to 29 could not be released (*) since cell counts were less than five in a given year. There were zero cell counts for males age 10 to 14 and 20 to 24.

Data Source: SEER STAT 2003; SEER Recode.

Prostate Cancer

Prostate Cancer - Overview

Prostate cancer begins in the prostate gland, which is part of the male reproductive system.¹¹ In 2007, it is estimated that prostate cancer among Canadian men will continue to be the leading type of cancer diagnosed.² In 2007, it is estimated that, on average, 429 Canadian men will be diagnosed with prostate cancer every week, and one in eight men will develop prostate cancer in his lifetime, generally after the age of 60.¹²

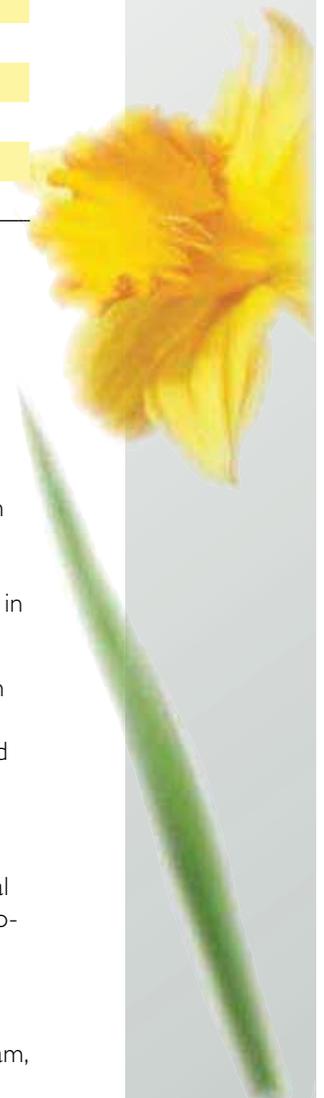
Similar to Canada, prostate cancer is the most common cancer diagnosed in Ontario men.¹³ An estimated 8,900 Ontario men will be diagnosed with prostate cancer in 2007.¹³ Although the causes of prostate cancer are unknown, dietary fat, age (particularly after 65), family history and African ancestry are risk factors associated with prostate cancer.¹⁴

Early Detection of Prostate Cancer

To date, there are four screening tests used to detect prostate cancer including the digital rectal examination, prostate specific antigen test (PSA), transrectal ultrasonography and magnetic resonance imaging.¹⁵

Digital Rectal Exam

The digital rectal exam is the most common way to screen for prostate cancer.¹⁶ During an exam, the doctor feels the prostate gland for lumps, changes in size, irregularities and consistency.¹⁶



Prostate Specific Antigen Test (PSA)

The PSA is a blood test that measures levels of PSA protein released from the prostate gland.¹⁶ In Canada, PSA testing has increased since the early 1990s.¹⁵

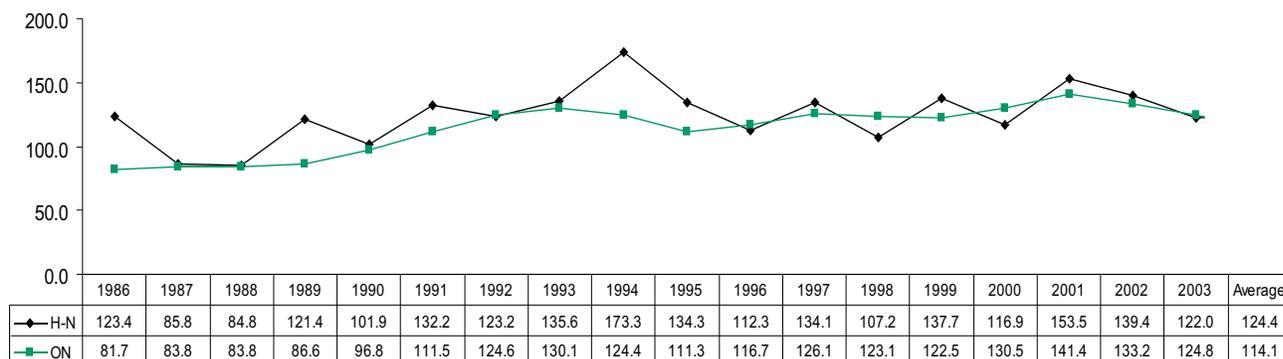
Transrectal Ultrasonography and Magnetic Resonance Imaging

Transrectal ultrasonography uses imagery of the prostate to determine any abnormalities.¹⁷ Magnetic Resonance Imaging (MRI) is a valuable screening method used to detect prostate cancer, as well as other conditions.¹⁵ MRI uses a magnetic field and radio waves to create a cross-sectional picture of various parts of the body.¹⁸

Prostate Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 3, the average age-standardized incidence rate for prostate cancer was higher in Haldimand and Norfolk (124.4/100,000) than in Ontario (114.1/100,000). From 1986 to 2003, incidence rates of prostate cancer in Haldimand and Norfolk were relatively inconsistent and peaked in 1994 (173.3/100,000). In Ontario, the age-standardized incidence rate for prostate cancer steadily increased from 1986 to 1993 and then fluctuated slightly thereafter. The sharp increase in the 1990s may be attributed to the increased use of the PSA test.¹⁹

Figure 3: Age-Standardized Incidence Rates for Prostate Cancer per 100,000 Males, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	55	38	39	57	49	66	64	71	93	73	62	77	61	82	69	96	89	80
ON CASES	2,956	3,173	3,276	3,517	4,069	4,907	5,671	6,137	6,059	5,538	5,952	6,641	6,651	6,795	7,426	8,272	8,016	7,572

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Prostate Cancer: (ICD-9: 185 (1986-2001), SEER Recode (2002, 2003)).

Prostate Cancer - Age-Specific Rates

As shown in Table 5, the age-specific rate for prostate cancer among males in Haldimand and Norfolk was highest in males age 80 to 84 (789.2/100,000). In Haldimand and Norfolk, the age-specific rate increased for males age 65 to 84.

Table 5: Age-Specific Rates for Prostate Cancer per 100,000 Males, Haldimand and Norfolk, 2003

Age Group	Haldimand and Norfolk Rate	Haldimand and Norfolk Count
0-4	0.0	0
5-9	0.0	0
10-14	0.0	0
15-19	0.0	0
20-24	0.0	0
25-29	0.0	0
30-34	0.0	0
35-39	0.0	0
40-44	0.0	0
45-49	*	*
50-54	*	*
55-59	256.1	9
60-64	629.9	17
65-69	528.9	12
70-74	648.4	13
75-79	778.5	11
80-84	789.2	7
85+	*	*

Data Notes: Cell counts for males age 45 to 54 and 85 and older could not be released (*) since cell counts were less than five in a given year. There were zero cell counts for males age zero to 44.

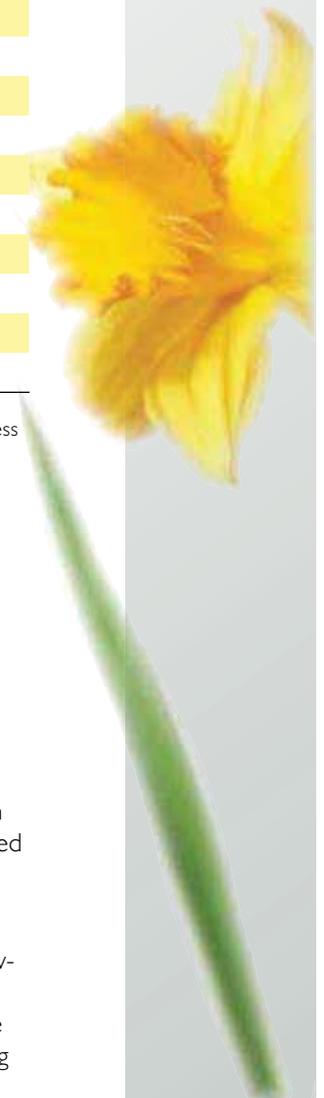
Data Source: SEER STAT 2003; SEER Recode.

Female Breast Cancer

Female Breast Cancer - Overview

Breast cancer begins in the cells of the breast.²⁰ Although breast cancer can be found in men, it is more prevalent in women.²¹ Among Canadian women, it is estimated that breast cancer will continue to be the most common type of cancer in 2007.² In 2007, an estimated 22,300 Canadian women and 170 Canadian men will be diagnosed with breast cancer.²¹ In Canada, on average, 429 women will be diagnosed with breast cancer every week.²¹ In their lifetime, one in nine Canadian women is expected to develop breast cancer.²¹ For Ontario, in 2007, an estimated 8,500 women will be diagnosed with breast cancer.¹³

Although there is no known single cause of breast cancer, some risk factors are increasing age, family history of breast cancer and ovarian cancer, previous breast disorders with biopsies showing abnormal cells, never having been pregnant or having a first pregnancy after age 30, dense breast tissue, taking hormone replacement therapy (estrogen plus progestin) for more than five years, beginning to menstruate at an early age (average age of menstruation is 12) and beginning menopause later than the average age (average age of menopause is 55).²² Oral contraceptives



and alcohol are associated with a slight increase in breast cancer, while lifestyle behaviours and risk factors including poor diet, smoking, physical inactivity and obesity are under study.²²

Early Detection of Female Breast Cancer

In Ontario, delivery of screening occurs through the Ontario Breast Screening Program (OBSP) and in the fee-for-service sector.²³ To date, screening methods include a two-view mammogram at all OBSP sites.²³ Mammograms and clinical breast examination are screening methods employed at the OBSP sites, although clinical breast examination is only available at some sites.²³

Mammograms

A mammogram is an x-ray of the breast that gives a clear picture of the soft tissue inside the breast.¹⁵ Mammograms can detect breast cancer at an early stage and can also be used to detect more advanced cancers.¹⁵ According to the *Progress Report on Cancer Control in Canada*, nearly half of all new cases of breast cancer will occur in females age 50 to 69 in Canada.¹⁵ As a result, the OBSP targets women age 50 to 69 and encourages them to participate in regular screening.²³ The OBSP screens women up to age 74.²³

It is recommended that women age 50 to 69 have a mammogram every two years, and females under the age of 50 or over the age of 69 who are at a high risk of developing breast cancer consult with their doctors to determine if a mammogram is deemed appropriate.²⁴ Moreover, the Canadian Cancer Society also recommends that women age 40 to 49 discuss the risk of breast cancer and the benefits and risks of mammography with their physicians.²⁴ Adults age 70 and older are also encouraged to talk to their physicians about a screening program.²⁴ The Norfolk General Hospital (NGH), in Simcoe, has an OBSP site.

Clinical Breast Examinations and Breast Self-Examinations

Clinical breast examinations can also detect breast cancer at the early and late stages.²³ The Canadian Cancer Society recommends that females older than 40 have a clinical breast examination by a trained health professional at least every two years.²⁴

Recently, the Canadian Cancer Society changed its message to women monitoring themselves for breast cancer. The Canadian Cancer Society no longer recommends routine monthly self-examination but rather urges women to know their own breasts and inform their doctors if they detect any changes.

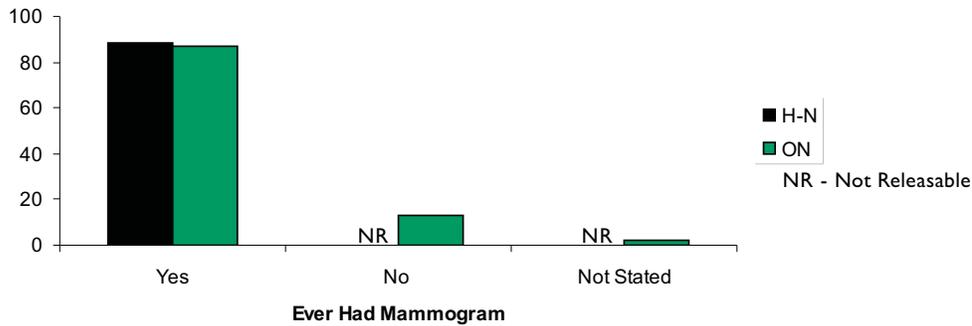
Early Detection of Female Breast Cancer - Data and Interpretation

The Canadian Cancer Society (2005) recommends that women age 50 to 69 have a mammogram every two years.²⁴

Ever Been Screened for a Mammogram

In 2005, a slightly higher proportion of Haldimand and Norfolk women age 50 to 69 (88.1% ± 8.6%) reported ever receiving a mammogram in their lifetime compared to 87.1% (± 1.5%) of Ontario women (see Figure 4) but not significantly.

Figure 4: Proportion of Women Who Have Ever Been Screened for Breast Cancer with a Mammogram, Age 50 to 69, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Ever Had a Mammogram	88.1 ± 8.6	87.1 ± 1.5
Never Had Mammogram	**	12.9 ± 1.5
Not Stated	**	* 2.0 ± 0.7
Total	NC	100

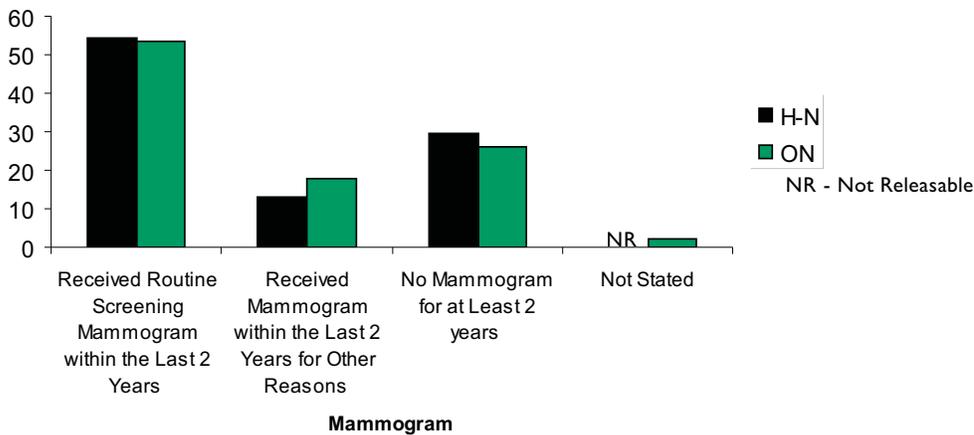
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. Not stated includes don't know, refusal and not stated. NC: Not able to compute.

Routine Screening for Breast Cancer with a Mammogram

Over half the population for both Haldimand and Norfolk (54.3% ± 10.7%) and Ontario (53.5% ± 2.1%) received routine screening for breast cancer with a mammogram within the last two years. (see Figure 5).

Figure 5: Mammogram Obtained within the Last Two Years, Females, Age 50 to 69, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Received Routine Screening Mammogram within the Last Two Years	54.3 ± 10.7	53.5 ± 2.1
Received Mammogram within the Last Two Years for Other Reasons	* 13.1 ± 7.8	18.0 ± 1.7
No Mammogram for at Least Two Years	* 29.6 ± 10.9	* 26.3 ± 1.8
Not Stated	**	* 2.2 ± 0.8
Total	NC	100

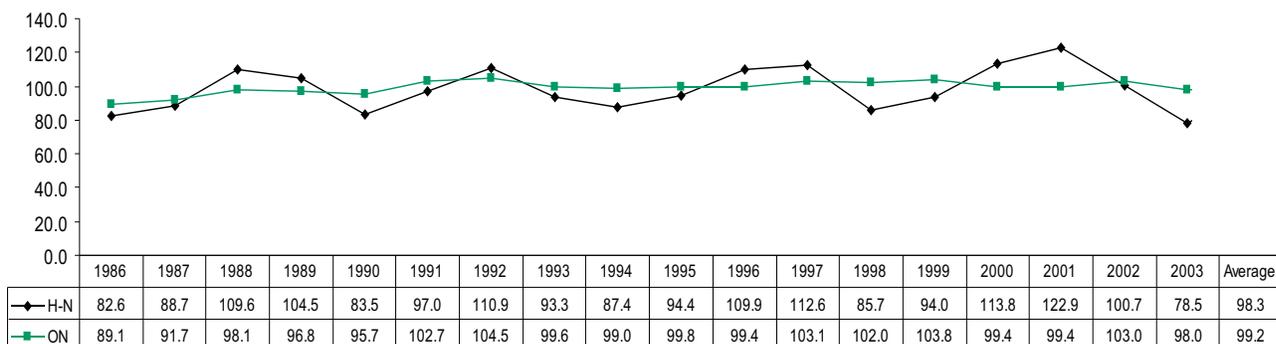
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution. **High sampling variability data is not releasable. Not stated includes don't know, refusal and not stated. NC: Not able to compute. Excludes non-applicable.

Female Breast Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 6, the average age-standardized incidence rate for breast cancer was slightly lower in Haldimand and Norfolk (98.3/100,000) than in Ontario (99.2/100,000). From 1986 to 2003, in Haldimand and Norfolk, the incidence rates of breast cancer were inconsistent. In Haldimand and Norfolk, the highest incidence rate for breast cancer was in 2001 (122.9/100,000) and the lowest was in 2003 (78.5/100,000). In Ontario, from 1986-2003, the age-standardized incidence rate for breast cancer was relatively consistent.

Figure 6: Age-Standardized Incidence Rates for Breast Cancer per 100,000 for Females, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	42	45	59	56	46	56	66	55	53	60	69	73	57	63	77	84	70	58
ON CASES	4,387	4,661	5,123	5,210	5,280	5,802	6,044	5,910	6,007	6,181	6,289	6,703	6,766	7,050	6,930	7,081	7,507	7,283

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Breast Cancer: [(ICD-9: 174 (1986-2001), SEER Recode (2002, 2003)].

Female Breast Cancer - Age-Specific Rates

As shown in Table 6, the age-specific rate for breast cancer among females in Haldimand and Norfolk was highest in females age 85 and older (473.9/100,000). In Haldimand and Norfolk, the age-specific rate increased for females age 80 and older.

Table 6: Age-Specific Rates for Breast Cancer per 100,000 Females, Haldimand and Norfolk, 2003

Age Group	Haldimand and Norfolk Rate	Haldimand and Norfolk Count
0-4	0.0	0
5-9	0.0	0
10-14	0.0	0
15-19	0.0	0
20-24	0.0	0
25-29	0.0	0
30-34	0.0	0
35-39	*	*
40-44	130.6	6
45-49	115	5
50-54	262.3	10
55-59	149	5
60-64	329.2	9
65-69	262.9	6
70-74	*	*
75-79	*	*
80-84	352.6	5
85+	473.9	6

Data Notes: Cell counts for males age 35 to 39 and 70 to 79 years could not be released (*) since cell counts were less than five in a given year. There were zero cell counts for females age zero to 34.

Data Source: SEER STAT 2003; SEER Recode.

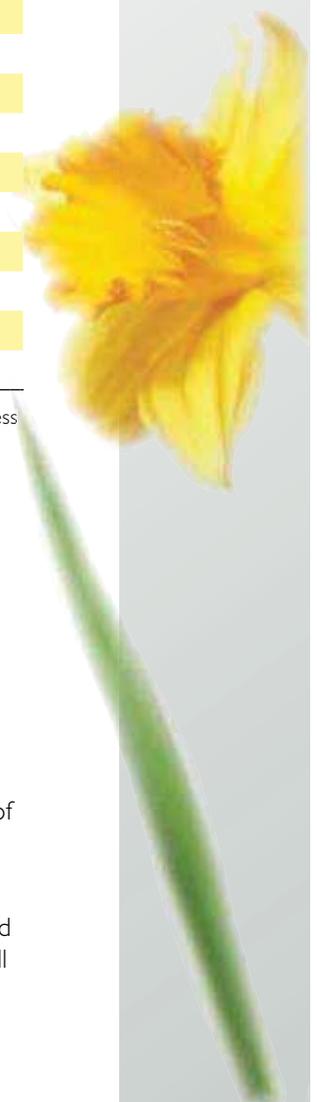
Lung Cancer

Lung Cancer - Overview

Lung cancer occurs when cells develop abnormally in one or both lungs and form a malignant tumour.²⁵ Lung cancer includes tumour of the bronchus, trachea and lung.²⁶

In Canada, it is estimated that lung cancer will be the leading type of cancer type diagnosed in 2007 for both sexes combined.² In 2007, it is estimated that 448 Canadians on average will be diagnosed with lung cancer every week.²⁷ In Canada, it is estimated that in 2007, the incidence of lung cancer will continue to increase among women and decrease among men.²⁷

In 2007, in Ontario, it is estimated that lung cancer will be the most frequently diagnosed cancer.¹³ In Ontario, lung cancer is the third most common cancer diagnosed in men and the second most common in women.¹³ For Ontario in 2007, an estimated 4,000 men and 3,900 women will be diagnosed with lung cancer.¹³



Smoking

The single most preventable cause of lung cancer is tobacco.²⁸ In Ontario, for both sexes, cigarette smoke is the leading cause of lung cancer.²⁸ Probably more than 90% of lung cancers in men and 70% of lung cancers in women are directly attributed to smoking.²⁸ According to Cancer Care Ontario (2003), lung cancers are a result of cigarettes smoked over the past 10 or more years.²⁹ Twenty years ago, young women, including teenagers, smoked regularly in record numbers.²⁹

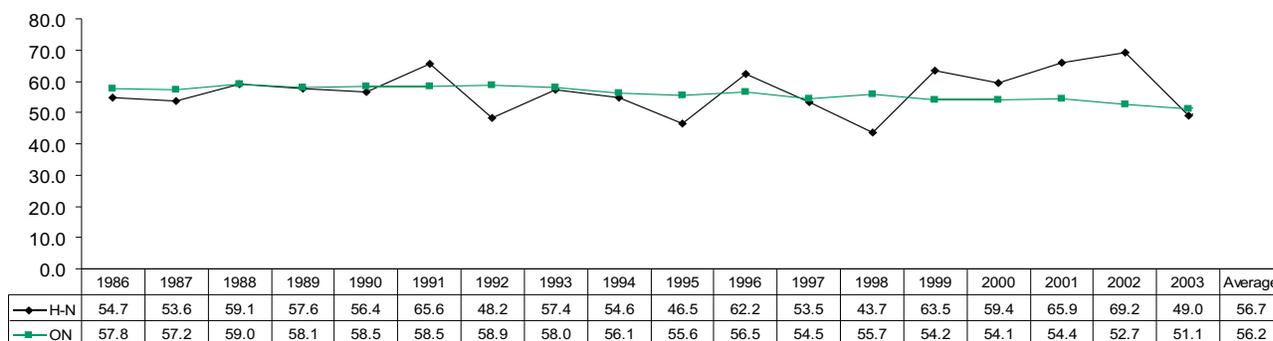
Environmental Carcinogens

Environmental carcinogens such as radiation, coal tars, soot, asbestos, radon, arsenic and nickel and chromium compounds may also increase the risk of lung cancer.^{28, 30} An overwhelming body of evidence suggests that second-hand smoke also causes lung cancer.³¹

Lung Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 7, the average age-standardized incidence rate for lung cancer was slightly higher in Haldimand and Norfolk (56.7/100,000) than in Ontario (56.2/100,000). From 1986 to 2003, the incidence rates of lung cancer in Haldimand and Norfolk were relatively inconsistent. The age-standardized incidence rates for lung cancer in Haldimand and Norfolk were highest in 2002 (69.2/100,000).

Figure 7: Age-Standardized Incidence Rates for Lung Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	55	55	61	62	62	74	55	67	64	56	76	67	57	83	77	87	93	69
ON	CASES	5,376	5,470	5,772	5,843	6,037	6,185	6,367	6,410	6,330	6,418	6,650	6,566	6,873	6,830	6,994	7,210	7,129	7,107

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Lung Cancer: [(ICD-9: 162 (1986-2001), Primary Code 330-349 (2002, 2003)].

Lung Cancer - Age-Specific Rates

As shown in Table 7, the age-specific rate for lung cancer in Haldimand and Norfolk was highest in persons age 75 to 79 (522.8/100,000). In Haldimand and Norfolk, the age-specific rate increased for persons age 60 to 79 and decreased thereafter. Particularly interesting, the age-specific rate dramatically increased from 265.4/100,000 in persons age 70 to 74 to 522.8/100,000 in persons age 75 to 79.

Table 7: Age-Specific Rates for Lung Cancer per 100,000, Haldimand and Norfolk, 2003

Age Group	Haldimand and Norfolk Rate	Haldimand and Norfolk Count
0-4	0.0	0
5-9	0.0	0
10-14	0.0	0
15-19	0.0	0
20-24	0.0	0
25-29	0.0	0
30-34	0.0	0
35-39	0.0	0
40-44	*	*
45-49	*	*
50-54	*	*
55-59	*	*
60-64	184.1	10
65-69	241.7	11
70-74	265.4	11
75-79	522.8	17
80-84	303.7	7
85+	*	*

Data Notes for H-N: Cell counts for persons age 40 to 59 and 85 years and older could not be released (*) since cell counts were less than five in a given year. There were zero cell counts for persons age zero to 39.

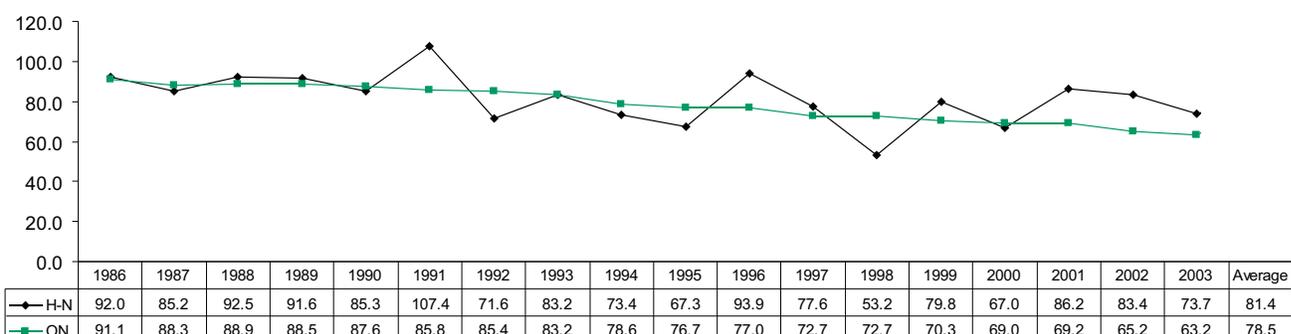
Data Source: SEER STAT 2003; lung cancer (Primary Site 330-349).

Lung Cancer Incidence - Males

As shown in Figure 8, the average age-standardized incidence rate for lung cancer among males was higher in Haldimand and Norfolk (81.4/100,000) than in Ontario (78.5/100,000). From 1986 to 2003, incidence rates of lung cancer among males in Haldimand and Norfolk fluctuated. Particularly interesting, in Ontario the age-standardized rate for lung cancer among males mostly declined from 1986 to 2003 with slight fluctuations. The age-standardized incidence rate for lung cancer in Haldimand and Norfolk among males was highest in 1991 (107.4/100,000).



Figure 8: Age-Standardized Incidence Rates for Lung Cancer per 100,000 for Males Haldimand and Norfolk and Ontario, 1986-2003



		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	42	39	44	44	43	56	37	44	40	38	52	44	31	49	41	53	52	48
ON	CASES	3,687	3,696	3,802	3,917	3,984	3,986	4,073	4,057	3,917	3,894	4,003	3,875	3,979	3,937	3,965	4,074	3,941	3,938

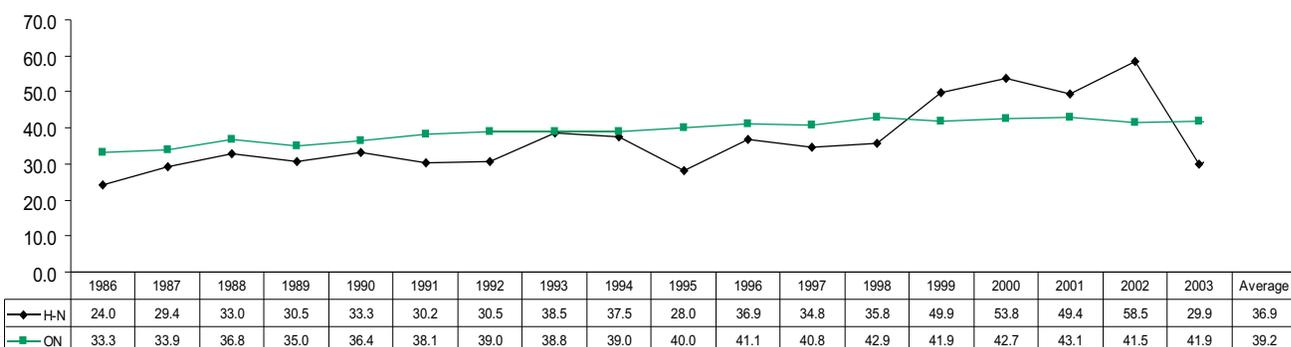
Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Lung Cancer: [(ICD-9: 162 (1986-2001), Primary Code 330-349 (2002, 2003)].

Lung Cancer Incidence - Females

As shown in Figure 9, the average age-standardized incidence rate for lung cancer among females was lower in Haldimand and Norfolk (36.9/100,000) than in Ontario (39.2/100,000). From 1986 to 2003, incidence rates of lung cancer among females in Haldimand and Norfolk remained relatively stable from 1986 to 1997 and then increased with each successive year, with the exception of 2001, and then decreased in 2003. In Ontario, age-standardized incidence rates for lung cancer among females remained relatively consistent from 1986 to 2003. Overall, the average incidence rate of lung cancer was at least double among males (81.4/100,000) compared to females (36.9/100,000). (See Figure 7 and Figure 9.)

Figure 9: Age-Standardized Incidence Rates for Lung Cancer per 100,000 for Females Haldimand and Norfolk and Ontario, 1986-2003



		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	13	16	17	18	19	18	18	23	24	18	24	23	26	34	36	34	41	21
ON	CASES	1,689	1,774	1,970	1,926	2,053	2,199	2,294	2,353	2,413	2,524	2,647	2,691	2,894	2,893	3,029	3,136	3,076	3,169

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Lung Cancer: [(ICD-9: 162 (1986-2001), Primary Code 330-349 (2002, 2003)].

Colorectal Cancer

Colorectal Cancer - Overview

Colorectal cancer begins in the cells that line the inside of the colon and rectum, which are part of the digestive system.³² In Canada, it is estimated that colorectal cancer will be the fourth most common type of cancer diagnosed in 2007 for both sexes combined and the third most common type of cancer for both men and women.²

In 2007, approximately 20,800 Canadians will be diagnosed with colorectal cancer.³³ Every week, on average, 400 Canadians will be diagnosed with colorectal cancer.³³ One in 14 men and one in 16 women are expected to develop colorectal cancer during their lifetime.³³

In Ontario, it is estimated that in 2007, colorectal cancer will be the second most common cancer diagnosed in men and the third most common in women.¹³ In 2007, an estimated 4,200 men and 3,600 women will be diagnosed with colorectal cancer in Ontario.¹³

Colorectal cancer may be preventable by reducing risk factors including polyps (small growths on the inner wall of the colon and rectum), poor diet, obesity, physical inactivity, ulcerative colitis or Crohn's disease, smoking and heavy alcohol consumption.³⁴ People with a family history of colorectal cancer, particularly Familial Adenomatous Polyposis (FAP), an inherited colorectal cancer syndrome, are at increased risk.³⁴

Early Detection of Colorectal Cancer

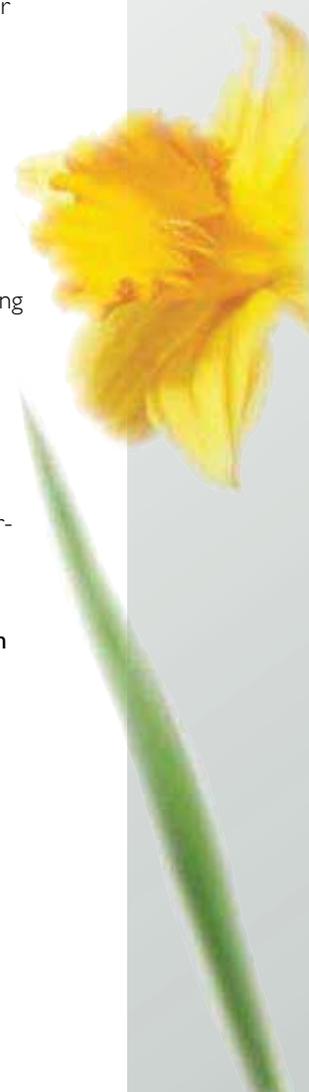
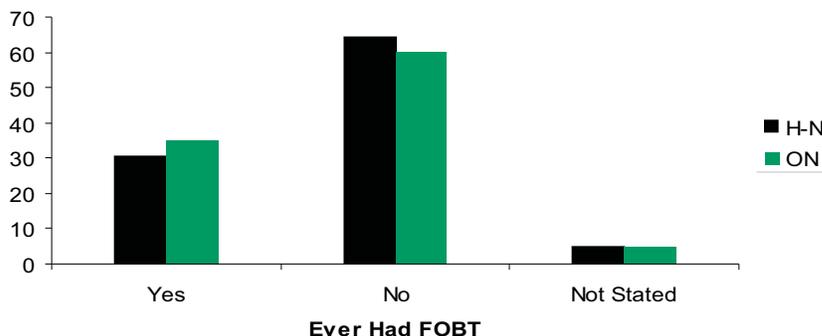
Colorectal cancer can be identified through screening.³ The Fecal Occult Blood Test (FOBT) is a reliable screening method for colorectal cancer to reduce deaths.³ The FOBT helps to identify polyps early before they become cancerous.³⁵ When detected early, there is a 90% chance of curing colorectal cancer compared to 10% when it is in an advanced-stage.³ The Canadian Cancer Society recommends that both men and women age 50 years of age or older have an FOBT every two years.³⁵ To date, in Canada, there are no organized, population-based screening programs.¹⁵ People with a positive FOBT are referred for a colonoscopy.³

Early Detection of Colorectal Cancer - Data and Interpretation

Ever Been Screened with a FOBT

Both in Ontario and Haldimand and Norfolk, over half the population age 50 years and older have never had an FOBT. In 2005, in Haldimand and Norfolk, a slightly lower proportion of persons reported that they have had been screened for colorectal cancer with an FOBT (30.7% ± 7.0%) compared to Ontario (34.7% ± 1.1%) but not significantly (See Figure 10).

Figure 10: Proportion of Persons Who Have Ever Been Screened for Colorectal Cancer with an FOBT for Persons Age 50 and Older, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Ever Had an FOBT	30.7 ± 7.0	34.9 ± 1.1
Never Had an FOBT	64.4 ± 7.6	60.1 ± 1.1
Not Stated	* 4.9 ± 3.1	5.0 ± 0.6
Total	100	100

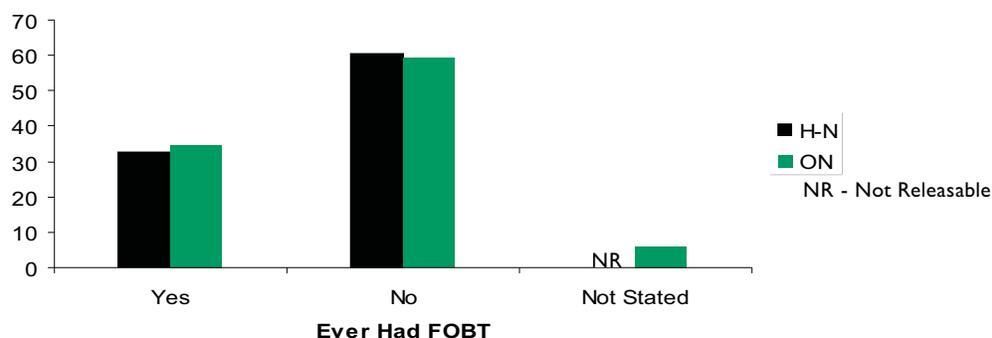
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution. Not stated includes not stated, don't know and refuse. Excludes non-applicable.

Ever Been Screened with an FOBT - Males and Females

Over half the population age 50 years and older in Haldimand and Norfolk and Ontario have never had an FOBT (see Figure 11 and Figure 12). For both Haldimand and Norfolk males and females, the proportion of persons age 50 and older who reported having an FOBT was lower than Ontario, but not significantly. A higher proportion of Haldimand and Norfolk males (32.5% ± 9.9%) than females (29.0% ± 8.3%) reported having an FOBT but not significantly. According to Cancer Care Ontario (2007), in Ontario, screening for colorectal cancer is still at a low level, and if it was more widely adopted, it has the potential to improve survival.³⁶

Figure 12: Proportion of Males Ever Who Have Been Screened for Colorectal Cancer with an FOBT for Persons Age 50 and Older, Haldimand and Norfolk and Ontario, 2005

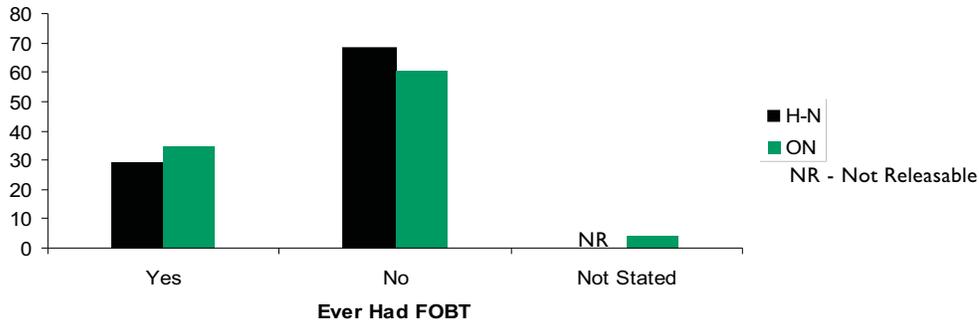


	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Ever Had an FOBT Males	32.5 ± 9.9	34.8 ± 1.6
Never Had an FOBT Males	60.3 ± 11.3	59.4 ± 1.7
Not Stated	**	5.8 ± 0.9
Total	NC	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. Not stated includes not stated, don't know and refuse. Excludes non-applicable. NC: Not able to compute.

Figure 12: Proportion of Females Who Have Been Screened for Colorectal Cancer with an FOBT Ever for Persons Age 50 and Older, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Ever Had an FOBT Females	29.0 ± 8.3	34.9 ± 1.5
Never Had an FOBT Females	68.3 ± 8.4	60.8 ± 1.6
Not Stated	**	4.3 ± 0.9
Total	NC	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. Not stated includes not stated, don't know and refuse. Excludes non-applicable. NC: Not able to compute.

Colorectal Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 13, the average age-standardized incidence rate for colorectal cancer was higher in Haldimand and Norfolk (55.3/100,000) than in Ontario (52.2 /100,000). From 1986 to 2003, incidence rates of colorectal cancer fluctuated. In Haldimand and Norfolk, the highest incidence rate for colorectal cancer was in 2000 (69.4/100,000). In Ontario, from 1986-2003, the age-standardized incidence rate for colorectal cancer was relatively consistent.

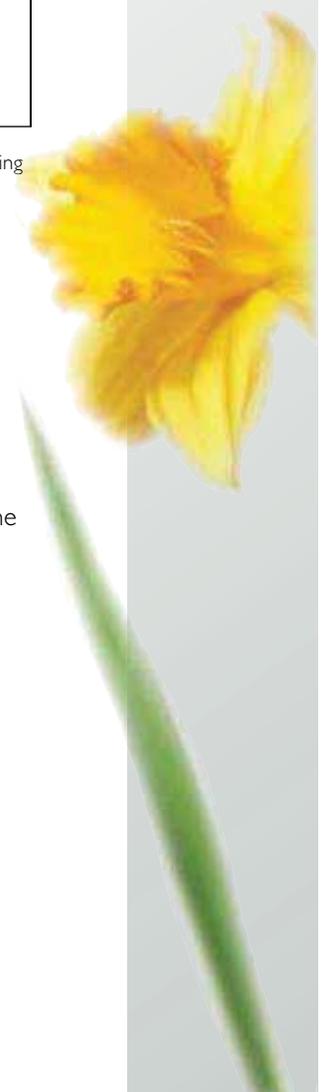
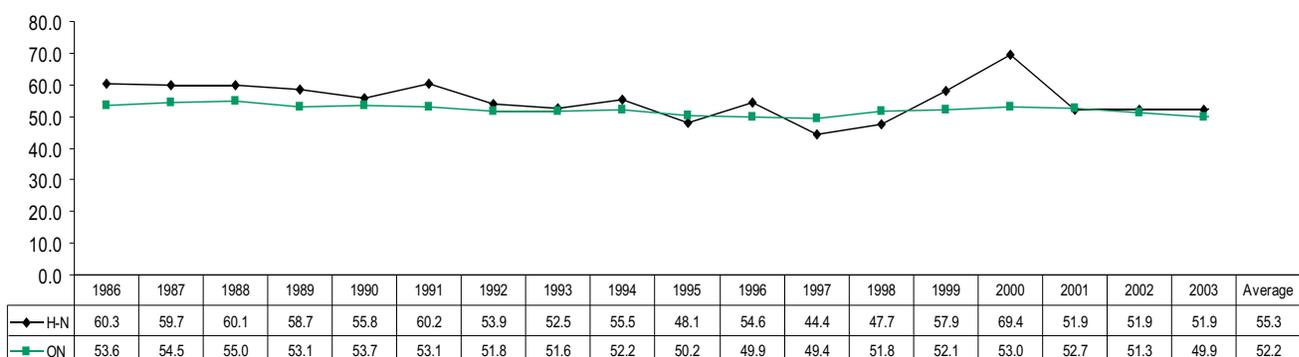


Figure 13: Age-Standardized Incidence Rates for Colorectal Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	61	61	63	63	62	68	62	62	68	58	68	57	60	76	90	72	72	72
ON CASES	4,904	5,152	5,341	5,301	5,506	5,593	5,600	5,700	5,909	5,801	5,909	5,986	6,451	6,638	6,918	7,061	7,049	7,019

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Colorectal Cancer: [(ICD-9: 153&154 (1986-2001), Primary Site Code: 180-219 (2002, 2003)].

Colorectal Cancer - Age-Specific Rates

As shown in Table 8, in 2003, the age-specific rate for colorectal cancer in Haldimand and Norfolk was highest in persons age 75 to 79 (399.8/100,000). In Haldimand and Norfolk, the age-specific rate increased in persons age 55 to 79 and decreased thereafter. Particularly interesting, the age-specific rate more than doubled from 72.8/100,000 for persons age 55 to 59 to 147.2/100,000 for persons age 60 to 64.

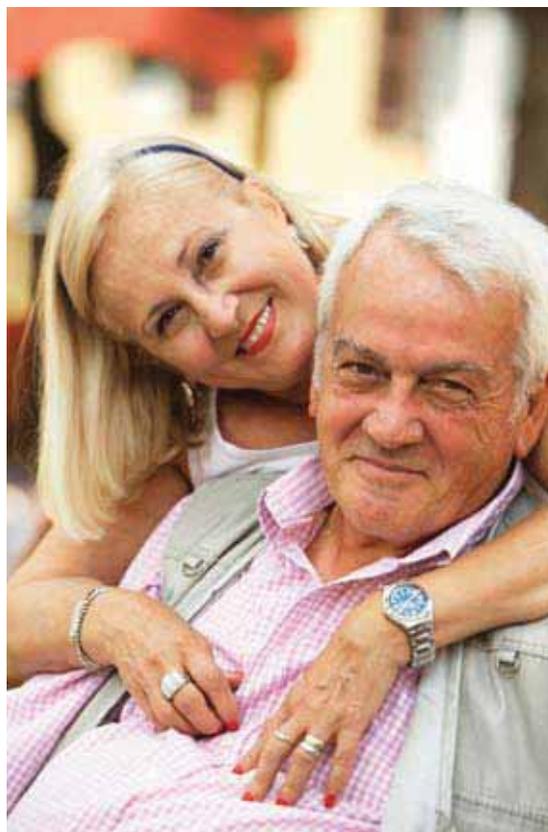


Table 8: Age-Specific Rates for Colorectal Cancer per 100,000, Haldimand and Norfolk and Ontario, 2003

Age Group	Haldimand and Norfolk Rate	Haldimand and Norfolk Count
0-4	0.0	0
5-9	0.0	0
10-14	0.0	0
15-19	0.0	0
20-24	0.0	0
25-29	*	*
30-34	0.0	0
35-39	0.0	0
40-44	0.0	0
45-49	*	*
50-54	*	*
55-59	72.8	5
60-64	147.2	8
65-69	285.7	13
70-74	337.8	14
75-79	399.8	13
80-84	390.5	9
85+	280.0	5

Data Notes: Cell counts for persons age 25 to 29 and 45 to 54 could not be released (*) since cell counts were fewer than five in a given year. There were zero cell counts for persons age zero to 24 and 30 to 44.

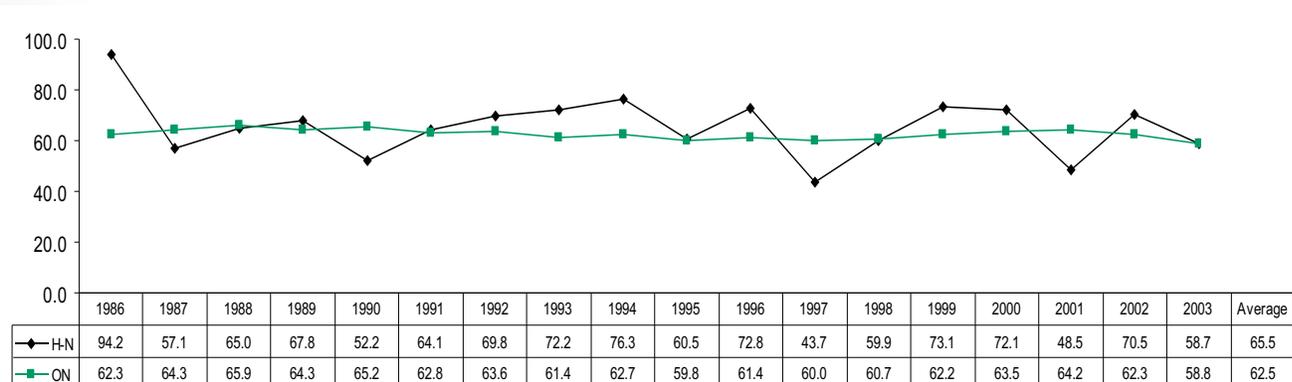
Data Source: SEER STAT 2003; Colorectal Cancer (Primary Site 180-219).

Colorectal Cancer Incidence Rates - Males

As shown in Figure 14, the average age-standardized incidence rate for colorectal cancer among males was higher in Haldimand and Norfolk (65.5/100,000) than in Ontario (62.5/100,000). From 1986 to 2003, incidence rates of colorectal cancer among males in Haldimand and Norfolk were inconsistent. The age-standardized incidence rate for colorectal cancer in Haldimand and Norfolk among males was highest in 1986 (94.2/100,000) and lowest in 1997 (43.7/100,000). In Ontario, from 1986 to 2003, the age-standardized incidence rates were stable.



Figure 14: Age-Standardized Incidence Rates for Colorectal Cancer per 100,000 Males, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	43	26	31	33	25	32	36	38	41	32	40	25	35	42	43	29	45	37
ON CASES	2,480	2,612	2,758	2,758	2,891	2,873	3,004	2,970	3,104	3,011	3,166	3,195	3,327	3,481	3,656	3,776	3,767	3,687

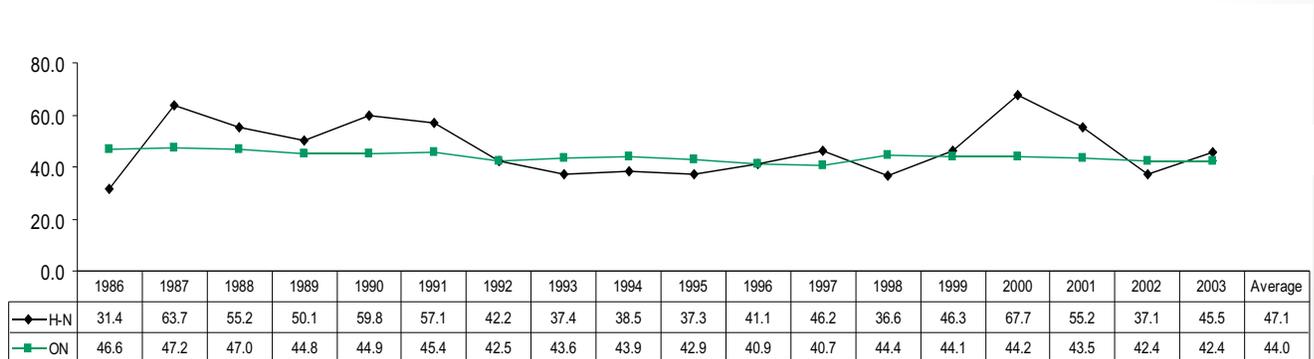
Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Colorectal Cancer: [(ICD-9: I53&I54 (1986-2001), Primary Site Code: 180-219 (2002, 2003)].

Colorectal Cancer Incidence Rates - Females

As shown in Figure 15, the average age-standardized incidence rate for colorectal cancer among females was higher in Haldimand and Norfolk (47.1/100,000) than in Ontario (44.0/100,000). From 1986 to 2003, incidence rates of colorectal cancer among females in Haldimand and Norfolk were inconsistent. The age-standardized incidence rate for colorectal cancer in Haldimand and Norfolk among females was highest in 2000 (67.7/100,000). In Ontario, from 1986 to 2003, the age-standardized incidence rates were stable. Overall in Haldimand and Norfolk, the average incidence rate for colorectal cancer was higher among males (65.5/100,000) than females (47.1/100,000). (See Figure 14 and Figure 15.)

Figure 15: Age-Standardized Incidence Rates for Colorectal Cancer per 100,000 Females, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	18	35	32	30	37	36	26	24	27	26	28	32	25	34	47	43	27	35
ON	CASES	2,424	2,540	2,583	2,543	2,615	2,720	2,596	2,730	2,805	2,790	2,743	2,791	3,124	3,157	3,262	3,285	3,282	3,332

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Colorectal Cancer: [(ICD-9: I53&I54 (1986-2001), Primary Site Code: 180-219 (2002, 2003)].

Uterine Cancer

Uterine Cancer - Overview

Uterine or endometrial cancer begins in the cell lining of the uterus, the major female reproductive organ.³⁷ Both in Canada and Ontario, cancer of the body of the uterus is the fourth most common cancer diagnosed in females.^{2, 38}

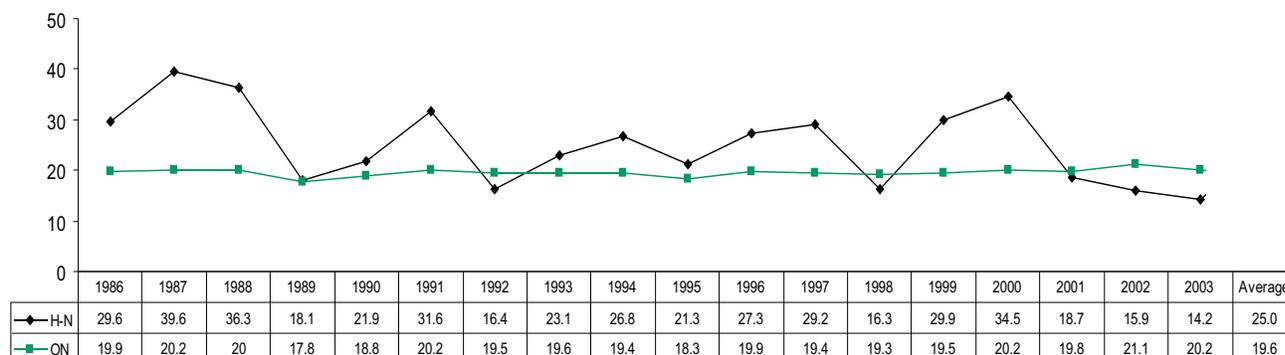
The risk factors of developing uterine cancer include: age (50 and older), beginning menstruation at a young age, obesity, never having given birth, reaching menopause later than average, taking the drug tamoxifen (hormonal treatment) and taking medications that contain estrogen for a long period of time (without the hormone progesterone).³⁹ Some females develop uterine cancer without any of these risk factors present.³⁹

Uterine Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 16, the average age-standardized incidence rate for uterine cancer was higher in Haldimand and Norfolk (25.0/100,000) compared to Ontario (19.6/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rate of uterine cancer fluctuated and was highest in 1987 (39.6/100,000) and lowest in 2003(14.2/100,000). In Ontario, from 1986-2003, the age-standardized incidence rate for uterine cancer was relatively consistent.



Figure 16: Age-Standardized Incidence Rates for Uterine Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	15	21	19	11	12	19	10	14	17	13	17	19	11	19	23	13	11	10
ON CASES	1,001	1,054	1,070	978	1,051	1,152	1,130	1,168	1,184	1,134	1,258	1,246	1,283	1,321	1,404	1,412	1,535	1,498

Data Source: Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Uterine Cancer: [(ICD-9: 179&182 (1986-2001) SEER Recode (2002, 2003)].

Bladder Cancer

Bladder Cancer - Overview

Bladder cancer begins in the cells of the bladder, which is found in the lower part of the abdomen and whose primary function is to store urine.⁴⁰ Some types of bladder cancer affect the lining of the bladder, while other types are found in the bladder wall and are more difficult to treat.⁴⁰

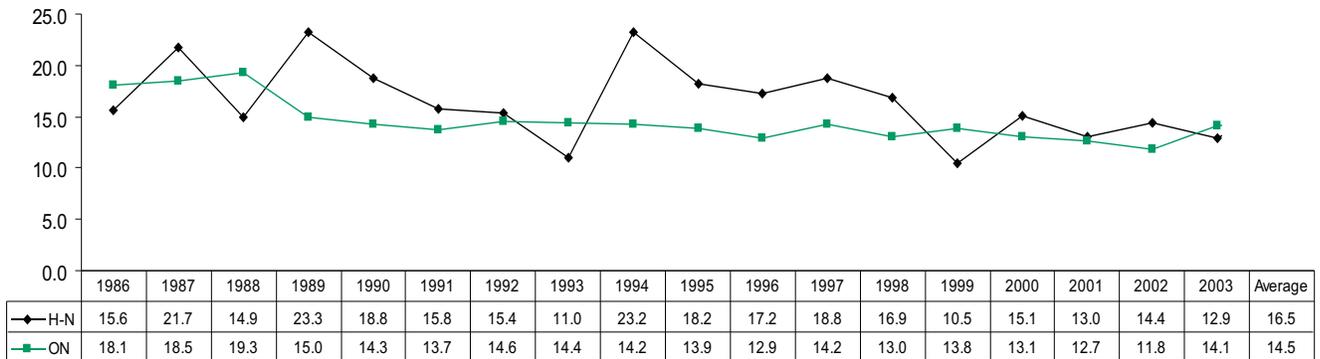
In Canada, it is estimated that in 2007, bladder cancer will be the sixth most common type of cancer diagnosed of all cancer types for both sexes combined.² In Ontario, bladder cancer is the fourth most common cancer site in males and thirteenth in females.⁴¹

Risk factors for bladder cancer include: being over the age of 50, being male, exposure to certain industrial chemicals (especially dyes), abuse of pain medication and smoking.⁴² It is important to note that some people may develop bladder cancer without any of these risk factors.⁴²

Bladder Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 17, the average age-standardized incidence rate for bladder cancer for both Haldimand and Norfolk (16.5/100,000) was higher than in Ontario (14.5/100,000). From 1986 to 2003 in Haldimand and Norfolk, incidence rates of bladder cancer fluctuated, with the highest peak in 1989 (23.3/100,000). In Ontario, from 1986-2003, the age-standardized incidence rate for bladder cancer was relatively consistent.

Figure 17: Age-Standardized Incidence Rates for Bladder Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	16	23	16	25	21	18	18	13	28	22	21	24	22	14	20	18	20	16
ON	CASES	1,660	1,746	1,869	1,504	1,472	1,448	1,577	1,594	1,606	1,609	1,525	1,723	1,617	1,763	1,728	1,711	1,631	1,978

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Colorectal Cancer: [(ICD-9: 188 (1986-2001), SEER Recode (2002, 2003)].

Non-Hodgkin’s Lymphoma

Non-Hodgkin’s Lymphoma - Overview

Non-Hodgkin’s Lymphoma (NHL) is a group of cancers that begin in the cells of the lymphatic system.⁴³ The primary function of the lymphatic system is to protect the body from disease.⁴³ Overall, NHL comprises 85% of all lymphomas, while the remaining 15% are called Hodgkin’s Lymphoma.⁴³

In Canada, for both males and females, the incidence of NHL has increased in the past 30 years (1974-2003).⁴⁴ In Canada, in 2007, it is estimated that NHL will be the fifth leading type of new cases of cancer for both sexes combined.² In Ontario, NHL represents the fifth most common cancer diagnosed in men and the sixth most common in women.⁴⁵

The risk factors for developing NHL include: exposure to certain pesticides, lymphocyte damage due to viral infection, radiation and chemotherapy, immuno-suppression drugs following organ transplant surgery and immune system problems.⁴⁶ The risk for developing NHL also increases with age and is higher among males than females.⁴⁴ Women age 30 to 49 and men 80 and older were found to have the largest increase in NHL.⁴⁴

Non-Hodgkin’s Lymphoma - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 18, the average age-standardized incidence rate for NHL was lower in Haldimand and Norfolk (13.6/100,000) than in Ontario (15.7/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rate of NHL was highest in 1995 (20.3/100,000). In Ontario, from 1986-2003, the age-standardized incidence rate for NHL cancer was relatively consistent.

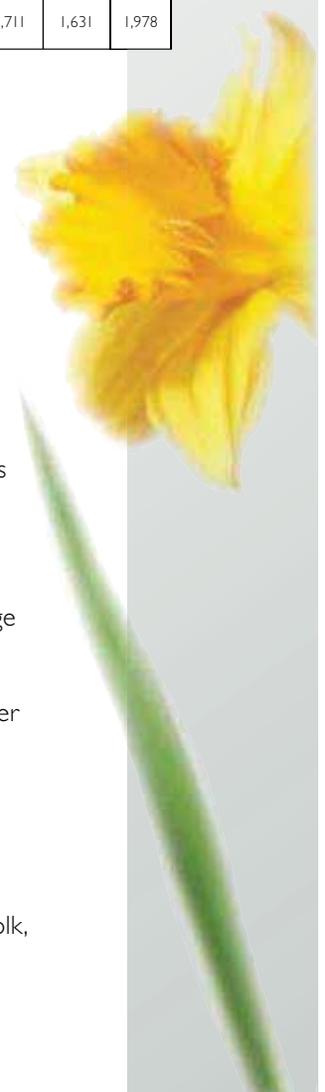
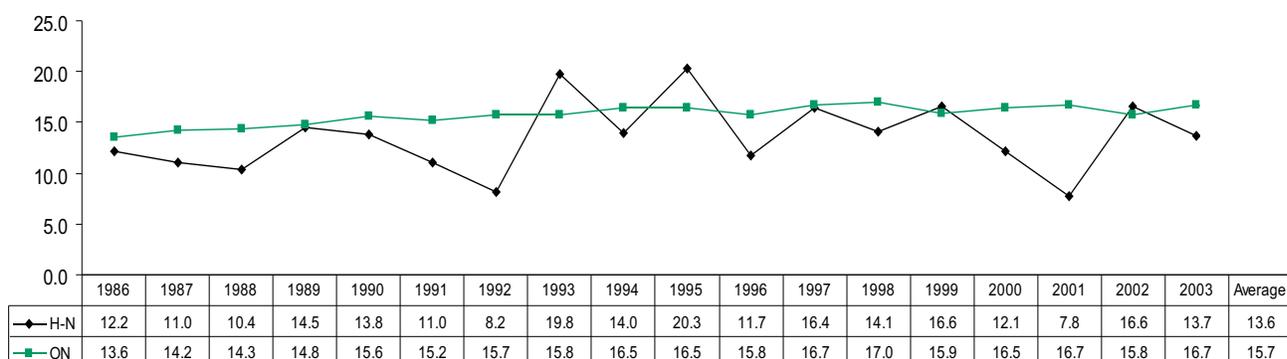


Figure 18: Age-Standardized Incidence Rates for Non-Hodgkin's Lymphoma per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	12	11	10	15	15	12	9	22	17	24	13	19	18	20	15	10	23	20
ON	CASES	1,252	1,347	1,388	1,488	1,603	1,604	1,679	1,738	1,846	1,897	1,860	1,996	2,090	1,998	2,116	2,191	2,127	2,288

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Non-Hodgkins Lymphoma: [(ICD-9: 200&202 (1986-2001) SEER Recode (2002, 2003)].

Malignant Melanoma

Malignant Melanoma - Overview

In Canada, it is estimated that melanoma, a form of skin cancer, will be the eighth most diagnosed type of cancer for both sexes combined in 2007.²

In Ontario, malignant melanoma ranks seventh and eighth among cancers diagnosed in Ontario in men and women, with higher frequency in males.⁴⁷ Melanoma is one of the most common cancers in young adults.⁴⁷

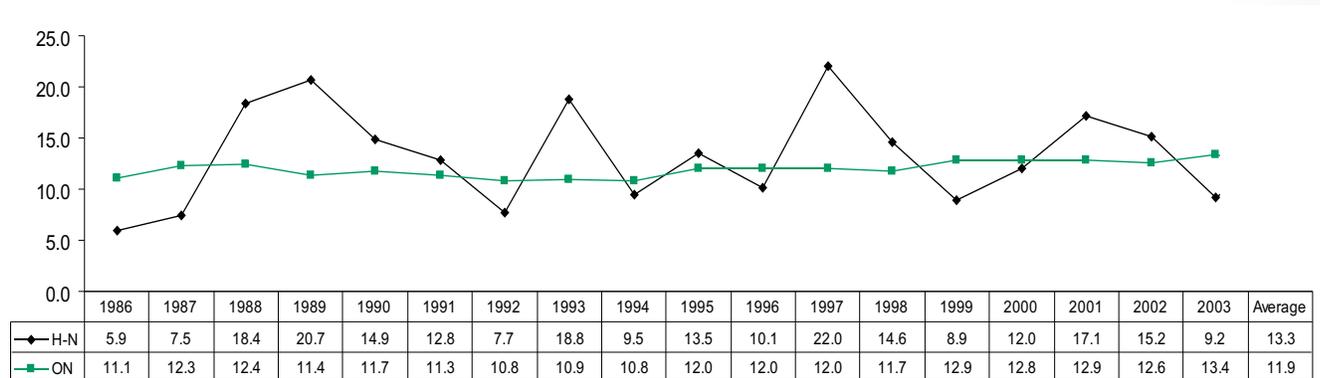
Risk factors include exposure to ultraviolet radiation in the sunlight, having fair or red hair, tendency to burn rather than tan, sun exposure in childhood and adolescence, family history, presence of atypical moles and exposure to non-solar sources of ultraviolet radiation (e.g., sun-lamps).⁴⁷ Sunburn is the major preventable risk associated with the development of basal cell carcinoma and malignant melanoma.⁴⁸

According to the Report on Cancer 2020 (2006), 40% of adult females and 34% adult males report that they do not often wear protective clothing when in the sun and do not avoid the sun between 11:00 a.m. and 4:00 p.m.¹ In addition, 12% of males and 29% of females age 18 to 34 reported using tanning equipment in the past 12 months.¹ Moreover, 36% of males and 30% of females reported having a sunburn at least once in the summer.¹

Malignant Melanoma - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 19, the average age-standardized incidence rate for malignant melanoma was higher in Haldimand and Norfolk (13.3/100,000) than in Ontario (11.9/100,000). In Haldimand and Norfolk, from 1986 to 2003, incidence rates of malignant melanoma were unstable compared to Ontario. The age-standardized incidence rate for malignant melanoma in Haldimand and Norfolk was the highest in 1997 (22.0/100,000) and lowest in 1986 (5.9/100,000).

Figure 19: Age-Standardized Incidence Rates for Melanoma of the Skin per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	6	7	18	20	16	14	8	20	11	15	11	25	18	11	15	22	20	11
ON	CASES	1,026	1,161	1,208	1,144	1,200	1,183	1,159	1,198	1,205	1,375	1,402	1,437	1,433	1,601	1,623	1,699	1,674	1,817

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Melanoma: [(ICD-9: 172 (1986-2001), SEER Recode (2002, 2003)].

Leukemia

Leukemia - Overview

Leukemia starts in the white blood cells, which fight infection by destroying viruses, bacteria and other foreign cells.⁴⁹ In Canada, it is estimated that leukemia will be the ninth most diagnosed type of cancer for both sexes combined in 2007.² In Ontario, leukemia is ranked eighth in males and ninth in females of all cancer sites.⁵⁰ Leukemia incidence is approximately 65% higher in men than women.⁵⁰

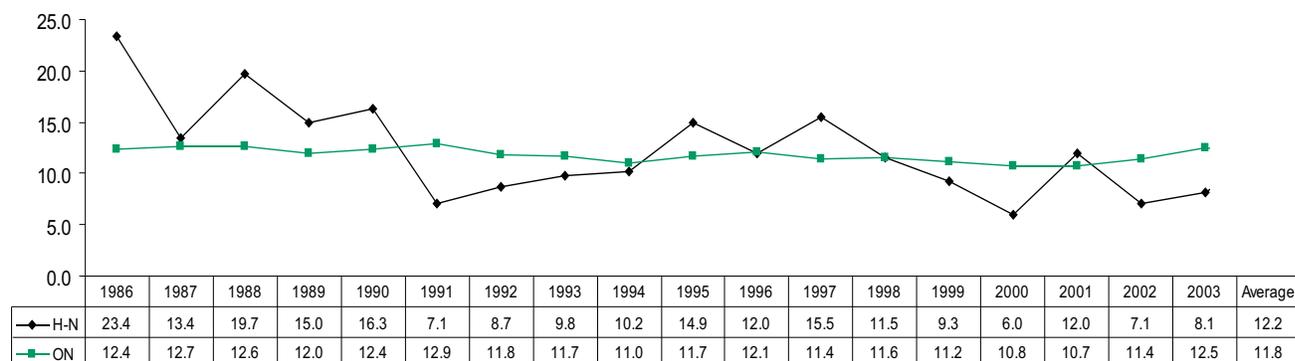
Risk factors for leukemia include age (some types more common in children, while others affect adults), very high exposure to radiation and genetic disorders (e.g., Down's syndrome).⁵¹ Moreover, the risk for developing Acute Myelogenous Leukemia (AML) increases in people who have other diseases affecting bone marrow and are exposed to the chemical benzene and certain cancer drugs.⁵¹

Leukemia - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 20, the average age-standardized incidence rate for leukemia was slightly higher in Haldimand and Norfolk (12.2/100,000) than in Ontario (11.8/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rates of leukemia were significantly unstable and peaked in 1986 (23.4/100,000). Of particular interest, in Haldimand and Norfolk the incidence rate in 1986 (23.4/100,000) was almost three times as high as in 2003 (8.1/100,000). In Ontario, from 1986-2003, the age-standardized incidence rate for leukemia was relatively consistent.



Figure 20: Age-Standardized Incidence Rates for Leukemia per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	24	14	20	16	18	8	10	11	12	18	14	19	14	11	8	16	10	11
ON	CASES	1,133	1,206	1,221	1,194	1,275	1,341	1,273	1,292	1,241	1,336	1,414	1,367	1,414	1,382	1,364	1,387	1,535	1,714

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Leukemia: [ICD-9: 204-208 (1986-2001), SEER Recode (2002, 2003)].

Oral Cavity and Pharynx

Oral Cavity and Pharynx – Overview

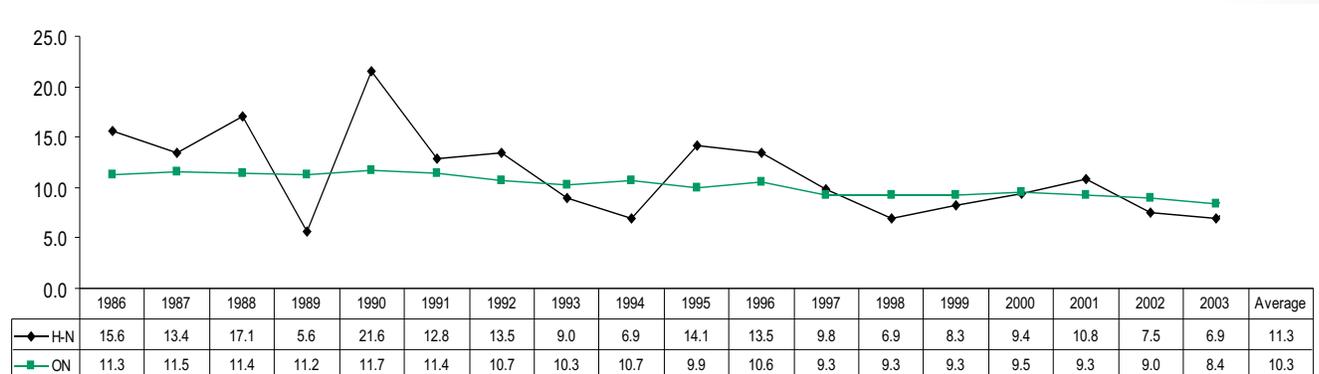
Oral cancer begins in the cells of the oral cavity.⁵² In Canada, it is estimated that oral cancer will be the thirteenth most diagnosed type of cancer for both sexes combined in 2007.² In Ontario, cancer of the oral cavity and pharynx rank the ninth most common cancer in men and sixteenth most common in women.⁵³

The risk factors associated with oral cancer include age (after 50), being male, chewing tobacco or using snuff, smoking (particularly if combined with heavy alcohol consumption), some medical problems in the mouth tissues, excessive sun exposure to the lips and chewing betel nut (the seed of a betel palm, which acts as a stimulant).⁵⁴ According to the Canadian Cancer Society, eating five to 10 servings of vegetables and fruits a day may decrease the risk of developing oral cancer.⁵⁴

Oral Cavity and Pharynx - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 21, the average age-standardized incidence rate for cancer of the oral cavity and pharynx was higher in Haldimand and Norfolk (11.3/100,000) than in Ontario (10.3/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rates for cancer of the oral cavity and pharynx were substantially inconsistent and peaked in 1990 (21.6/100,000). In Ontario, from 1986 to 2003 the age-standardized incidences rate for cancer of the oral cavity and pharynx were relatively consistent.

Figure 21: Age-Standardized Incidence Rates for Cancer of the Oral Cavity and Pharynx per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	15	14	18	6	23	14	15	10	8	18	17	12	9	11	12	15	10	8
ON	CASES	1,048	1,117	1,130	1,121	1,202	1,208	1,173	1,124	1,202	1,141	1,248	1,117	1,129	1,170	1,230	1,234	1,219	1,175

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Oral Cavity and Pharynx: [(ICD-9: 140-149 (1986-2001), SEER Recode (2002, 2003)].

Kidney Cancer

Kidney Cancer - Overview

Kidney cancer begins in the cells of the kidney, whose function is to filter water, waste material from the blood and impurities to produce urine.⁵⁵ The most common type of kidney cancer is renal cell cancer.⁵⁵

In Canada, it is estimated that kidney cancer will be the seventh most diagnosed type of cancer for both sexes combined in 2007.² In Ontario, kidney cancer is the eleventh most common type of cancer in women and the sixth most common cancer site in men.⁵⁶

The risk factors for developing kidney cancer are being male, smoking, age (particularly over 50), obesity, long-term dialysis, long-term use of phenacetin (analgesic painkiller), gene mutation, workplace exposure to coke ovens in the steel industry and Von Hippel-Lindau (VHL) disease.⁵⁷ VHL disease is a genetic multi-system disorder and is characterized by abnormal growth of tumours in certain parts of the body.⁵⁸

Kidney Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 22, the average age-standardized incidence rate for kidney cancer for both Haldimand and Norfolk and Ontario was relatively the same (10.7/100,000 and 10.8/100,000 respectively). In Haldimand and Norfolk, the highest incidence rate for kidney cancer was in 1997 (15.4/100,000). Overall, the rate was relatively unstable from 1986 to 2003 in Haldimand and Norfolk. In Ontario, from 1986 to 2003, the age-standardized incidence rate for kidney cancer was relatively consistent.

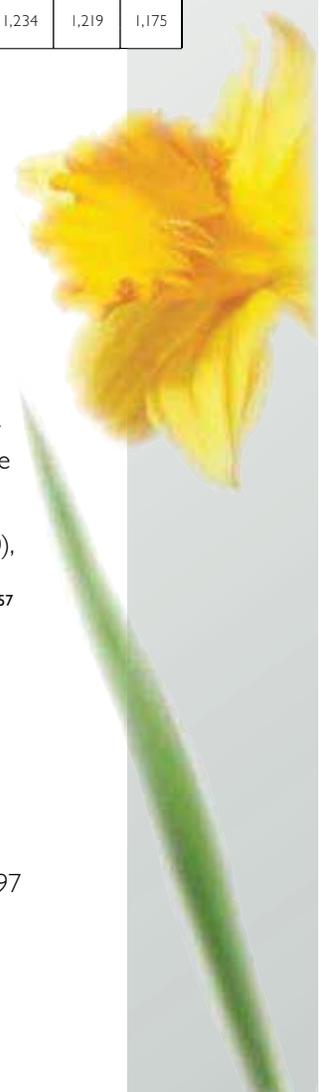
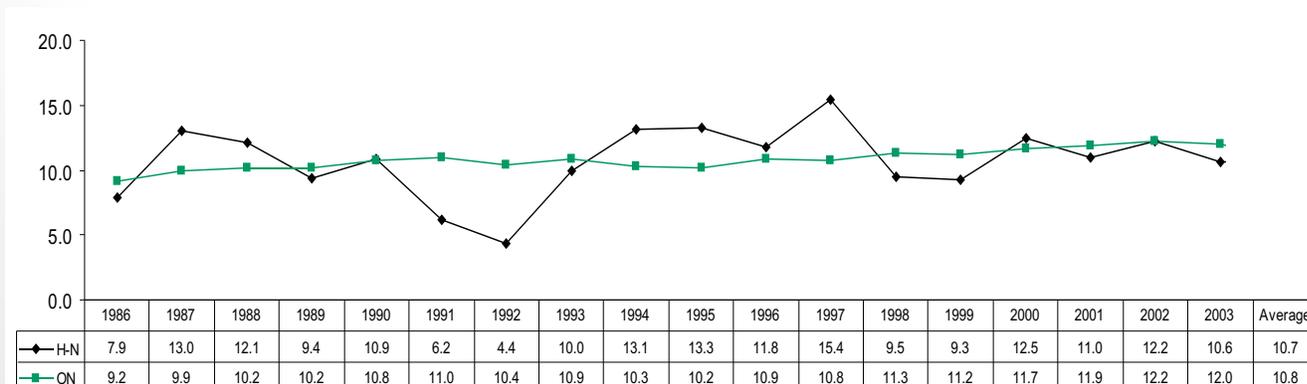


Figure 22: Age-Standardized Incidence Rates for Kidney Cancer (including other urinary organs) per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	8	13	12	10	12	7	5	12	15	16	15	19	12	12	16	15	15	14
ON CASES	850	933	1,000	1,025	1,107	1,162	1,123	1,208	1,163	1,177	1,287	1,308	1,391	1,409	1,514	1,576	1,655	1,679

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Kidney Cancer: [(ICD-9: 189 (1986-2001), SEER Recode (2002, 2003)].

Pancreatic Cancer

Pancreatic Cancer - Overview

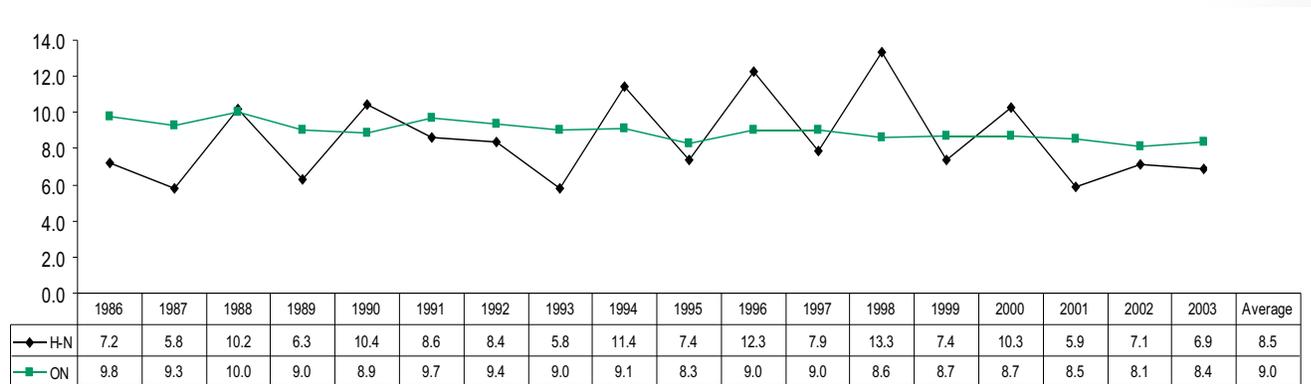
Pancreatic cancer begins in the cells of the pancreas, whose main function is to regulate sugar levels in the blood and produce protein to help digest food.⁵⁹

In Canada, it is estimated that pancreatic cancer will be the twelfth most diagnosed type of cancer for both sexes combined in 2007.² In Ontario, pancreatic cancer has dramatically increased over the past 60 years.⁶⁰ Pancreatic cancer ranks tenth most common in females and eleventh most common in males in Ontario.⁶⁰ The risk factors for pancreatic cancer are smoking; age (after 50); a diet low in fruits, vegetables and fibre; obesity; family history of cancer and workplace exposure to gasoline manufacturing processes.⁶¹

Pancreatic Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 23, the average age-standardized incidence rate for pancreatic cancer was slightly lower in Haldimand and Norfolk (8.5/100,000) than in Ontario (9.0/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rate of pancreatic cancer was unstable and peaked in 1998 (13.3/100,000). In Ontario, from 1986 to 2003, the age-standardized incidence rate for pancreatic cancer was relatively consistent.

Figure 23: Age-Standardized Incidence Rates for Pancreatic Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	7	6	11	7	12	10	10	7	13	9	15	10	17	10	14	8	10	10
ON	CASES	895	875	971	899	908	1,024	1,016	1,000	1,028	963	1,063	1,095	1,071	1,104	1,141	1,143	1,120	1,196

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Pancreatic Cancer: [(ICD-9: 157 (1986-2002), SEER Recode (2003)].

Brain and Other Specified Parts of the Central Nervous System Cancer

Brain and Other Specified Parts of the Central Nervous System Cancer - Overview

Brain cancer starts in the cells of the brain.⁶² Cancer of the central nervous system includes the spinal cord, brain and meninges.⁶³

In Canada, it is estimated that brain cancer will be the fifteenth most diagnosed type of cancer for both sexes combined in 2007.² In Ontario, cancer of the brain and other central nervous system ranks as the fourteenth most common in women and the twelfth most common in men.⁶³

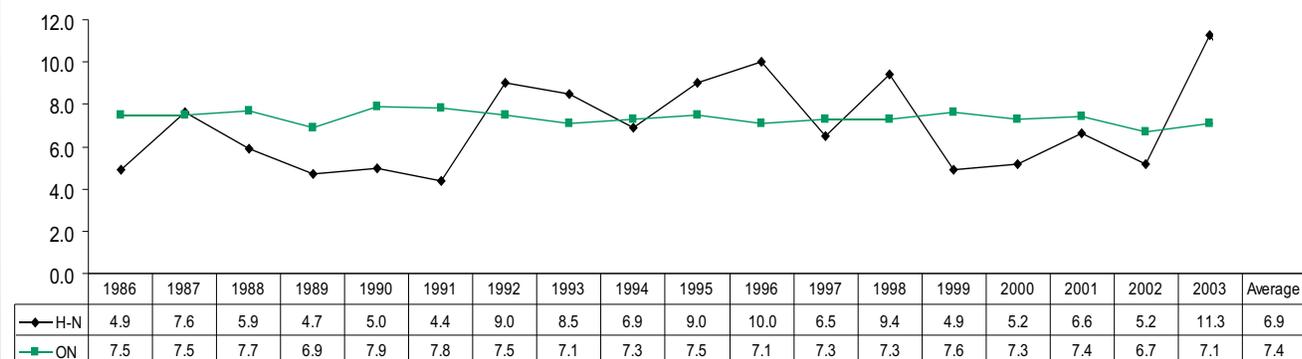
The risk factors for brain cancer include age, family history of gliomas (brain tumour from glial cells) and workplace exposure to vinyl chloride, ionizing radiation, formaldehyde and acrylonitrile.⁶⁴

Brain and Other Specified Parts of the Central Nervous System Cancer - Age-Standardized Incidence Rates Data and Interpretation

As shown in Figure 24, the average age-standardized incidence rate for brain cancer and other specified parts of the central nervous system was slightly lower in Haldimand and Norfolk (6.9/100,000) than in Ontario (7.4/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rates of brain and other specified parts of the central nervous system cancer were unstable and peaked in 2003 (11.3/100,000). In Ontario, from 1986 to 2003, the age-standardized incidence rate for brain and other nervous system cancer was relatively consistent.



Figure 24: Age-Standardized Incidence Rates for Brain Cancer and Other Specified Parts of the Central Nervous System per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	5	8	6	5	5	5	10	9	8	10	12	7	10	5	7	9	7	16
ON	CASES	690	771	751	689	819	816	799	770	817	844	804	855	872	923	905	939	865	949

Data Source: Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Brain Cancer and other Central Nervous System: [(ICD-9: 191-192 (1986-2001), SEER Recode (2002, 2003)].

Cervical Cancer

Cervical Cancer - Early Detection

Ontario Cervical Screening Practice Guidelines

The Ontario Cervical Screening Practice Guidelines recommends that all women who are, or have ever been, sexually active be screened for cervical cancer.⁶⁵ Cervical cytology screening should be initiated within three years of the first vaginal sexual activity (e.g., vaginal intercourse, vaginal/oral and/or vaginal/digital sexual activity).⁶⁵ Screening should be done annually until there are three negative consecutive Pap tests.⁶⁵ After three annual negative Pap tests, screening should continue every two to three years, although these recommendations do not apply to women with previous abnormal Pap tests.⁶⁵ Screening at a three-year interval is recommended, supported by an adequate recall mechanism.⁶⁵ Women who have not been screened in more than five years should be screened annually until there are three consecutive negative Pap tests.⁶⁵ Screening may be discontinued after the age of 70 if there is an adequate negative screening history in the previous 10 years (i.e., three or more negative tests).⁶⁵

Women who have special circumstances, including women who are immunocompromised or HIV positive, who underwent total or subtotal hysterectomy, pregnant women and women who have had sex with other women, should follow the Ontario Cervical Screening Practice Guidelines.⁶⁵ The Ontario Cervical Screening Practice Guidelines can be found at <http://www.cancercare.on.ca/documents/CervicalScreeningGuidelines.pdf>.⁶⁵ The Cancer Action Plan 2020 target is that 95% of women who have ever been sexually active participate in organized cervical screening.¹

Cervical Cancer - Early Detection Data and Interpretation

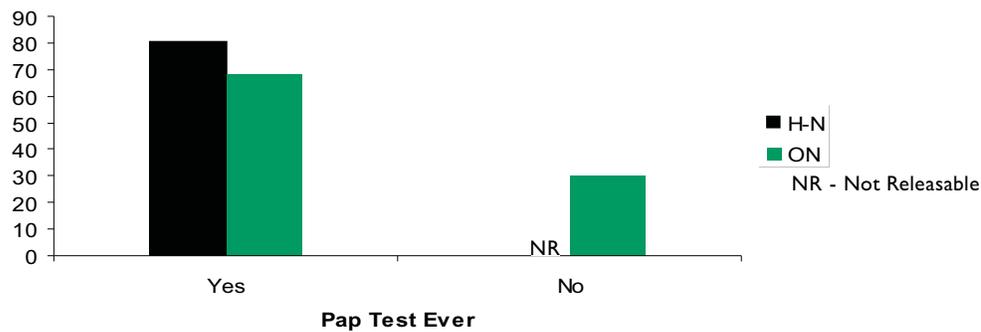
Although cervical cancer incidence rates were not releasable due to data limitations, the proportion of women who had been screened for cervical cancer is included in this report. It is important to note that the following information provides an overview of the proportion of women

age 18 to 70 who reported ever receiving a Pap test in their lifetime and less than three years ago. However, it does not provide information on the proportion of women who reported having receiving a Pap test every three years.

Ever Been Screened with a Pap Test (age 18 to 29)

In 2005, a higher percentage of Haldimand and Norfolk women age 18 to 29 reported having had a Pap test in their lifetime ($80.3\% \pm 12.9\%$) compared to Ontario ($68.1\% \pm 2.5\%$) but not significantly (See Figure 25).

Figure 25: Proportion of Women Who Have Ever Been Screened for Cervical Cancer Age 18 to 29 with a Pap Test



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Ever Had a Pap Test	80.3 ± 12.9	68.1 ± 2.5
Never Had a Pap Test	**	30.1 ± 2.4
Not Stated	**	**
Total	NC	NC

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. Not stated includes refusal, not stated, and don't know. NC: Not able to compute.

Pap Smear, Females Aged 18 to 29

A higher proportion of Haldimand and Norfolk women age 18 to 29 reported having a Pap test within the last three years ($74.9\% \pm 14.0\%$) compared to Ontario ($66.1\% \pm 2.5\%$) but not significantly (see Figure 26).

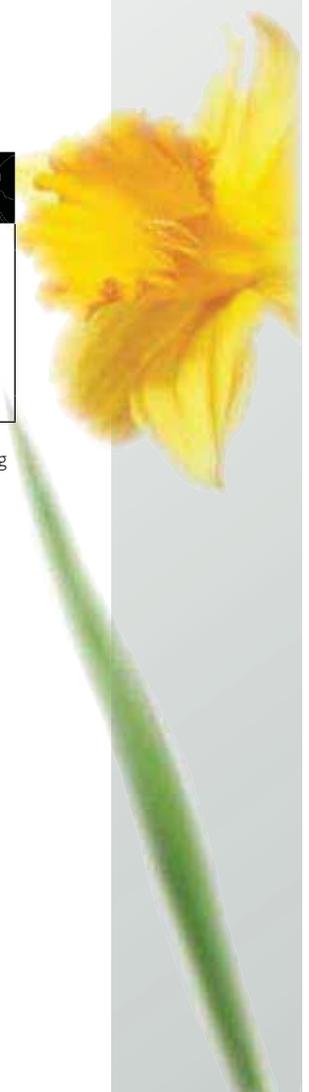
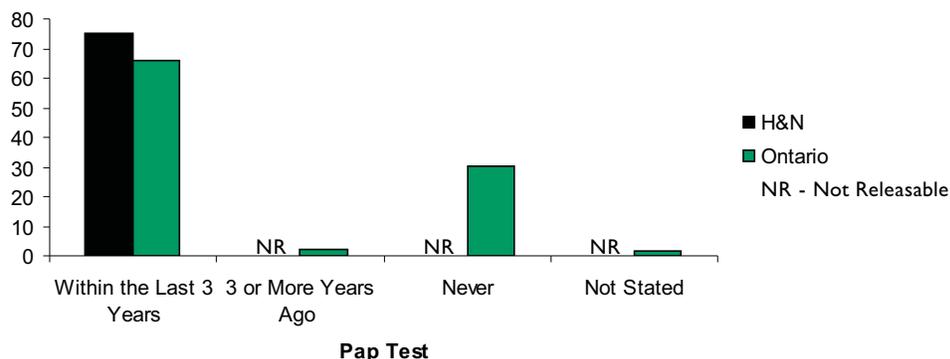


Figure 26: Pap Test, Females, Age 18 to 29, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Within the Last Three Years	74.9 ± 14.0	66.1 ± 2.5
Three or More Years Ago	**	2.0 ± 0.6
Never	**	30.1 ± 2.4
Not Stated	**	*1.7 ± 0.9
Total	NC	100

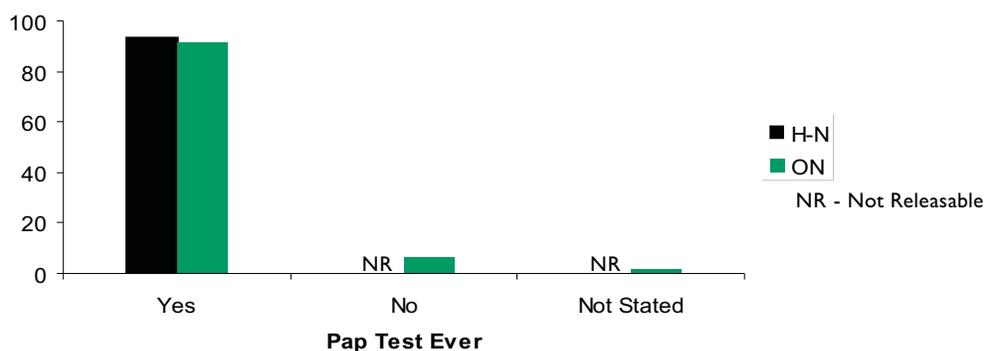
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution. **High sampling variability data is not releasable. Not stated includes don't know and refuse. Excludes non-applicable. NC: Not able to compute.

Ever Been Screened with a Pap Test (Age 30 to 70)

Overall, in Haldimand and Norfolk 93.4% (± 5.3%) of women age 30 to 70 reported ever having had a Pap test, of which a higher percentage reported that they have had a Pap test (93.4% ± 5.3%) compared to Ontario (91.7% ± 0.9%) but not significantly (see Figure 27).

Figure 27: Proportion of Women Who Have Been Screened for Cervical Cancer Age 30-70 Years with a Pap Test Ever, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Ever Had a Pap Test	93.4 ± 5.3	91.7 ± 0.9
Never Had a Pap Test	**	6.5 ± 0.7
Not Stated	**	1.9 ± 0.5
Total	NC	100

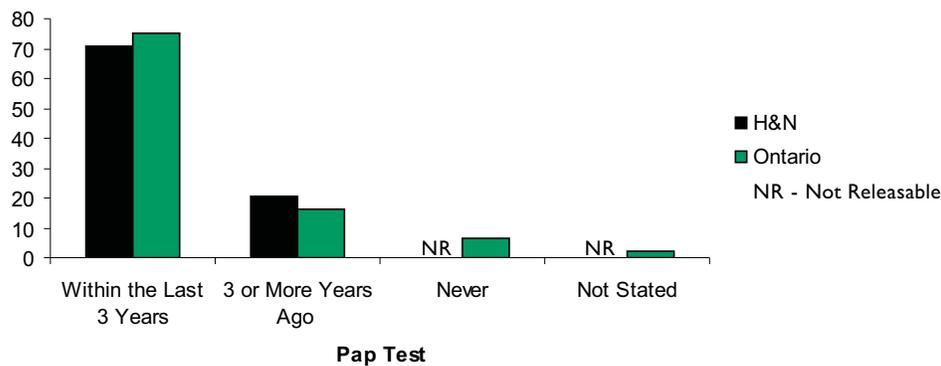
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. Not stated includes not stated, don't know and refuse. Excludes non-applicable. NC: Not able to compute. N=12,223

Pap Test, Females, Age 30 to 70, Haldimand and Norfolk and Ontario, 2005

In Haldimand and Norfolk, a lower proportion of Haldimand and Norfolk women age 30 to 70 reported having a Pap test within the last three years (70.6% ± 7.8%) compared to Ontario (75.2% ± 1.2%) but not significantly.

Figure 28: Pap Test, Females, Age 30 to 70, Haldimand and Norfolk and Ontario, 2005



	Haldimand and Norfolk (% ± 95% CI)	Ontario (% ± 95% CI)
Within the Last Three Years	70.6 ± 7.8	75.2 ± 1.2
Three or More Years Ago	20.6 ± 6.2	16.3 ± 0.9
Never	**	6.4 ± 0.7
Not Stated	**	2.1 ± 0.5
Total	NC	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. Not stated includes don't know and refuse. Excludes non-applicable. NC: Not able to compute.



Cancer Incidence Rates and Screening Practices Summary

Cancer Incidence Rates

All Cancer Sites Combined

Based on the analysis, this report provided new information on cancer incidence rates (see Figure 29).

Overall, the average-standardized incidence rates were relatively similar in Haldimand and Norfolk and Ontario. In Haldimand and Norfolk, from 1986 to 2003, the average rate of all cancers combined was higher among males than females and higher compared to the provincial rate for both sexes.

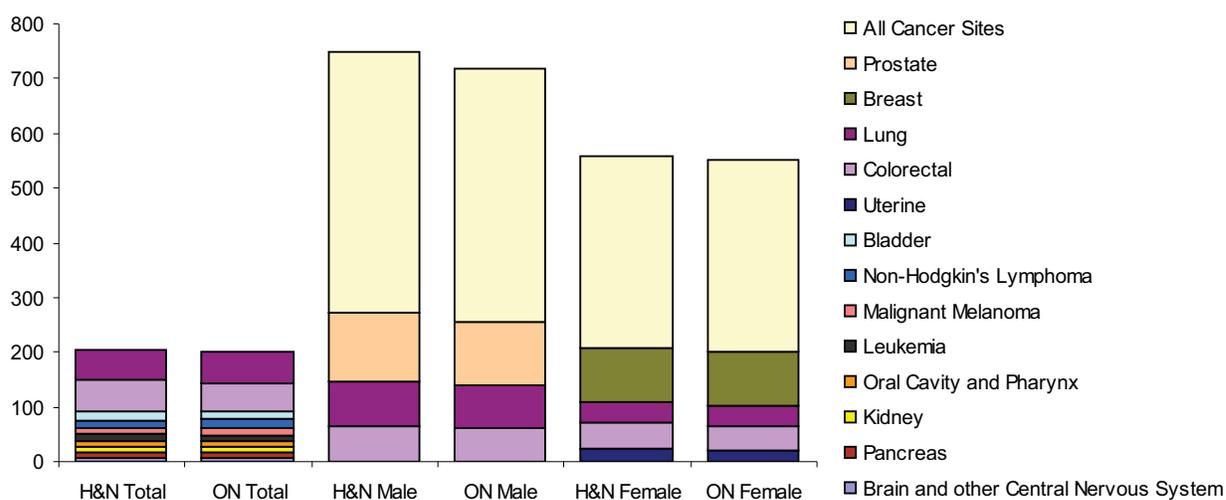
Selected Types of Cancer

On average from 1986 to 2003, the most common types of cancer were prostate, female breast, and lung for both Haldimand and Norfolk and Ontario. From 1986 to 2003, for both Haldimand and Norfolk and Ontario prostate cancer was the leading type of cancer diagnosed in males, followed by lung and colorectal, whereas breast cancer was the leading type in incidence among women, followed by colorectal and lung cancer.

Compared to Ontario, in Haldimand and Norfolk the average incidence rates for colorectal, uterine, bladder, malignant melanoma and oral cavity and pharynx were higher and lung cancer and leukemia were slightly higher. Whereas, Non-Hodgkin's Lymphoma was lower and pancreatic cancer, kidney cancer and cancer of the brain and central nervous system was slightly lower.

For males, prostate, lung and colorectal cancer rates were higher in Haldimand and Norfolk compared to Ontario and for Haldimand and Norfolk females colorectal and uterine cancer was higher than the provincial rate, whereas lung cancer was lower and female breast cancer was slightly lower.

Figure 29: Summary of Average Age-Standardized Incidence Rates of All Cancers and Selected Cancers per 100,000, Haldimand and Norfolk, and Ontario (1986 to 2003)



Cancer	H&N Total	ON Total	H&N Males	ON Males	H&N Females	ON Females
All Cancer Sites Combined	---	---	477.7	462.2	350.4	348.1
Prostate	---	---	124.4	114.1	---	---
Breast	---	---	---	---	98.3	99.2
Lung	56.7	56.2	81.4	78.5	36.9	39.2
Colorectal	55.3	52.2	65.5	62.5	47.1	44.0
Uterine	25.0	19.6	---	---	25.0	19.6
Bladder	16.5	14.5				
Non-Hodgkin's Lymphoma	13.6	15.7	---	---	---	---
Malignant Melanoma	13.3	11.9	---	---	---	---
Leukemia	12.2	11.8	---	---	---	---
Oral Cavity and Pharynx	11.3	10.3	---	---	---	---
Kidney	10.7	10.8	---	---	---	---
Pancreas	8.5	9.0	---	---	---	---
Brain and Central Nervous System	6.9	7.4	---	---	---	---

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Data Notes: Refer to figures in chapter.

Cancer Incidence - Age-Specific Rates

Generally, the incidence of cancer was highest among older persons (see Table 9). Age-specific rates for all cancer sites increased with age, with some fluctuations. Age-specific rates for all cancers combined were highest among males age 75 to 79 and females age 70 to 74. For the different types of cancers, prostate cancer was highest among males age 80 to 84, female breast cancer was highest in females age 85 and older, while both lung and colorectal cancer were highest in persons age 75 to 79.

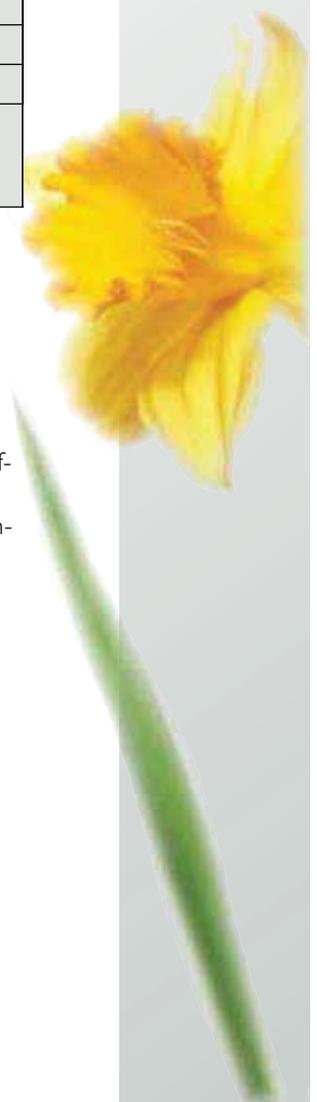


Table 9: Age-Specific Rates for all Cancer Sites and Cancer Types per 100,000, Haldimand and Norfolk, 2003.

Age Group	Male: All Cancer Sites	Female: All Cancer Sites	Prostate	Female Breast	Lung	Colorectal
0-4	0.00	*	0.0	0.0	0.0	0.0
5-9	*	*	0.0	0.0	0.0	0.0
10-14	*	0.0	0.0	0.0	0.0	0.0
15-19	*	*	0.0	0.0	0.0	0.0
20-24	0.0	0.0	0.0	0.0	0.0	0.0
25-29	*	*	0.0	0.0	0.0	*
30-34	*	194.2	0.0	0.0	0.0	0.0
35-39	*	231.9	0.0	*	0.0	0.0
40-44	108.3	239.5	0.0	130.6	*	0.0
45-49	260.9	368.0	*	115.0	*	*
50-54	620.7	655.8	*	262.3	*	*
55-59	711.4	536.5	256.1	149.0	*	72.8
60-64	1445.0	731.5	629.9	329.2	184.1	147.2
65-69	1851.0	1227.0	528.9	262.9	241.7	285.7
70-74	2144.6	1729.0	648.4	*	265.4	337.8
75-79	3609.3	1522.6	778.5	*	522.8	399.8
80-84	2818.5	1481.0	789.2	352.6	303.7	390.5
85+	2884.6	1579.8	*	473.9	*	280.0

Data Notes: *Cell counts were fewer than five in a given year and cannot be released. Bolded numbers represent highest age-specific rates for all cancers and selected types of cancer. See age-specific tables in Chapter I for detailed information.

Screening Practices

In general, over two-thirds of females age 50 to 69 in both Haldimand and Norfolk and Ontario, reported having ever been screened for breast cancer. Over half the population for both Haldimand and Norfolk (54.3% ± 10.7%) and Ontario (53.5% ± 2.1%) received routine screening for breast cancer with a mammogram within the last two years. Moreover, more than two-thirds of Haldimand and Norfolk females reported receiving a Pap test within the last three years (age 18-29; 30-70). However, less than one-third of Haldimand and Norfolk residents age 50 and older reported ever been screened for colorectal cancer with a Fecal Occult Blood Test (FOBT) which is lower than Ontario. A higher proportion of Haldimand and Norfolk males than females reported having an FOBT, but not significantly. According to Cancer Care Ontario (2007), in Ontario screening for colorectal cancer is still at a low level and if it is more widely adopted, it has the potential to improve survival rates.³⁶

It is important to note that the screening data does not provide information of the proportion of persons who adhere to the recommended screening guidelines, for cervical and colorectal cancer. The following provides a high-level summary overview of screening practices among Haldimand and Norfolk residents.

Early Detection of Breast Cancer - Mammogram

In summary, 88.1% ($\pm 8.6\%$) of Haldimand and Norfolk females age 50 to 69 have been screened for breast cancer using a mammogram in their lifetime. Over half the population for both Haldimand and Norfolk (54.3% $\pm 2.1\%$) and Ontario (53.5% $\pm 2.1\%$) received routine screening for breast cancer with a mammogram within the last two years.

Early Detection of Colorectal Cancer - FOBT

A small proportion of Haldimand and Norfolk (30.7% $\pm 7.0\%$) residents reported ever having an FOBT. A higher proportion of Haldimand and Norfolk males (32.5% $\pm 9.9\%$) compared to females (29.0% $\pm 8.3\%$) reported ever having an FOBT.

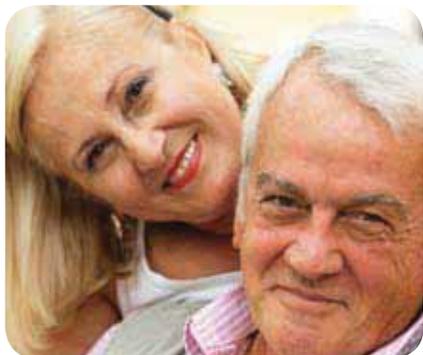
Early Detection of Cervical Cancer - Pap Test

Overall, 80.3% ($\pm 12.9\%$) of Haldimand and Norfolk females age 18 to 29 reported ever having a Pap test in their lifetime. A higher proportion of Haldimand and Norfolk women age 18 to 29 reported having a Pap test within the last three years (74.9% $\pm 14.0\%$) compared to Ontario (66.1% $\pm 2.5\%$), but not significantly. Moreover, a lower proportion of Haldimand and Norfolk women age 30 to 70 reported having a Pap test within the last three years (70.6% $\pm 7.8\%$) compared to Ontario (75.2% $\pm 1.2\%$), but not significantly.

It is important to note that the aforementioned paragraph does not provide information on the proportion of persons who follow the screening guidelines for specific types of cancer (colorectal and cervical cancer).







Cancer Mortality Rates

This chapter provides an overview of cancer mortality rates in Haldimand and Norfolk compared to Ontario from 1986 to 2003. All cancer sites, as well as selected types of cancer, are included in this chapter. The selected types of cancer include the following: lung, prostate, female breast, colorectal and pancreatic cancer. Other selected types of cancers were excluded because of data limitations (small cell counts). Age-standardized incidence rates were used. The following chapter provides an overview of the selected types of cancer followed by data and interpretation.

In order to fully understand the following chapter, estimated mortality cases of cancer by sex for both Canada and Ontario are summarized in the table below for all cancers and the leading types of cancer (see Table 10 and Table 11).

Table 10: Estimated Deaths for Cancer, by Sex, Canada, 2007

CANADA		
Total	Males	Females
1. Lung	1. Lung	1. Lung
2. Colorectal	2. Colorectal	2. Breast
3. Breast	3. Prostate	3. Colorectal

Source: Canadian Cancer Statistics 2007.

Table 11: Estimated Deaths for Cancer, by Sex, Ontario, 2007

ONTARIO		
Total	Males	Females
1. Lung	1. Lung	1. Lung
2. Colorectal	2. Colorectal	2. Breast

Source: Canadian Cancer Statistics 2007.

All Cancer Sites Combined Mortality - Overview

According to the Canadian Cancer Statistics (2007), an estimated 72,700 Canadian deaths will occur in 2007, of which a higher number of men than women will die of cancer.² In 2007, it is estimated that lung cancer alone will account for 29% of cancer deaths in men and 26% of cancer deaths in women.²

In Ontario, it is estimated that 26,900 people will die of cancer in 2007.¹³ In Ontario, lung cancer is the leading cause of cancer death, followed by colorectal cancer.¹³ In 2007, it is estimated that lung cancer among men will be the leading type of cancer death, followed by colorectal and prostate. For Ontario women, it is estimated that lung cancer will be the leading cause of cancer death, followed by breast cancer and colorectal cancer.¹³

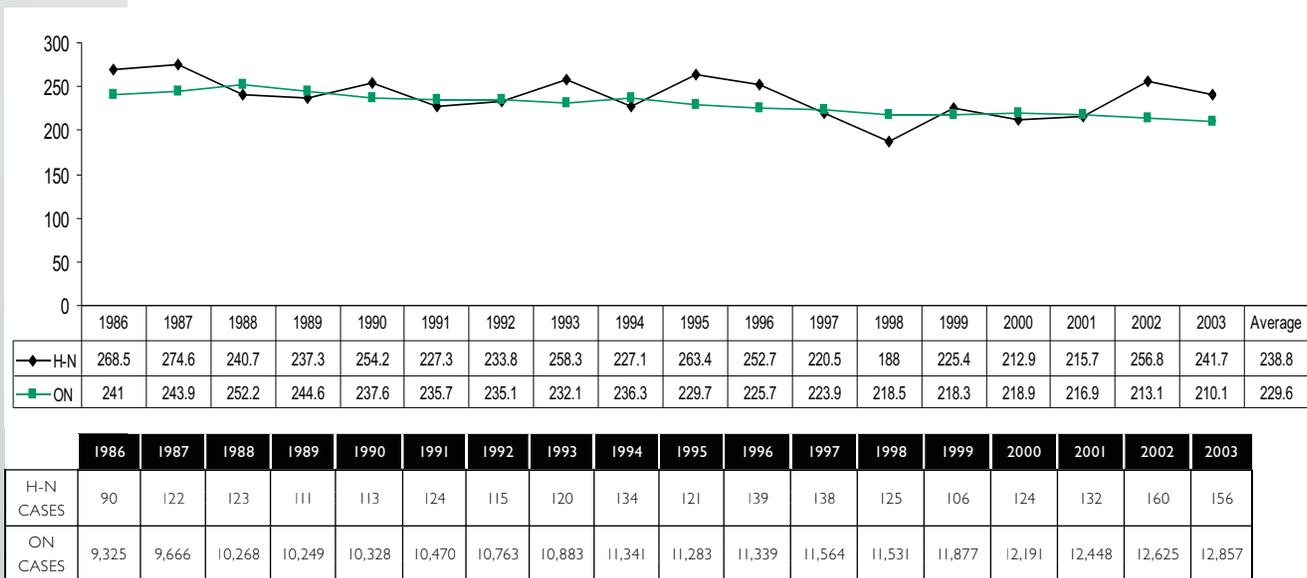
All Cancer Sites Combined Mortality Rates

All Cancer Sites Combined Mortality - Age-Standardized Mortality Rates Data and Interpretation

All Cancer Sites Combined Mortality - Males

As shown in Figure 30, the average age-standardized mortality rate among males for all cancer sites was higher in Haldimand and Norfolk (238.8/100,000) than in Ontario (229.6/100,000). In Haldimand and Norfolk, the age-standardized mortality rate for all cancer sites was highest in 1987 (274.6/100,000) and lowest in 1998 (188/100,000). Overall, mortality rates fluctuated from 1986 to 2003. In Ontario, the age-standardized mortality rates for all cancers among males mostly declined from 1994 to 2003.

Figure 30: Age-Standardized Mortality Rates for All Cancer Sites per 100,000 for Males, Haldimand and Norfolk and Ontario, 1986-2003



Data Source: Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

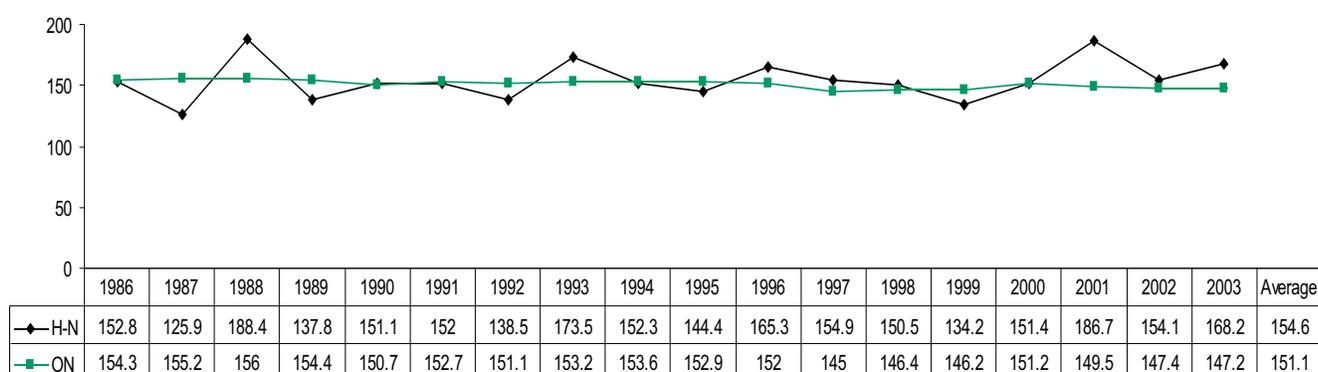
All Cancer Sites: (ICD-9: 140-208 (excluding 173), SEER Recode: All Malignant Sites).

All Cancer Sites Combined Mortality - Females

As shown in Figure 31, the average age-standardized mortality rate among females for all malignant cancer sites was higher in Haldimand and Norfolk (154.6/100,000) than in Ontario (151.1/100,000). In Haldimand and Norfolk, the highest mortality rate was in 1988 (188.4/100,000) and the lowest was in 1987 (125.9/100,000).

Overall, the mortality rate for all cancer sites among females in Haldimand and Norfolk fluctuated from 1986 to 2003. In Ontario, the age-standardized rate for all malignant cancers among females declined from 2000 to 2003. Similar to Ontario, the average age-standardized mortality rate for all cancer sites in Haldimand and Norfolk was higher for males (238.8/100,000) than females (154.6/100,000) (see Figure 30 and Figure 31).

Figure 31: Age-Standardized Mortality Rates for all Cancer Sites per 100,000 for Females, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	83	69	111	81	92	98	90	111	100	97	115	107	109	98	112	142	119	132
ON CASES	7,958	8,283	8,545	8,719	8,723	9,099	9,195	9,572	9,816	9,997	10,175	9,969	10,305	10,660	11,129	11,295	11,400	11,700

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

All Cancer Sites: (ICD-9: 140-208 (excluding 173), SEER Recode: All Malignant Sites).

Lung Cancer

Lung Cancer - Overview

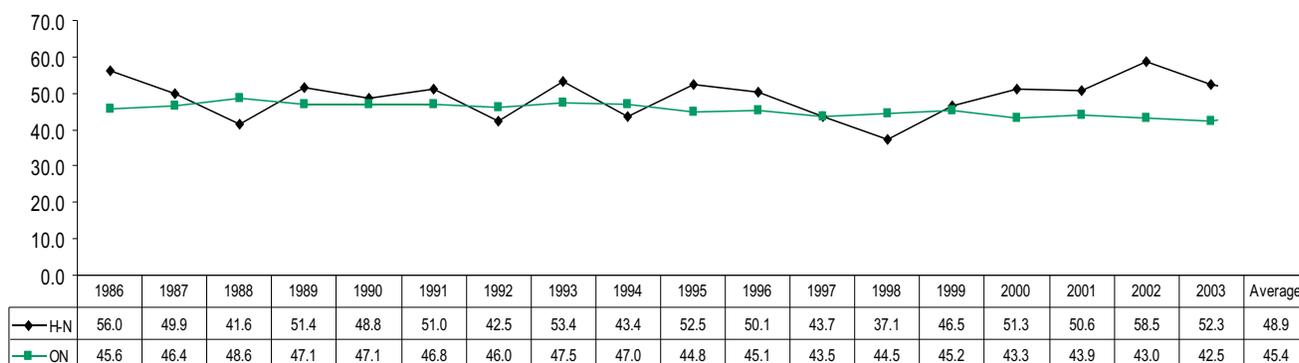
In Canada, it is estimated that lung cancer will be the leading cause of cancer death for both men and women.¹³ In 2007, it is estimated that of the 23,300 Canadians who will be diagnosed with lung cancer, 19,900 will die from it.²⁷

In Ontario, an estimated 3,600 men and 3,200 women will die of lung cancer in 2007.¹³ The major cause of lung cancer for both sexes is attributed to cigarette smoking.²⁶

Lung Cancer - Age-Standardized Mortality Rates Data and Interpretation

As shown in Figure 32, the average age-standardized mortality rate for lung cancer was higher in Haldimand and Norfolk (48.9/100,000) than in Ontario (45.4/100,000). In Haldimand and Norfolk, the highest mortality rate was in 2002 (58.5/100,000). In Haldimand and Norfolk, the age-standardized rate fluctuated from 1986 to 2003. In Ontario, the mortality rate of lung cancer was relatively stable.

Figure 32: Age-Standardized Mortality Rates for Lung Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	57	51	44	55	54	58	49	63	52	64	62	55	48	62	68	70	79	75
ON	CASES	4,217	4,414	4,740	4,722	4,845	4,942	4,970	5,252	5,306	5,184	5,324	5,261	5,511	5,731	5,623	5,846	5,886	5,939

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Lung: (ICD-9: 162, ICD-10: C330-C349).

Lung Cancer Mortality - Males

As shown in Figure 33, the average age-standardized mortality rate for lung cancer among males was higher in Haldimand and Norfolk (73.9/100,000) than in Ontario (66.6/100,000). In Haldimand and Norfolk, the highest mortality rate among males was in 1989 (96.4/100,000). Moreover, in Haldimand and Norfolk, the age-standardized mortality rate among males mostly decreased from 95.9/100,000 in 1986 to 73.6/100,000 in 2003. In Ontario, the mortality rate of lung cancer has been mostly decreasing.

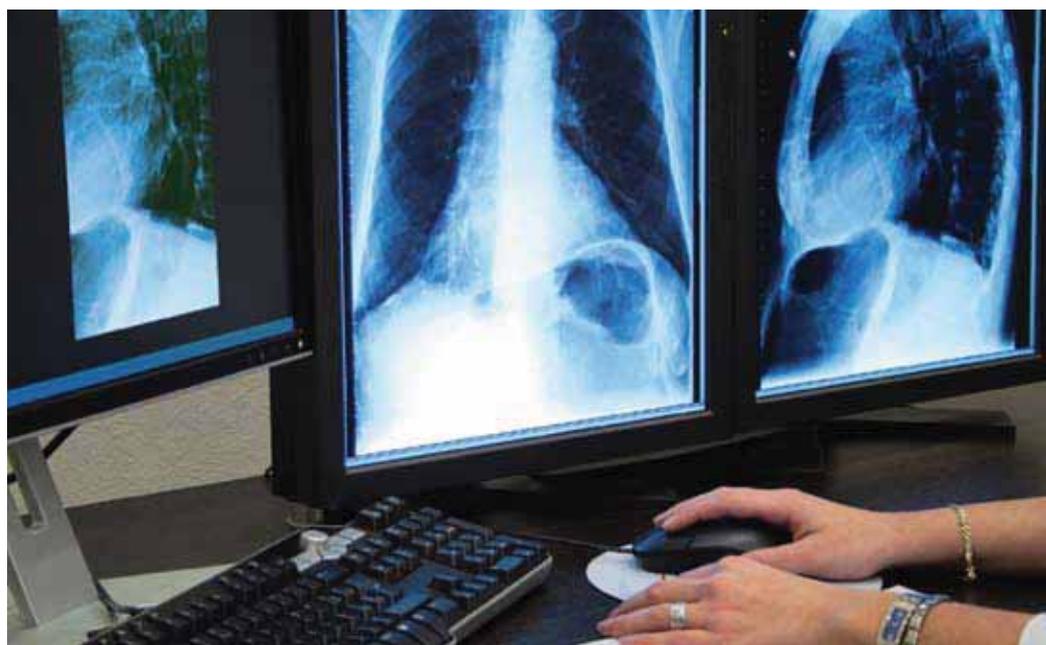
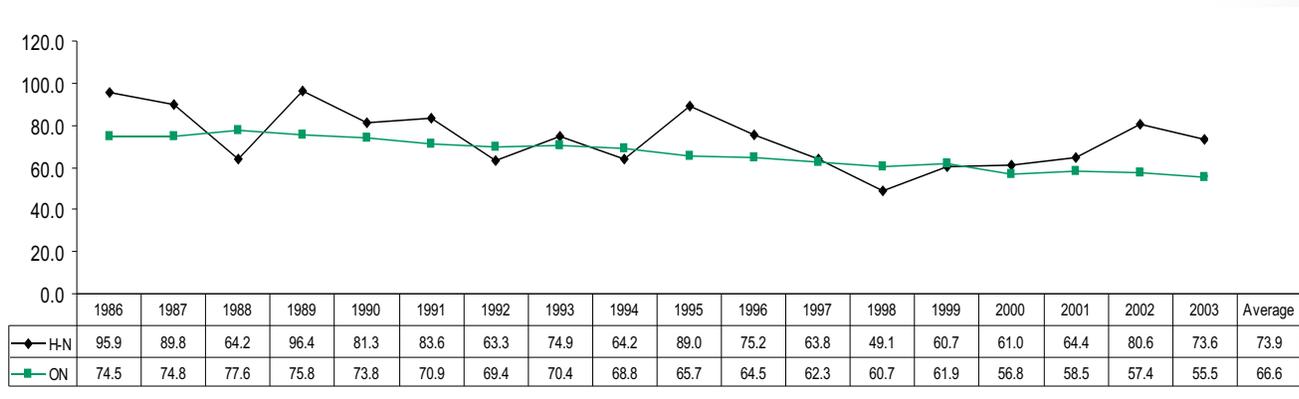


Figure 33: Age-Standardized Mortality Rates for Lung Cancer per 100,000 for Males Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	45	41	30	47	40	43	33	40	35	49	42	36	28	37	38	40	49	48
ON	CASES	2,963	3,065	3,259	3,272	3,292	3,245	3,264	3,384	3,383	3,288	3,302	3,265	3,279	3,415	3,227	3,409	3,435	3,430

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

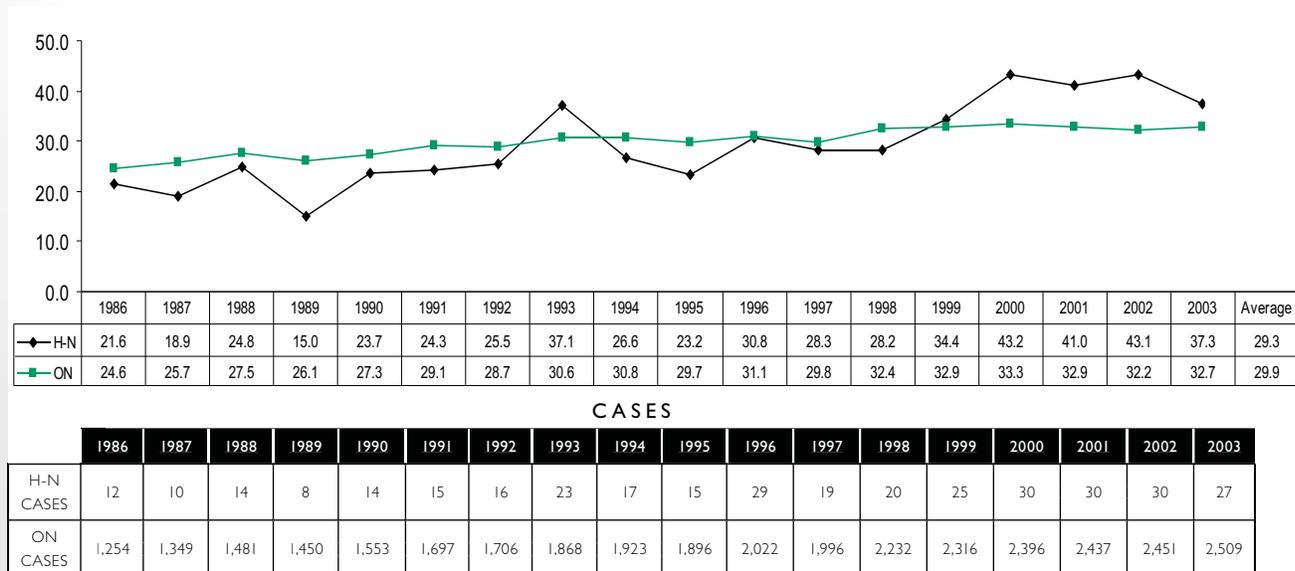
Lung: (ICD-9: 162, ICD-10: C330-C349).

Lung Cancer Mortality - Females

As shown in Figure 34, the average age-standardized mortality rate for lung cancer among females was slightly lower in Haldimand and Norfolk (29.3/100,000) than in Ontario (29.9/100,000). In Haldimand and Norfolk, the highest mortality rate among females was in 2000 (43.2/100,000). Particularly interesting, from 1999 to 2003, the mortality rate was higher in Haldimand and Norfolk than Ontario and increasing, with the exception of 2003 in Haldimand and Norfolk. Similar to Ontario, the average-standardized mortality rate in Haldimand and Norfolk was more than double among males (73.9/100,000) than females (29.3/100,000). (See Figure 33 and Figure 34.)



Figure 34: Age-Standardized Mortality Rates for Lung Cancer per 100,000 for Females Haldimand and Norfolk and Ontario, 1986-2003



Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Lung: (ICD-9: 162, ICD-10: C330-C349).

Prostate Cancer

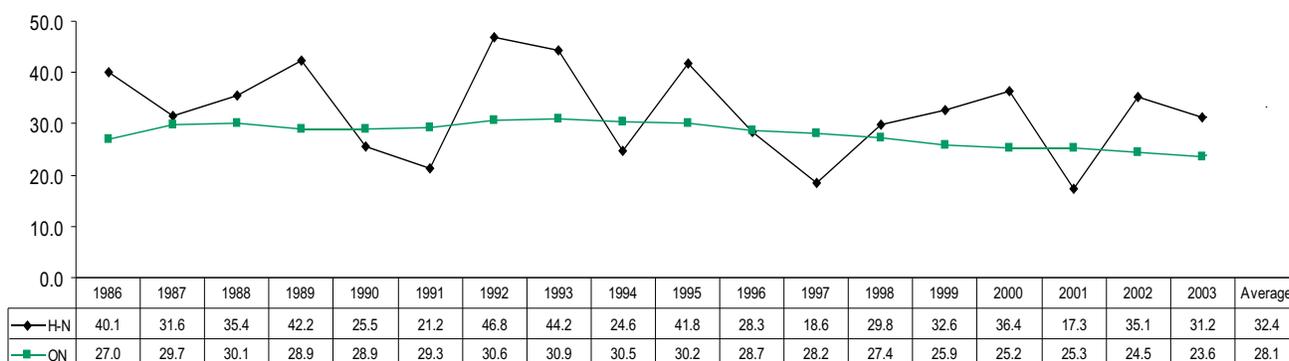
Prostate Cancer - Overview

In Canada, in 2007, it is estimated that prostate cancer will be fourth most common cause of cancer related deaths.² According to the Canadian Cancer Society (2007), it is estimated that in Canada, one in 27 men will die of prostate cancer in their lifetime.¹¹ Furthermore, it is estimated that in Canada, an average of 83 men will die of prostate cancer each week in 2007.¹¹ In Ontario, an estimated 1,650 men will die of prostate cancer in the year 2007.¹³

Prostate Cancer - Age-Standardized Mortality Rates Data and Interpretation

As shown in Figure 35, the average age-standardized mortality rate for prostate cancer was higher in Haldimand and Norfolk (32.4/100,000) than in Ontario (28.1/100,000). In Haldimand and Norfolk, the highest mortality rate was in 1992 (46.8/100,000). In Haldimand and Norfolk, the age-standardized rate fluctuated significantly from 1986 to 2003. In Ontario, the mortality rate of prostate cancer for the most part has been declining since 1993.

Figure 35: Age-Standardized Mortality Rates for Prostate Cancer per 100,000 Males, Haldimand and Norfolk and Ontario, 1986-2003



	CASES																	
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	17	14	16	19	12	10	23	22	13	21	15	10	16	18	20	10	21	19
ON CASES	912	1,050	1,087	1,086	1,130	1,187	1,263	1,318	1,341	1,361	1,323	1,352	1,346	1,313	1,330	1,376	1,375	1,370

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Prostate: (ICD-9: 185, ICD-10: SEER Recode).

Female Breast Cancer

Female Breast Cancer - Overview

According to the *Progress Report on Cancer Control in Canada*, breast cancer is the second leading cause of cancer-related deaths in Canadian women.¹⁵ According to the Canadian Cancer Society (2007), it is estimated that one in 27 Canadian women will die of breast cancer in their lifetime, and on average, 102 Canadian women will die each week in 2007.²¹ However, since 1969 in Canada, breast cancer mortality rates have been declining in women age 20 to 39.²¹

In Ontario, an estimated 2,000 women will die of breast cancer in 2007.¹³ In Ontario, the death rates from breast cancer among Ontario women age 50 to 69 decreased 29% from 1989 to 2002.²³ The decrease in breast cancer mortality may be attributed to the increase in the number of women who are getting screened for breast cancer and improvements in treatment.²³

Female Breast Cancer - Age-Standardized Mortality Rates Data and Interpretation

As shown in Figure 36, the average age-standardized mortality rate for female breast cancer was higher in Haldimand and Norfolk (30.4/100,000) than in Ontario (29.0/100,000). In Haldimand and Norfolk, the highest mortality rate was in 2001 (41.6/100,000) and fluctuated from 1986 to 2003. Generally, in Ontario, the mortality rate of breast cancer has been declining.

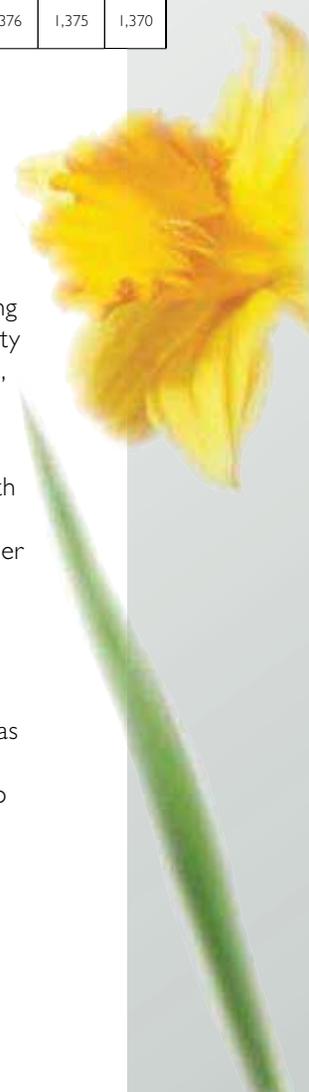
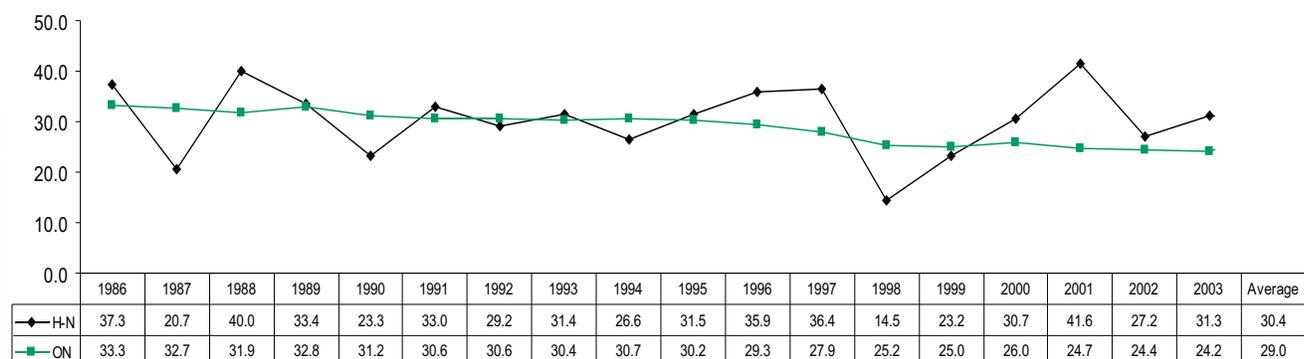


Figure 36: Age-Standardized Mortality Rates for Breast Cancer per 100,000 for Females, Haldimand and Norfolk and Ontario, 1986-2003



CASES

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N CASES	19	11	22	19	13	21	19	19	16	20	25	25	12	16	22	32	21	24
ON CASES	1,689	1,709	1,711	1,810	1,760	1,782	1,818	1,855	1,925	1,946	1,934	1,892	1,761	1,790	1,920	1,869	1,886	1,910

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Breast: (ICD-9: 174, ICD-10: SEER Recode).

Colorectal Cancer

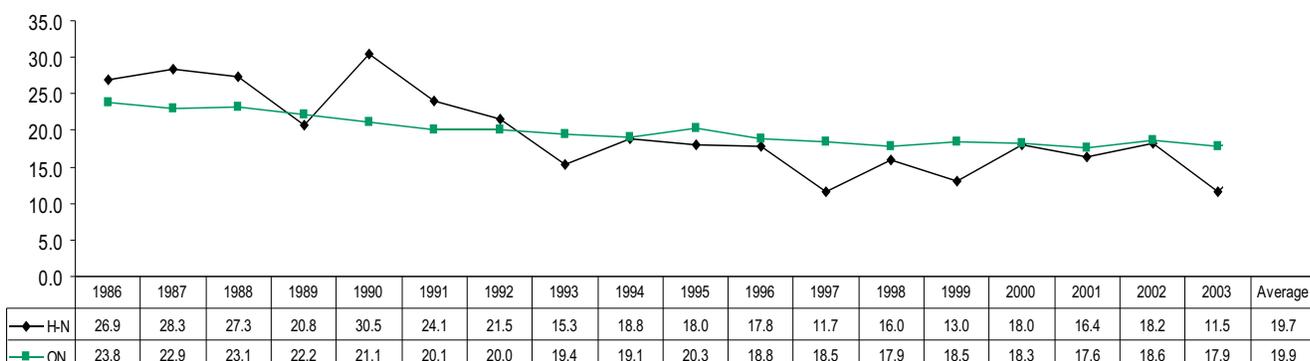
Colorectal Cancer - Overview

In Canada, colorectal cancer is the second leading cause of death from cancer.¹³ In 2007, it is estimated that one in 28 men and one in 31 women will die from colorectal cancer.³³ In Ontario, it is estimated that 1,750 men and 1,500 women will die of colorectal cancer in 2007.¹³

Colorectal Cancer - Age-Standardized Mortality Rates Data and Interpretation

As shown in Figure 37, the average age-standardized mortality rate for colorectal cancer was slightly lower in Haldimand and Norfolk (19.7/100,000) than in Ontario (19.9/100,000). In Haldimand and Norfolk, the highest mortality rate was in 1990 (30.5/100,000).

Figure 37: Age-Standardized Mortality Rates for Colorectal Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	27	29	29	22	34	28	25	18	23	24	22	15	20	18	24	23	24	16
ON	CASES	2,158	2,153	2,226	2,211	2,158	2,126	2,159	2,151	2,171	2,361	2,240	2,253	2,240	2,377	2,427	2,411	2,603	2,559

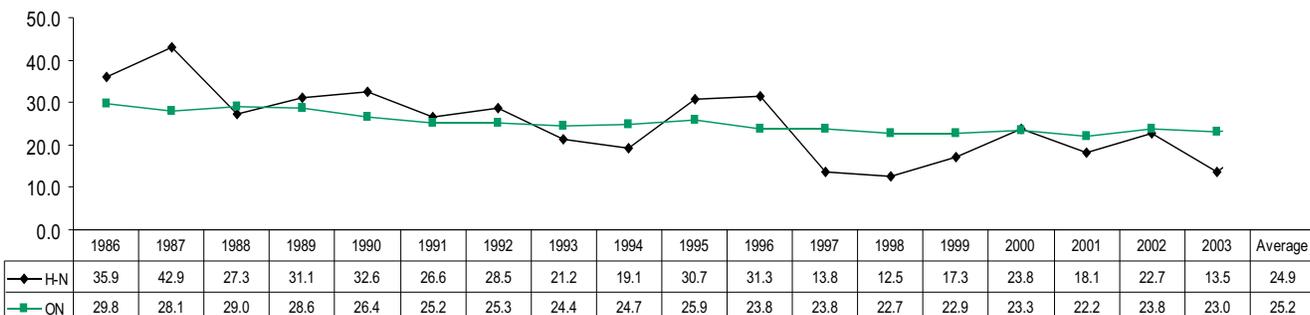
Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Colorectal Cancer: (ICD-9: I53&I54, ICD-10: C180-C219).

Colorectal Cancer Mortality - Males

As shown in Figure 38, among males, the average age-standardized mortality rate for colorectal cancer was slightly lower in Haldimand and Norfolk (24.9/100,000) than in Ontario (25.2/100,000). In Haldimand and Norfolk, the highest mortality rate was in 1987 (42.9/100,000). In Ontario, the mortality rates for colorectal cancer mostly decreased from 1986 to 2003.

Figure 38: Age-standardized Mortality Rates for Colorectal Cancer per 100,000 Males, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	16	19	12	15	16	13	15	11	10	15	17	8	7	10	14	11	14	7
ON	CASES	1,123	1,100	1,155	1,181	1,129	1,108	1,142	1,147	1,177	1,265	1,190	1,232	1,184	1,248	1,301	1,274	1,404	1,405

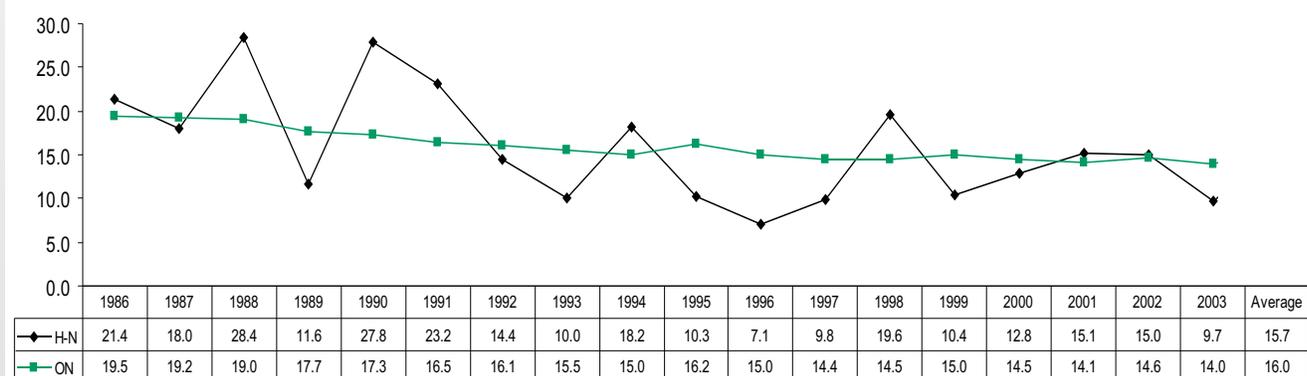
Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003)

Colorectal Cancer: (ICD-9: I53&I54, ICD-10: C180-C219)

Colorectal Cancer Mortality - Females

As shown in Figure 39, among females, the average age-standardized mortality rate for colorectal cancer was slightly lower in Haldimand and Norfolk (15.7/100,000) than in Ontario (16.0/100,000). In Haldimand and Norfolk, the highest mortality rate among females was in 1988 (28.4/100,000). In Ontario, the mortality rates for colorectal cancer have mostly decreased from 1986 to 2003. Similar to Ontario, the average age-standardized mortality rate in Haldimand and Norfolk was higher among males (24.9/100,000) than females (15.7/100,000). (See Figure 38 and Figure 39).

Figure 39: Age-Standardized Mortality Rates for Colorectal Cancer per 100,000 Females, Haldimand and Norfolk and Ontario, 1986-2003



		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	16	19	12	15	16	13	15	11	10	15	17	8	7	10	14	11	14	9
ON	CASES	1,123	1,100	1,155	1,181	1,129	1,108	1,142	1,147	1,177	1,265	1,190	1,232	1,184	1,248	1,301	1,274	1,404	1,405

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Colorectal Cancer: (ICD-9: 153&154, ICD-10: C180-C219).

Pancreatic Cancer

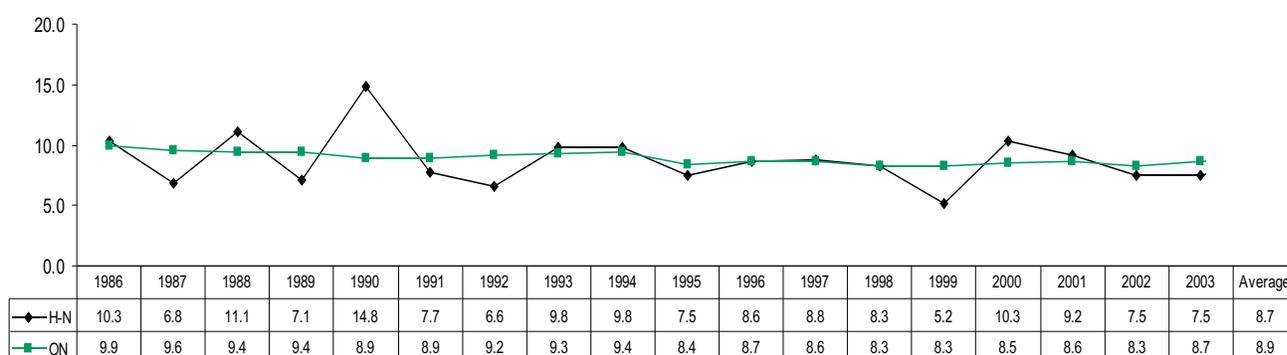
Pancreatic Cancer - Overview

According to the Canadian Cancer Society/National Cancer Institute of Canada (2007), in 2007, it is estimated that pancreatic cancer will be the fourth leading cause of cancer-related deaths for all types of cancer.²

Pancreatic Cancer - Age-Standardized Mortality Rates Data and Interpretation

As shown in Figure 40, the average age-standardized mortality rate for pancreatic cancer is slightly lower in Haldimand and Norfolk (8.7/100,000) than in Ontario (8.9/100,000). In Haldimand and Norfolk, the highest mortality rate was in 1990 (14.8/100,000). Overall, in Haldimand and Norfolk, the age-standardized mortality rates for pancreatic cancer fluctuated from 1986 to 2003. In Ontario, the mortality rates for pancreatic cancer have remained consistent from 1986 to 2003.

Figure 40: Age-Standardized Mortality Rates for Pancreatic Cancer per 100,000, Haldimand and Norfolk and Ontario, 1986-2003



		CASES																	
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H-N	CASES	10	7	12	8	17	9	8	12	12	9	11	11	11	7	14	13	10	11
ON	CASES	897	902	905	934	914	941	991	1,027	1,066	972	1,040	1,053	1,041	1,063	1,119	1,165	1,158	1,242

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Pancreatic: (ICD-9: 157, ICD-10: SEER Recode).

Cancer Mortality Rates Summary

All Cancer Combined

Overall, the average age-standardized mortality rates were relatively similar in Haldimand and Norfolk as compared to those in Ontario (see Figure 41). The average age-standardized mortality rates in Haldimand and Norfolk from 1986 to 2003 for all cancers sites were higher among males than females and were higher compared to the provincial rates.

Selected Types of Cancer

On average from 1986 to 2003 lung cancer was the leading cause of cancer death in Haldimand and Norfolk and Ontario followed by breast and prostate in Ontario and prostate and breast in Haldimand and Norfolk.

Similar to Ontario, for Haldimand and Norfolk males, lung cancer was leading cause of cancer deaths, followed by prostate and colorectal cancer. For Ontario females, lung, female breast and colorectal was the leading causes of cancer deaths. For Haldimand and Norfolk women breast cancer was the leading cause of cancer deaths, followed by lung and colorectal.

Lung cancer deaths from 1986 to 2003 were higher in Haldimand and Norfolk than Ontario, whereas colorectal and pancreatic cancer were slightly lower. In Haldimand and Norfolk men, lung and prostate cancer were higher, while colorectal cancer was slightly lower. In women, breast was slightly higher, while lung cancer and pancreatic cancer was slightly lower compared to the provincial rate. This is slightly different than the estimated frequency of cancer related deaths that will be diagnosed in 2007, since this report focuses on age-standardized rates, rather than frequencies (see Table 10 and Table 11).

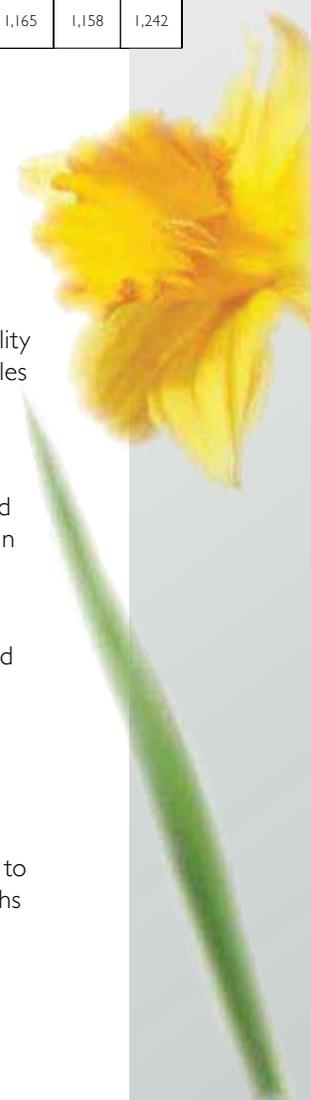
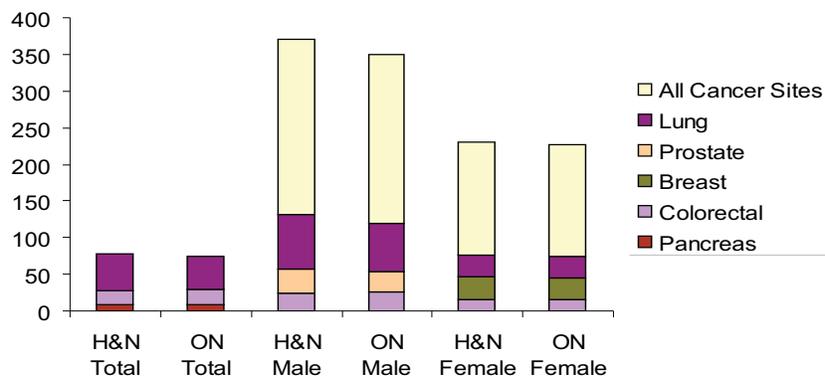


Figure 41: Summary of Average Age-standardized Mortality Rates of All Cancers and Selected Cancers per 100,000, Haldimand and Norfolk, and Ontario (1986-2003)



Cancer	H&N Total	ON Total	H&N Males	ON Males	H&N Females	ON Females
All Cancer Sites Combined	-- --	-- --	238.8	229.6	154.6	151.1
Lung	48.9	45.4	73.9	66.6	29.3	29.9
Prostate	-- --	-- --	32.4	28.1	-- --	-- --
Breast	-- --	-- --	-- --	-- --	30.4	29.0
Colorectal	19.7	19.9	24.9	25.2	15.7	16.0
Pancreas	8.7	8.9	-- --	-- --	-- --	-- --

Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003).

Data Notes: See figures in Chapter 2 for detailed information. Other selected types of cancer were excluded in the graph, due to data limitations.



Lifestyle Behaviours/ Risk Factors

Lifestyle Behaviours/Risk Factors - Introduction

This chapter provides an overview of selected lifestyle behaviours and risk factors in Haldimand and Norfolk compared to Ontario in 2005. The selected lifestyle behaviours presented in include the following: vegetables and fruit consumption, leisure-time physical activity, being overweight/obese, smoking, exposure to second-hand smoke and alcohol consumption. The primary data source used was the Canadian Community Health Survey (CCHS). The CCHS provides baseline data for monitoring lifestyle behaviours in Haldimand and Norfolk compared to Ontario. The data highlights gender differences and specific age categories. The following provides an overview of selected types of lifestyle behaviours followed by data and interpretation.

Lifestyle Behaviours/Risk Factors - Overview

According to the Targeting Cancer: An Action Plan for Cancer Prevention and Detection: *Cancer 2020 Summary Report*, in 2020, 50% of cancers can either be prevented or detected early before they become serious health concerns.⁶⁶ Lifestyle behaviours such as tobacco use, poor diet, physical inactivity and alcohol consumption are modifiable risk factors that are positively associated with chronic conditions to include cancer.¹ *The Cancer 2020 Action Plan* includes priorities and targets on tobacco use reduction, nutrition, physical activity, obesity and alcohol to name a few.¹ This chapter examines personal health practices and behaviours as they relate to cancer.

Vegetables and Fruit Consumption

Vegetables and Fruit Consumption - Overview

According to the *Progress Report on Cancer Control in Canada*, 30% of all cancers in developed countries are attributed to diet-related factors.¹⁵ The lack of sufficient vegetables and fruit consumption has been identified as a risk factor in the development of several chronic diseases that include heart disease, hypertension and cancer.⁶⁷ Evidence suggests that a diet rich in vegetables

and fruit reduces the risk of several types of cancers, particularly cancers of the gastrointestinal tract (mouth, pharynx, esophagus, stomach, colon and rectum).¹⁵

In June 2006, the Ontario Action Plan for Healthy Eating and Active Living was launched by the Ontario government.⁶⁸ The \$10-million plan consists of strategies to build healthy communities, promote public awareness and engagement and improve the health of children and youth.⁶⁸ The Ministry of Health Promotion has launched a fruit and vegetable pilot project in northern Ontario to provide children with additional fruits and vegetables.

Canada's Food Guide

As shown in Table 12, Canada's Food Guide recommends the following daily servings of vegetables and fruit for proper growth and development and for reducing the risk of developing chronic diseases like cancer.⁶⁹ According to the *Report on Cancer 2020 (2006)*, the vegetable and fruit intake indicator is based on the percentage of adults age 18 and older who eat vegetables and fruits at least five times a day.¹ For the purpose of program planning, this report examines the percentage of persons age 12 and older who eat vegetables and fruit at least five times a day.

Table 12: Recommended Number of Vegetable and Fruit Servings per Day

Sex	CHILDREN			TEENS		ADULTS			
	Both Sexes	Both Sexes	Both Sexes	Female	Male	Female	Male	Female	Male
Age	2-3	4-8	9-13	14-18	14-18	19-50	19-50	51+	51+
Servings	4	5	6	7	8	7-8	8-10	7	7

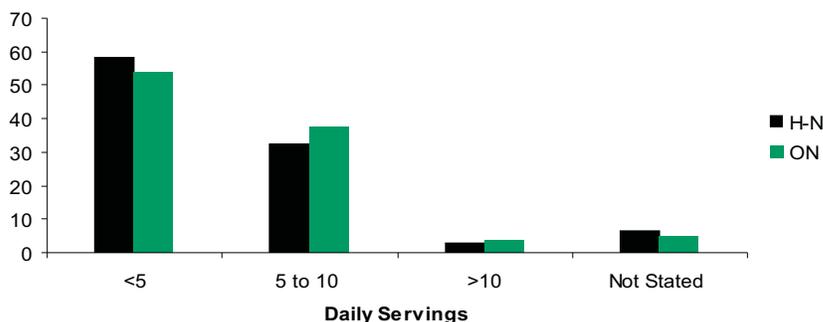
Health Canada (2007). Canada's Food Guide for Healthy Living. Retrieved July 17, 2007, from http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/basics-base/index_e.html.

Vegetables and Fruit Consumption - Data and Interpretation

In 2005, over half of Haldimand and Norfolk residents age 12 and older (58.3% ± 4.6%) consumed fewer than five servings of vegetables and fruit daily (See Figure 42). Compared to Ontario, Haldimand and Norfolk had a higher percentage of residents age 12 and older who consumed fewer than five servings of vegetables and fruit daily but not significantly. Similar to Ontario, the proportion of Haldimand and Norfolk residents age 12 and older who consumed five or more servings of vegetables and fruit falls dramatically short of the Cancer 2020 Action Plan target of 90% of Ontarians consuming five or more servings of vegetables and fruit daily.¹

It is important to recognize that the new Canada's Food Guide recommends higher numbers of servings per day of vegetables and fruits.⁶⁹ For example, children age 9 to 13 are encouraged to have six servings per day rather than five.⁶⁹ Furthermore, the recommendation for adults and teens ranges from seven servings per day for teen girls to eight to 10 servings for adult males.⁶⁹ Considering these changes, since over half of Haldimand and Norfolk residents are consuming fewer than five servings of vegetables and fruit daily, it is apparent that Haldimand and Norfolk residents' intake of vegetables and fruit is considerably worse than reported.

Figure 42: Daily Consumption of Vegetables and Fruit, 12 years and older, Haldimand and Norfolk and Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Fewer than Five Daily Servings	58.3 ± 4.6	53.8 ± 0.8
Five to 10 Daily Servings	32.5 ± 4.6	37.5 ± 0.8
More than 10 Daily Servings	*2.8 ± 1.5	3.7 ± 0.3
Not Stated	*6.4 ± 2.4	5.0 ± 0.37
Total	100	100

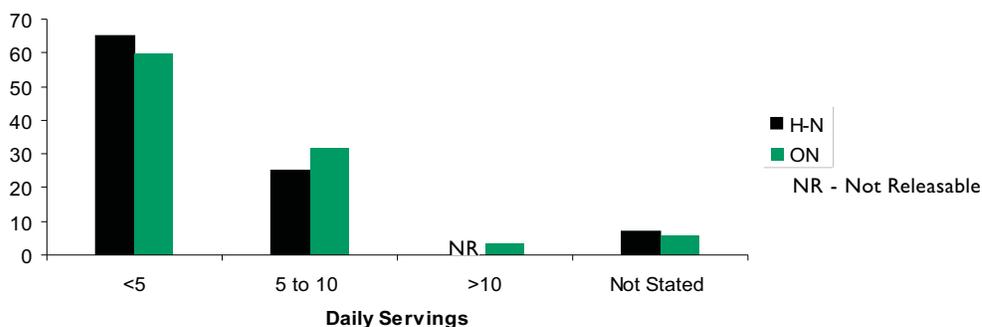
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution.

Vegetables and Fruit Consumption - Males

As shown in Figure 43, over half of Haldimand and Norfolk males age 12 and older (65.0% ± 6.0%) consumed fewer than five servings of vegetables and fruit daily, and 25.1% (± 5.4%) consumed five to 10 daily servings of vegetables and fruit in 2005. Compared to Ontario, Haldimand and Norfolk had a higher percentage of males age 12 and older who consumed fewer than five servings of vegetables and fruit daily but not significantly.

Figure 43: Daily Consumption of Vegetables and Fruit, 12 and older, Males, Haldimand and Norfolk and Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Fewer than Five Daily Servings	65.0 ± 6.0	59.8 ± 1.1
Five to 10 Daily Servings	25.1 ± 5.4	31.6 ± 1.0
More than 10 Daily Servings	**	3.1 ± 0.4
Not Stated	*7.1 ± 3.42	5.6 ± 0.6
Total	NC	NC

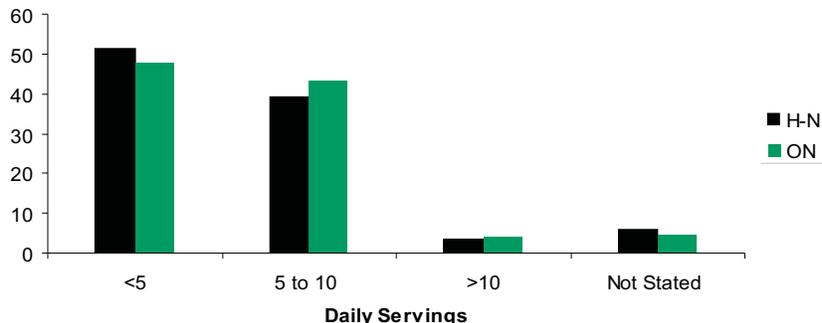
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution. **High sampling variability, therefore data is not releasable. NC: Unable to Compute.

Vegetables and Fruit Consumption - Females

In 2005, slightly over half of Haldimand and Norfolk female age 12 and older (51.4% ± 7.0%) consumed fewer than five servings of vegetables and fruit daily, and 39.3% (± 6.5%) consumed five to 10 daily servings of vegetables and fruit (see Figure 44). Compared to Ontario, Haldimand and Norfolk had a slightly higher percentage of females age 12 and older who consumed fewer than five daily servings of vegetables and fruit but not significantly. In Haldimand and Norfolk, a significantly higher proportion of males (65.0% ± 6.0%) than females (51.4% ± 7.0%) consumed fewer than five servings of vegetables and fruit daily. (See Figure 43 and Figure 49.)

Figure 44: Daily Consumption of Vegetables and Fruit, 12 and older, Females, Haldimand and Norfolk and Ontario. 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Fewer than Five Daily Servings	51.4 ± 7.0	48.0 ± 1.1
Five to 10 Daily Servings	39.3 ± 6.5	43.2 ± 1.1
More than 10 Daily Servings	*3.5 ± 2.2	4.3 ± 0.5
Not Stated	*5.8 ± 3.4	4.5 ± 0.5
Total	100	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution.

Leisure-Time Physical Activity

Leisure-Time Physical Activity - Overview

According to the *Active 2010: Ontario's Sport and Physical Activity Strategy (2005)*, physical activity has many health benefits as it improves the musculoskeletal, cardiovascular, endocrine, metabolic and immune systems.⁷⁰ According to Marrett, Thesis & Ashbury (2000), physical activity helps to prevent colon cancer and may also help prevent prostate and breast cancer.⁷¹

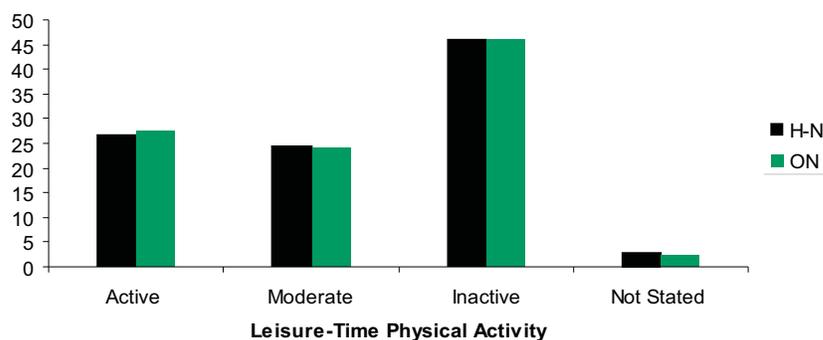
Canada's Physical Activity Guide to Healthy Active Living (CPAG)

According to *Canada's Physical Activity Guide to Healthy Active Living (CPAG)(2002)*, people should be active most days of the week.⁷² Health benefits can be achieved by accumulating either 30 to 60 minutes of moderate-intensity activity or 60 minutes of light-intensity activity, four to seven days a week.⁷² Total activity can be accumulated at 10 minute intervals.⁷² According to the *Report on Cancer 2020 (2006)*, the goal is to have 90% of Ontarians participating in moderate to vigorous activity on most days of the week.¹

Leisure-Time Physical Activity - Data and Interpretation

Leisure-time physical activity refers to any type of physical activity done in a person's free time (outside of work and school). In 2005, in Haldimand and Norfolk, 51.1% (\pm 4.7%) of persons age 12 and older were physically active and moderately active, while 45.9% (\pm 4.8%) were inactive (see Figure 45). Leisure-time physical activity rates were not significantly different than those in Ontario. Similar to Ontario, the proportion of Haldimand and Norfolk residents age 12 and older who engage in moderate physical activity falls dramatically short of the Cancer 2020 Action plan target of 90% of Ontarians participating in moderate to vigorous activity on most days of the week.¹

Figure 45: Leisure-Time Physical Activity, Age 12 and older, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Active	26.8 ± 3.8	27.6 ± 0.7
Moderate	24.3 ± 4.1	24.1 ± 0.6
Inactive	45.9 ± 4.8	46.0 ± 0.8
Not Stated	*2.9 ± 1.9	2.3 ± 0.3
Total	100	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

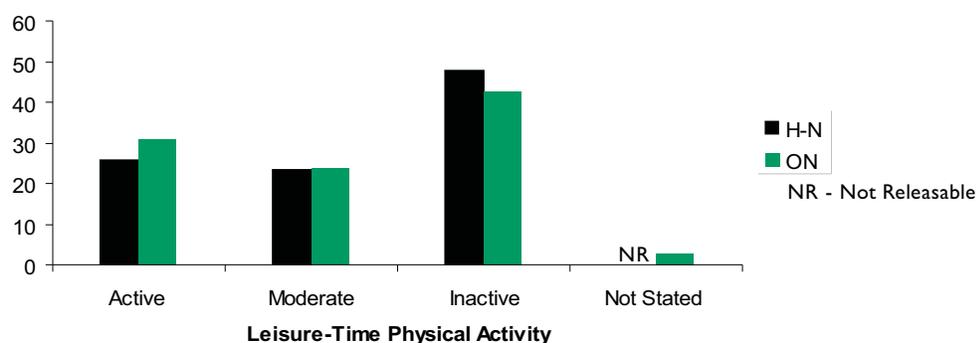
Data Notes: * High sampling variability, interpret with caution.

Note: The Physical Activity Index is calculated as the sum of the average daily energy expenditures of all leisure time activities. Individuals are classified as follows: 3.0kcal/kg/day or more=physically active, 1.5-2.9kcal/kg/day=moderately active; less than 1.5kcal/day=inactive

Leisure-Time Physical Activity - Males

As shown in Figure 46, in 2005, in Haldimand and Norfolk, of the proportion of males age 12 and older, 49.1% ± 6.9% were physically active or moderately active, while 47.7% (± 6.9%) were inactive. Leisure-time physical activity rates among males were not significantly different than those in Ontario. The proportion of Haldimand and Norfolk males age 12 and older who were physically inactive was higher than Ontario, but not significantly.

Figure 46: Leisure-Time Physical Activity, Age 12 and older, Males, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Active	25.7 ± 5.6	31.0 ± 1.0
Moderate	23.4 ± 6.1	23.7 ± 1.0
Inactive	47.7 ± 6.9	42.7 ± 1.1
Not Stated	**	2.6 ± 0.35
Total	NC	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC. NC: Not able to compute.

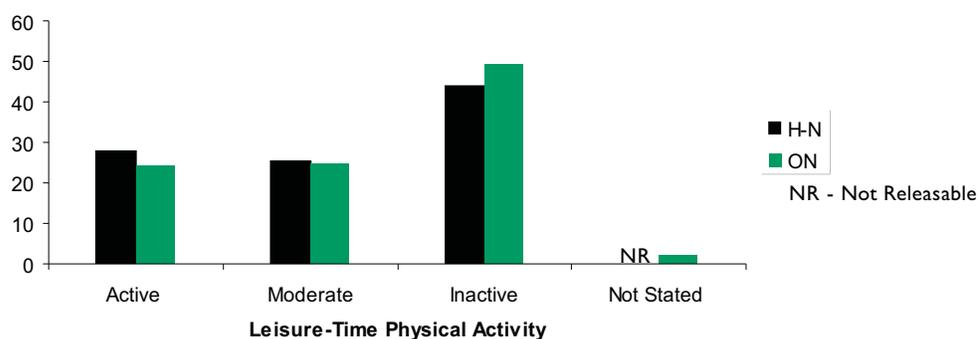
Date Notes: **High sampling variability, therefore data is not releasable.

Note: The Physical Activity Index is calculated as the sum of the average daily energy expenditures of all leisure time activities. Individuals are classified as follows: 3.0kcal/kg/day or more=physically active, 1.5-2.9kcal/kg/day=moderately active; less than 1.5kcal/day=inactive.

Leisure-Time Physical Activity - Females

In 2005, 53.2% \pm 6.1% of Haldimand and Norfolk females age 12 and older were physically active and moderately active, while 44.1% (\pm 6.3%) were inactive (see Figure 47). Leisure-time physical activity rates among females were not significantly different than those in Ontario. Compared to Ontario, a higher proportion of Haldimand and Norfolk females age 12 and older were physically active and moderately active, while a lower proportion were inactive but not significantly. Inconsistent with Ontario, a higher percentage of Haldimand and Norfolk males (47.7% \pm 6.9%) than females (44.1% \pm 6.3%) were inactive, although these differences were not statistically significant. (See Figure 46 and Figure 47.)

Figure 47: Leisure-Time Physical Activity, Age 12 and older, Females, Haldimand and Norfolk, Ontario, 2005



	H&N (% \pm 95% CI)	ON (% \pm 95% CI)
Active	28.0 \pm 5.5	24.2 \pm 0.9
Moderate	25.2 \pm 5.3	24.5 \pm 0.9
Inactive	44.1 \pm 6.3	49.3 \pm 1.1
Not Stated	**	2.0 \pm 0.4
Total	NC	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability, therefore data is not releasable. NC: Unable to compute.

Note: The Physical Activity Index is calculated as the sum of the average daily energy expenditures of all leisure time activities. Individuals are classified as follows: 3.0kcal/kg/day or more=physical active, 1.5-2.9kcal/kg/day=moderately active; less than 1.5kcal/day=inactive.

Focus on Physical Activity - 2003 Brant, Haldimand, Norfolk Student Health Survey Results

In Fall 2003, the Student Health Survey was administered to students within the Grand Erie District School Board and the Brant Haldimand Norfolk Catholic District School Board. Some of the findings in the report about youth physical activity levels included the following:

- 95% of students did not meet daily requirements for 90 minutes of physical activity (90 minutes = 30 minutes of vigorous + 60 minutes of moderate activity).
- 75% of students spent three or more hours daily on sedentary activities.⁷³

Overweight/Obesity

Overweight/Obesity - Introduction

According to the 2004 *Chief Medical Officer of Health Report: Healthy Weights, Healthy Lives*, there are several health risks associated with being overweight or obese that include coronary heart disease and stroke, hypertension, Type 2 diabetes, osteoarthritis, gallbladder disease and some types of cancer (breast, endometrial, colon, prostate and kidney).⁷⁴

Measurement

To date, Body Mass Index (BMI) is an indicator of weight-related health risk available for persons age 18 and older.⁷⁴ BMI is calculated using the person's height and weight.⁷⁴ However, the new Canadian guidelines for the clinical management of obesity recommend measuring BMI and waist circumference in all adults and adolescents to determine the degree and distribution of body fat.⁷⁵

Overweight/Obesity - Data and Interpretation (18 and older)

BMI classification system for persons age 18 and older consists of underweight, normal weight, overweight, obese, obese class 1, obese class 2 and obese class 3.⁷⁶ The risk of developing health problems associated with BMI is shown in Table 13. According to the *Report on Cancer 2020* (2006), the Cancer 2020 Action Plan targets seek to have only 10% of Ontarians classified as obese (BMI 30 and over).¹

Table 13: Health Risk Classification According to Body Mass Index (BMI). For use with adults 18 and older, excluding pregnant or breastfeeding women

BMI Category	Classification	Risk of Developing Health Problems
<18.5	Underweight	Increased risks
18.5 - 24.9	Normal weight	Least risk
25.0 - 29.9	Overweight	Increased risk
30 and over	Obese	
30 - 34.9	Obese Class 1	High risk
35.0 - 39.9	Obese Class 2	Very high risk
>40	Obese Class 3	Extremely high risk

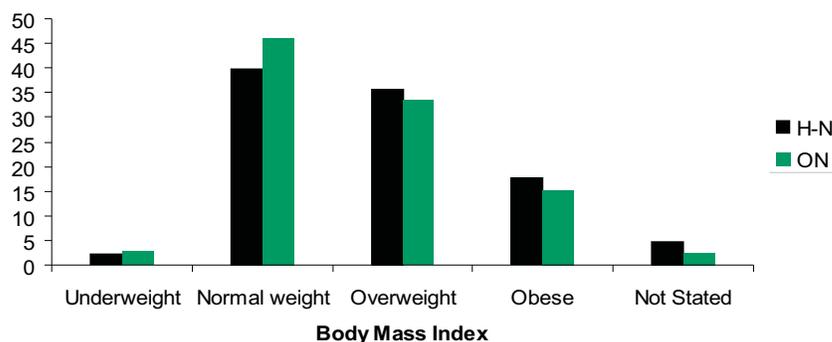
Note: For persons 65 and older, the 'normal' range may begin slightly above BMI 18.5 and extend into the 'overweight' range.

Source: *Canadian Guidelines for Body Weight Classification in Adults*. Health Canada 2003.

In 2005, more than half of Haldimand and Norfolk residents age 18 years and older (53.4% ± 5.4%) were considered overweight or obese, while 39.8% (± 5.2%) were considered normal weight (see Figure 48). A higher proportion of Haldimand and Norfolk adults age 18 and older were classified as either overweight or obese compared to Ontario but not significantly.

According to the health risk classification table, slightly more than half of Haldimand and Norfolk residents range from being at an increased risk to an extremely high risk of developing health problems. Similar to Ontario, the proportion of Haldimand and Norfolk residents age 18 and older who are considered obese exceeds the Cancer 2020 Action Plan target of 10%.

Figure 48: Self-Reported Body Mass Index, 18 and older, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Underweight	*2.2 ± 1.4	2.7 ± 0.3
Normal weight	39.8 ± 5.2	46.2 ± 0.8
Overweight	35.7 ± 4.8	33.5 ± 0.8
Obese	17.7 ± 3.6	15.1 ± 0.6
Not Stated	*4.6 ± 2.1	2.4 ± 0.3
Total	100	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution. Excludes non-applicable.

Notes: BMI Classification: Underweight (<18.50), Normal Weight (18.50-24.99); Overweight (25.00-29.99); and Obese (30 and over). Excluded female respondents age 18-49 who were pregnant or did not answer the pregnancy question.

Smoking

Smoking - Introduction

According to the Report on Cancer 2020 (2006), tobacco is the leading cause of cancer.¹ Tobacco use has been associated with cancers of the lip, lung, pharynx, larynx, stomach, esophagus, pancreas, bladder and kidney.¹⁵ Tobacco use also increases the risk of cervical, colorectal and possibly multiple myeloma, liver and breast cancer.¹⁵ According to the Report on Cancer 2020 (2006), one of the Cancer 2020 Action Plan targets seeks to have no more than 5% of adults age 18 and older as current smokers.¹

Smoking - Data and Interpretation

Since Ontario requires smokers to be 19 to purchase cigarettes, smoking status was examined for persons 19 and older. In 2005, in Haldimand and Norfolk, 42.4% (± 5.2%) of persons age 19 and older reported being former smokers, while 30.4% (± 5.0%) smoked daily or occasionally and 27.1% ± 3.1% never smoked (see Figure 49). In Haldimand and Norfolk, a significantly higher proportion of persons age 19 and older smoked daily or occasionally compared to Ontario, whereas, a significantly lower proportion of Haldimand and Norfolk residents reported that they never smoked compared to their provincial counterparts. There were no statistically significant differences in the former smoker category.

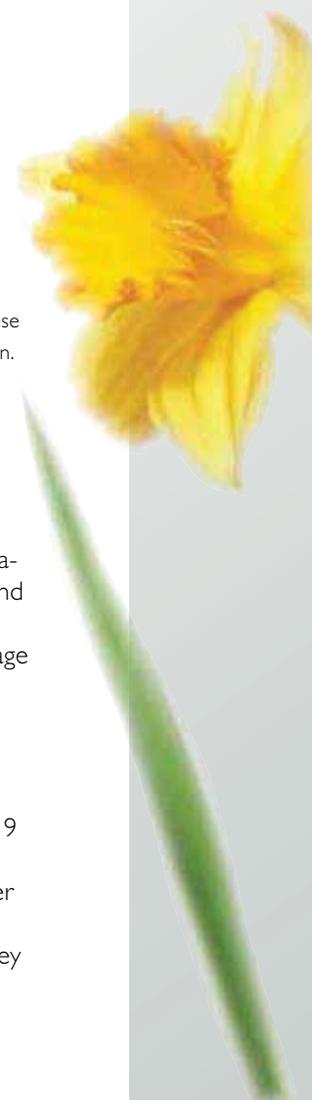
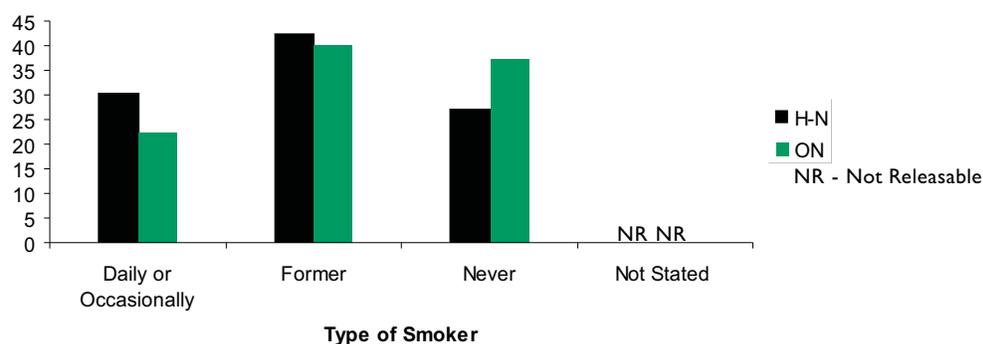


Figure 49: Smoking Status, 19 and older, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Daily or Occasionally	30.4 ± 5.0	22.3 ± 0.6
Former	42.4 ± 5.2	40.1 ± 0.8
Never	27.1 ± 3.1	37.5 ± 0.8
Not Stated	**	**
Total	NC	NC

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: ** High sampling variability data is not releasable. NC: Not able to compute.

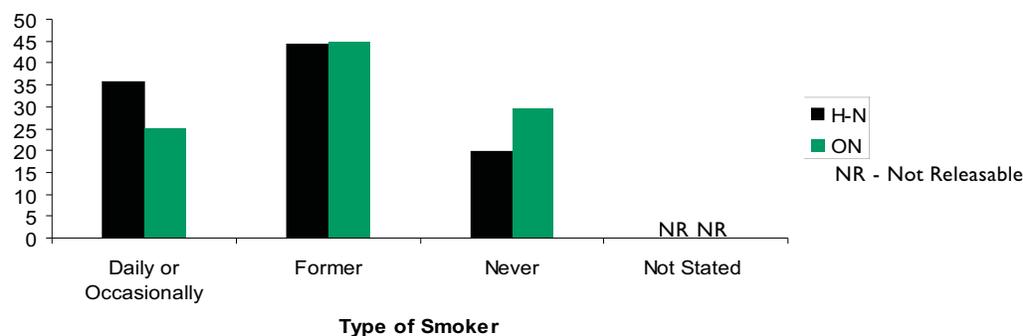
Notes:

- Daily smokers refers to those who reported smoking cigarettes every day.
- Occasional smoker includes former daily smoker who now smoke occasionally.
- Former smokers are those who previously smoked either daily or occasionally and are now non-smokers.
- Never a daily smoker or has smoked fewer than 100 cigarettes a lifetime.

Smoking - Males (19 and older)

For Haldimand and Norfolk males age 19 and older, 44.2% (± 7.8%) reported being former smokers, while 35.8% (± 8.2%) smoked daily or occasionally and 19.7% (± 5.0%) never smoked (see Figure 50). Compared to Ontario, a significantly higher proportion of Haldimand and Norfolk males smoke daily or occasionally, whereas a significantly lower proportion of Haldimand and Norfolk males reported that they never smoked compared to Ontario. There were no statistically significant differences in the former smoker category.

Figure 50: Smoking Status, 19 and older, Males, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Daily or Occasionally	35.8 ± 8.2	25.3 ± 1.0
Former	44.2 ± 7.8	44.8 ± 1.1
Never	19.7 ± 5.0	29.7 ± 1.1
Not Stated	**	**
Total	NC	NC

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: ** High sampling variability data is not releasable. NC: Not able to compute.

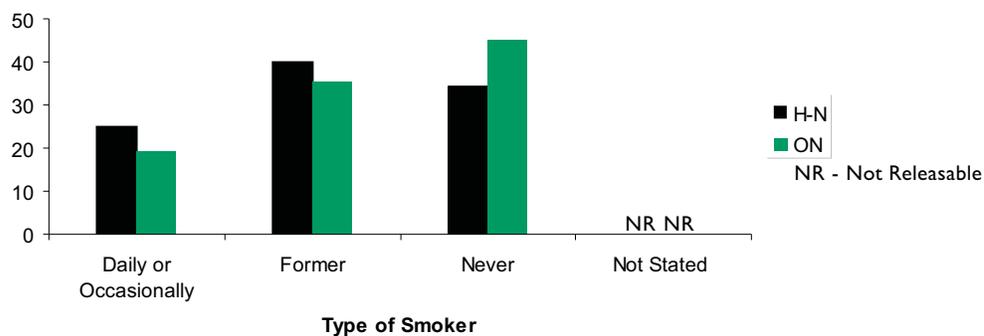
Notes:

- Daily smokers refers to those who reported smoking cigarettes every day.
- Occasional smoker includes former daily smoker who now smoke occasionally.
- Former smokers are those who previously smoked either daily or occasionally and are now non-smokers.
- Never a daily smoker or has smoked fewer than 100 cigarettes a lifetime.

Smoking - Females (19 and older)

For Haldimand and Norfolk females age 19 and older, 40.7% (± 6.5%) reported being former smokers, while 34.4% (± 5.9%) never smoked and 25.0% (± 5.6%) smoked daily or occasionally (see Figure 51). Compared to Ontario, a higher percentage of Haldimand and Norfolk females smoke daily or occasionally, but not significantly, whereas a significantly lower proportion of Haldimand and Norfolk females reported that they never smoked compared to their provincial counterparts. There were no statistically significant differences in the former smoker category. Overall, similar to Ontario, a higher proportion of Haldimand and Norfolk males smoked daily or occasionally (35.8% ± 8.2%) compared to Haldimand and Norfolk females (25.0% ± 5.6%) but not significantly. (See Figure 50 and Figure 51.)

Figure 51: Smoking Status, 19 and older, Females, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Daily or Occasionally	25.0 ± 5.6	19.4 ± 0.8
Former	40.7 ± 6.5	35.5 ± 1.0
Never	34.4 ± 5.9	45.0 ± 1.1
Not Stated	**	**
Total	NC	NC

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: **High sampling variability data is not releasable. NC: Not able to compute.

Notes:

- Daily smokers refers to those who reported smoking cigarettes every day.
- Occasional smoker includes former daily smoker who now smoke occasionally.
- Former smokers are those who previously smoked either daily or occasionally and are now non-smokers.
- Never a daily smoker or has smoked fewer than 100 cigarettes a lifetime.

Focus on Smoking - 2003 Brant, Haldimand, Norfolk Student Health Survey Results

Some of the findings in the 2003 Brant, Haldimand, Norfolk Report about youth smoking included the following:

- Evidence of experimentation with tobacco was found in Grade 5.
- By Grade 7, 16% of students had smoked at least one puff of a cigarette in their lifetime.
- By Grade 11, 22% of students had smoked at least once during the past 30 days, and more than half (55%) of those students were smoking every day.
- Over half (55%) of current smokers (someone who smoked in the past 30 days and 100 cigarettes in their lifetime) in Grades 7, 9, and 11 had tried to quit during the past year.
- Smoking patterns did not appear to differ significantly by gender.⁷⁷

Exposure to Second-Hand Smoke

An overwhelming body of evidence demonstrates that second-hand smoke causes nasal sinus cancer, lung cancer, asthma, Sudden Infant Death Syndrome (SIDS), heart disease, middle ear infections in children and various respiratory illnesses.³¹ Further evidence suggests that second-hand smoke may be causally associated with spontaneous abortion, stroke, cervical cancer, negative development of cognition and behaviour in children and exacerbation of cystic fibrosis.⁷⁸

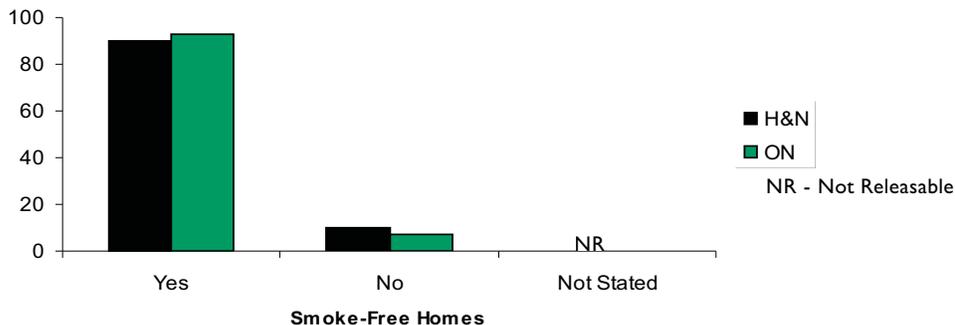
The Smoke-Free Ontario Act has been in effect since May 2006 and mandates that all enclosed public places and workplaces be smoke-free. This has been a significant change in Norfolk County where no local by-law existed before the provincial legislation. In Haldimand County, there was a very strong local by-law in place since 2003. Exposure to second-hand smoke in homes and private vehicles is still considered a health risk.

Exposure to Second-Hand Smoke - Data and Interpretation

Smoke-Free Homes

Smoke-free homes are defined as homes in which neither household members nor regular visitors, smoke every day or almost every day. Overall, 89.7% (± 3.2%) of households in Haldimand and Norfolk are smoke-free. The proportion of smoke-free homes in Haldimand and Norfolk is lower than in Ontario (92.6% ± 0.4%) (see Figure 52).

Figure 52: Smoke-Free Homes, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Yes	89.7 ± 3.2	92.6 ± 0.4
No	10.3 ± 3.2	7.3 ± 0.4
Not Stated		0.1 ± 0.1
Total	100	100

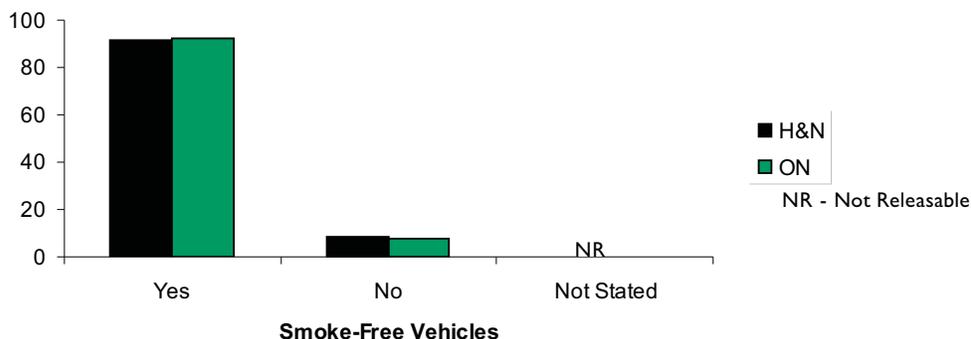
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: Not stated includes don't know, refused and not stated.

Smoke-Free Vehicles

Smoke-free vehicles are defined as cars or private vehicles that are not exposed to second-hand smoke every day or almost every day in the past month. Overall, a high proportion of Haldimand and Norfolk residents were not exposed to second-hand smoke in a car or private vehicle in the past month (91.5% ± 2.8%). Although the proportion was slightly lower in Haldimand and Norfolk compared to Ontario, they were not statistically significant different (see Figure 53).

Figure 53: Smoke-Free Vehicles, Haldimand and Norfolk, Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Yes	91.5 ± 2.8	92.1 ± 0.4
No	*8.5 ± 2.8	7.7 ± 0.4
Not Stated		*0.2 ± 0.1
Total	NC	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: *High sampling variability, interpret with caution, Not stated includes don't know, refused and not stated.

Alcohol Consumption

Alcohol Consumption - Overview

According to Rehm et al. (2004), there is growing recognition that alcohol is a global health issue. It is linked to over 60 different medical conditions, placing a heavy burden on public health.⁷⁹ Excessive amounts of alcohol increases the risk of cancer.⁸⁰ Drinking two standard drinks, which is equivalent to 25 grams of alcohol per day, increases the risk of larynx, mouth, pharynx, and esophageal cancers.¹⁵ Alcohol consumption is also a risk factor for cancers of the breast and liver and a probable risk factor for cancers of the rectum and colon.⁸¹ Heavy alcohol consumption also increases the risk of liver cancer caused by cirrhosis of the liver.¹⁵ There is also evidence linking alcohol consumption to colorectal cancer in men and breast cancer in women, and there is some evidence linking alcohol consumption to stomach cancer.¹⁵ The risk of developing these types of cancer increases with the amount of alcohol consumed.¹⁵

The following provides an overview of the findings from the 2005 Canadian Addiction Survey:

- 79.3% of Canadians (age 15 and older) consumed alcohol in the past year.
- 25.5% of past year drinkers reported binge drinking (having five or more standard drinks at one sitting for men and four or more for women) in the past month and 6.2% in the past week.
- 22.6% of past-year drinkers exceeded the low-risk drinking guidelines (weekly alcohol intake should not exceed 14 standard drinks for males and nine drinks for females, and daily consumption should not exceed two drinks among males or females).⁸²

Focus on Alcohol, Cannabis and Other Drug Use - 2003 Brant, Haldimand, Norfolk Student Health Survey Results

Some of the findings in the 2003 Brant, Haldimand, Norfolk report about youth alcohol consumption include the following:

- 38% of students in Grades 5 and 7 drank alcohol in the past 12 months.
- 41% of students in Grades 9 and 11 drank alcohol in the past four weeks, of which nearly 29% drank on a weekly basis.
- 40% of alcohol users in Grade 11 reported binge drinking during the past four weeks (i.e., drinking five or more drinks on one occasion).⁸³

Low-Risk Drinking Guidelines and Binge Drinking

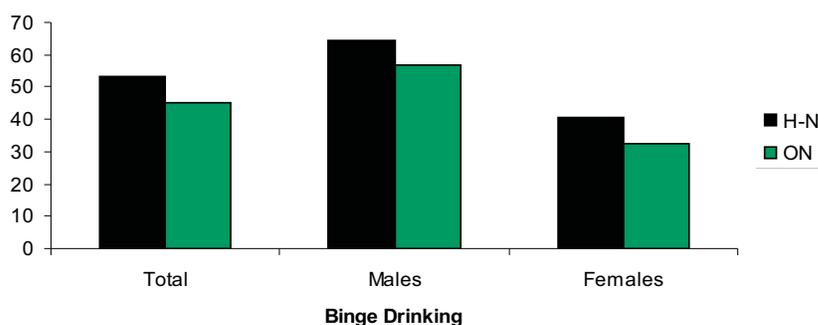
The Centre for Addiction and Mental Health (CAMH) and medical and social researchers from the University of Toronto developed the low-risk drinking guidelines.⁸⁴ The guidelines specify drinking no more than two standard drinks on any day with a weekly intake limit of nine standard drinks for women and 14 standard drinks for men.⁸⁴ The Canadian Mental Health Association

(CMHA) also defines binge drinking as consuming five or more drinks on one occasion.⁸⁵ To delineate the scope of this section, binge drinking was reported.

Binge Drinking - Data and Interpretation

Of the proportion of persons age 20 and older who reported drinking alcohol in the past 12 months, a significantly higher proportion of Haldimand and Norfolk (53.2% \pm 5.4%) residents reported binge drinking compared to their Ontario counterparts (45.2% \pm 0.9%) (see Figure 54). Significant gender differences were found when comparing Haldimand and Norfolk females to Ontario females. A significantly higher proportion of Haldimand and Norfolk females (40.7% \pm 6.9%) reported having at least one occasion of binge drinking in the past year compared to Ontario females (32.6% \pm 1.1%). No significant differences were found among males. A significantly higher proportion of Haldimand and Norfolk males (64.3% \pm 7.9%) than Haldimand and Norfolk females reported binge drinking (40.3% \pm 6.8%).

Figure 54: Binge Drinking, 20 and older, Haldimand and Norfolk, Ontario, 2005



	H&N (% \pm 95% CI)	ON (% \pm 95% CI)
Binge Drinking	53.2 \pm 5.4	45.2 \pm 0.9
Binge Drinking Females	40.7 \pm 6.9	32.6 \pm 1.1
Binge Drinking Males	64.3 \pm 7.9	56.9 \pm 1.2

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.

Data Notes: Not stated includes don't know, refusal and not stated, although not illustrated in table.

Lifestyle Behaviours/Risk Factor Summary

In summary, Haldimand and Norfolk residents face formidable challenges in adopting healthy lifestyle behaviours. For example, over half of Haldimand and Norfolk residents consumed fewer than five daily servings of vegetables and fruits (age 12 and older), reported binge drinking (age 20 and older) and were obese or overweight (age 18 and older). A higher proportion of persons age 19 years and older smoked daily or occasionally compared to Ontarians in general and just less than half reported being inactive in their leisure time (age 12 and older). On the other hand, a high proportion of Haldimand and Norfolk residents reported having smoke-free homes and vehicles. The following section highlights the key findings for each lifestyle and risk factor indicator:

Vegetables and Fruit Consumption

Over half of Haldimand and Norfolk residents reported that they did not comply with the daily requirements of vegetables and fruit intake as outlined by the Canada's Food Guide. Compared



to Ontario, Haldimand and Norfolk had a higher proportion of residents who consumed fewer than five daily servings of vegetables and fruit, but not significantly. Over half of Haldimand and Norfolk males and females did not consume the recommended servings of vegetables and fruit.

Leisure-Time Physical Activity

In Haldimand and Norfolk, just less than half of persons age 12 and older were inactive. Leisure-time physical activity rates were not significantly different than those for Ontario. In Haldimand and Norfolk, just less than half the population of both females and males were inactive. A higher proportion of Haldimand and Norfolk males were inactive compared to females but not significantly.

Overweight/Obese

In Haldimand and Norfolk, over half the population age 18 and older were classified as either overweight or obese. According to the health risk classification table, slightly more than half of Haldimand and Norfolk residents range from being at an increased risk to an extremely high risk of developing health problems.

Smoking

In Haldimand and Norfolk, a higher proportion of persons age 19 and older reported being former smokers, smoked daily or occasionally and never smoked. In Haldimand and Norfolk, a significantly higher proportion of persons smoked daily or occasionally compared to Ontario.

Exposure to Second-Hand Smoke

Overall, a high proportion of Haldimand and Norfolk residents were not exposed to second-hand smoke in a car, and a high proportion of homes in Haldimand and Norfolk are smoke-free.

Alcohol Consumption

Over half of Haldimand and Norfolk residents age 20 and older reported binge drinking in the past 12 months. A significantly higher proportion of Haldimand and Norfolk residents reported binge drinking than their Ontario counterparts. Significant differences were only found among females.



Cancer Prevention Programs

This chapter provides an overview of some the Health Unit programs that address the prevention and early detection of cancer. According to the *Ontario Public Health Standards (2007, April)*, cancer is considered a chronic disease along with heart disease, stroke, respiratory illness, and Type 2 diabetes. Lifestyle risk factors for chronic disease include poor diet, smoking, physical inactivity, alcohol use and other substance misuse (illegal and/or prescription drugs).

Many of the programs offered by the Health Unit use a comprehensive approach with a multi-faceted range of activities that employ more than one health promotion strategy and address the prevention of more than one chronic illness. Specific health promotion initiatives vary from year to year or by season depending on community resources, availability of staff and community priorities.

Nutrition

The promotion of healthy eating is a cornerstone of many of the Health Unit's chronic disease prevention programs. Healthy eating is encouraged and promoted to the public through many sectors to people of all ages.

The Student Nutrition Program provides nutritious food at school to foster healthy eating practices for healthy growth and development. This program emphasizes the daily consumption of vegetables, fruits and milk, which are often lacking in children's diets. Locally, the Student Nutrition Programs provide 35 breakfast, lunch and snack programs to 7,882 students. To support schools, nutrition teaching resources are available to both elementary and secondary teachers.

Adults may receive nutrition information through their workplace or by attending a community presentation or food demonstration. Registered Dietitians are available at the Health Unit to answer food and nutrition questions from people of all ages.

Tobacco Use Prevention

Preventing youth from starting to smoke is a critical element in preventing future cancer morbidity and mortality. The Health Unit provides teaching resources on the risks of smoking for all grades. At the secondary school level, creative strategies are used to reach students with youth-friendly approaches. For example, interactive displays with carbon monoxide testing and the Tobacco 411 wheel motivate students to learn more about the dangers of smoking. The Tobacco 411 wheel was developed by the Haldimand-Norfolk Health Unit as an educational resource for youth age 13 to 18. It provides educators with an opportunity to interact with youth and relay key messages surrounding tobacco control such as second-hand smoke, the tobacco industry, health effects, global tobacco and more. In Haldimand and Norfolk, the Tobacco 411 wheel is used in various settings such as in high schools during lunch, at health fairs and other youth events.

Across Ontario, youth peer-to-peer approaches are also used to engage youth in learning about smoking prevention. In Haldimand and Norfolk, 10 Peer Leaders are employed by the Health Unit to implement this program with area youth.

Smoking cessation is another important element of tobacco control programs. The Health Unit provides a range of supports to help adults and youth quit smoking. Advice, resources and referrals are provided free of charge.

Finally, since May 2006, the Smoke-Free Ontario Act (SFOA) has made enclosed public places and workplaces smoke-free. The Health Unit plays an important role by educating the public about the dangers of second-hand smoke and enforcing the SFOA.

Physical Activity Promotion

Regular physical activity is promoted to residents all ages as a major lifestyle behaviour as it is linked to the prevention of many chronic diseases, including some cancers. The Health Unit offers a number of programs to school children including the Pause to Play Family Challenge. This week-long campaign encourages families to turn off their TVs and video games and choose physical activity for their leisure time. Also, resources supporting curriculum and the daily physical activity mandate are available for teachers to borrow.

The Health Unit is currently working with other county departments, community groups and members to support the creation of walkable communities. The way in which communities are designed (e.g., connecting sidewalks, having destinations and amenities within walking distance, green space/parks) has an impact on physical activity levels. The Health Unit also offers community presentations and workshops with "try-it" activities.

Substance Misuse Prevention

The Health Unit advocates for a harm reduction approach to alcohol use in the community. Programming reflects the promotion of the low-risk drinking guidelines. Youth programming educates youth about the risks of alcohol and other drugs. Campaigns such as Drug Awareness Week and Safe Grad are implemented yearly in area high schools. Drug Awareness Week occurs nationally the third week of November. Youth are targeted with positive peer modeling and alcohol and other drug alternative messages. The Safe Grad campaign targets senior students in May before the long weekend and prom with safe partying messages. Resources are available for elementary and secondary school teachers. Alcohol policies in workplaces and municipalities are promoted.

Multi-Risk-Factor Programs

Many lifestyle programs are implemented using a multi-risk-factor approach. An example of this is the Heart Healthy School Award program. This incentive program supports school communities in adopting, implementing and maintaining heart health activities as part of their school

culture. Schools earn credit for current activities and are encouraged to implement innovative ideas focusing on healthy eating, physical activity, smoking and alcohol use prevention and stress management.

An example of an adult multi-risk-factor program is the Health Unit's workplace health program, Health at Work. This program promotes a comprehensive approach by using an employee-based needs assessment followed by customized planning, consultation and programming. Lifestyle factors such as healthy eating, smoking cessation and physical activity are often the focuses of employee education programs or campaigns.

Cancer Screening Promotion

The role of the Health Unit is to promote provincially approved screening programs related to breast, cervical and colorectal cancers. Norfolk General Hospital is home to one of 120 Ontario Breast Screening Program (OBSP) sites, and the Health Unit works in conjunction with OBSP staff to promote this self-referral program to women 50 and older.

The Health Unit is currently working on a Central West breast screening promotion project that reaches women through their hair stylists. Hair stylists will be provided with resources to generate conversation about breast screening and help them educate their clients about the importance of regular breast screening.

The sexual health program provides cervical cancer screening and counselling for sexually active teens, young adults and women who do not have a family physician. Health Unit staff educate individuals and groups on Human Papillomavirus (HPV) and the guidelines for cervical cancer screening within the community and school settings.

On August 2, 2007, the Ontario government announced a new school-based immunization program to offer publicly funded HPV vaccine to all women in Grade 8 would to commence in fall 2007. This immunization program consists of three doses of vaccine given over an eight-month period by public health nurses in schools in Haldimand and Norfolk counties.

HPV vaccine is close to 100% effective in protecting against four types of high-risk HPV strains, two of which are responsible for 70% of cervical cancers. The other two are responsible for about 90% of genital warts. The vaccine is most effective if given before exposure to the virus.

Since the promotion of colorectal screening is new, appropriate promotional campaigns will follow in the future.

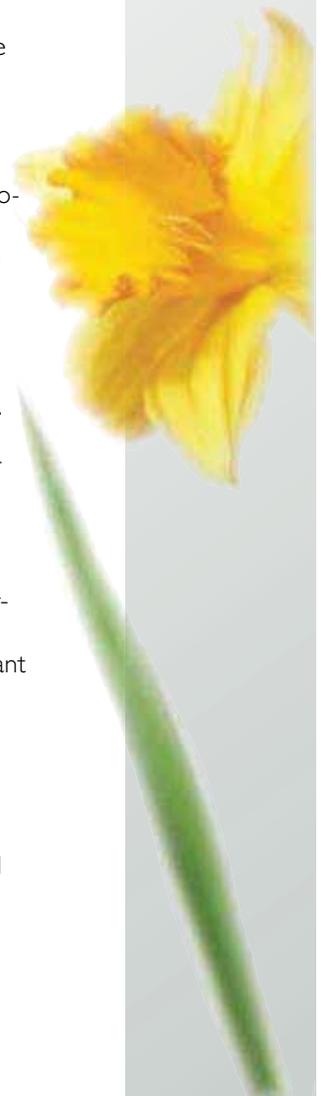
Sun Safety

The Sun Sense program at the Health Unit educates members of the community on the importance of protecting themselves from the sun's harmful UV rays in a variety of ways. Sunburn is the major preventable risk associated with the development of basal cell carcinoma and malignant melanoma.⁴⁸

The Health Unit is working to develop a variety of resources, including news releases, on the topic of Sun Sense that will be available to the public and are working with local day cares to ensure that up-to-date Sun Sense policies are in place.

Shade is a crucial component of Sun Sense. During the current school year, the Health Unit will be working to educate staff and students on the importance of shade as protection from the sun's harmful UV rays.

The Sun Sense information on the Health Unit's website is also being updated.



Cancer Prevention Programs Summary

Lifestyle risk factors for cancer include poor diet, smoking, physical inactivity, alcohol use and sun exposure. The Health Unit has health promotion programs that address all of these risk factors. The Canadian Cancer Society's "Seven Steps to Health" are the key messages promoted to the public related to cancer prevention:

1. Be a non-smoker and avoid second-hand smoke.
2. Eat five to 10 servings of vegetables and fruits a day. Choose high-fibre, lower-fat foods. If you drink alcohol, limit your intake to one to two drinks a day.
3. Be physically active on a regular basis: this will also help you maintain a healthy body weight.
4. Protect yourself and your family from the sun.
5. Follow cancer screening guidelines.
6. Visit your doctor or dentist if you notice any change in your normal state of health.
7. Follow health and safety instructions at home and at work when using, storing and disposing of hazardous materials.



Summary

The goal of The Haldimand and Norfolk Cancer Report 2007 is to provide an overview of all cancers, selected types of cancers, screening practices and selected lifestyle behaviours/risk factors in Haldimand and Norfolk compared to Ontario. The report is an important document for understanding cancer trends over a period of time as well as screening practices and lifestyle behaviours in Haldimand and Norfolk compared to Ontario. Age-standardized incidence rates and mortality rates from 1986 to 2003 were examined. For selected types of cancer, age-specific rates were used. An overview of the Haldimand-Norfolk Health Unit's chronic disease prevention programs, with a particular emphasis on cancer, was also included in this report. It was intended to provide physicians, health-care professionals, local politicians, members of the media, and Health Units and with useful information for the purpose of cancer prevention.

Cancer Incidence

Based on the analysis, this report provided new information for cancer incidence rates (see Figure 1).

Overall, the average-standardized incidence rates were relatively similar in Haldimand and Norfolk and Ontario. In Haldimand and Norfolk, from 1986 to 2003, the average rate of all cancers combined was higher among males than females and higher compared to the provincial rate for both sexes.

On average (1986 to 2003), the most common types of cancer are prostate, female breast, and lung for both Haldimand and Norfolk and Ontario. From 1986 to 2003, for both Haldimand and Norfolk and Ontario prostate cancer was the leading type of cancer diagnosed in males, followed by lung and colorectal, whereas breast cancer was the leading type in incidence among women, followed by colorectal and lung cancer.

Compared to Ontario, in Haldimand and Norfolk the average incidence for colorectal, uterine, bladder, malignant melanoma and oral cavity and pharynx was higher and lung cancer and leuke-

mia was slightly higher. Whereas, Non-Hodgkin's Lymphoma was lower and pancreatic cancer, kidney cancer and cancer of the brain and central nervous system was slightly lower.

For males, prostate, lung and colorectal cancer was higher in Haldimand and Norfolk compared to Ontario and for Haldimand and Norfolk females colorectal and uterine cancer was higher than the provincial rate, whereas lung cancer was lower and female breast cancer was slightly lower.

Cancer Incidence - Age Specific Rates

Generally, the incidence of cancer was highest among older persons. Age-specific rates for all cancer sites increased with age, with some fluctuations. Age-specific rates for all cancers combined were highest among males age 75 to 79 and females age 70 to 74. For the different types of cancers, prostate cancer was highest among males age 80 to 84, female breast cancer was highest in females age 85 and older, while both lung and colorectal cancer were highest in persons age 75 to 79.

Screening Practices

Over half the population of women age 50 to 69 years for both Haldimand and Norfolk (54.3% \pm 10.7%) and Ontario (53.5% \pm 2.1%) received routine screening for breast cancer with a mammogram within the last two years. More than two-thirds of Haldimand and Norfolk females reported receiving a Pap test within the last three years (age 18-29; 30-70). Moreover, less than one-third of Haldimand and Norfolk residents age 50 and older reported ever been screened for colorectal cancer with a Fecal Occult Blood Test (FOBT). This is lower than Ontario. A higher proportion of Haldimand and Norfolk males than females reported having a FOBT, but not significantly. According to *Cancer Care Ontario (2007)*, in Ontario screening for colorectal cancer is still at a low level and if it is more widely adopted, it has the potential to improve survival.³⁶

It is important to note that the screening data does not provide information of the proportion of persons who adhere to the recommended screening guidelines, for cervical and colorectal cancer.

Cancer Mortality

Overall, the average standardized mortality rates were relatively similar in Haldimand and Norfolk as compared to those in Ontario. The average standardized mortality rates in Haldimand and Norfolk from 1986 to 2003 for all cancers sites were higher among males than females and were higher compared to the province.

On average (1986 to 2003) lung cancer is the leading cause of cancer death for both Haldimand and Norfolk and Ontario; followed by breast and prostate in Ontario and prostate and breast in Haldimand and Norfolk.

Similar to Ontario, for Haldimand and Norfolk males, lung cancer was the leading cause of cancer deaths, followed by prostate and colorectal cancer. For Ontario females, lung, breast and colorectal was the leading causes of cancer deaths. For Haldimand and Norfolk women breast cancer was the leading cause of cancer deaths, followed by lung and colorectal.

Lung cancer deaths from 1986 to 2003 were higher in Haldimand and Norfolk than Ontario, whereas colorectal and pancreatic cancer was slightly lower. In Haldimand and Norfolk men, lung and prostate cancer were higher, while colorectal cancer was slightly lower, and in women, breast cancer was slightly higher, while lung cancer and pancreatic cancer was slightly lower compared to the provincial counterpart.

Lifestyle Behaviours/Risk Factors

For lifestyle behaviour/risk factors data, it was found that Haldimand and Norfolk residents face formidable challenges in adopting healthy lifestyle behaviours. Over half of Haldimand and Norfolk residents consumed fewer than five daily servings of vegetables and fruit (age 12 and older), reported binge drinking (age 20 and older) and were obese or overweight (age 18 and

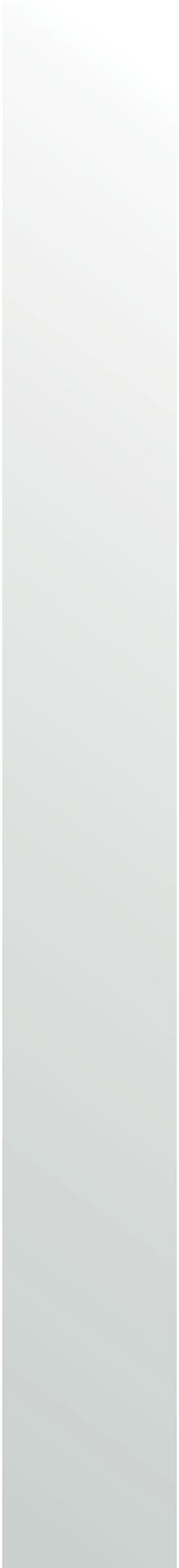
older). A higher proportion of persons age 19 and older smoked daily or occasionally compared Ontarians in general and almost half of persons age 12 and older reported being inactive in their leisure time. On the other hand, a high proportion of Haldimand and Norfolk residents reported having smoke-free homes and vehicles.

Recommendations

Continued efforts in cancer prevention are essential to reduce cancer incidence and mortality rates. Although it is encouraging that cancer incidence and mortality rates were relatively similar to Ontario, Haldimand and Norfolk still faces considerable challenges in the health promotion arena, promoting healthy lifestyle behaviours and early detection cancer screening methods, particularly for colorectal cancer. One of the most significant challenges in Haldimand and Norfolk is the health disparities associated with living in a rural community. Accessibility barriers, lower socio-economic status, geographic isolation, and limited health care and support services may contribute to poor lifestyle behaviours and should be considered in future health promotion program planning and implementation. Moreover, in the past the health-care system focused on the medical model that emphasized treating disease. However, this paradigm shift from curative medicine to a more comprehensive holistic view of health and health determinants requires a multi-disciplinary and collaborative approach of cancer prevention and care. Increased investments in cancer care prevention and ongoing cancer surveillance and research in public health may reduce cancer morbidity and mortality rates and improve quality of life among Haldimand and Norfolk residents. The following is a list of recommendations as a result of this report. The Health Unit will:

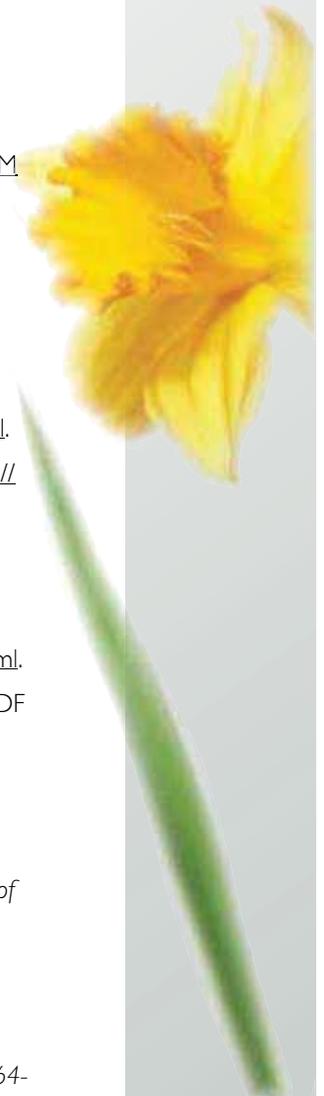
1. Provide residents, physicians, health-care professionals, local politicians, the media, other Health Units, and local government with useful information for the purpose of program planning and prevention.
2. Identify program needs from the data and modify existing chronic disease prevention programs to address those needs.
3. Develop and implement healthy public policies and programs and to create supportive environments conducive to health that address healthy lifestyle behaviours.
4. Conduct further research on the lifestyle behaviours and risk factors presented in this report.
5. Promote the benefits of screening for early detection of cancer.
6. Identify best practices in rural health from a population health perspective.





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