



Cancer in Ottawa 2012

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Errata – Cancer in Ottawa 2012

An updated version of *Cancer in Ottawa 2012* is now available.

1. Please note that there was an error in *Cancer in Ottawa 2012*, Table 1, on page 7:

- A. The Ottawa-level counts and rates for melanoma and leukemia had been inadvertently switched and have been corrected as follows:

Melanoma (2007)

Ottawa total (counts) = 151

Ottawa males (counts) = 78

Ottawa females (counts) = 73

Ottawa crude rate = 17.6

Leukemia (2007)

Ottawa total (counts) = 146

Ottawa males (counts) = 89

Ottawa females (counts) = 57

Ottawa crude rate = 17.1

- B. Under the Ontario-less-Ottawa crude rate column incorrect rates were inserted for all cancers profiled in the table. Instead of the true crude rates for this population, the values for the upper 95% confidence level interval for each rate were presented in the table.

The correct Ontario-less-Ottawa crude rates for all cancers are as follows:

Cancer Type	Ontario-less-Ottawa Crude Rate (per 100,000)
All cancers, combined	497
Female breast	126.1
Lung	61.6
Prostate	155.3
Colorectal	59.8
Non-Hodgkin Lymphoma	22.4
Leukemia	16.5
Melanoma	17.6
Kidney	14.3
Body of uterus	25.6
Bladder	15.0
Cervical	9.0
Testicular	5.1



Errata – Cancer in Ottawa 2012

- C. The standardized incidence rate (SIR) for all cancers combined was incorrectly labelled as 2.38. The correct SIR for all cancers combined is 0.96 (95% CI: 0.93-0.99). This means that incidence due to all cancers combined is significantly lower in Ottawa compared to the rest of Ontario not significantly higher as originally reported.
2. As a result of the above error, the first sentence in the text above Table 1 on page 7 has been revised to reflect the correct data. The revised sentence reads: “Incidence due to all cancers combined was significantly lower in Ottawa compared to the rest of Ontario (Table 1; SIR = 0.96 [0.93-0.99]”.
3. Page 2, Executive Summary, Summary of Findings, Cancer in Ottawa 2007: The first bullet has been revised to reflect the correct data. The revised bullet reads: “Ottawa has lower incidence rates for prostate and cervical cancers, as well as all cancers combined than does the rest of Ontario”.
4. Page 31, Figure 19: Age-standardized lung cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987-2006; the legend is incorrect and does not correctly identify the data shown in the figure. The Ontario less Ottawa males were incorrectly labelled as Ottawa females. The Ontario less Ottawa females were incorrectly labelled as Ontario less Ottawa males.
5. Page 93, Appendix II, the cancer definitions for all ages and age groups 30-49, 50-64, 65-79 and 80+ table is missing the code definitions which detail the short title, full title, ICD-0-3 site/ Histology and ICD-10 for cancers of the following cancers: Thyroid, Brain, Liver, Myeloma, and Ovary. These have been added to the Appendix.



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This report is one of a series of health status reports published by Ottawa Public Health (OPH). These comprehensive reports are an important part of the public health mandate to report on population health status. They provide the evidence necessary to identify trends and health issues of public health importance in Ottawa. Local evidence helps tailor planning and decision-making to enhance the health of the Ottawa population.

This particular report is an epidemiological overview of cancer incidence and mortality in Ottawa for frequently occurring cancers of public health importance. The data support the Ontario Public Health Standards requirement to monitor the burden of cancer over time, and to identify emerging trends and priority populations. The Ontario Public Health Standard's goal related to cancer and other chronic disease prevention is:

- To reduce the burden of preventable chronic disease of public health importance

In Ontario, new cancer diagnoses and deaths due to cancer are recorded and stored in the Ontario Cancer Registry, an electronic database that is housed and maintained by Cancer Care Ontario.

Although there are over 200 different cancers, they all have in common the uncontrolled, abnormal growth of cells and the potential to spread to other locations through the blood and lymph circulatory systems.¹ This abnormal growth begins with a small series of genetic changes within cells.² Each cancer results from a unique combination of environmental and risk factors; therefore treatment is complex.

Cancer tends to be a disease of aging, but it can and does affect people of all ages. As Ottawa's population ages and grows, the *total number* of people diagnosed with cancer (and the overall cost of treatment) will increase.¹ However; *the rate of new cases* being diagnosed (incidence) is decreasing for many cancers.

More Ontarians are living longer with cancer or surviving the disease because of early detection through screening and the availability of more effective treatments.¹ Ontario offers cancer screening for breast, cervical and colorectal cancers. This report includes an overview of these preventive screening rates among Ottawa residents, as well as an overview of prostate-specific antigen testing.

Many cancers are preventable. Cancer is associated with modifiable risk factors and behaviours such as smoking, alcohol consumption, unhealthy food choices and/or lack of healthy food options and unprotected exposure to ultraviolet radiation. While only ultraviolet radiation exposure is included in this report, all the other risk factors will be profiled in upcoming health status reports.

Executive summary

Summary of findings

Cancer in Ottawa, 2007

- Ottawa has lower incidence rates for prostate and cervical cancers, as well as all cancers combined than does the rest of Ontario*.
- The four most common cancer diagnoses among Ottawa males are prostate, colorectal, lung and non-Hodgkin lymphoma. Among Ottawa females, the four most common cancer diagnoses are breast, lung, colorectal and body of the uterus.
- Ottawa has lower mortality rates than the rest of Ontario for all cancers combined and for prostate cancer.
- The four most common cancer deaths among Ottawa males are due to lung, colorectal, prostate and pancreatic cancers; among Ottawa females, the four most common cancer deaths are due to lung, breast, colorectal and pancreatic cancers.

Five-year relative cancer survival rate in Ottawa

- The five-year relative survival rate for all cancers profiled (except urinary bladder cancer), increased from 1993–1997 to 2003–2007. Prostate cancer (99.6%) had the highest five-year relative survival rate, while pancreatic cancer (13.2%) had the lowest.
- The five-year relative survival rate for the four most common cancers (breast, lung, prostate and colorectal) in Ottawa has increased since the late 1980s.

Cancer trends in Ottawa

- New cancer cases have increased since the mid-1980s. In 2006, the average incidence rate for females and males was 352.7 per 100,000, and 446.6 per 100,000, respectively.
- Cancer deaths have increased since the mid-1980s, while average mortality rates have declined. In 2006, the average mortality rate for females and males was 136.9 per 100,000, and 195.6 per 100,000, respectively.
- Age-specific incidence and mortality rates for all cancers increase significantly with increasing age.
 - Ottawa females had higher incidence rates than did Ottawa males in the 30–49 year age group; Ottawa males had higher incidence rates than did Ottawa females aged 50 and older.
 - Ottawa females had higher mortality rates in the 30–49 year age group, while Ottawa males had higher mortality rates in the 65–79 and 80+ year age groups.

Cancer profiles

- In 2007, the four most frequent cancer diagnoses among Ottawa residents were female breast, lung, prostate and colorectal. Summaries of incidence and mortality data for these cancers, along with other cancers of public health importance are profiled in this report.

*= updated from *Cancer in Ottawa 2012* report posted on January 9th, 2012

Executive summary

Explanation of report contents

The following provides a general description of the tables and graphs found in this report. For a more detailed explanation of the terminology and methodology used, please refer to the glossary and methodology section in the appendix.

Cancer in Ottawa, 2007

Summary table for cancer diagnoses/deaths, 2007

These tables provide an overview of the overall and sex-specific frequency of cancer diagnoses/deaths in Ottawa; crude incidence/mortality rate for different cancers in Ottawa and the rest of Ontario (Ontario less Ottawa); and standardized incidence/mortality ratios for different cancers in 2007. The crude rates and frequencies summarize the true state of different cancers in Ottawa during 2007.

The standardized incidence ratio (SIR) and standardized mortality ratio (SMR) show whether cancer rates are no different, higher or lower than rates in the rest of Ontario (Ontario less Ottawa) for each cancer type described.

- If the ratio and its 95% confidence interval (CI) *include* 1.0, then the rate was not statistically different in Ottawa than in the rest of Ontario.
- If the ratio and its 95% CI are *greater than* 1.0, then the rate in Ottawa was significantly higher than the rate in the rest of Ontario.
- If the ratio and its 95% CI are *less than* 1.0, then the rate in Ottawa was significantly lower than the rate in the rest of Ontario.

Common cancer diagnoses/deaths by sex, 2007

These figures show the top 10 most frequent cancer diagnoses/deaths by sex in Ottawa during 2007. These results guided the selection of which cancers were profiled in this report.

Common cancer diagnoses/deaths by age group, 2003–2007 combined

These figures show the most frequent cancer diagnoses/deaths by age group in Ottawa during the five-year period 2003–2007, where releasable.

Five-year relative cancer survival in Ottawa

Five-year relative survival for common cancers in Ottawa, 1993–1997 and 2003–2007

This figure shows the five-year relative survival for 13 common cancers in Ottawa during 1993–1997 and 2003–2007.

Five-year relative survival for the most common cancers in Ottawa, 1988–1992 to 2003–2007

This figure shows the five-year relative survival for the four most common cancers by sex over time for 1988–1992, 1993–1997, 1998–2002 and 2003–2007.

Executive summary

Cancer trends in Ottawa

Cancer trends for all cancers diagnoses/deaths, 1986–2007

These figures show the frequency of all cancer diagnoses/deaths from 1986 to 2007 and average all cancer incidence/mortality rates among Ottawa males and females from 1987 to 2006. In this three-year centered moving average, the years used are still from 1986–2007 but every year profiled is calculated using three years of combined data, so even though the graphs for the average years start at 1987, that year included 1986, 1987, 1988. Similarly, the 2006 average year includes 2005, 2006 and 2007. (For more information, refer to the glossary.)

Age-standardized rates were calculated and reported as three-year moving averages. Statistically significant differences in age-standardized rates between Ottawa and the rest of Ontario were examined by calculating rate ratios using SEER*Stat statistical software. If the rate ratio probability value (p-value) was *less than* 0.05, then the Ottawa rate was statistically different than the Ontario-less-Ottawa rate.

Age-specific incidence/mortality rates for all cancers by sex, 2003–2007 combined

These figures show changes in age-specific incidence/mortality rates for all cancers by sex over six age-groups (0–14, 15–29, 30–49, 50–64, 65–79 and 80+ years) in Ottawa for the five-years 2003–2007. Statistically significant differences between age-specific rates were determined by comparing 95% confidence intervals. If the confidence intervals *did overlap*, the rates were not significantly different at the 95% confidence level. If they *did not overlap*, the age-specific rates were significantly different at the 95% confidence level.

Incidence and mortality trends for all cancers by age group, 1987–2006

This six-part figure shows changes in average age-standardized incidence and mortality rates for all cancers by sex for six different age-groups (0–14, 15–29, 30–49, 50–64, 65–79 and 80+ years) in Ottawa from 1986 to 2007. These rates were calculated and reported as three-year moving averages. Statistically significant differences in five-year combined age-standardized rates by age group were determined by comparing 95% confidence intervals. If the confidence intervals *did overlap*, the rates were not significantly different at the 95% confidence level. If they *did not overlap*, the five-year combined age-standardized rates were significantly different at the 95% confidence level.

Executive summary

Cancer profiles

Age-standardized incidence/mortality rates per 100,000, Ottawa and the rest of Ontario, 1987–2006

These figures compare changes in average age-standardized incidence/mortality rates for different cancers by sex from 1987 to 2006 in Ottawa and the rest of Ontario (Ontario less Ottawa) using three-year moving averages. Statistically significant differences in age-standardized rates between Ottawa and the rest of Ontario were examined by calculating rate ratios using SEER*Stat. If the rate ratio p-value was *less than* 0.05, then the rate for the rest of Ontario was statistically significantly different than the Ottawa rate.

Age-specific incidence/mortality rates per 100,000, Ottawa, 2003–2007 (combined)

These figures compare age-specific incidence/mortality rates in Ottawa for 2003–2007 over six age groups (0–14, 15–29, 30–49, 50–64, 65–79 and 80+ years), and by sex for each of the cancers profiled in this report. Statistically significant differences in age-specific rates were determined by comparing 95% confidence intervals. If the confidence intervals *did overlap*, the rates were not significantly different at the 95% confidence level. If they *did not overlap*, the rates were significantly different at the 95% confidence level.

Data sources

Cancer Care Ontario (Ontario Cancer Registry, 2011)

Cancer Care Ontario (CCO) operates the Ontario Cancer Registry (OCR). This registry contains incidence and mortality data on all Ontario residents who have been newly diagnosed with, or died from invasive neoplasia, except for basal cell and squamous cell skin cancers. The OCR links electronic records at the individual level using these four data sources:

1. Hospital discharge and ambulatory care records with cancer diagnoses from the Canadian Institute for Health Information (CIHI)
2. Cancer-related pathology reports from hospitals and private laboratories
3. Consultation and treatment records of patients from any Regional Cancer Centre in Ontario
4. Ontario death certificates that list cancer as the underlying cause of death, which are received from the Ontario Registrar General

OCR data is provided by CCO through SEER*Stat, statistical software (release 8) for the analysis of cancer data. This software was used to calculate the cancer frequencies; crude rates; age-specific rates and age-standardized rates using incidence and mortality data; and survival statistics that are described in this report.

Canadian Community Health Survey (CCHS)

CCHS is a national population household survey conducted by Statistics Canada and distributed

Executive summary

to Ottawa Public Health by the Ontario Ministry of Health and Long-term Care (MOHLTC). CCHS is administered in all provinces, except on First Nation Reserves, Canadian Forces bases and several remote areas. The survey collects information on the health and socio-economic status of the Canadian population aged 12 and older. Data collection began in 2000. At the time of this report, data were available for Ottawa from 2000–01, 2003, 2005, 2007, 2008, 2009, and 2010. Until 2007, CCHS had a two-year data collection cycle. Beginning in 2007, regional data are collected on an annual basis.

Rapid Risk Factor Surveillance System (RRFSS)

The Rapid Risk Factor Surveillance System (RRFSS) is an ongoing telephone survey conducted for Ottawa Public Health by the Institute of Social Research at York University. The survey is administered to adults aged 18 and older in various public health units across Ontario. Data collection in Ottawa began in 2001 and at the time of this report, data were available for Ottawa from 2001 to 2010. Ottawa households are randomly selected and about 100 residents are surveyed monthly about health-risk behaviours, knowledge, attitudes and awareness of different health topics.

Data limitations and cautions

Survey data

Self-reported data may be subject to errors in recall and over- or under-reporting due to social desirability. For example, self-reported data about preventive cancer screening may be over- or under-reported because people may have difficulty remembering when the screening test occurred.

Comparison of rates

Average age-standardized rates are reported for cancer incidence and mortality. Age-standardized rates provide a summary number that allows Ottawa to be meaningfully compared to the rest of Ontario (i.e., Ontario less Ottawa). However, these adjusted rates do not represent the true picture of cancer in Ottawa and the rest of Ontario. Crude rates should be used to assess an unadjusted picture of cancer in Ottawa.

Ontario Cancer Registry (OCR)

The Ontario Cancer Registry is a passive registry; as such caution should be taken when comparing cancer incidence and mortality data from older releases. Because cancer cases are not actively tracked and entered into the registry, data from previous years are subject to change with the submission of new information based on the timing of its receipt.

At the time of this publication, the most recent year available for cancer incidence and mortality data in Ontario was 2007. As such, the information presented in this report may not be a truly representative picture of the current burden of cancer in Ottawa.



Cancer Incidence

Incidence due to all cancers combined was *significantly lower* in Ottawa compared to the rest of Ontario (Table 1; SIR = 0.96 [0.93-0.99]*).

Incidence due to prostate and cervical cancer was *significantly lower* in Ottawa compared to the rest of Ontario (SIR = 0.83 [0.76-0.90] & 0.63 [0.38-0.88], respectively).

Table 1 shows the true picture of cancer incidence in Ottawa during 2007, including cancer frequencies and crude cancer rates for Ottawa and the rest of Ontario. It also shows standardized incidence ratios (SIR), which compare age adjusted cancer rates in Ottawa to the rest of Ontario.

Table 1: Summary of cancer diagnoses in Ottawa, 2007*

	Ottawa total (counts)	Ottawa males (counts)	Ottawa females (counts)	Ottawa crude rate	Ontario-less-Ottawa crude rate	SIR	95% CI for SIR
All cancers, combined	3890	1924	1966	454.5	497	0.96	(0.93-.99)*
Female Breast	553	NA	553	126.7	126.1	1.03	(0.94–1.12)
Lung	502	236	266	58.7	61.6	1.01	(0.92–1.10)
Prostate	502	502	NA	119.8	155.3	0.83	(0.76–0.90)*
Colorectal	492	269	223	57.5	59.8	1.01	(0.92–1.10)
Non-Hodgkin lymphoma	173	98	75	20.2	22.4	0.94	(0.80–1.08)
Melanoma	151	78	73	17.6	17.6	1.03	(0.87–1.20)
Leukemia	146	89	57	17.1	16.5	1.08	(1.03–1.14)
Kidney	117	66	51	13.7	14.3	0.99	(0.81–1.17)
Body of uterus	116	NA	116	26.6	25.6	1.07	(0.87–1.27)
Bladder	112	82	30	13.1	15.0	0.92	(0.75–1.09)
Cervical	25	NA	25	5.7	9.0	0.63	(0.38–0.88)*
Testicular	21	21	NA	5.0	5.1	0.94	(0.53–1.35)

Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: standardized incidence ratios (SIRs) were calculated using the following age groups: 0–14, 15–29, 30–49, 50–64, 65–79, & 80+;

NA = not applicable, *: statistically significant difference at a 95% confidence level

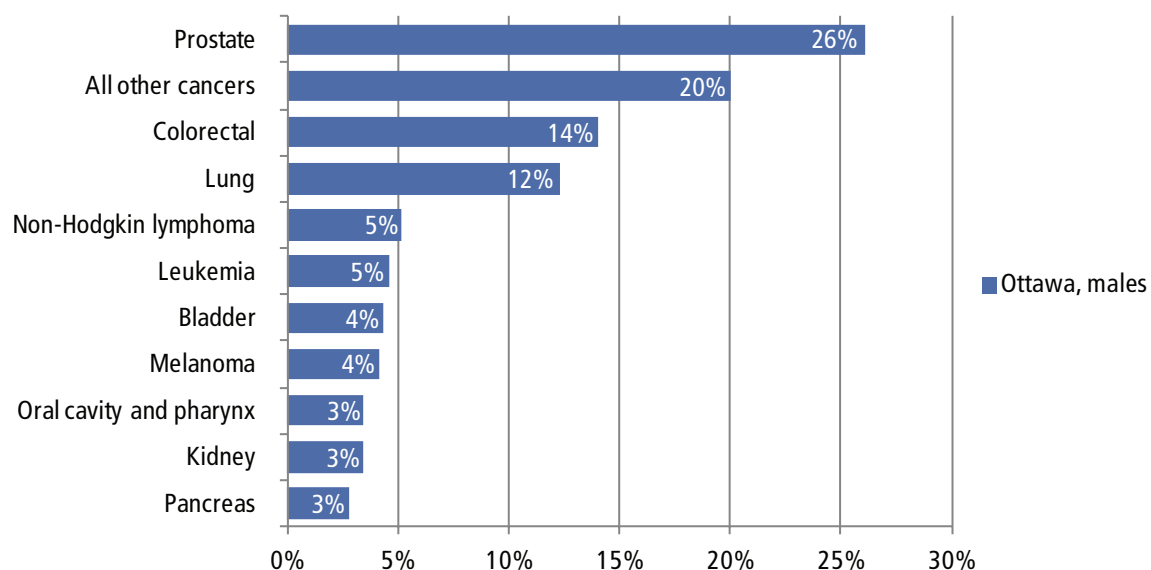
* Updated from *Cancer in Ottawa 2012* report posted on January 9th, 2012

Cancer in Ottawa 2007

Most common cancer diagnoses in Ottawa, 2007

Among Ottawa males, the most common cancer diagnoses in 2007 were attributable to prostate cancer, colorectal cancer, lung cancer, non-Hodgkin lymphoma and leukemia (Figure 1).

Figure 1: Most common cancer diagnoses by sex, Ottawa males (n=1924)



Source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

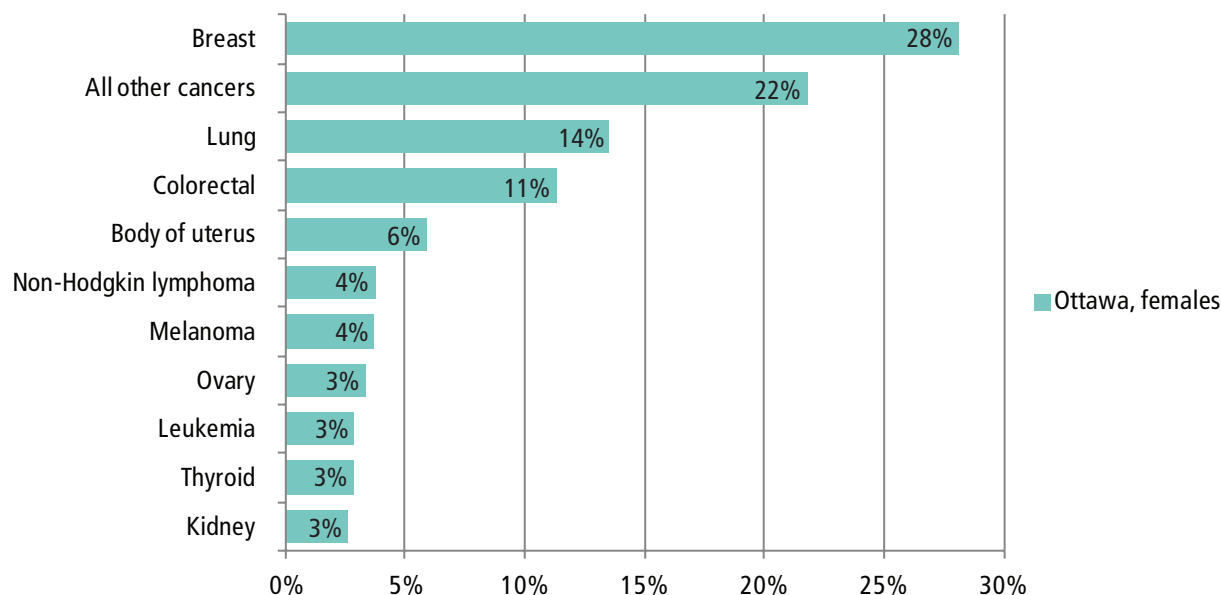
Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: Percentages are rounded to the nearest whole number

Cancer in Ottawa 2007

Among Ottawa females, the most common cancer diagnoses in 2007 were attributable to breast cancer, lung cancer, colorectal cancer and body of uterus cancer (Figure 2).

Figure 2: Most common cancer diagnoses by sex, Ottawa females 2007 (n=1966)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: Percentages are rounded to the nearest whole number

Most common cancer diagnoses by age group

Leukemia was the most common childhood cancer diagnosis in Ottawa between 2003 and 2007 (Figure 3).

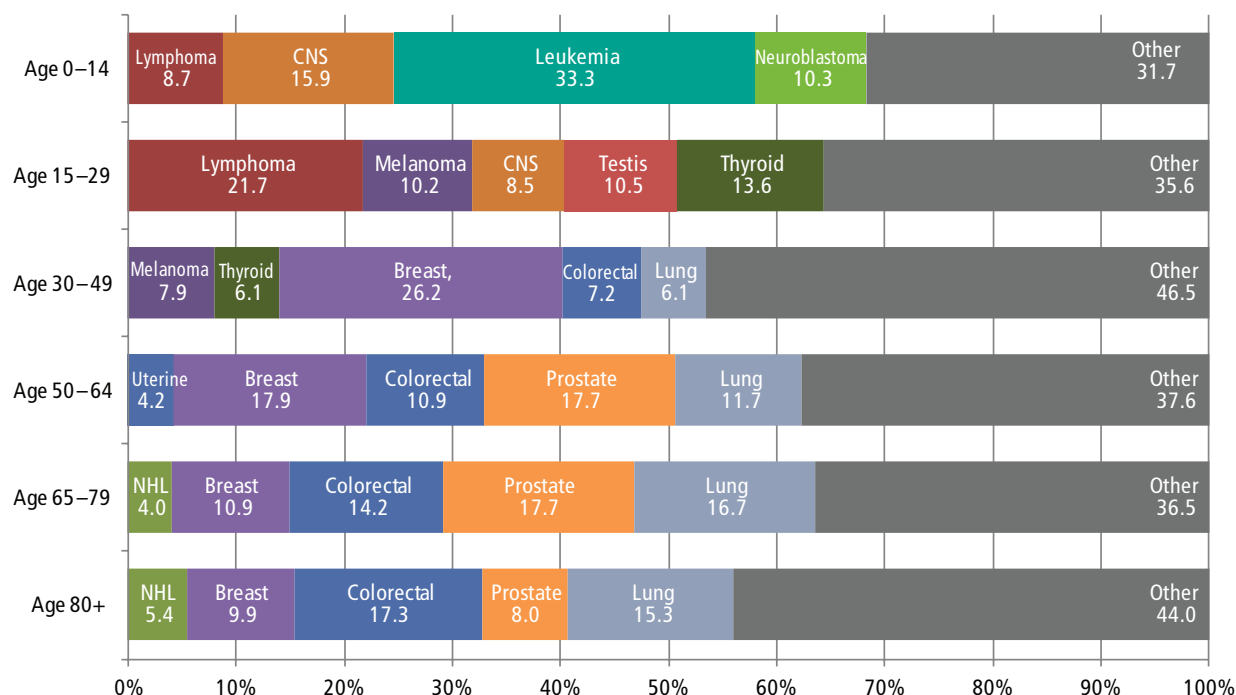
Lymphoma was the most common cancer diagnosis among adolescents and young adults 15–29 years.

Breast cancer accounted for 26.2% of cancer diagnoses in the 30–49 year age group between 2003 and 2007.

Breast cancer (17.9%) is the most common cancer diagnosis in the 50–64 year age group, while prostate cancer (17.7%) and colorectal cancer (17.3%) are the most common cancer diagnoses for the 65–79 year and 80+ year age groups, respectively.

Cancer in Ottawa 2007

Figure 3: Most common cancer diagnoses by age group, Ottawa 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: Cancer definitions differ for 0–14 year and 15–29 year age groups; see Appendix I for cancer definitions

CNS = Central nervous system, NHL = non-Hodgkin lymphoma

Cancer mortality

Mortality due to all cancers combined and prostate cancer was *significantly lower* in Ottawa compared to the rest of Ontario, respectively (SMR = 0.71 [0.67-0.75] and 0.77 [0.58-0.96] (Table 2).

Mortality due to all other cancers in Ottawa was *not significantly different* than the rest of Ontario.

Table 2 shows the true picture of cancer mortality in Ottawa during 2007, including cancer frequencies and crude cancer rates for Ottawa and the rest of Ontario. It also shows standardized mortality ratios (SMR), which compare age adjusted cancer rates in Ottawa to the rest of Ontario.

Cancer in Ottawa 2007

Table 2: Summary of cancer deaths in Ottawa, 2007*

	Ottawa total (counts)	Ottawa males (counts)	Ottawa females (counts)	Ottawa crude rate	Ontario-less-Ottawa crude rate	SMR	95% CI for SMR
All cancers, combined	1554	764	790	181.6	196.9	0.71	(0.67–0.75)*
Lung	370	185	185	43.2	47.8	0.94	(0.84–1.04)
Colorectal	174	86	88	20.3	23.7	0.87	(0.74–1.00)
Female Breast	123	NA	123	28.2	30.2	0.96	(0.79–1.13)
Pancreas	98	52	46	11.5	10.2	1.12	(0.90–1.34)
Non-Hodgkin lymphoma	75	36	39	8.8	7.7	1.12	(0.87–1.37)
Leukemia	66	43	23	7.7	6.5	1.16	(0.87–1.45)
Prostate	64	64	NA	15.3	21.7	0.77	(0.58–0.96)*
Esophagus	41	34	7	4.8	4.4	1.06	(0.74–1.38)
Bladder	40	26	14	4.7	4.8	0.95	(0.66–1.25)
Stomach	38	26	12	4.4	4.7	0.91	(0.62–1.20)
Cervical	^	NA	^	^	2.7	NA	NA
Testicular	^	^	NA	^	0.2	NA	NA

Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),

Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: standardized mortality ratios (SMRs) were calculated using the following age groups: 0–14, 15–29, 30–49, 50–64, 65–79, & 80+

NA = not applicable; ^ = statistic not releasable due to fewer than six deaths; *: statistically significant difference at a 95% confidence level

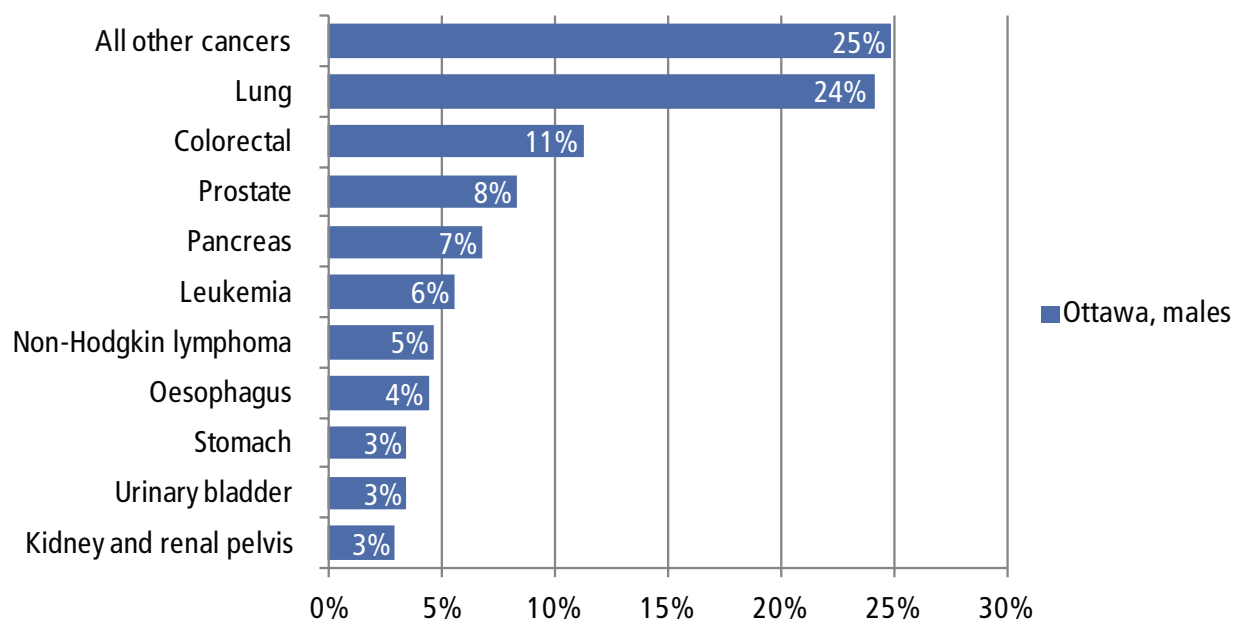
* = Updated from *Cancer in Ottawa 2012* report posted on January 9th 2012

Cancer in Ottawa 2007

Most common cancer deaths in Ottawa, 2007

Among Ottawa males, the most common cancer deaths occurring in 2007 were attributable to lung cancer, colorectal cancer, prostate cancer and pancreatic cancer (Figure 4).

Figure 4: Most common cancer deaths, Ottawa males 2007 (n=764)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

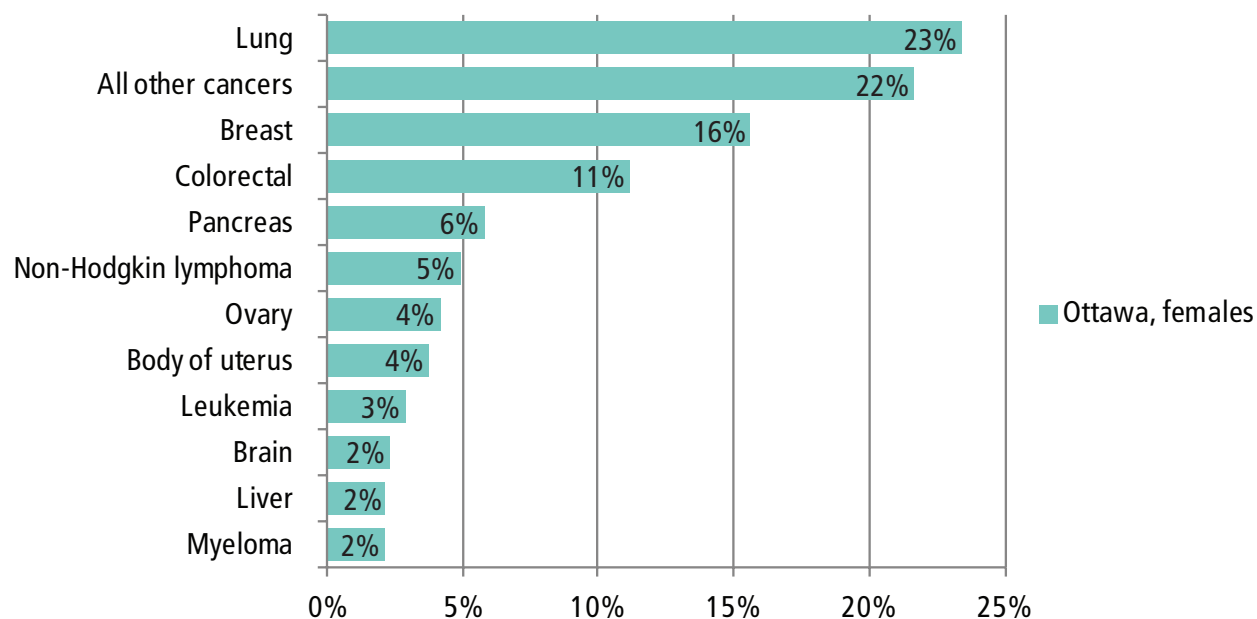
Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: Percentages are rounded to the nearest whole number

Cancer in Ottawa 2007

Among Ottawa females, the most common cancer deaths occurring in 2007 were attributable to lung cancer, breast cancer, colorectal cancer and pancreatic cancer (Figure 5).

Figure 5: Most common cancer deaths, Ottawa females 2007 (n=790)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: Percentages are rounded to the nearest whole number

Cancer in Ottawa 2007

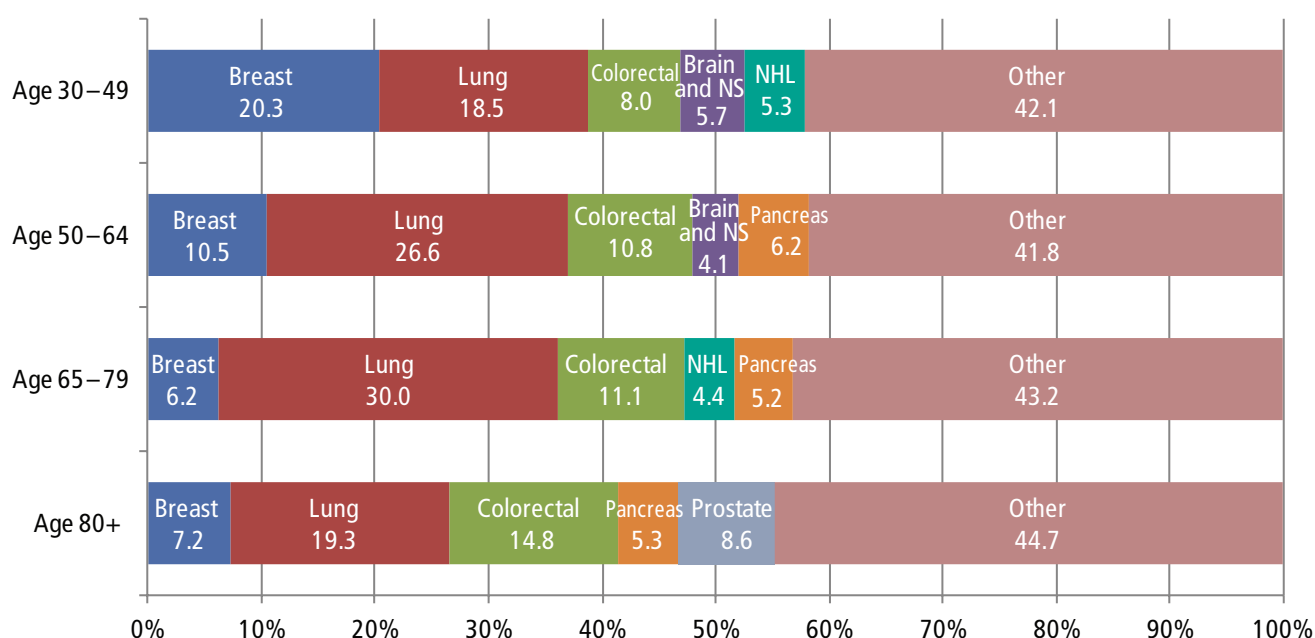
Most common cancer deaths by age group

In Ottawa, among those 30–49 years, breast cancer accounted for 20.3% of all cancer deaths between 2003 and 2007 (Figure 6).

Among those aged 50 and older, lung cancer accounted for the majority of cancer deaths between 2003 and 2007, followed by colorectal cancer.

Counts of cancer deaths by age group between 2003 and 2007 were not releasable for the 0–4 and 15–29 year age groups due to fewer than six deaths per cancer being reported.

Figure 6: Most common cancer deaths by age group, Ottawa 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),

Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: See Appendix I for cancer definitions. Brain & NS = brain & nervous system, NHL = non-Hodgkin Lymphoma

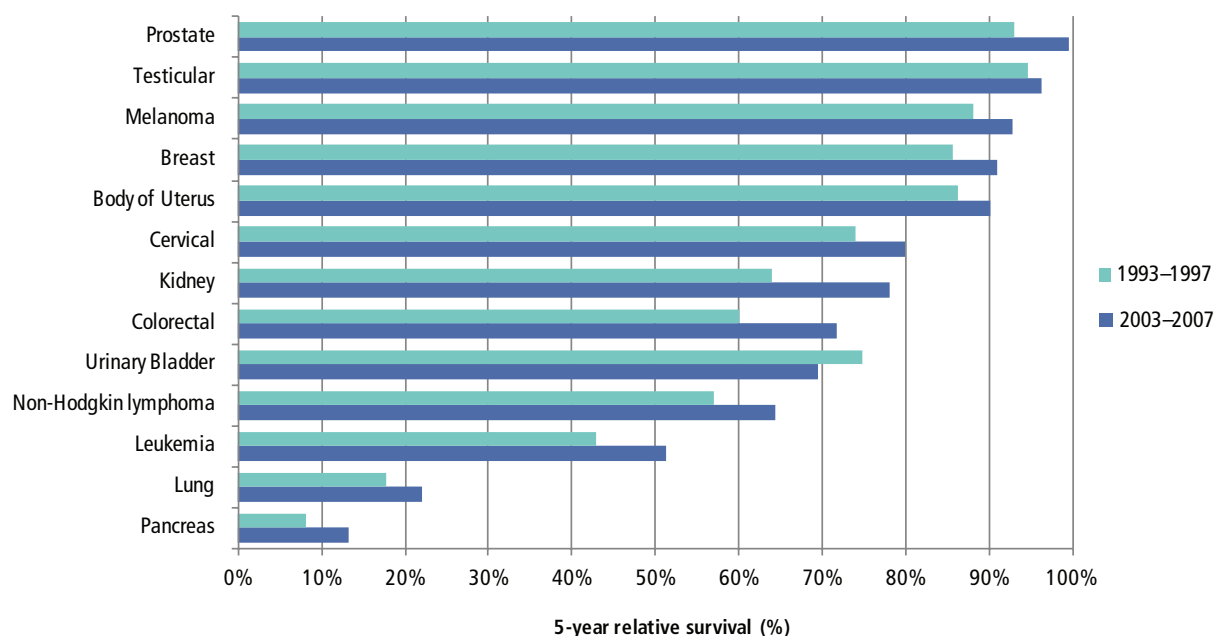
Five-year relative cancer survival in Ottawa

Survival examines how long after diagnosis people live. Relative survival measures the survival of cancer patients in comparison to the general population to estimate the effect of cancer. In this report, relative survival is the ratio of Ottawa residents diagnosed with a specific cancer compared to the expected survival of Ontario residents of the same age and sex, and during the same time period.

Relative survival varies by cancer type (Figure 7). Prostate cancer, testicular cancer, melanoma, breast cancer and body of uterus cancer all had over 90% five-year survival during 2003–2007. The lowest five-year relative survival was observed in pancreatic cancer (13.2%) and lung cancer (22%).

Most cancers except for urinary bladder cancer showed improved survival between 1993–1997 and 2003–2007, with the greatest improvements observed for kidney cancer, colorectal cancer and non-Hodgkin lymphoma.

Figure 7: Five-year relative survival for common cancers in Ottawa, 1993–1997 and 2003–2007



Data source: Cancer Care Ontario–SEER*Stat Release 8–OCRIS (May 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October (1987–2007)

Data note: Survival is based on individuals diagnosed at ages 15–99

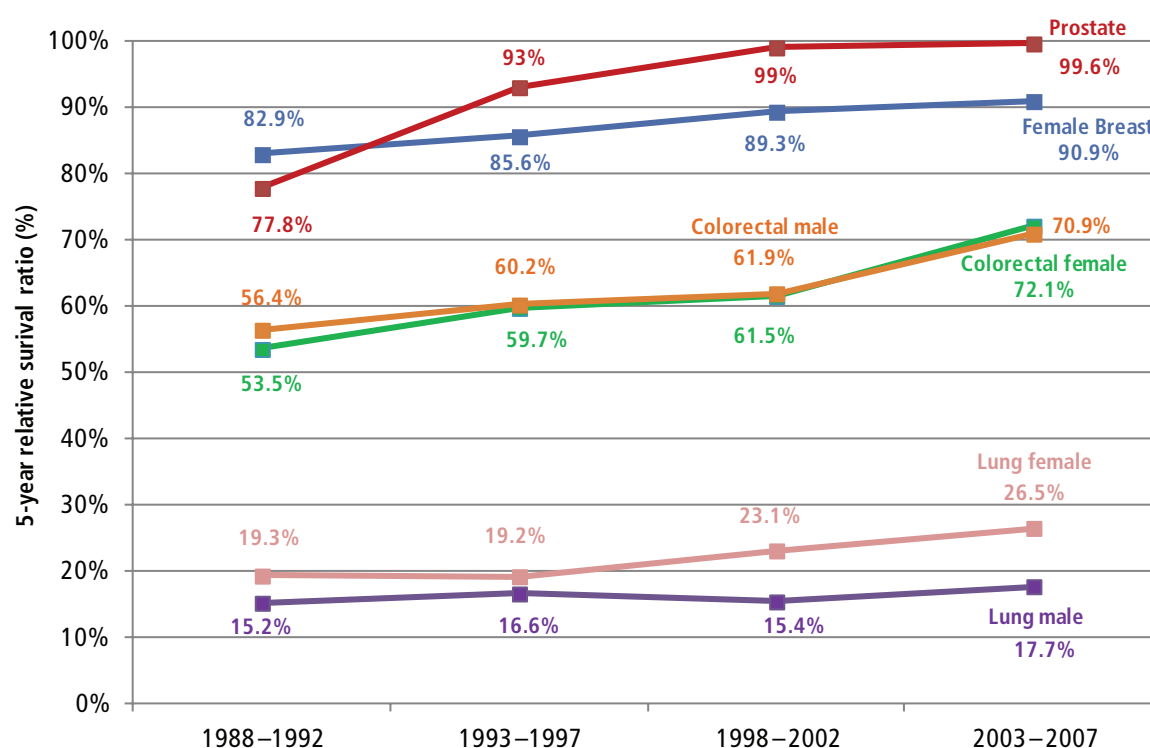
Cancer in Ottawa 2007

Five-year relative survival for prostate, female breast, colorectal cancer, and lung cancer in Ottawa has improved since the late 1980s.

Prostate cancer increased from 77.8% to 99.6% five-year survival, while female breast cancer increased from 82.8% to 90.9% five-year survival from 1988–1992 to 2003–2007, respectively (Figure 8).

Colorectal cancer and lung cancer relative survival also improved for both sexes between 1988–1992 and 2003–2007.

Figure 8: Five-year relative survival for the most common cancers in Ottawa, 1988–1992 to 2003–2007



Data source: Cancer Care Ontario–SEER*Stat Release 8–OCRIS (May 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October (1987–2007)

Data note: Survival is based on individuals diagnosed at ages 15–99

Cancer in Ottawa 2007

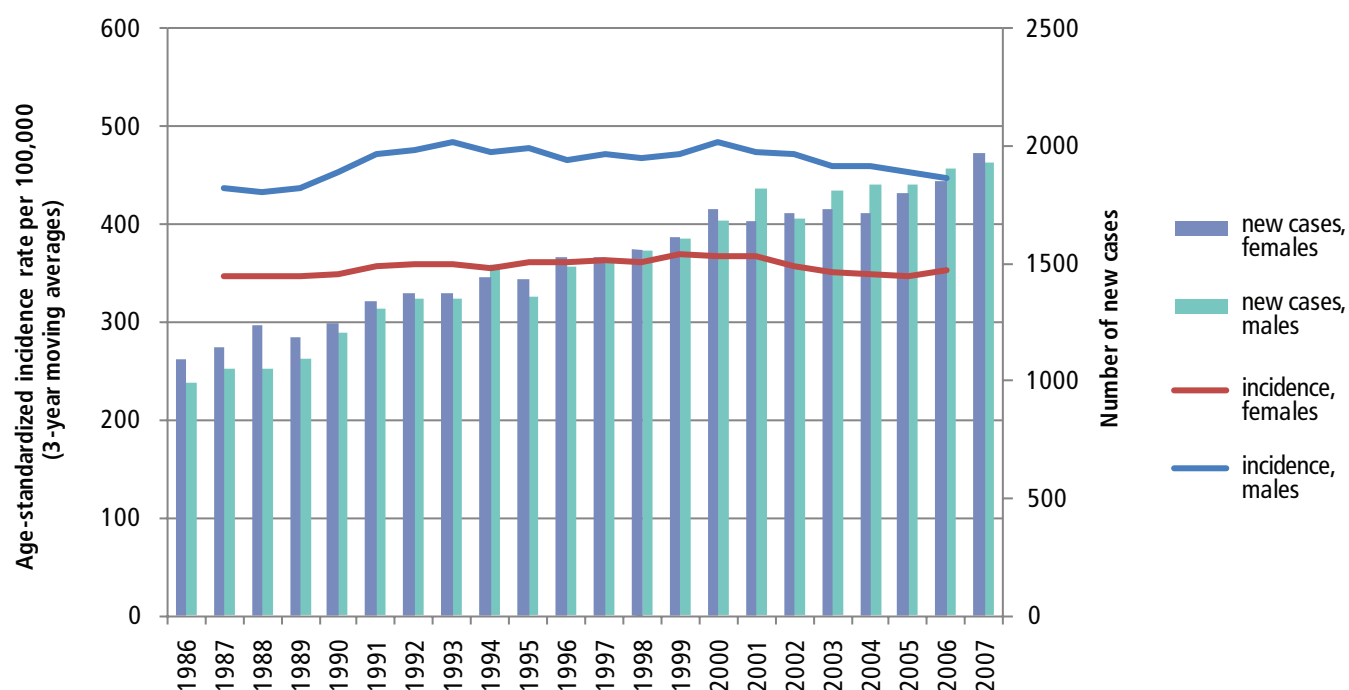
Cancer trends in Ottawa

Trends in new cancer cases and incidence rates for all cancers

Among males, the average incidence rate for all cancers rose from 436.8 per 100,000 in 1987, to 483.8 per 100,000 in 1993. Although the number of new cases of cancer continued to rise from 1986 to 2007, average incidence rates stabilized, reaching 446.6 per 100,000 in 2006 (Figure 9).

Average incidence rates for all cancers among Ottawa females increased slightly from 347.2 per 100,000 in 1987, to 368.5 in 1999, and then stabilized to a rate of 352.7 in 2006. As with males, the number of new cases of cancer increased among females from 1986 to 2007.

Figure 9: Trends in number of new cases and incidence rates for all cancers, Ottawa 1986–2007



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

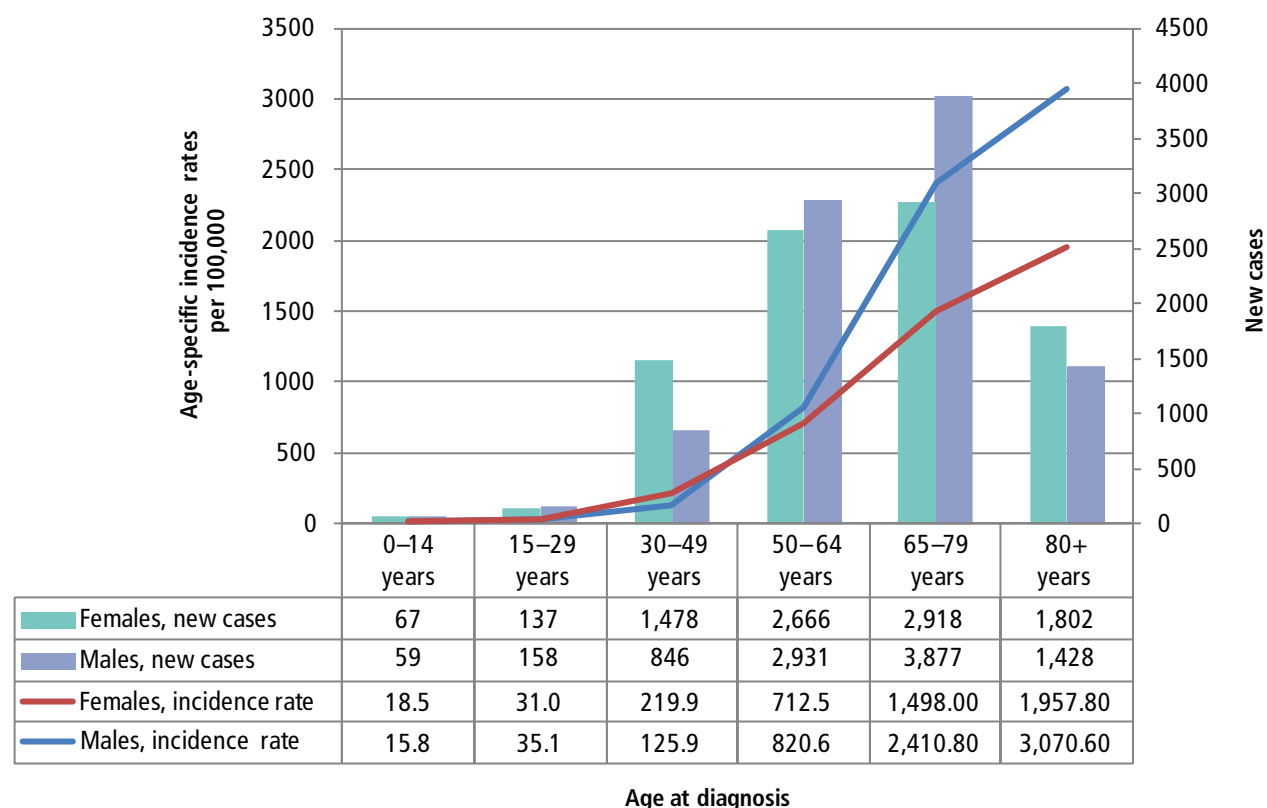
Cancer in Ottawa 2007

Age-specific incidence

Age-specific incidence rates for all cancer cases increased significantly with age between 2003 and 2007 (Figure 10).

Ottawa females had significantly higher age-specific incidence rates than did males 30–49 years. Incidence rates for all cancer cases were significantly higher among Ottawa males than for Ottawa females in the 50–64, 65–79 and 80+ year age groups.

Figure 10: Age-specific incidence rates for all cancers by sex, Ottawa 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

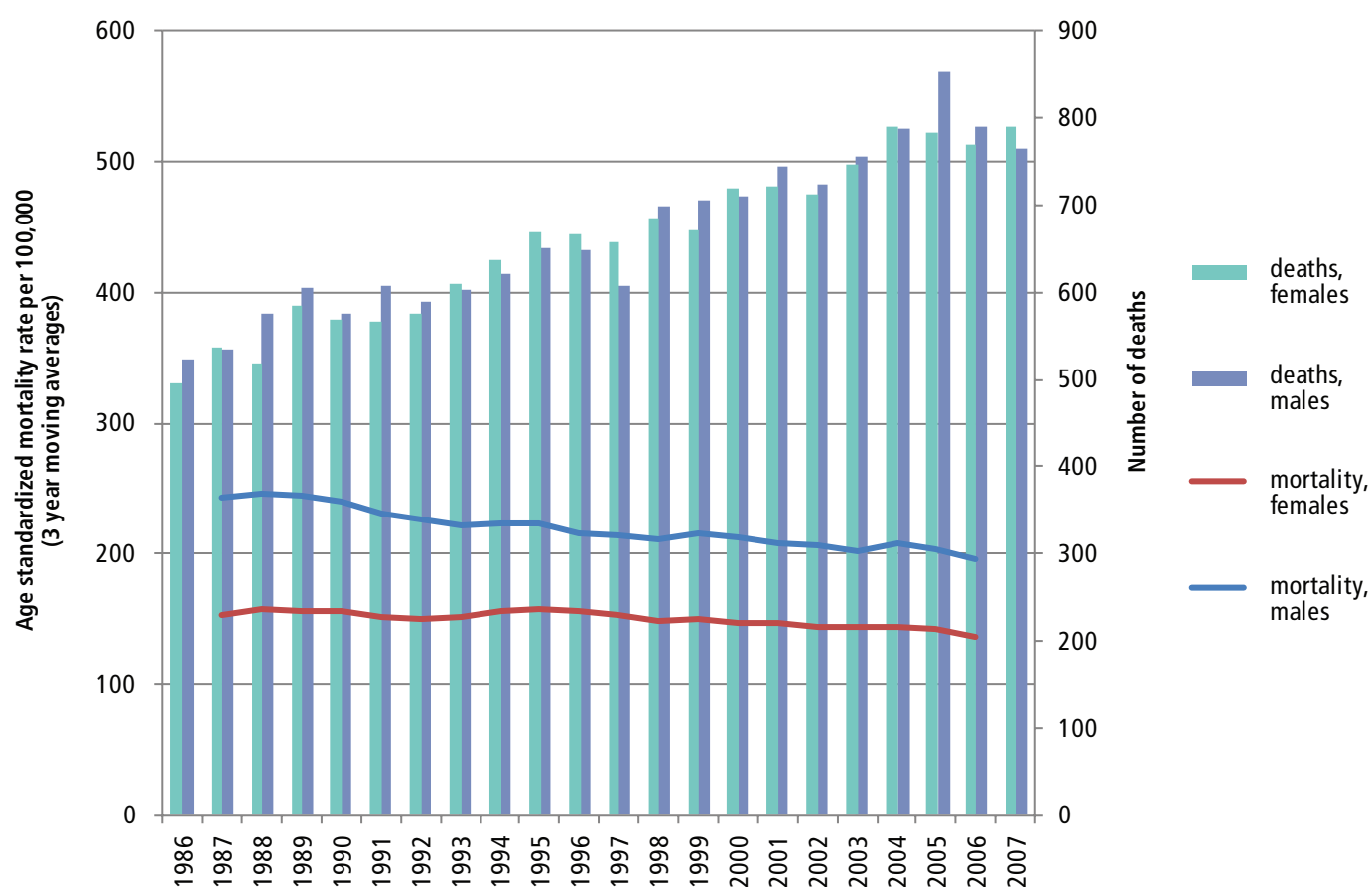
Cancer in Ottawa 2007

Trends in cancer deaths and mortality rates for all cancers

Among Ottawa males, average cancer mortality rates have been declining since the 1980s, from 245.5 per 100,000 in 1988, to 195.6 per 100,000 in 2006. Average female cancer mortality rates declined slightly from 158 per 100,000 in 1988, to 136.9 per 100,000 in 2006 (Figure 11).

Despite declines in three-year moving-average mortality rates, the total number of cancer deaths has increased since the late 1980s. This reflects the reality that the population is both growing and proportionately older than it was then.

Figure 11: Trends in number of deaths and mortality rates for all cancers, Ottawa 1986–2007



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

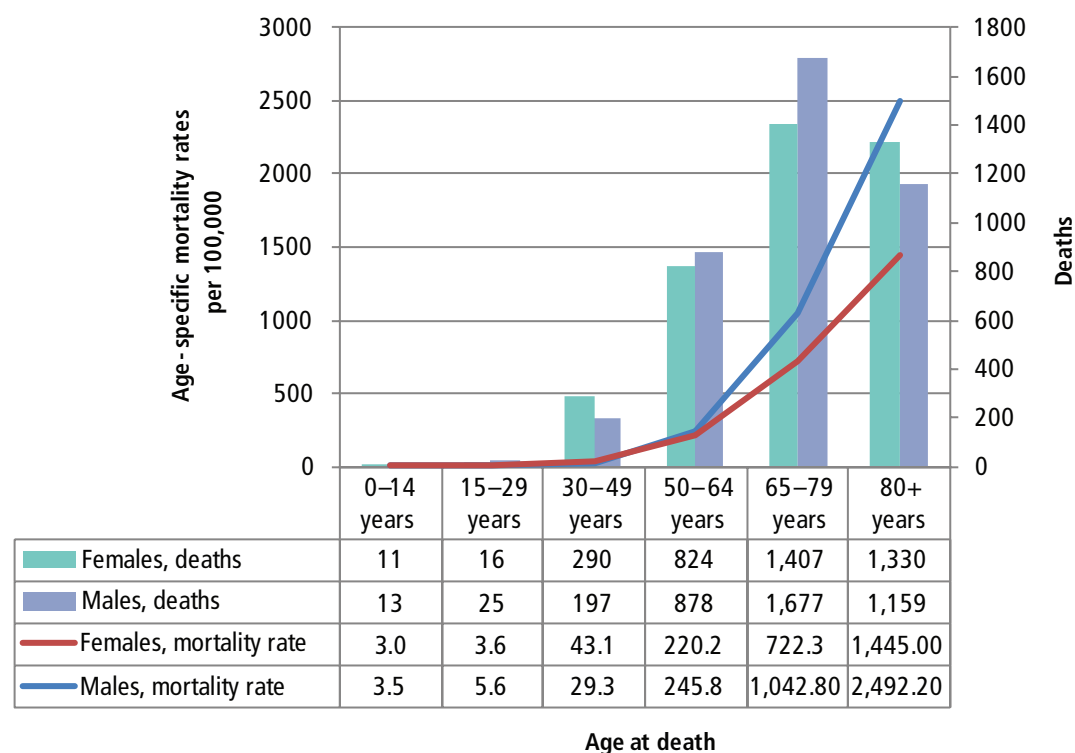
Cancer in Ottawa 2007

Age-specific mortality

Age-specific mortality rates for all cancers deaths increase significantly with age after the 15–29 year age group (Figure 12).

Age-specific mortality rates for all cancer deaths are higher among Ottawa males than for Ottawa females in the 65–79 and 80+ year age groups. However, Ottawa females have a significantly higher age-specific mortality rate than do males 30–49 years.

Figure 12: Age-specific mortality rates for all cancers by sex, Ottawa 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer in Ottawa 2007

Incidence and mortality trends for all cancers by age group

Age 0–29

In Ottawa, average incidence rates for all cancers among those 0–14 years were higher among males than among females between 1991 and 2003 (Figure 13a).

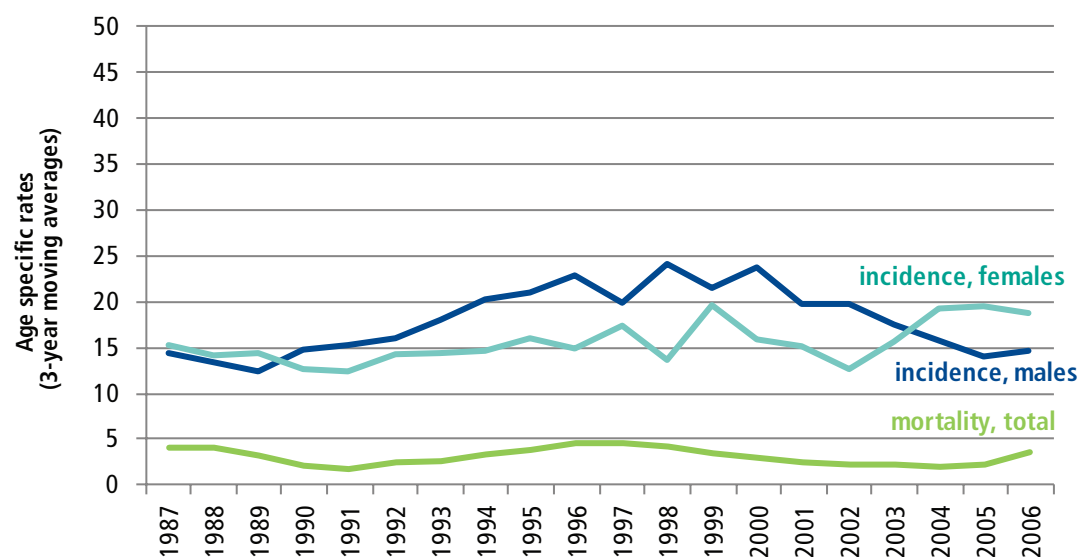
Average mortality rates for all cancers among those 0–14 years have remained stable since the 1980s (Figure 13a).

In the 15–29 year age group, average incidence rates among Ottawa males peaked in 2000 at 40.1 per 100,000, before declining to 35.2 per 100,000 in 2006 (Figure 13b). Among Ottawa females, average all-cancer incidence rates peaked in 1994 at 44.1 per 100,000, before declining to 30.1 per 100,000 in 2006.

Average mortality rates among Ottawa males and females 15–29 years have remained stable since the late 1980s (Figure 13b).

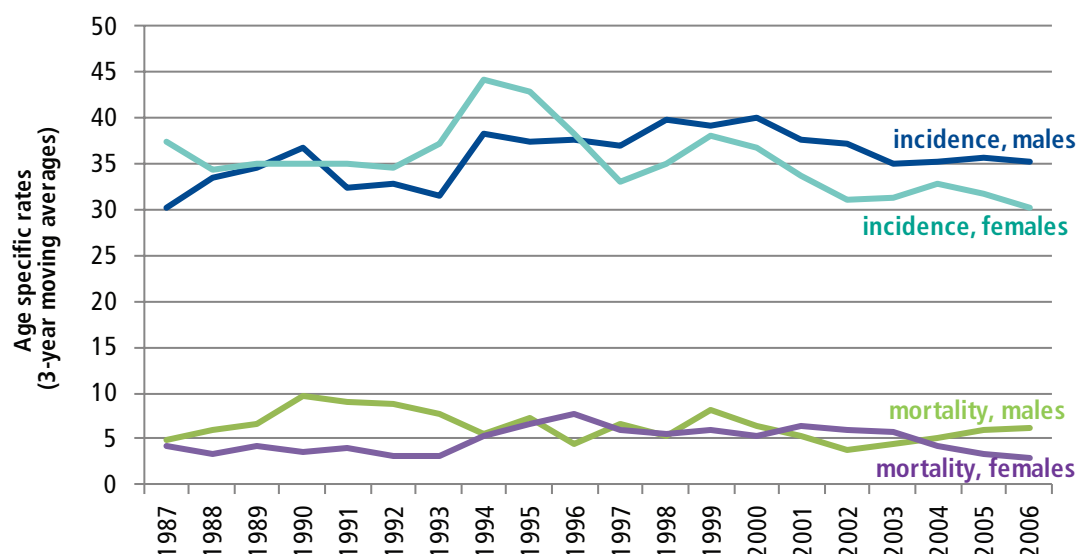
Figure 13: Average incidence & mortality trends for all cancers, by age group. Ottawa 1987–2006

Figure 13a: Age 0–14



Cancer in Ottawa 2007

Figure 13b: Age 15–29



Age 30–64

In the 30–49 year age group, average incidence rates and mortality rates for all cancers are higher for females than males (Figure 13c).

Average incidence rates for all cancers have increased since the late 1980s among both sexes in the 30–49 year age group. Among Ottawa males, incidence rates increased from 109.3 per 100,000 in 1988, to 129.2 per 100,000 in 2005. Among Ottawa females, incidence rates increased from 182.4 in per 100,000 in 1990, to 229.9 per 100,000 in 2006 (Figure 13c).

Average mortality rates for all cancers among males and females 30–49 year declined steadily from 1987 to 2006. Among males, mortality rates declined from 40 per 100,000, to 27.7 per 100,000. Among females, mortality rates declined from 49.5 per 100,000, to 39.8 per 100,000 (Figure 13c).

Average incidence rates among males and females were similar before diverging in 1999. Average rates among Ottawa males 50–64 years were stable from 1987 to 1999 before steadily increasing to 827.3 per 100,000 in 2006. Average rates among Ottawa females 50–64 years increased slightly from 741.1 per 100,000 in 1987, to 762.8 per 100,000 in 1997, before declining steadily to 713.8 per 100,000 in 2006 (Figure 13d).

Average mortality rates among Ottawa males and females 50–64 years have declined steadily since the late 1980s. Among Ottawa males, mortality rates for all cancers declined from 372.3 per 100,000 in 1987, to 233.7 per 100,000 in 2006. Among Ottawa females, mortality rates declined from 311.4 per 100,000 in 1988, to 213.3 per 100,000 in 2006 (Figure 13d).

Cancer in Ottawa 2007

Figure 13: Average incidence & mortality trends for all cancers, by age group. Ottawa 1987–2006

Figure 13c: Age 30–49

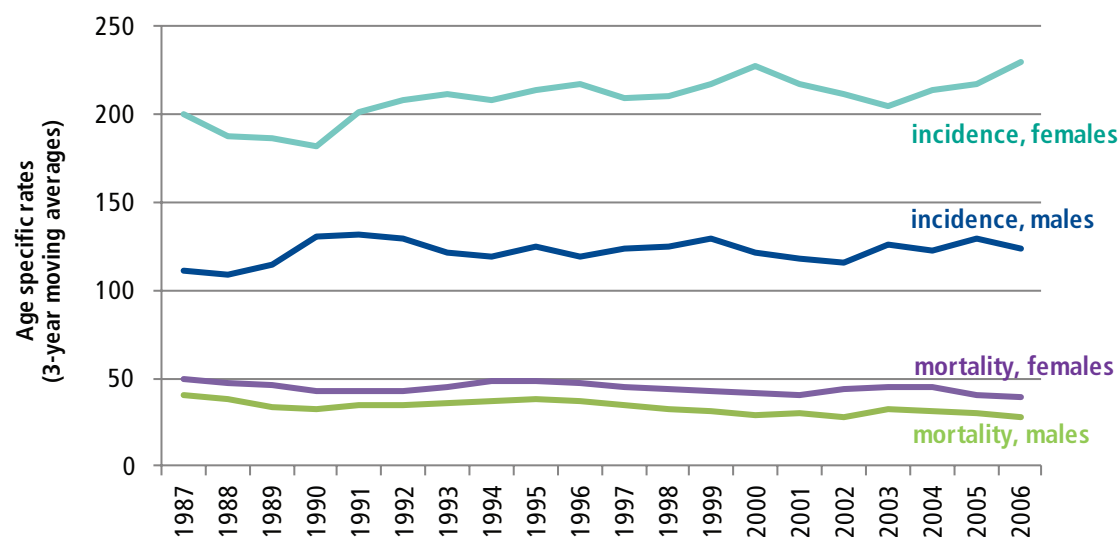
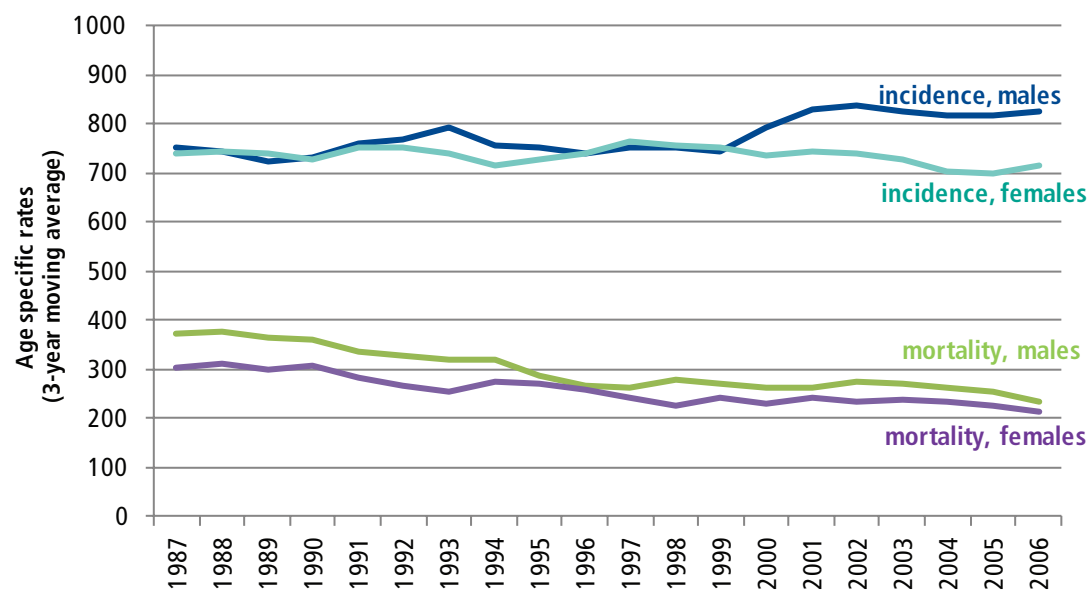


Figure 13d: Age 50–64



Cancer in Ottawa 2007

Ages 65–80+

Average incidence rates and mortality rates for all cancers are higher among Ottawa males than for Ottawa females in the 65–79 year age group (Figure 13e).

Among Ottawa males 65–79 years, the average incidence rate peaked in 2000 at 2,672.2 per 100,000, before declining to 2,369.2 per 100,000 in 2006, a slightly higher rate than observed during the late 1980s. Among females, the incidence rate for all cancers remained stable until 1999, increasing to 1,586.6 per 100,000 in 2001. After 2001, incidence rates among females began to decline, decreasing to 1,468.8 in 2006 (Figure 13e).

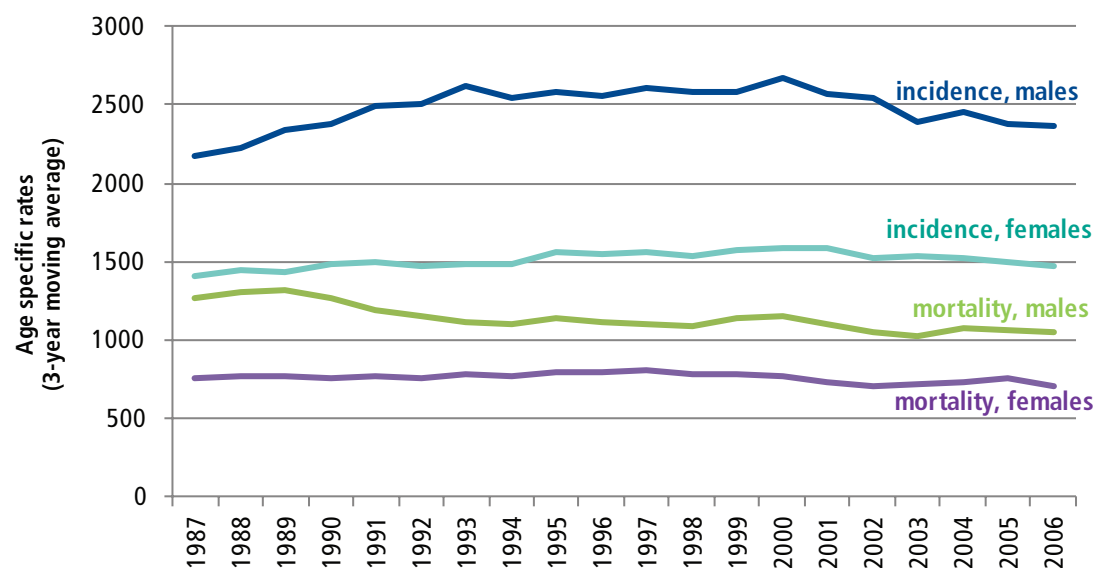
Average mortality rates among males 65–79 years declined steadily from 1987 to 1998, reaching 1,090.5 per 100,000 before stabilizing. Mortality rates among females increased slightly to 802.9 per 100,000 in 1997, before declining steadily to 703.1 per 100,000 in 2006 (Figure 13e).

Among males in the 80+ year age group, average incidence rates for all cancers have declined steadily from 1995 to 2006 (Figure 13f). Mortality rates among males in the 80+ year age group have remained stable since the late 1980s.

Among females in the 80+ year age group, average incidence rates for all cancers have increased slightly from 1987 to 2006, reaching 2,033.6 per 100,000 in 2006. Average mortality rates for all cancers among females increased from 1,164.4 per 100,000 in 1987, to 1,492 per 100,000 in 2001 before stabilizing (Figure 13f).

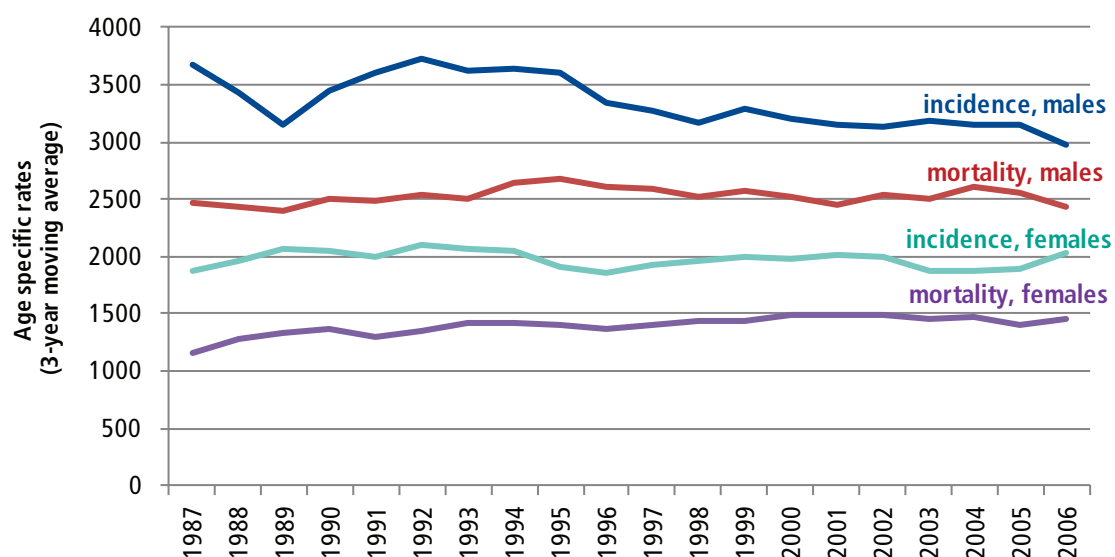
Figure 13: Average incidence & mortality trends for all cancers, by age group. Ottawa 1987–2006

Figure 13e: Age 65–79



Cancer in Ottawa 2007

Figure 13f: Age 80+



For all Figure 13 graphs:

Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),

Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: Age-specific rates were calculated using the following age groups: 0–14, 15–29, 30–49, 50–64, 65–79, & 80+



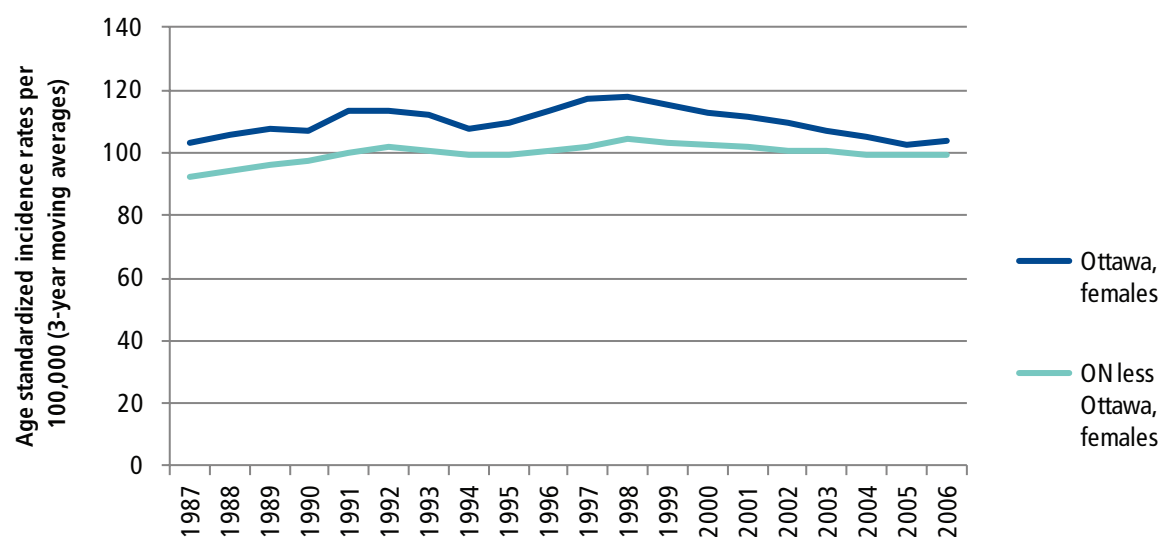
Female breast cancer

Incidence highlights

Female breast cancer incidence rates have stabilized in Ottawa since the late 1980s (Figure 14).

Historically, average female breast cancer incidence rates were significantly higher in Ottawa compared to the rest of Ontario from 1987 to 2004. In 2006, the female breast cancer incidence rate for Ottawa females was 103.5 per 100,000, compared to 99.6 per 100,000 for Ontario-less-Ottawa females. This difference was not significant.

Figure 14: Age-standardized female breast cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

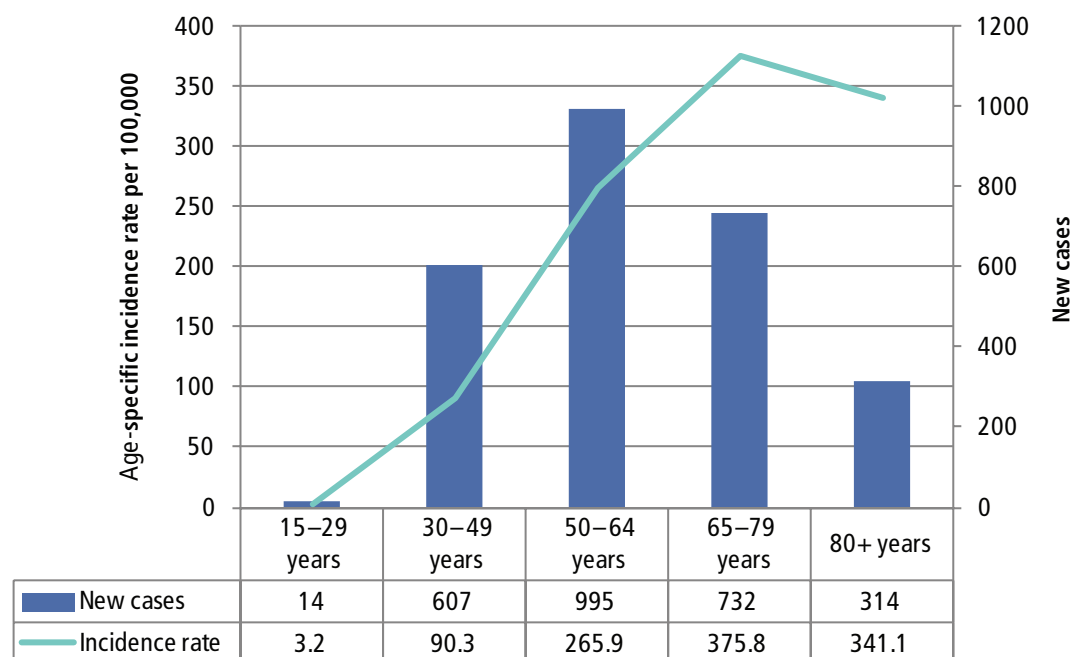
Age-specific breast cancer incidence

Five-year combined age-specific breast cancer incidence rates increased significantly with age until 65–79 years, peaking at 375.8 per 100,000 before decreasing slightly to 341.1 per 100,000 in the 80+ age group (Figure 15).

The largest number of new breast cancer diagnoses was seen in the 50–64 year age group with 995 new breast cancer diagnoses during 2003 to 2007.

There were no differences in five-year combined breast cancer incidence rates by age group between Ottawa and the rest of Ontario (not shown). There were no cases of breast cancer among Ottawa females in the 0–14 year age group.

Figure 15: Age-specific breast cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

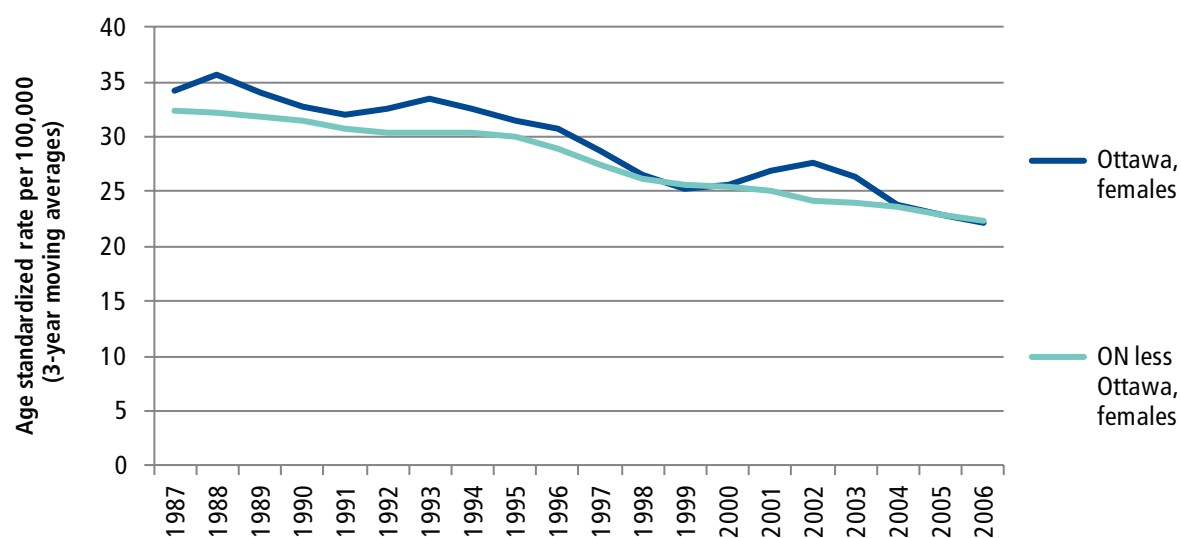
Cancer profiles

Mortality highlights

Average female breast cancer mortality rates have been steadily decreasing in Ottawa and the rest of Ontario since the late 1980s (Figure 16).

In Ottawa, the average mortality rate decreased significantly from 34.3 per 100,000 in 1987, to 22.1 per 100,000 in 2006. Ottawa females had a significantly higher average breast cancer rate in 2002 compared to the rest of Ontario.

Figure 16: Age-standardized female breast cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

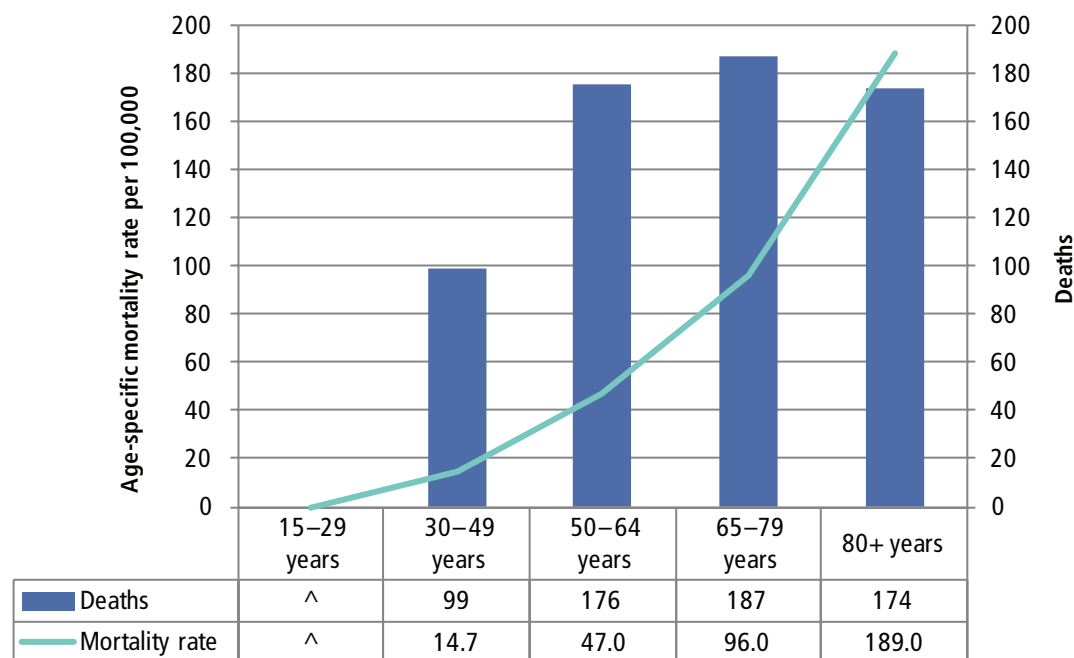
Age-specific breast cancer mortality

Five-year combined age-specific breast cancer mortality rates increased significantly with age, peaking at 189 per 100,000 in the 80+ age group for Ottawa during 2003–2007 (Figure 17).

The largest number of breast cancer deaths in Ottawa occurred in the 65–79 year age group.

There was no difference in breast cancer mortality rates by age between Ottawa and the rest of Ontario (not shown). There were no breast cancer deaths among Ottawa females 0–14 years, and breast cancer mortality data among females 15–29 years were not releasable due to there being fewer than six deaths recorded.

Figure 17: Age-specific breast cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

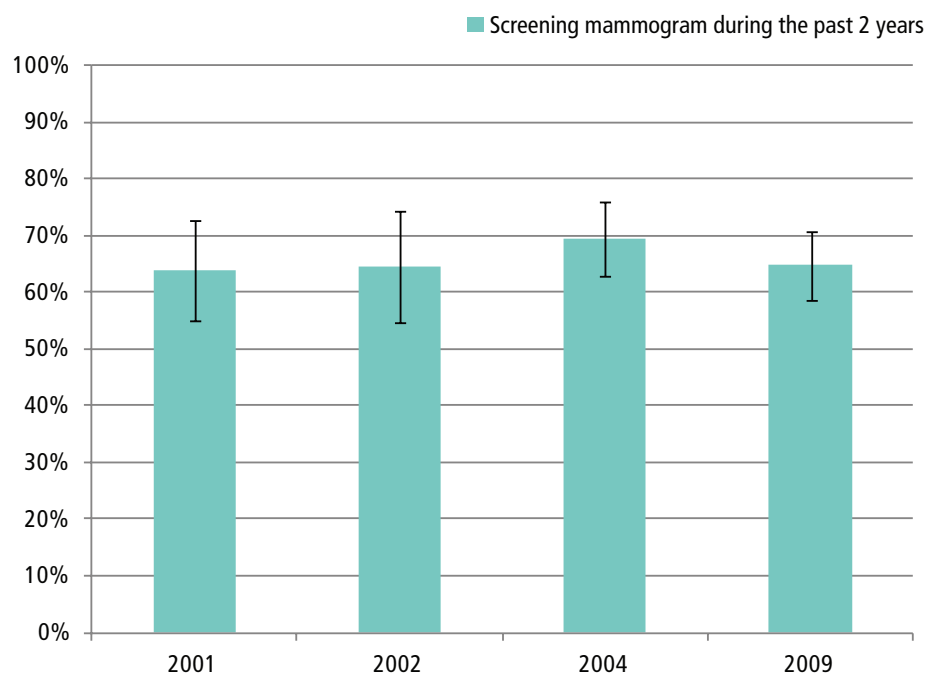
Cancer profiles

Breast cancer screening

Regular breast cancer screening has played a role in the decline in breast cancer mortality rates since the late 1980s³. A breast X-ray (mammogram) can help detect breast cancer early, which can increase the likelihood of successful treatment and thereby prevent the cancer from spreading to other parts of the body.

In Ottawa, 64.7% ($\pm 6.2\%$) of females aged 50–69 self-reported having a screening mammogram during the past two years in 2009. This has not changed significantly since 2001 (Figure 18)*.

Figure 18: Percentage of Ottawa females, aged 50-69, who reported having a screening mammogram in the past two years*



Data source: Rapid Risk Factor Surveillance System 2001, 2002, 2004, & 2009

* = Updated from *Cancer in Ottawa 2012* report posted on January 9th, 2012

Cancer profiles

Lung cancer

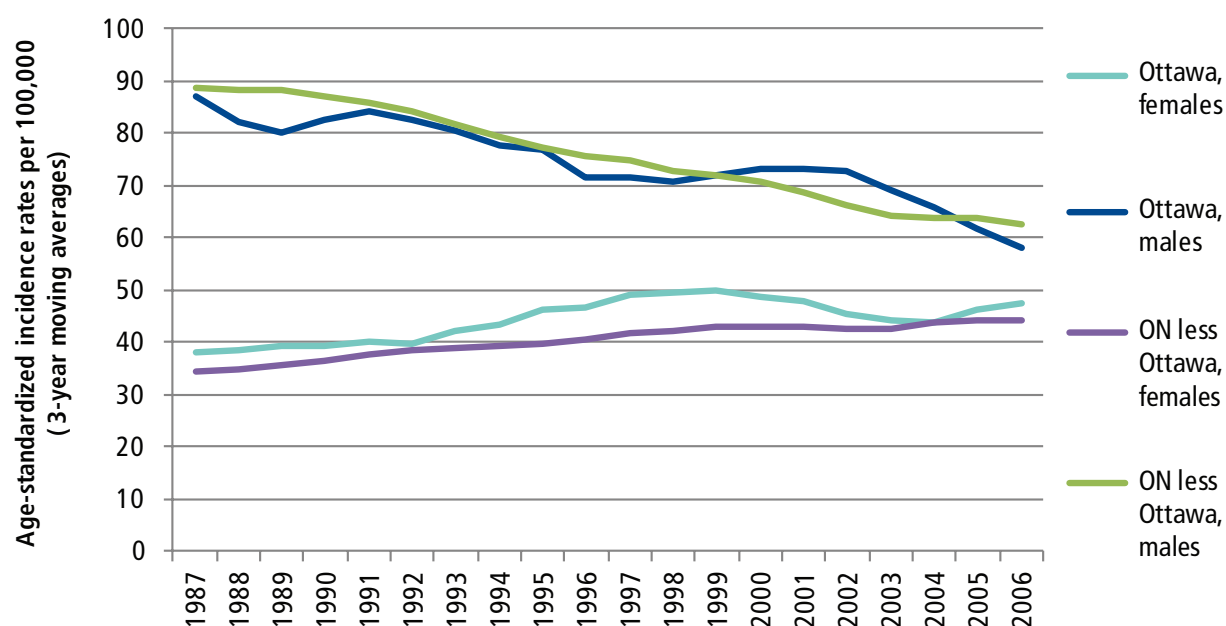
Incidence highlights

Historically, average lung cancer incidence rates have been significantly higher in males compared to females.

Average lung cancer incidence rates have decreased significantly over time among males and have stabilized over time among females in Ottawa and the rest of Ontario (Figure 19).

Average incidence rates declined from 87.2 per 100,000 in 1987 among Ottawa males, to 51.8 per 100,000 in 2006. The incidence rate rose among Ottawa females from 38.3 per 100,000 in 1987, to 49.8 per 100,000 in 1999 before stabilizing, reaching 47.6 in 2006.

Figure 19: Age-standardized lung cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006*



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

* Updated from *Cancer in Ottawa 2012* report posted January 9th, 2012

Cancer profiles

Age-specific lung cancer incidence rates

Lung cancer age-specific incidence rates increased significantly with age among Ottawa males during 2003–2007. Among Ottawa females, age-specific lung cancer rates increased significantly with age up to 65–79 years (Figure 20).

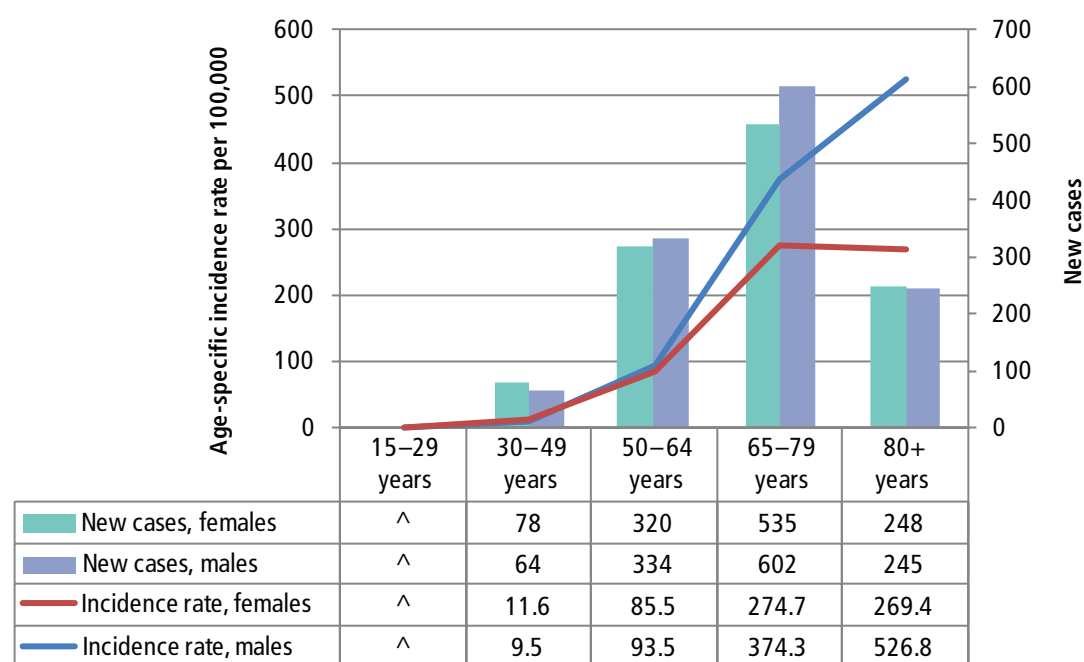
Lung cancer incidence rates are significantly higher among Ottawa males 65–79 and 80+ years than for Ottawa females in the same age groups.

Among males, the age-specific rate peaked at 526.8 per 100,000 in the 80+ year age group, while among females the rate peaked in the 65–79 year age group at 374.3 per 100,000.

There were no lung cancer cases among males and females in the 0–14 year age group in Ottawa. Incidence rate data in the 15–29 year age group were not releasable for this period due to fewer than six cases being observed.

There were no significant differences in incidence rates by age group between Ottawa and the rest of Ontario for either males or females (not shown).

Figure 20: Age-specific lung cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

Mortality highlights

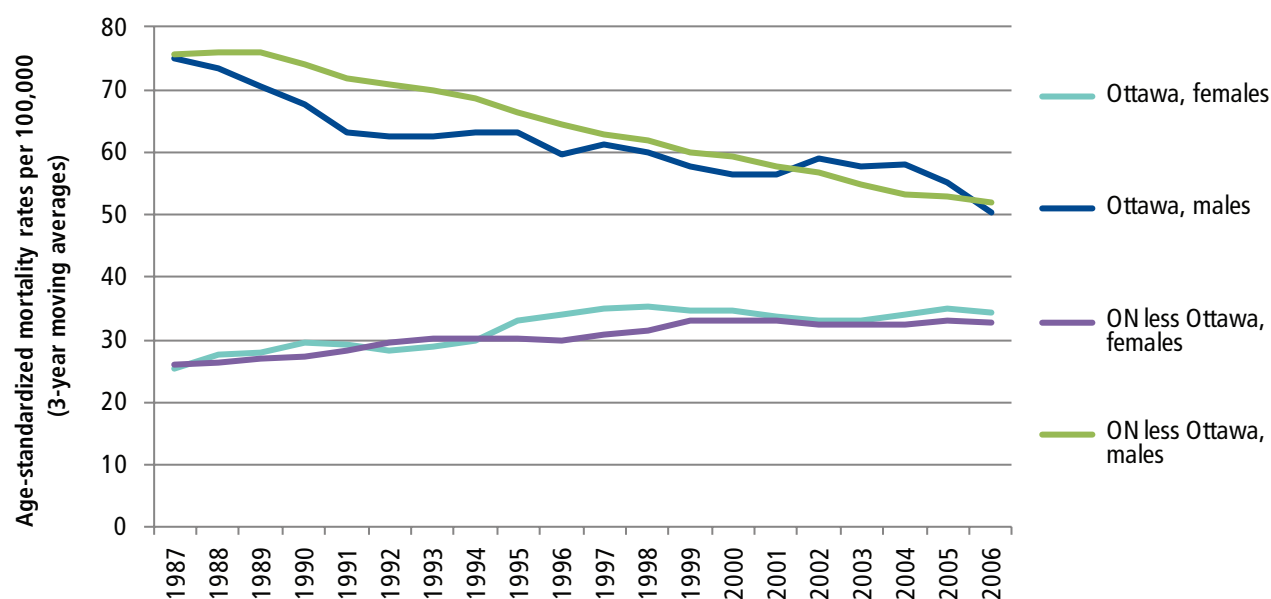
Females had significantly lower average mortality rates than males in both Ottawa and the rest of Ontario.

Average lung cancer mortality rates declined significantly in Ottawa males from 74.9 per 100,000 in 1987, to 50.5 per 100,000 in 2006. Among Ottawa females, mortality rates increased from 25.4 per 100,000, to 35.2 in 1998, and were lower at 34.4 in 2006 (Figure 21).

For most years, Ottawa males had lower rates compared to those in the rest of Ontario. Average mortality rates were significantly lower among Ottawa males than those in the rest of Ontario. In 2002, lung cancer mortality rates among males in Ottawa were higher than those in the rest of Ontario. This difference was significantly higher in 2004.

Among females, average mortality rates were significantly higher in Ottawa between 1996 and 1998 than the rest of Ontario.

Figure 21: Age-standardized lung cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

Age-specific lung cancer mortality rates

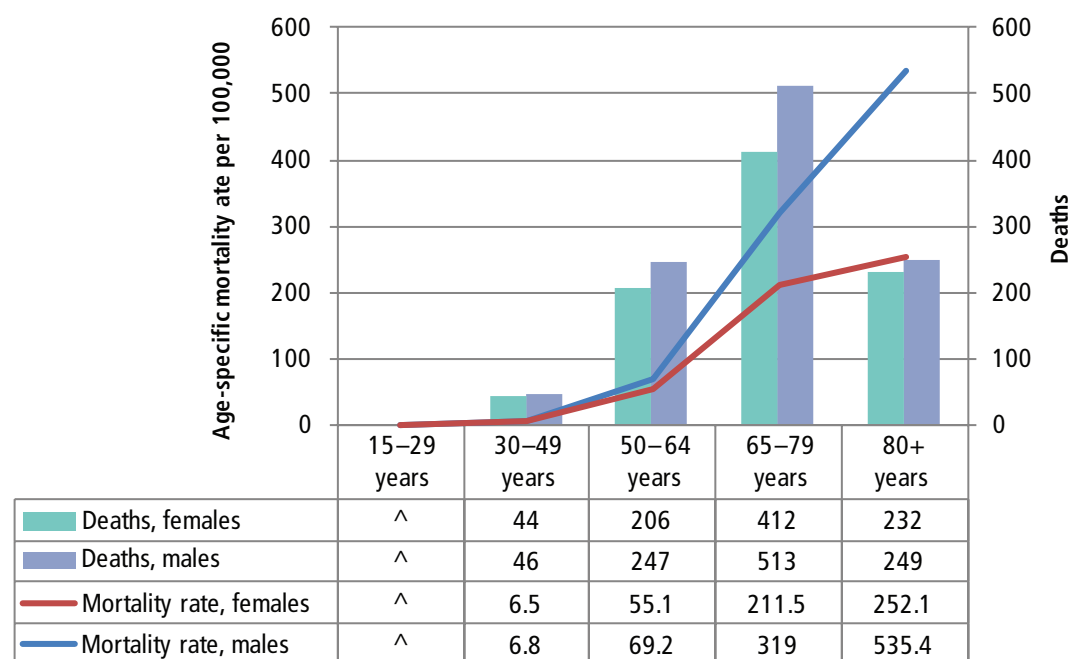
Age-specific lung cancer mortality rates increased significantly with age among Ottawa males during 2003 to 2007. Among Ottawa females, age-specific mortality rates increased significantly until 65–79 years (Figure 22).

Mortality rates among Ottawa males were significantly higher than mortality rates among Ottawa females in the 65–79 and 80+ year age groups.

Among Ottawa males and females in the 15–29 year age group, age-specific mortality rates were not releasable due to fewer than six deaths being observed. There were no deaths among males in the 0–14 year age group. Among females in the 0–14 year age group, mortality data were not releasable due to fewer than six cases being observed.

There were no differences in mortality rates by age between Ottawa and the rest of Ontario (not shown).

Figure 22: Age-specific lung cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Colorectal cancers

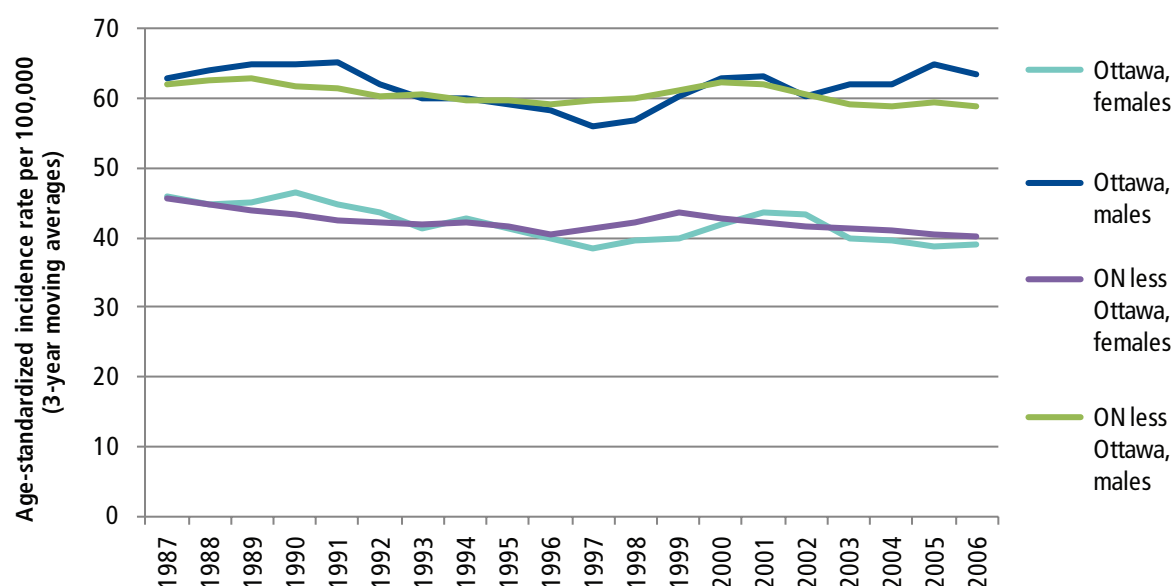
Incidence highlights

Average colorectal cancer incidence rates have remained stable among males and females in Ottawa since 1987 (Figure 23).

Males had significantly higher average incidence rates than females. In 2006, the incidence rate among Ottawa males was 63.6 per 100,000, compared to 39.1 per 100,000 among Ottawa females.

Average colorectal cancer incidence rates were similar for most years between Ottawa and the rest of Ontario among males and females, respectively. Rates were significantly higher among Ottawa males in 2005 and 2006.

Figure 23: Age-standardized colorectal cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

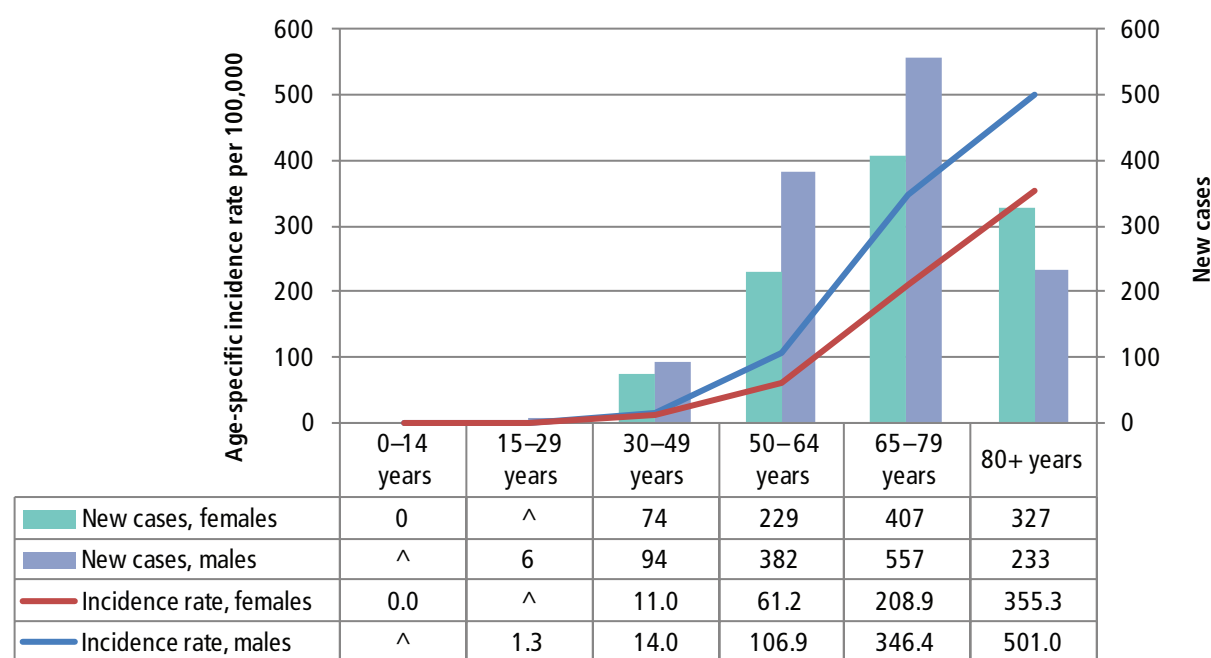
Age-specific colorectal cancer incidence

Age-specific colorectal cancer incidence rates for 2003 to 2007 increased significantly with age for both males and females in Ottawa (Figure 24).

Ottawa males in the 50–64, 65–79 and 80+ year age groups had significantly higher age-specific incidence rates than did Ottawa females of the same age.

There were no differences in incidence rates by age group between Ottawa and the rest of Ontario (not shown).

Figure 24: Age-specific colorectal cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

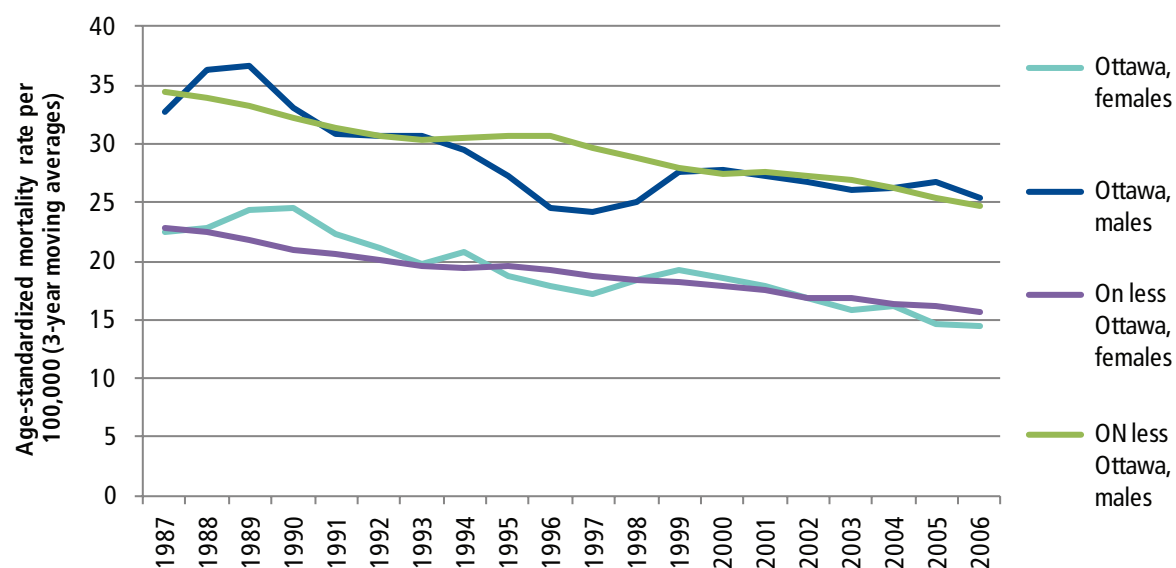
Cancer profiles

Mortality highlights

Historically, males have had higher average mortality rates than females in both Ottawa and the rest of Ontario.

Average colorectal cancer mortality rates for both sexes have declined since the late 1980s (Figure 25). In 2006, the mortality rate among Ottawa males was 25.3 per 100,000, compared to 32.8 per 100,000 in 1987. Among Ottawa females, the rate was 14.4 per 100,000 in 2006, compared to 22.5 per 100,000 in 1987.

Figure 25: Age-standardized colorectal cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

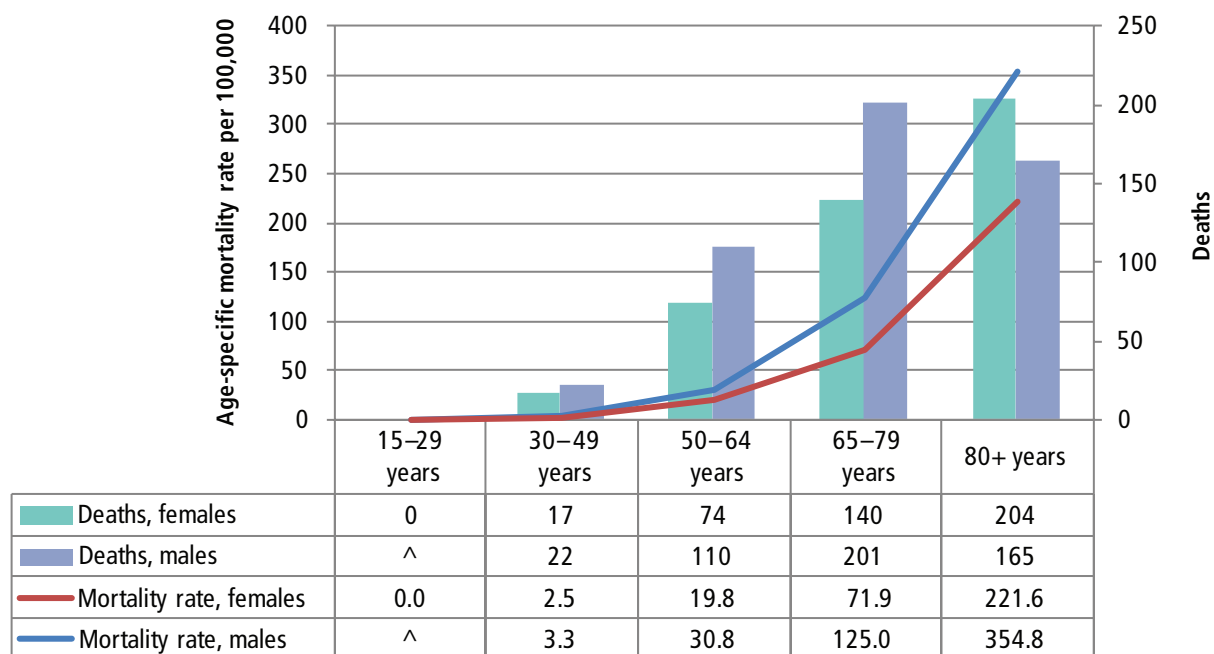
Age-specific colorectal cancer mortality

Age-specific colorectal cancer mortality rates in 2003–2007 increased significantly with age for both sexes (Figure 26). There were no deaths observed during this period among Ottawa residents 0–14 years of either sex.

Age-specific colorectal mortality rates are significantly higher among Ottawa males in the 50–64, 65–79 and 80+ year age groups than for Ottawa females of the same age.

There were no differences in mortality rates by age group between Ottawa and the rest of Ontario (not shown).

Figure 26: Age-specific colorectal cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

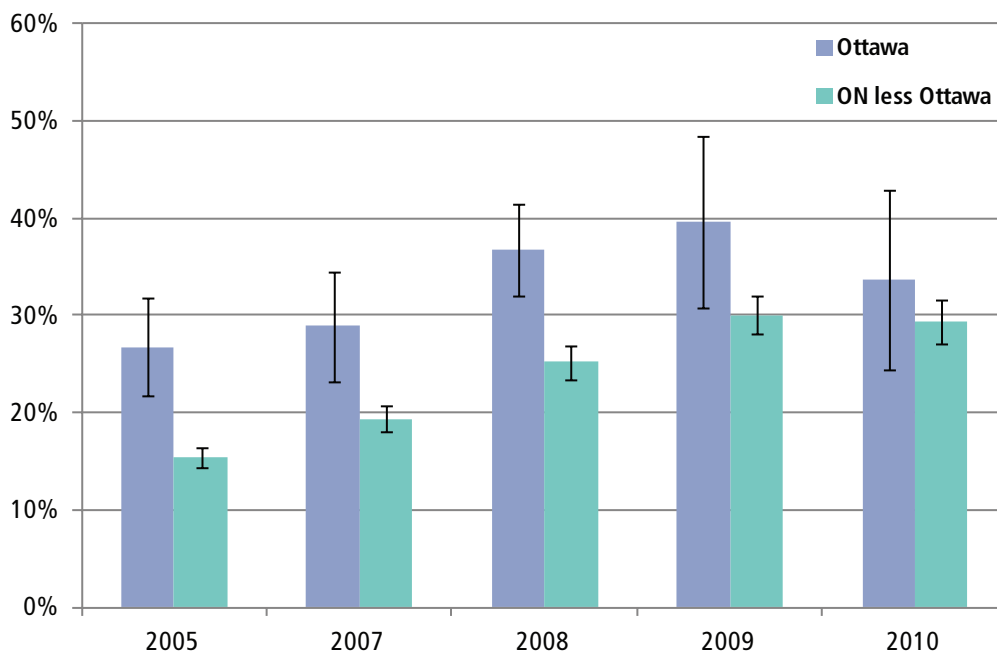
Colorectal cancer screening

In Ontario, colorectal cancer screening is conducted using the fecal occult blood test (FOBT).⁴ *ColonCancerCheck*, Ontario's colorectal cancer screening program, offers a colorectal cancer screening with FOBT every two years for Ontario residents aged 50–74 that are of average risk for colorectal cancer. Colonoscopy is recommended for those with symptoms or with a family history of colorectal cancer.

In 2010, 33.7% ($\pm 7.1\%$) of Ottawa residents aged 50–74 reported having an FOBT during the past two years (Figure 27). While this is a slight increase from 26.8% ($\pm 5\%$) in 2005, it is not statistically significant.

There was no significant difference between Ottawa and the rest of Ontario in 2009 and 2010. However, Ottawa adults were significantly more likely to report having had a FOBT in the past two years than were those in the rest of Ontario during the previous years (2005–2008).

Figure 27: Percentage of residents aged 50 to 74 who had a fecal occult blood test during last two years, Ottawa and the rest of Ontario, 2005–2010



Data source: Canadian Community Health Survey, cycles 3.1, 2007, 2008, 2009 & 2010
Statistics Canada, distributed by Ontario Ministry of Health and Long-Term Care

Cancer profiles

Prostate cancer

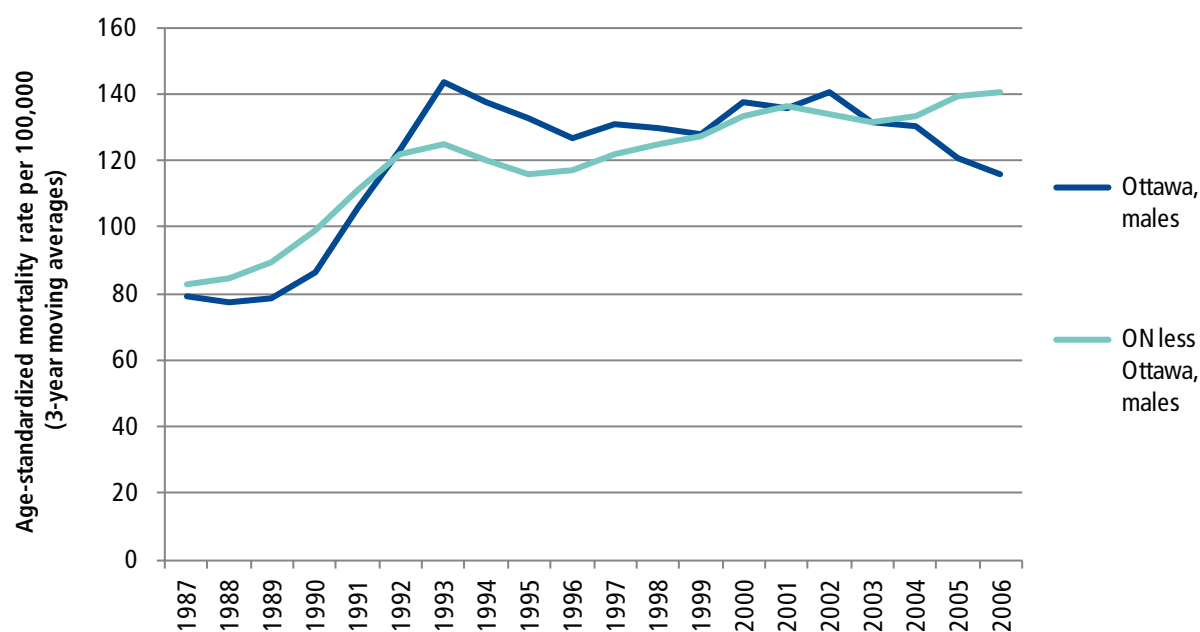
Incidence highlights

Average prostate cancer incidence rates in Ottawa and the rest of Ontario have increased since the late 1980s (Figure 28).

Among Ottawa males, there was a significant rise in average incidence rates between 1987 and 1993, increasing from 79.2 per 100,000, to 143.3 per 100,000 in seven years before gradually declining to 115.9 per 100,000 in 2006.

In 2006, average incidence rates among Ottawa males (115.9 per 100,000) were significantly lower than for Ontario-less-Ottawa males, who had a rate of 140.8 per 100,000. This is different from 1993 to 1997 when average incidence rates were significantly higher than those of the rest of Ontario.

Figure 28: Age-standardized prostate cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

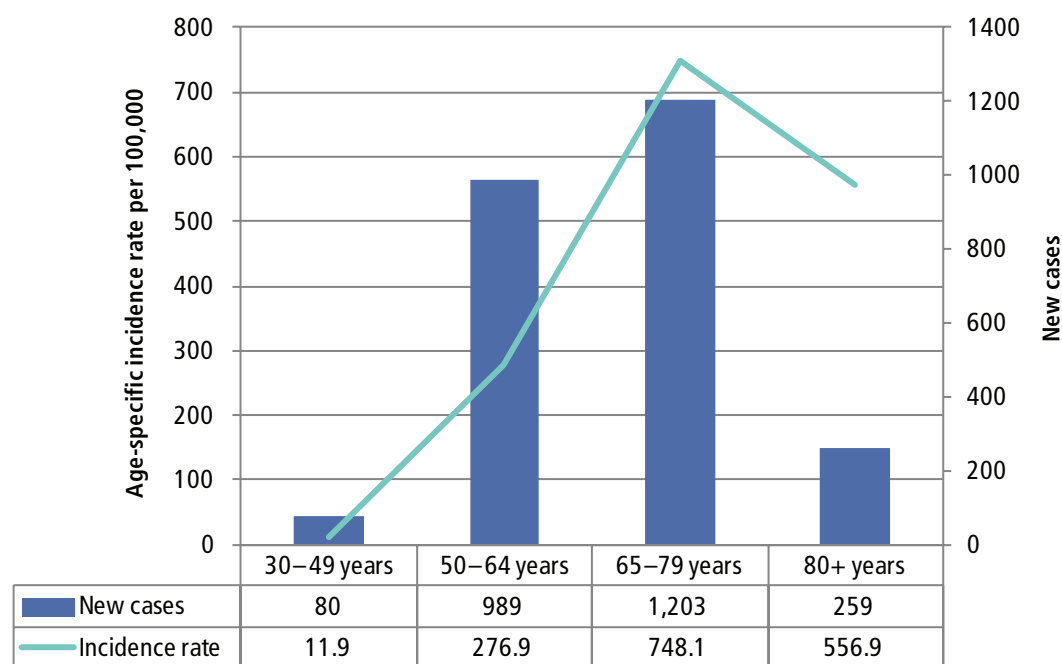
Age-specific prostate cancer incidence

Age-specific prostate cancer incidence rates increased significantly with age until 65–79 years. The incidence rate peaked at 748.1 per 100,000 among Ottawa males 65–79 years. It then declined significantly to 556.9 per 100,000 in the 80+ year age group (Figure 29).

There were no prostate cancer cases among Ottawa males 0–14 years or 15–29 years during 2003–2007.

Ottawa males had significantly lower rates than Ontario-less-Ottawa males in the 65–79 year and 80+ year age groups (not shown).

Figure 29: Age-specific prostate cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

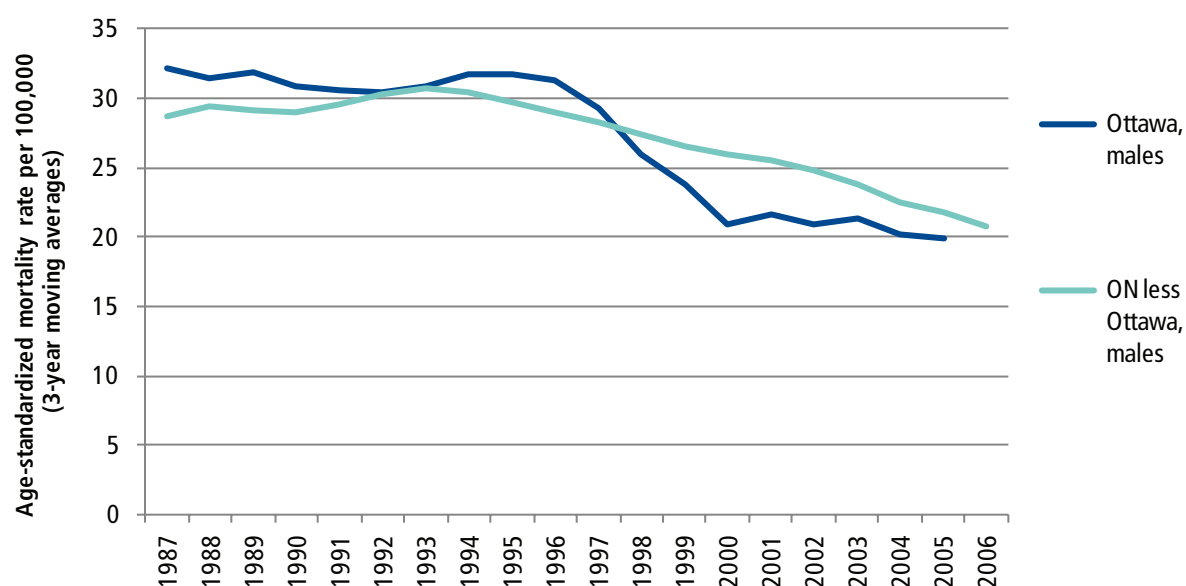
Cancer profiles

Mortality Highlights

Average prostate cancer mortality rates have declined significantly from the late 1980s (Figure 30). Among Ottawa males, the mortality rate decreased from 32.1 per 100,000 in 1987, to 18.1 per 100,000 in 2006.

Average mortality rates among Ottawa males were significantly lower than those among Ontario-less-Ottawa males between 2000 and 2002.

Figure 30: Age-standardized prostate cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

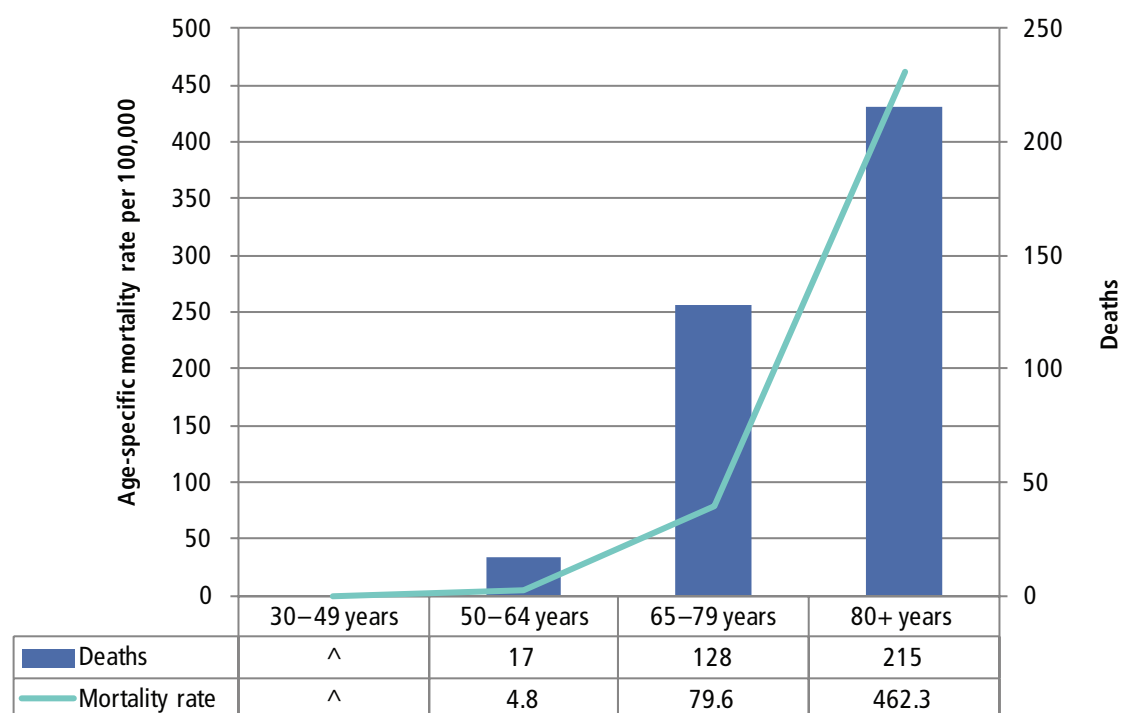
Age-specific prostate cancer mortality

Age-specific prostate cancer mortality rates for 2003 to 2007 increased significantly with age among Ottawa males (Figure 32).

There were no prostate cancer deaths among Ottawa males 0–14 and 15–29 years.

There was no difference in prostate cancer mortality rates by age group between Ottawa and the rest of Ontario (not shown).

Figure 31: Age-specific prostate cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Prostate specific antigen testing

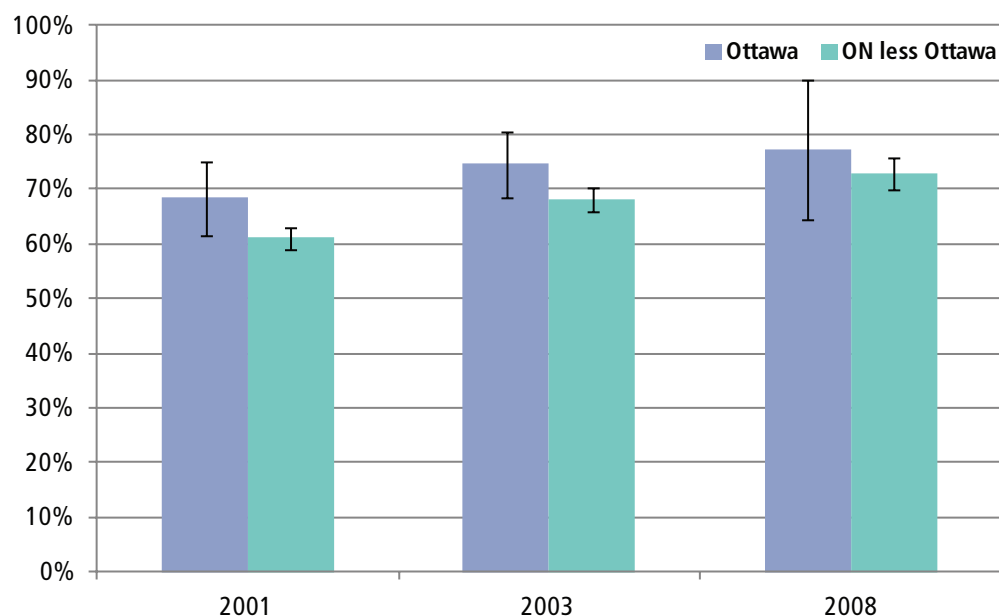
The prostate specific antigen (PSA) test is a blood test that screens for higher than normal levels of PSA.⁵ Higher than normal PSA levels usually indicates a prostate problem, but not necessarily prostate cancer. Unlike the breast, colorectal and cervical cancers, there is no provincial prostate cancer screening program because of disagreement between experts on the usefulness of the PSA test as a screening tool for some males. It is recommended that men speak with their physicians to determine if PSA testing is an appropriate screening tool for them.

In 2008, 77.3% ($\pm 12.7\%$) * of Ottawa males aged 50 and older reported ever having a PSA test. This proportion has not changed significantly since 2001 (Figure 32).

There were no significant differences between Ottawa and the rest of Ontario.

* = Updated from *Cancer in Ottawa 2012* posted on January 9th, 2012

Figure 32: Percentage of males age 50 years and older reporting ever having a PSA test, Ottawa and the rest of Ontario



Data source: Canadian Community Health Survey, cycles 1.1, 2.1, 2008
Statistics Canada, distributed by the Ministry of Health and Long-Term Care

Cancer profiles

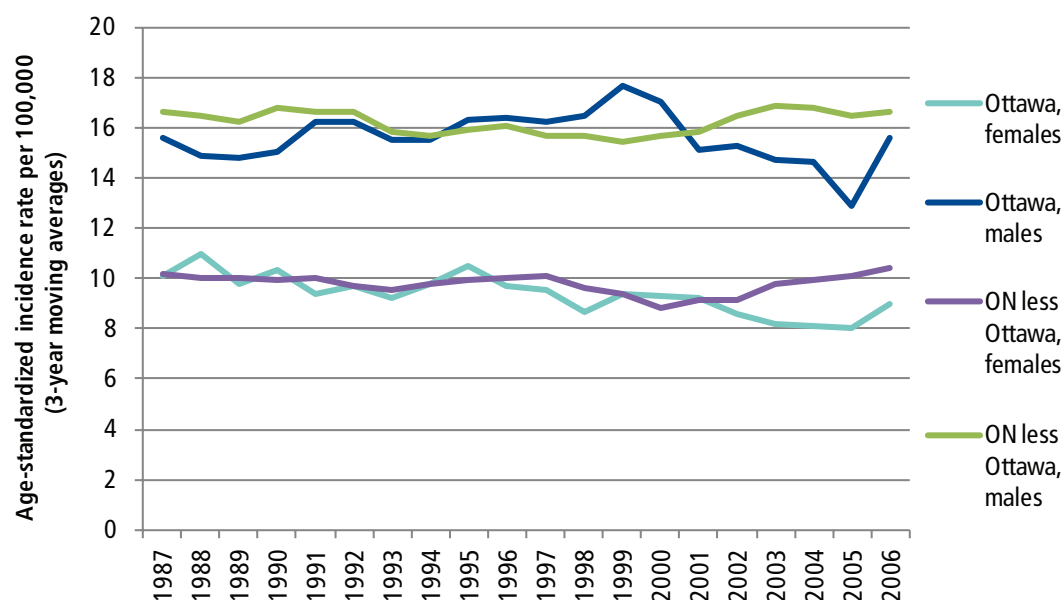
Leukemia

Incidence highlights

Historically, average leukemia incidence rates have been higher among males than females (Figure 33).

Average incidence rates among males and females have remained relatively stable since the 1980s. In 1999, the average rates among Ottawa males peaked at 17.7 per 100,000 before decreasing significantly to a low of 12.9 per 100,000 in 2005. For most years there was no significant difference between Ottawa males and those of the rest of Ontario, except in 2005 when rates were significantly lower in Ottawa. A similar trend was observed among females, except in 2004 and 2005 when incidence rates were significantly lower in Ottawa compared to the rest of Ontario.

Figure 33: Age-standardized leukemia incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

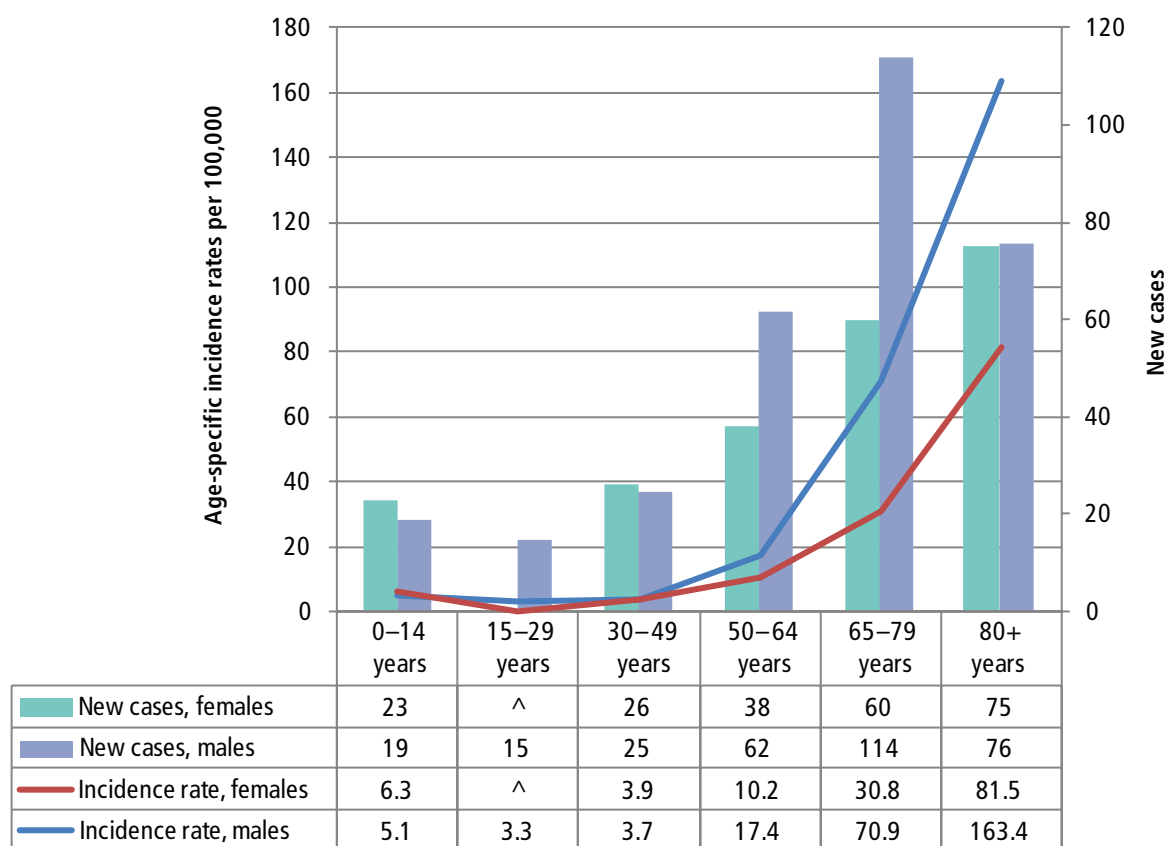
Age-specific leukemia incidence

Beginning in the 30–49 year age group, age-specific leukemia incidence rates increased significantly with age in Ottawa males and females (Figure 34).

Among Ottawa males, age-specific leukemia rates were significantly higher in the 65–79 and 80+ year age groups than for Ottawa females of the same age.

Leukemia is the most common cancer observed in children 0–14 years. Age-specific leukemia incidence rates among Ottawa males and females 0–14 years were 5.1 per 100,000, and 6.3 per 100,000, respectively. This figure was higher than for adolescent and young adults 15–29 years or for Ottawa adults in the 30–49 year age group. These differences are not statistically significant.

Figure 34: Age-specific leukemia incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

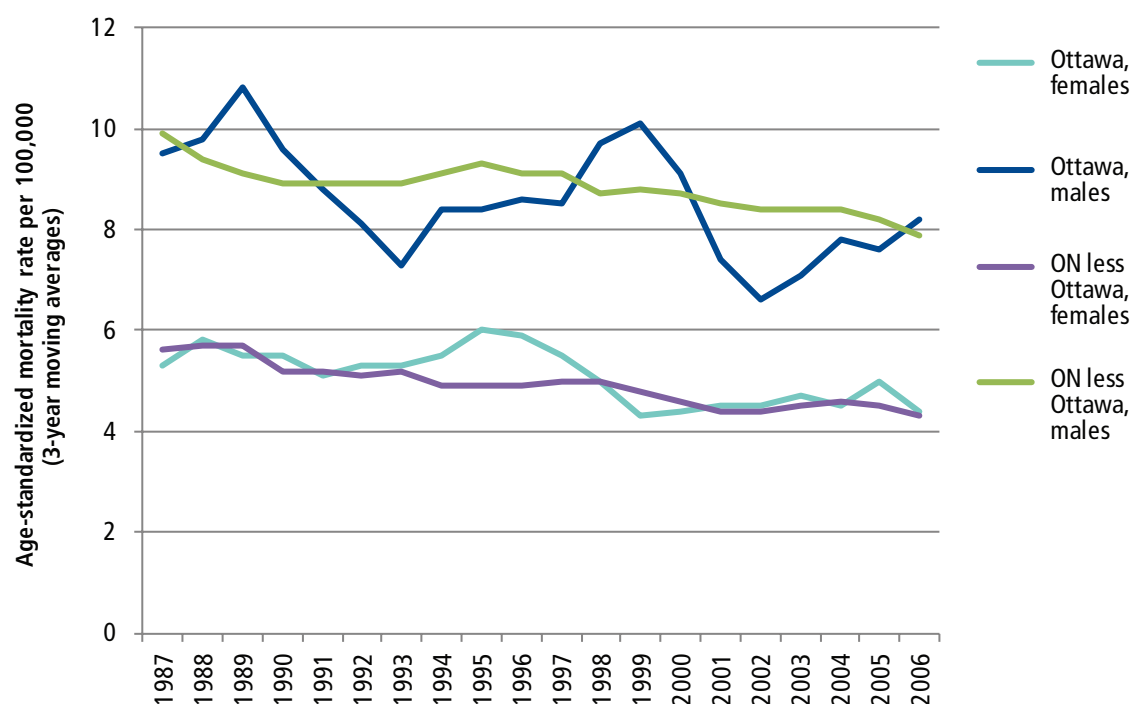
Mortality highlights

Average leukemia mortality rates have remained stable among males and females since the late 1980s (Figure 35).

Rates were significantly higher among Ottawa males than Ottawa females in all years except 2005. In 2006, the average mortality rate among Ottawa males was nearly double the mortality rate for Ottawa females at 8.2 per 100,000 and 4.4 per 100,000, respectively.

There were no significant differences in overall average leukemia mortality rates between Ottawa and the rest of Ontario between 1987 and 2006 (not shown). Ottawa males did have a significantly lower mortality rate in 2002 than did males in the rest of Ontario.

Figure 35: Age-standardized leukemia mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011
 Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
 Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

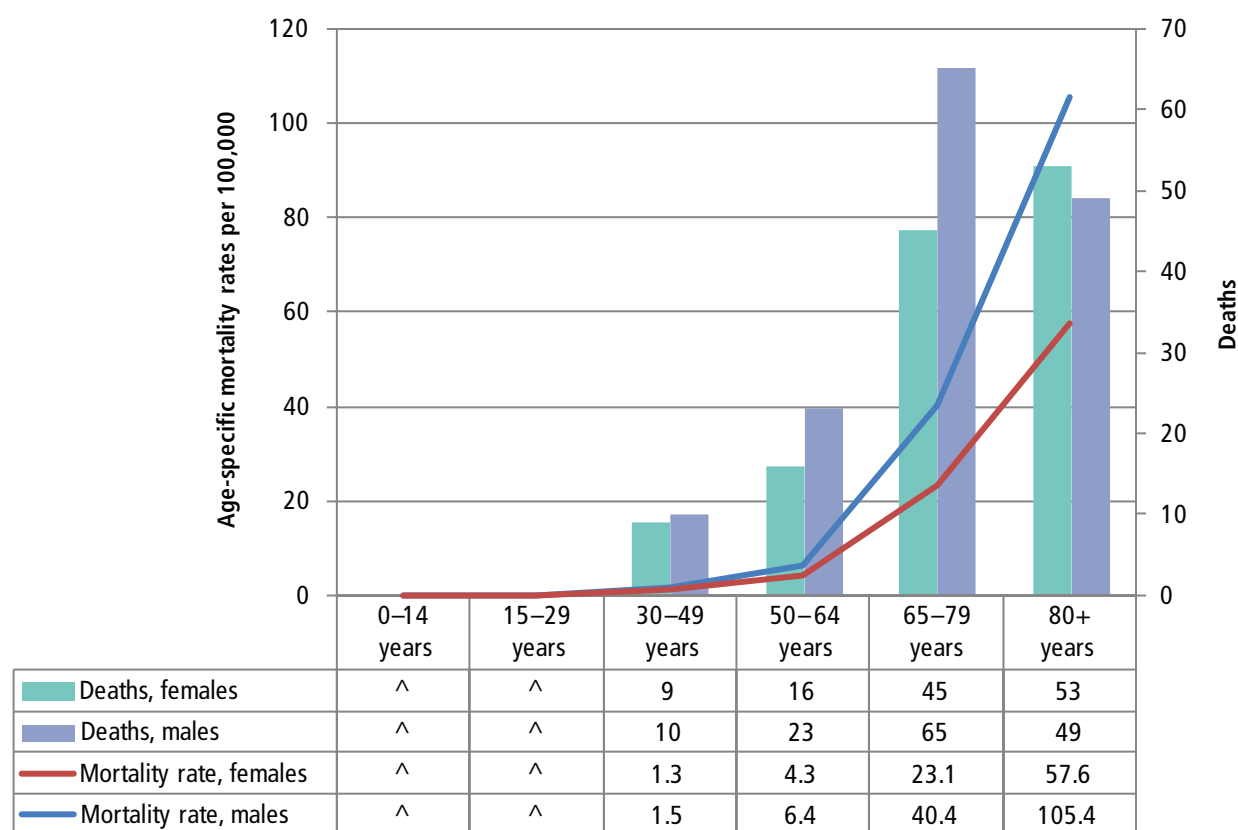
Age-specific leukemia mortality

For both sexes, age-specific leukemia mortality rates increased with age during 2003–2007 (Figure 36). Among females, these rates increased significantly with age, beginning at 50–64 years. Among males, rates increased significantly with age beginning at 30–49 years.

Leukemia mortality rates were significantly higher for males than for females in the 65–79 and 80+ age groups.

Leukemia mortality rates by age group were similar between Ottawa and the rest of Ontario (not shown).

Figure 36: Age-specific leukemia mortality rates per 100,000, Ottawa 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Melanoma

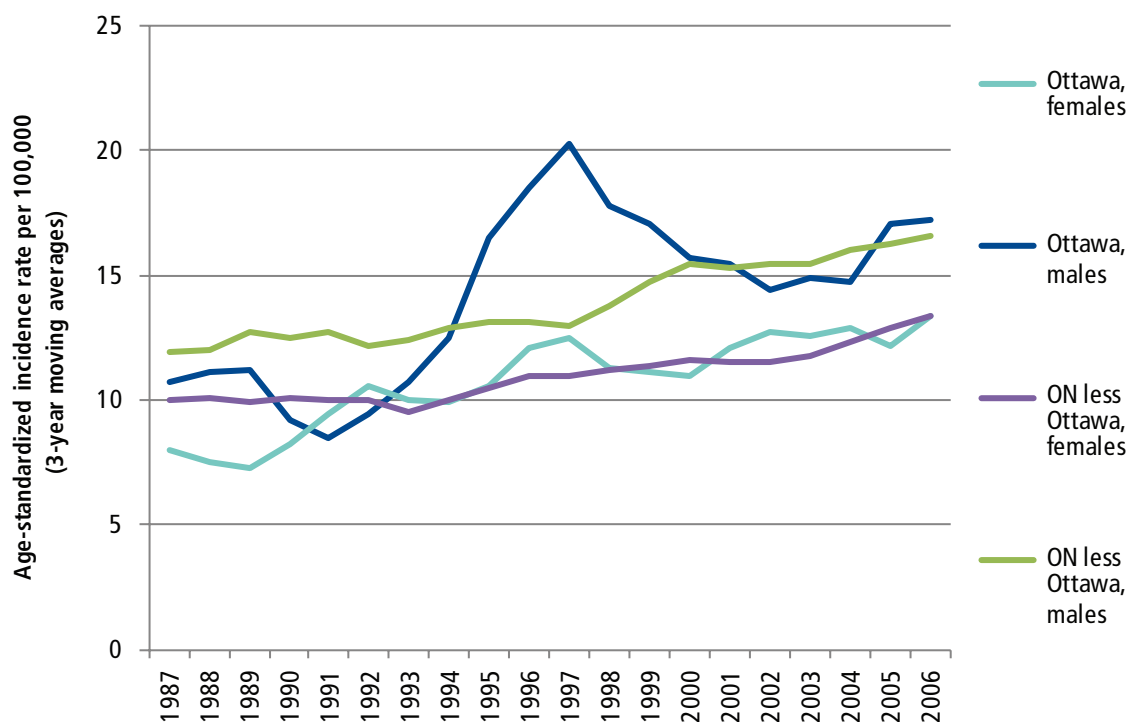
Incidence highlights

Average melanoma incidence rates among males increased significantly from 1987 to 2006 (Figure 37).

In 1991, average incidence rates decreased slightly to 8.5 per 100,000 before increasing sharply to a high 20.3 per 100,000 among Ottawa males in 1997. Incidence rates started to decline after 1997, reaching 17.2 per 100,000 in 2006. Incidence rates among Ottawa males were significantly lower than Ontario less Ottawa between 1990 and 1992, but significantly higher between 1995 and 1998.

Average incidence rates for Ottawa females increased steadily from 8.0 per 100,000 in 1987, to 13.4 per 100,000 in 2006. Rates were similar for Ottawa females and Ontario-less-Ottawa females for most years except during the late 1980s when they were significantly lower than the rest of Ontario.

Figure 37: Age-standardized melanoma incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

Age-specific melanoma incidence

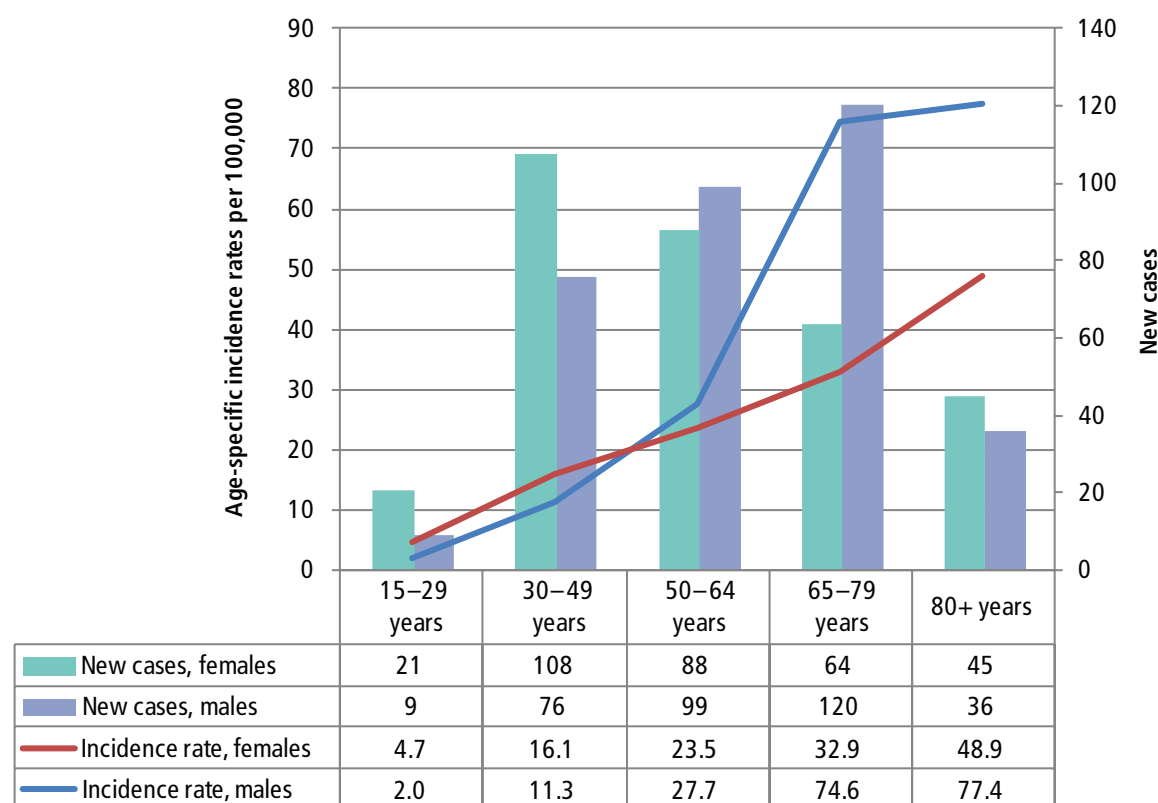
Among Ottawa males, age-specific melanoma incidence rates increased significantly with age until 65–79 years from 2003 to 2007. Among Ottawa females, age-specific melanoma incidence rates are significantly higher among females 30–49 years than for those 15–29 years. There were no significant differences among females aged 30 and older (Figure 38).

Females 15–29 and 30–49 years had slightly higher rates than males of the same age; however, these differences were not significant.

Males 65–79 years had significantly higher melanoma rates than did females of the same age. The number of new cases increased sharply between 50–64 and 65–79 years.

There were no differences in incidence rates by age group between Ottawa and the rest of Ontario for either sex. There were no new cases observed in the 0–14 year age group in Ottawa during this time.

Figure 38: Age-specific melanoma incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

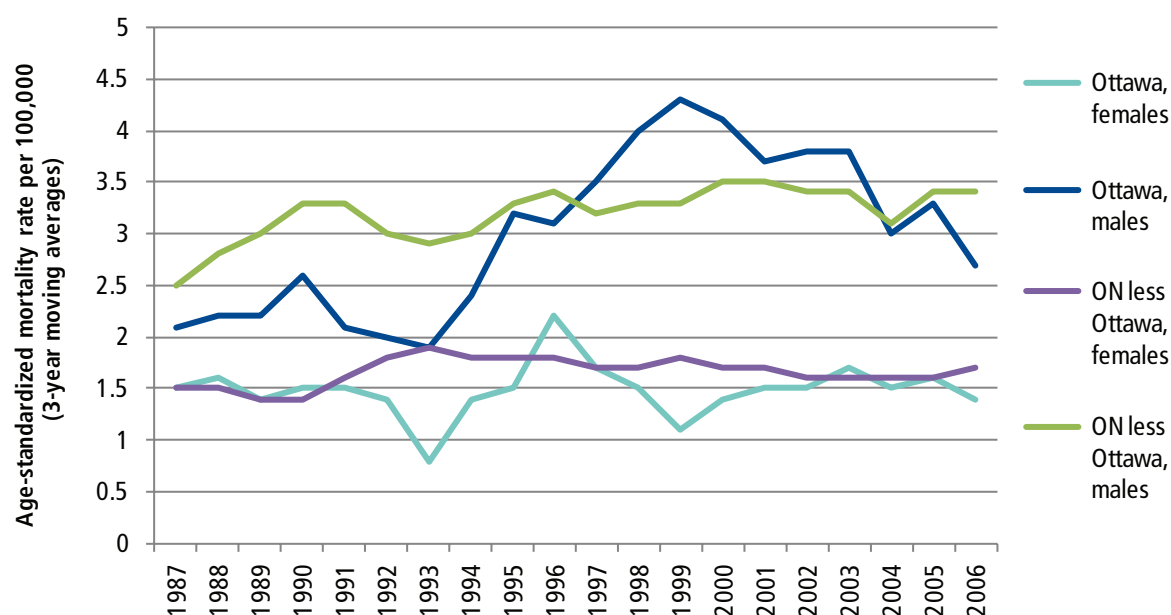
Mortality highlights

Average melanoma mortality rates have remained stable since 1987 among both sexes in Ottawa and the rest of Ontario (Figure 39). In 1993, melanoma mortality rates among Ottawa males and females were significantly lower than those in the rest of Ontario.

In 2006, the average rate among Ottawa males was 2.7 per 100,000, compared to 1.4 per 100,000 among Ottawa females. These differences are not significant.

Average mortality rates among Ottawa males have been significantly higher than for Ottawa females since the late 1990s.

Figure 39: Age-standardized melanoma mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

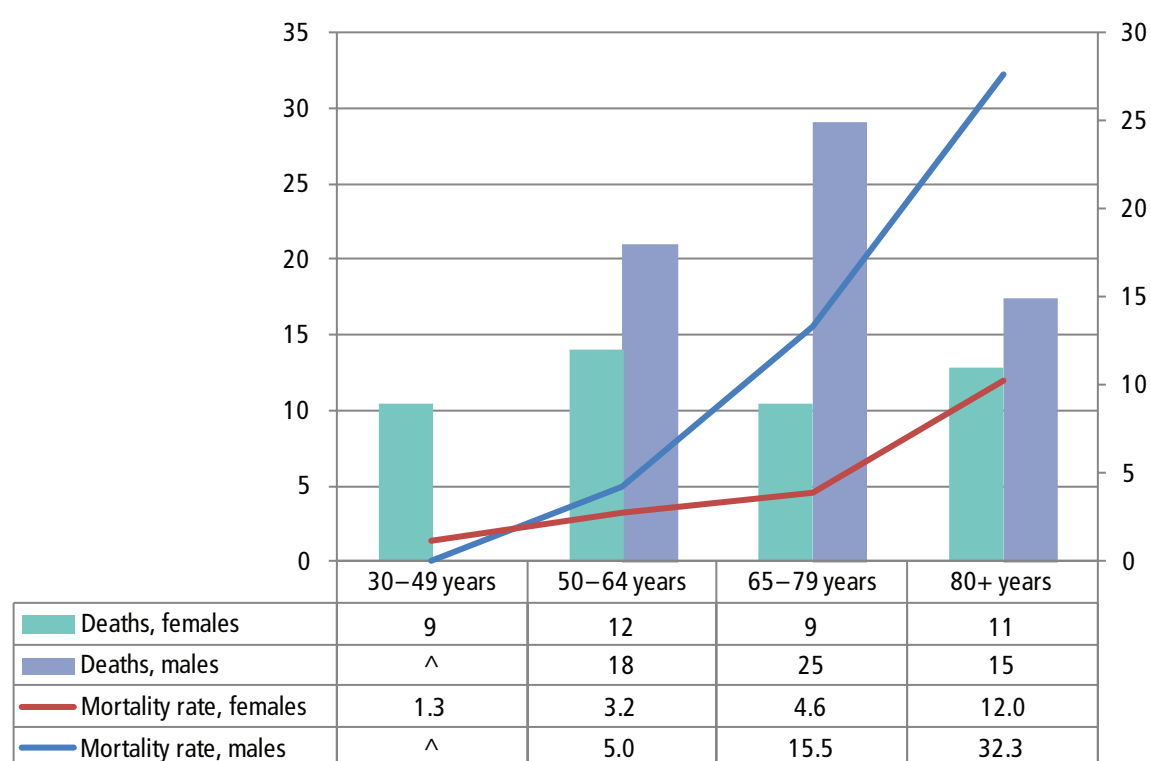
Cancer profiles

Age-specific melanoma mortality

Among Ottawa males, age-specific mortality rates increased significantly between 50–64 and 65–79 years. Among females, there were no significant differences in age-specific melanoma mortality rates between age groups (Figure 40).

There were no differences in the five-year combined melanoma mortality rates by age group between Ottawa and the rest of Ontario (not shown). There were no deaths observed in Ottawa in the 0–14 year and 15–29 year age groups during this time.

Figure 40: Age-specific melanoma mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Ultraviolet radiation

Ultraviolet radiation (UV rays), is in natural sunlight and light produced by tanning lamps used during artificial tanning.⁶ Overexposure to ultraviolet radiation increases the risk for developing melanoma.⁷

Artificial tanning

In 2009, 7.7% ($\pm 1.5\%$) of Ottawa adults 18 and older reported using artificial tanning equipment during the last 12 months.⁸ This has not changed significantly since 2006. There were no significant differences in use between males and females.

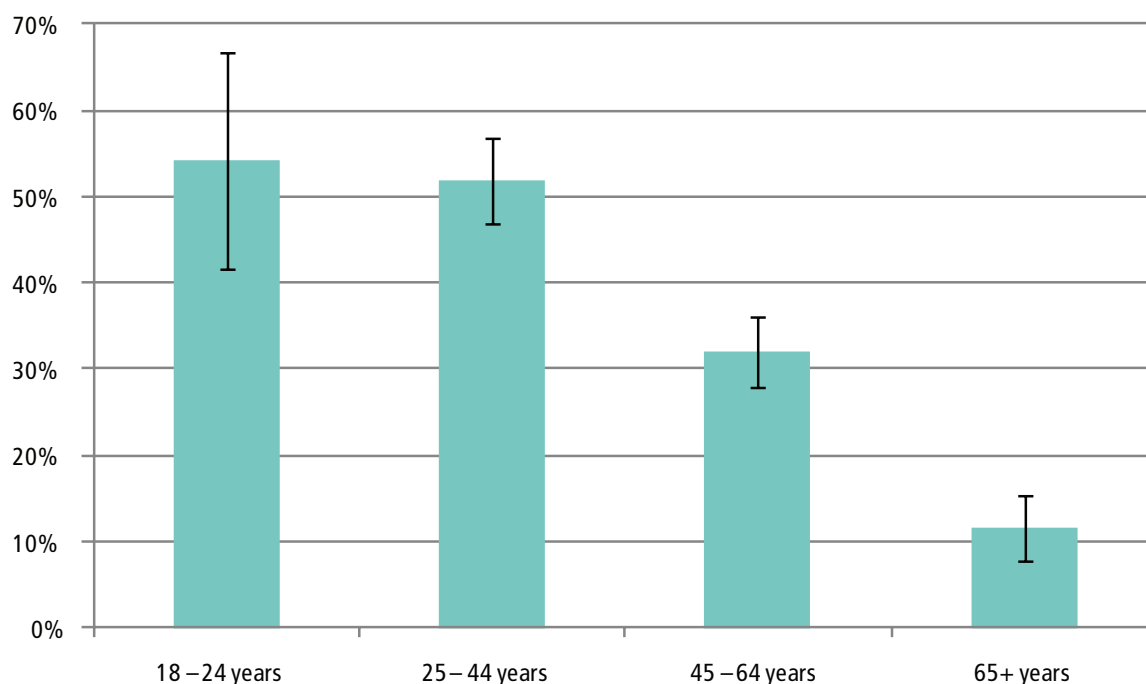
Ottawa adults aged 18 to 34 ($13.4\% \pm 4.2\%$) were significantly more likely than those aged 50 and older ($4.7\% \pm 1.8\%$) to report using artificial tanning equipment. (* = *high sampling variability; interpret with caution*)

Sun safety

In 2010, 35% ($\pm 2.6\%$) of Ottawa adults 18 and older reported being sunburnt in the last 12 months.⁹ This statistic has not changed significantly since 2001. Males are significantly more likely than females to report being sunburnt. In 2010, 40.6% ($\pm 4.2\%$) of Ottawa males compared to 31.0% ($\pm 3.3\%$) of Ottawa females reported being sunburnt at least once in the past 12 months.

In 2010, the proportion of adults reporting being sunburnt in the past 12 months decreased significantly with age in those 25 years and older (Figure 41).

Figure 41: Percentage of Ottawa adults reporting being sunburnt in the past 12 months by age, Ottawa, 2010



Data source: Rapid Risk Factor Surveillance System, 2010

Non-Hodgkin lymphoma

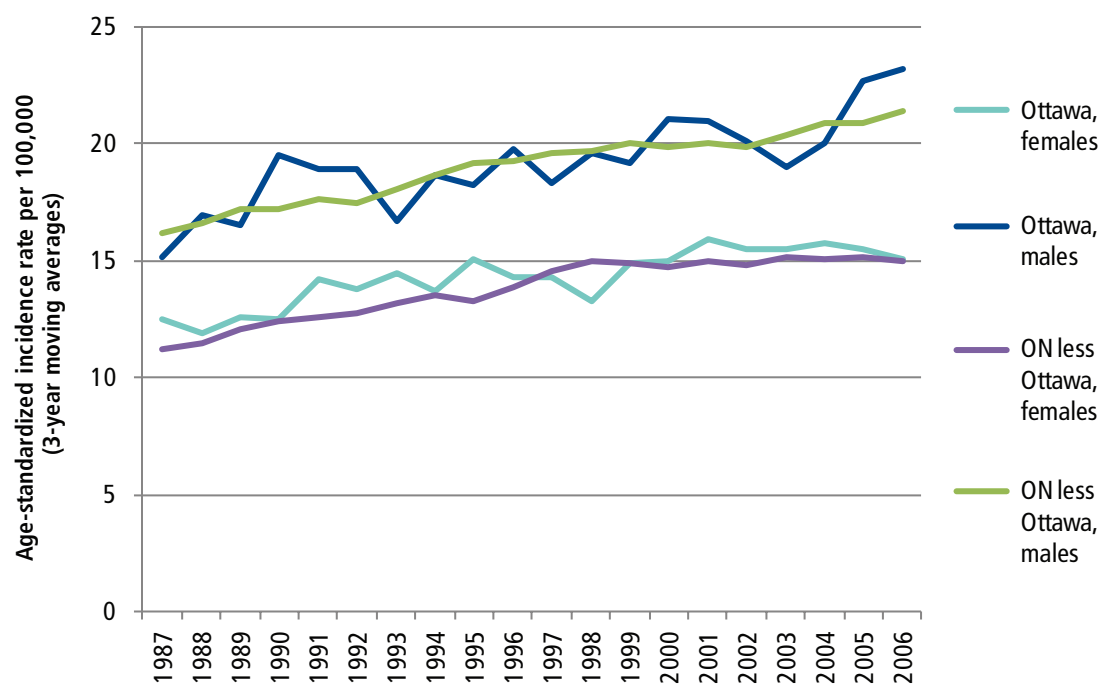
Incidence highlights

Historically, males have had higher average non-Hodgkin lymphoma incidence rates than have females.

In both Ottawa and the rest of Ontario, average non-Hodgkin lymphoma incidence rates among males have increased significantly since 1987 (Figure 42). Incidence rates among females have also increased since 1987, albeit insignificantly.

In 2006, the average rate among Ottawa males was 23.2 per 100,000, compared to 15.2 per 100,000 in 1987. Among Ottawa females, the average rate was 15.1 per 100,000 in 2006.

Figure 42: Age-standardized non-Hodgkin lymphoma incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011
Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
 Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

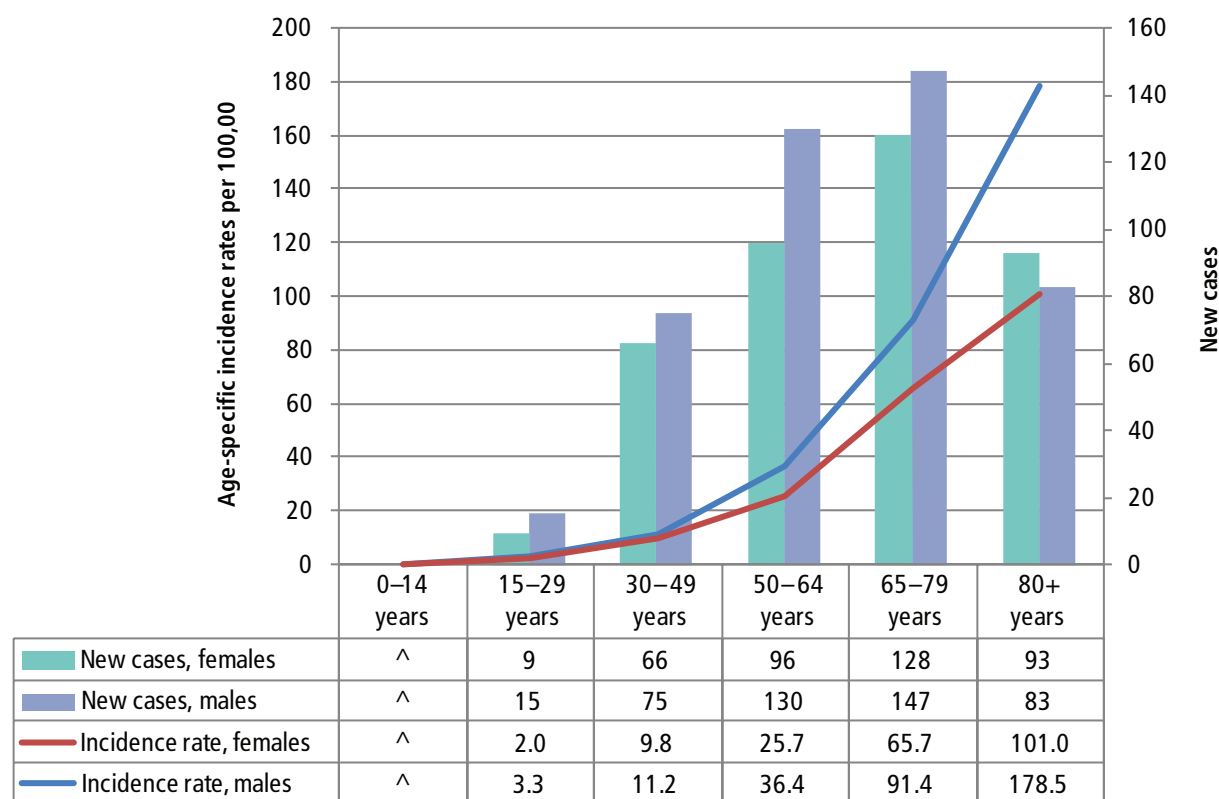
Cancer profiles

Age-specific non-Hodgkin lymphoma incidence

Among Ottawa males and females, age-specific non-Hodgkin lymphoma incidence rates increased significantly with age during 2003–2007 (Figure 43).

Ottawa males had a significantly higher incidence rate than Ottawa females in the 80+ age group, reaching 178.5 per 100,000 and 101.0 per 100,000, respectively.

Figure 43: Age-specific non-Hodgkin lymphoma incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

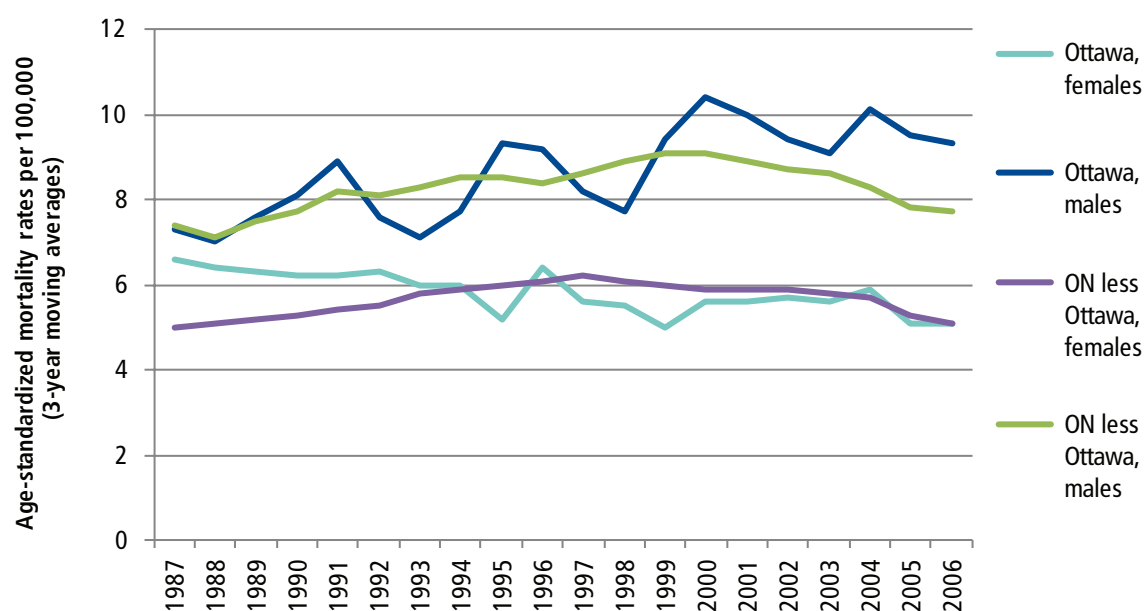
Mortality highlights

In Ottawa and the rest of Ontario, average non-Hodgkin lymphoma mortality rates have remained stable since the late 1980s among both males and females (Figure 44).

In 2006, the average rate among Ottawa males was 9.3 per 100,000 compared to 5.1 per 100,000 Ottawa females. There were no significant difference between Ottawa females and those of the rest of Ontario except in 1987.

Average mortality rates were significantly higher among Ottawa males than for Ottawa females from 1995–2006.

Figure 44: Age-standardized non-Hodgkin lymphoma mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

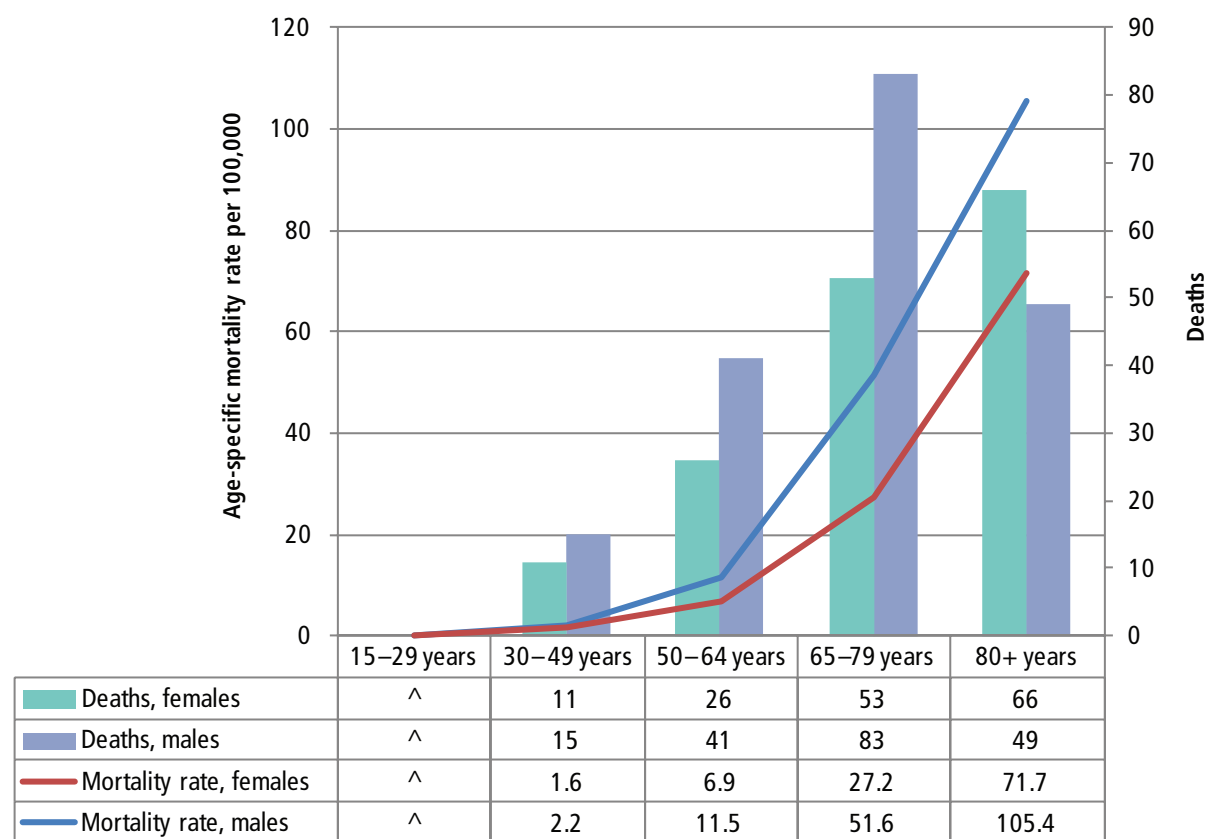
Age-specific non-Hodgkin lymphoma mortality rates

Age-specific non-Hodgkin lymphoma mortality rates increased significantly with age among both Ottawa males and females (Figure 45).

Ottawa males 65–79 years had a significantly higher age-specific mortality rate than do Ottawa females in the same age group. There were no non-Hodgkin lymphoma deaths among Ottawa males and females 0–14 years.

There were no differences in non-Hodgkin lymphoma mortality rates by age between Ottawa and the rest of Ontario (not shown).

Figure 45: Age-specific non-Hodgkin lymphoma mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Cancer of the esophagus

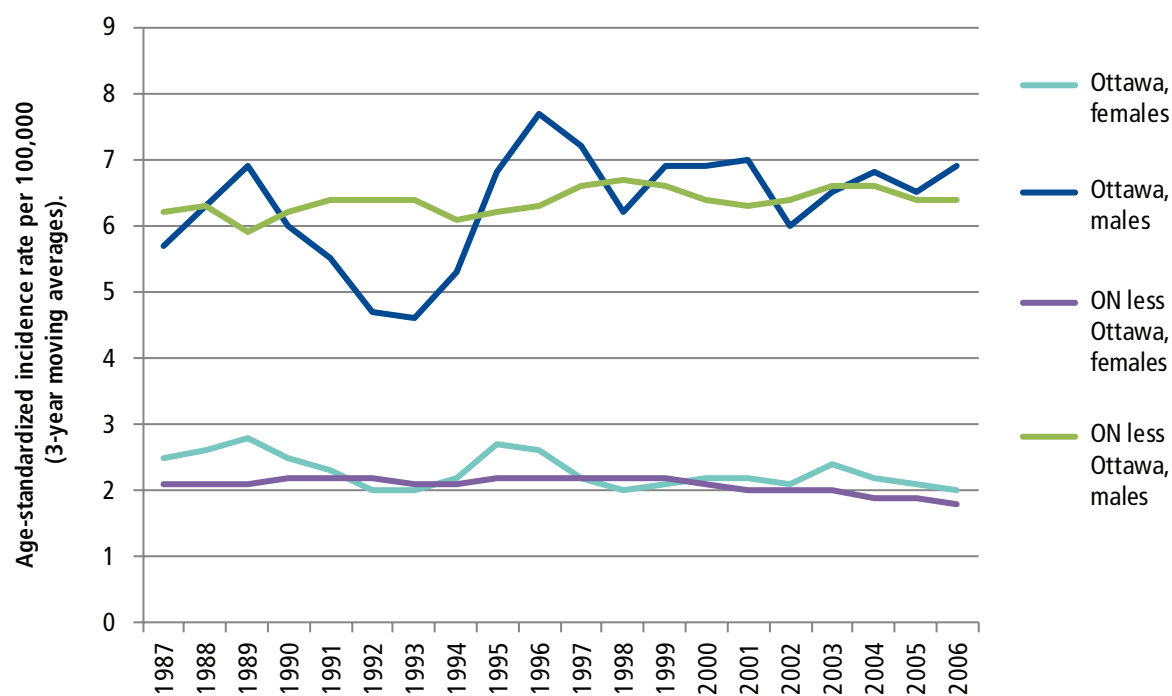
Incidence highlights

In Ottawa and the rest of Ontario, average esophageal cancer incidence rates have been stable since the late 1980s (Figure 46).

In 2006, the average rate among Ottawa males was 6.9 per 100,000, compared to 2.0 per 100,000 among Ottawa females.

Historically, average incidence rates among males have been significantly higher than those for females.

Figure 46: Age-standardized cancer of the esophagus incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

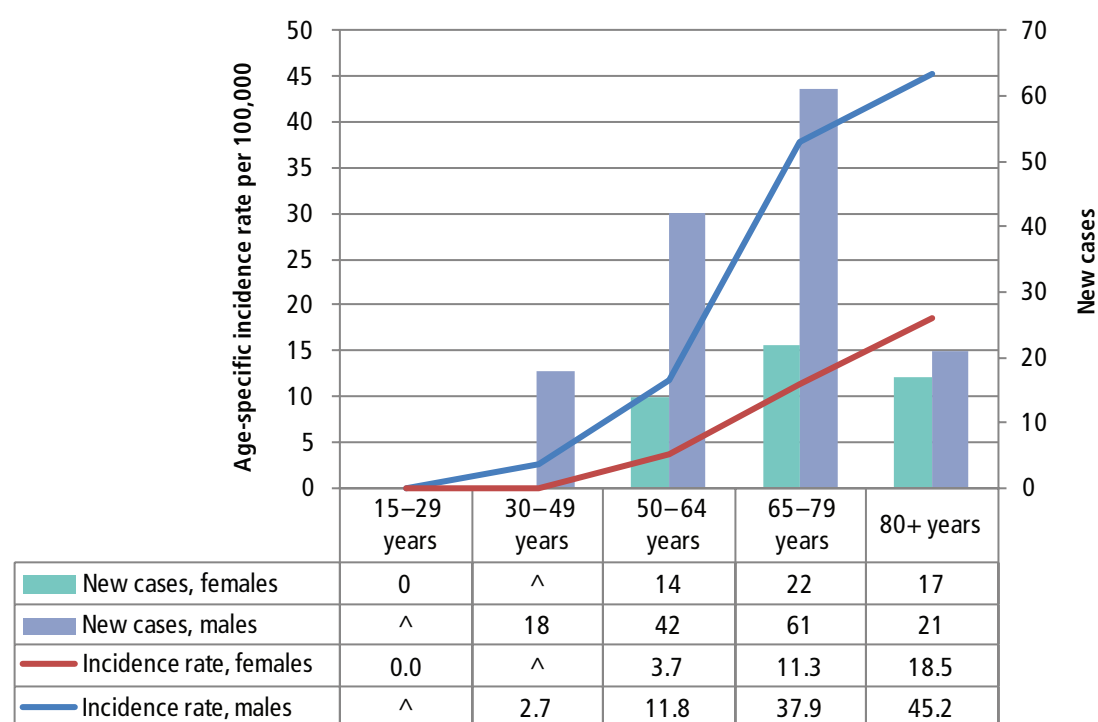
Age-specific esophageal cancer incidence

Among Ottawa males, age-specific esophageal cancer incidence rates increase significantly with age until 65–79 years (Figure 47). Among females, incidence rates were significantly lower at 50–64 years than for the 65+ age groups. There were no cases in the 0–14 year age group during 2003–2007.

Age-specific esophageal cancer incidence rates were significantly higher among males than for females in the 50–64 and 65–79 year age groups.

There were no differences in esophageal cancer incidence rates between Ottawa and the rest of Ontario for either males or females (not shown).

Figure 47: Age-specific esophageal cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

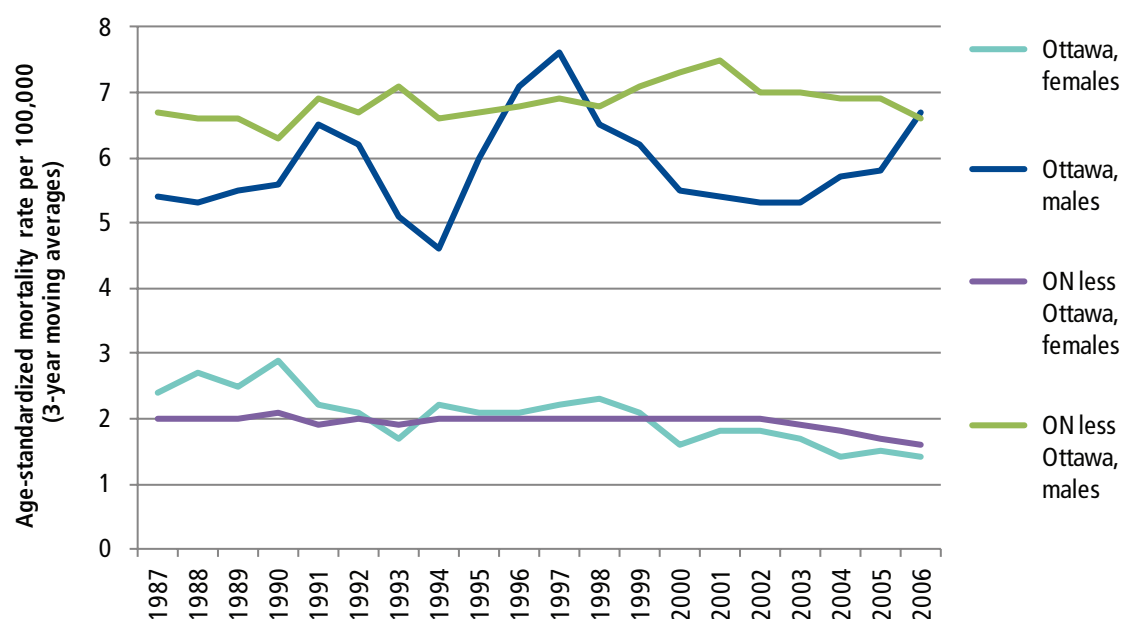
Mortality highlights

Historically, average esophageal mortality rates have been higher among males than among females.

In Ottawa and the rest of Ontario, average esophageal cancer mortality rates have remained stable among females since 1987 (Figure 48). Average mortality rates among males were significantly lower in Ottawa than the rest of Ontario between 1993-1994 and 2000-2003.

In 2006, the average rate among Ottawa males was 6.7 per 100,000, compared to 1.4 per 100,000 among Ottawa females. This is a significant difference.

Figure 48: Age-standardized cancer of the esophagus mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

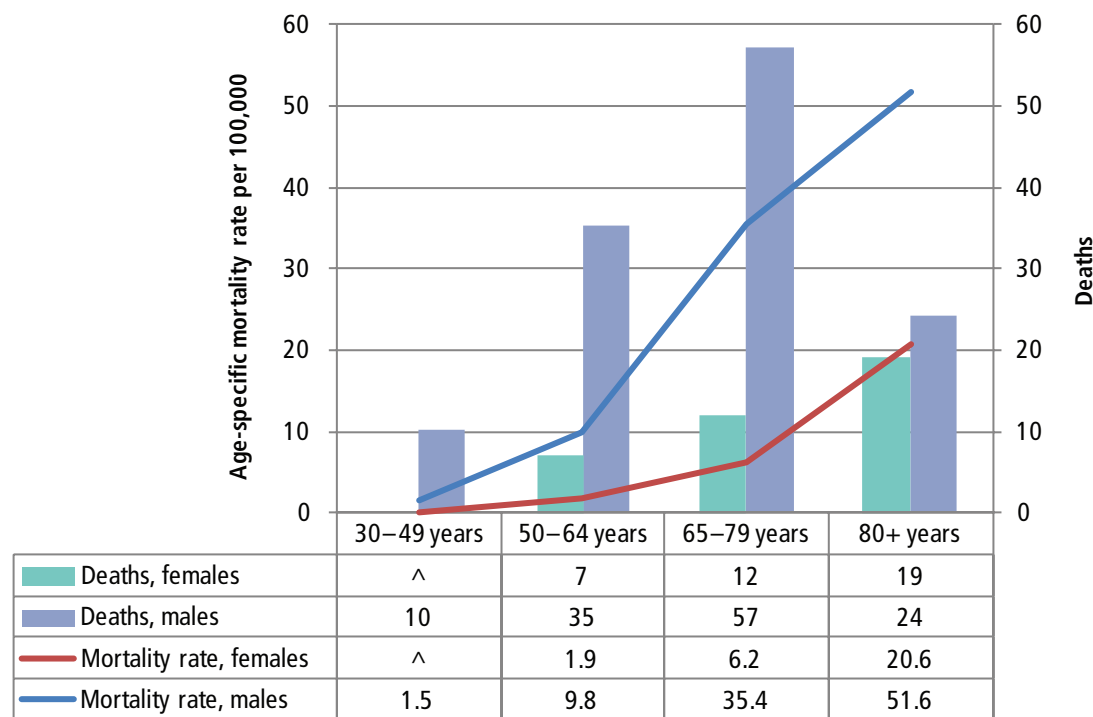
Age-specific esophageal cancer mortality

Ottawa males have significantly higher age-specific esophageal cancer mortality rates than do Ottawa females (Figure 49).

Esophageal cancer age-specific mortality rates for 2003–2007 increased with age for both sexes. However, the increases seen in the 65–79 and 80+ year age groups were not significant for either males or females. There were no deaths observed in the 0–14 and 15–29 year age groups for both sexes.

There were no significant differences in mortality rates by age group between Ottawa and the rest of Ontario for both sexes (not shown).

Figure 49: Age-specific esophageal cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancers of the urinary bladder

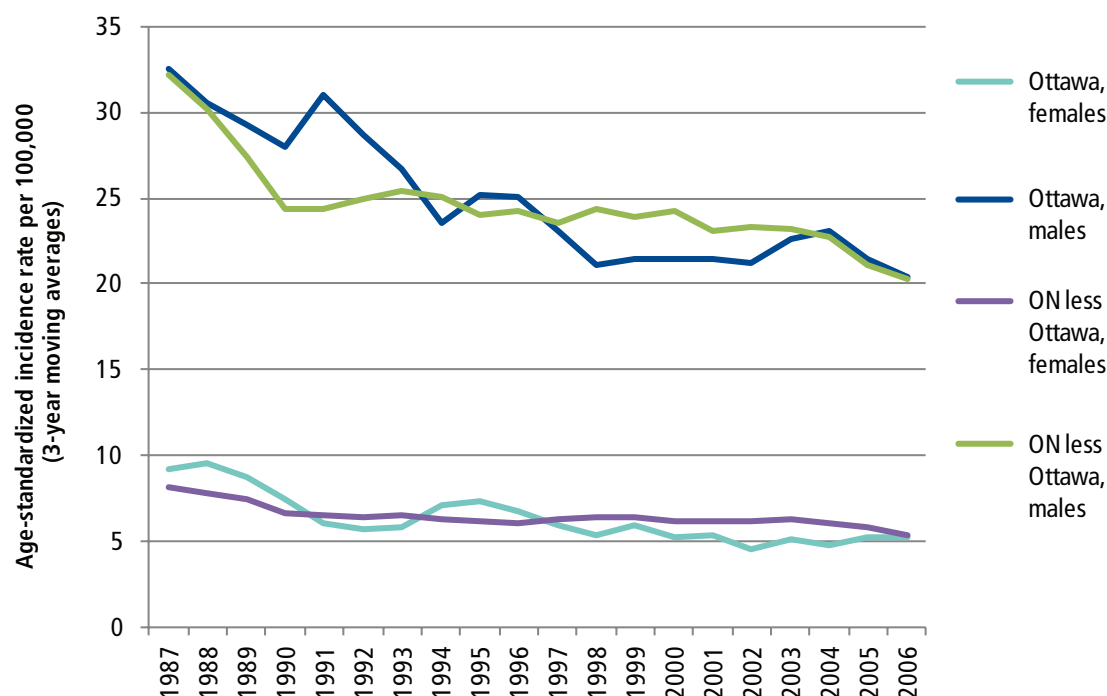
Incidence highlights

Among Ottawa males and females, average urinary bladder cancer incidence rates have decreased significantly from 1987 (Figure 50).

Average urinary bladder cancer incidence rates decreased from 32.5 per 100,000 in 1987, to 20.4 per 100,000 among Ottawa males. Among Ottawa females, average rates decreased from 9.2 per 100,000 in 1987, to 5.3 per 100,000 in 2006.

There were no differences between Ottawa and the rest of Ontario except in 1991, when the incidence rate was significantly higher among Ottawa males than among males in the rest of Ontario.

Figure 50: Age-standardized urinary bladder cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

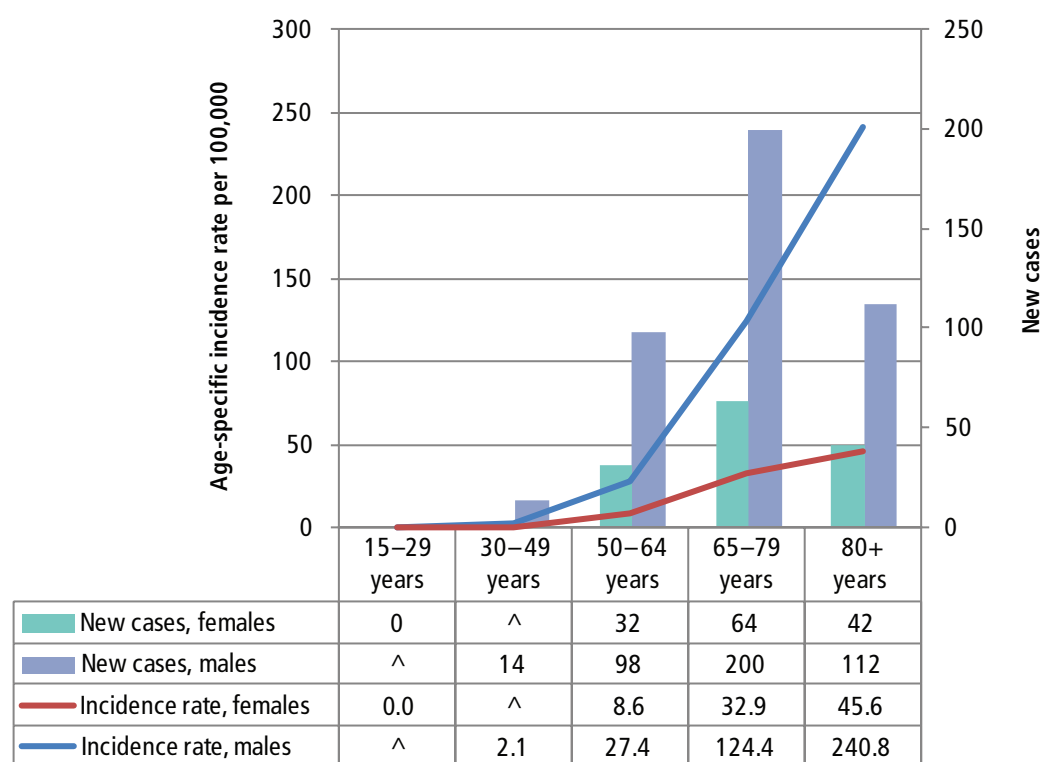
Age-specific urinary bladder cancer incidence

Age-specific urinary bladder cancer incidence rates increased with age during 2003–2007 (Figure 51). Among Ottawa males, rates increased significantly across all age groups. Among females, incidence increased significantly between 50–64 and 65–79 years.

Ottawa males aged 50 and older had significantly higher age-specific urinary bladder cancer incidence rate than did females of the same age. There were no new cases of urinary bladder cancer in the 0–14 year age group for either sex.

There were no significant differences in urinary bladder incidence rates by age group between Ottawa and the rest of Ontario for either sex (not shown).

Figure 51: Age-specific urinary bladder cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

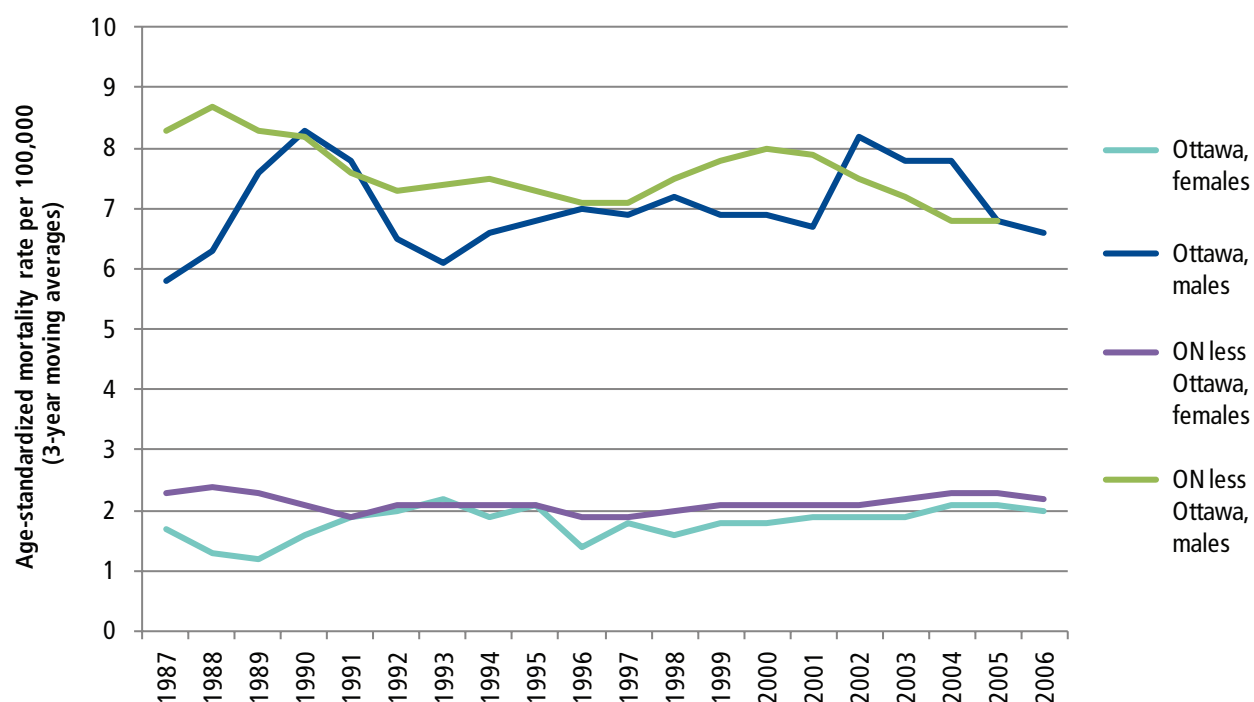
Mortality highlights

In Ottawa and the rest of Ontario, average urinary bladder cancer mortality rates have remained relatively stable since the late 1980s (Figure 52).

In 2006, the average mortality rates among Ottawa males and females were 6.6 per 100,000 and 2.2 per 100,000, respectively.

There were no significant differences in urinary bladder cancer mortality rates between Ottawa and the rest of Ontario for either sex since the late 1980s when mortality rates in Ottawa were significantly lower.

Figure 52: Age-standardized urinary bladder cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

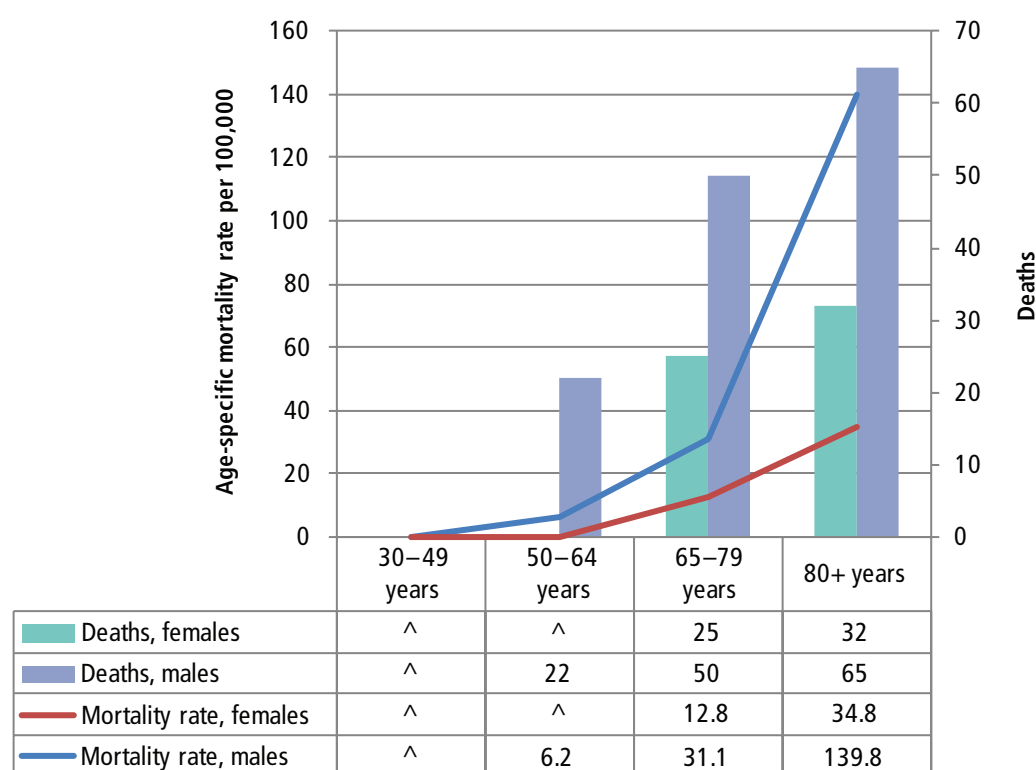
Age-specific mortality rates

Age-specific mortality rates increased with age among both sexes during 2003–2007 (Figure 53). There were too few urinary bladder cancer mortalities to report for Ottawa females younger than 65, or for males 30–49 years. There were no urinary bladder cancer deaths observed in the 0–14 year age groups for either sex.

Ottawa males 65–79 and 80+ years had significantly higher urinary bladder cancer mortality rates than did females in the same age groups.

There were no differences in mortality rates by age group between Ottawa and the rest of Ontario for either sex (not shown).

Figure 53: Age-specific urinary bladder cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

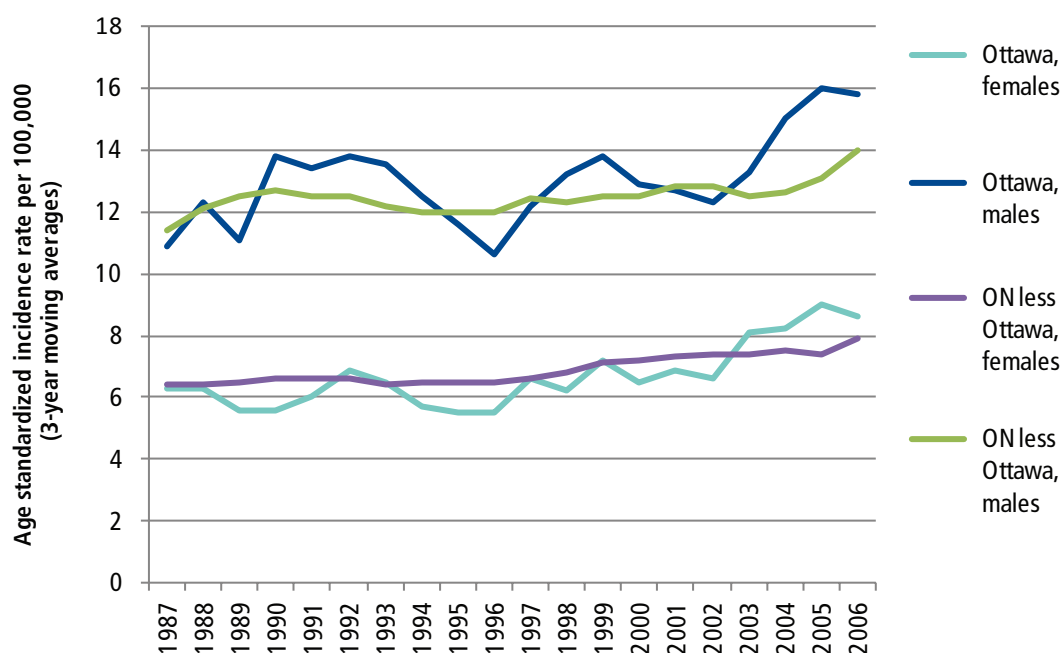
Kidney & renal pelvis cancers

Incidence highlights

In Ottawa and the rest of Ontario, average kidney cancer incidence rates were significantly higher among males than among females (Figure 54). In 2006, the average rate among Ottawa males was 15.8 per 100,000, compared to 8.6 per 100,000 among Ottawa females.

Average incidence rates among Ottawa males have increased significantly since 1987, when the rate was 10.9 per 100,000, to 15.8 per 100,000 in 2006. Average incidence rates among Ottawa females remained stable from 1987 to 2006. Average incidence rates were significantly higher among Ottawa males in 2003 and 2004 and higher among Ottawa females in 2005 compared to those of the rest of Ontario.

Figure 54: Age-standardized kidney and renal pelvis cancer incidence rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

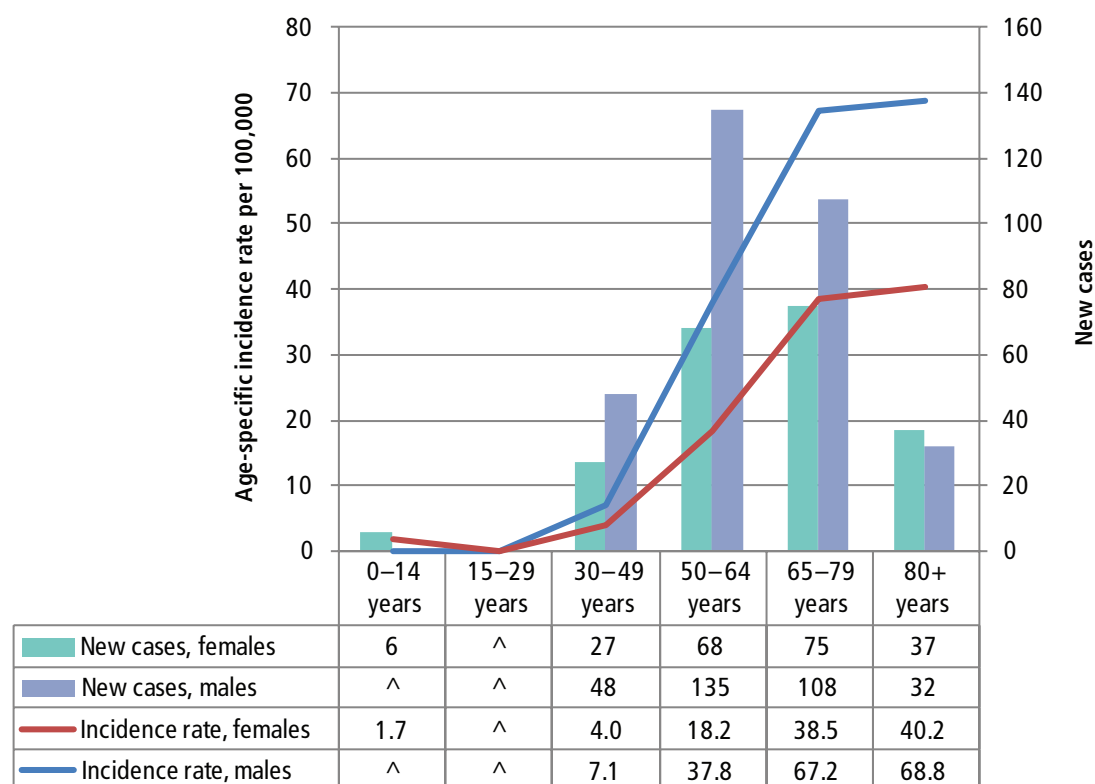
Age-specific kidney cancer incidence

Age-specific kidney cancer incidence rates increased significantly with age until 65–79 years for both sexes during 2003–2007 (Figure 55).

Ottawa males 50–64 and 65–79 years had significantly higher incidence rates than did Ottawa females in the same age groups.

There were no differences by age between Ottawa and the rest of Ontario for either sex (not shown).

Figure 55: Age-specific kidney and renal pelvis cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

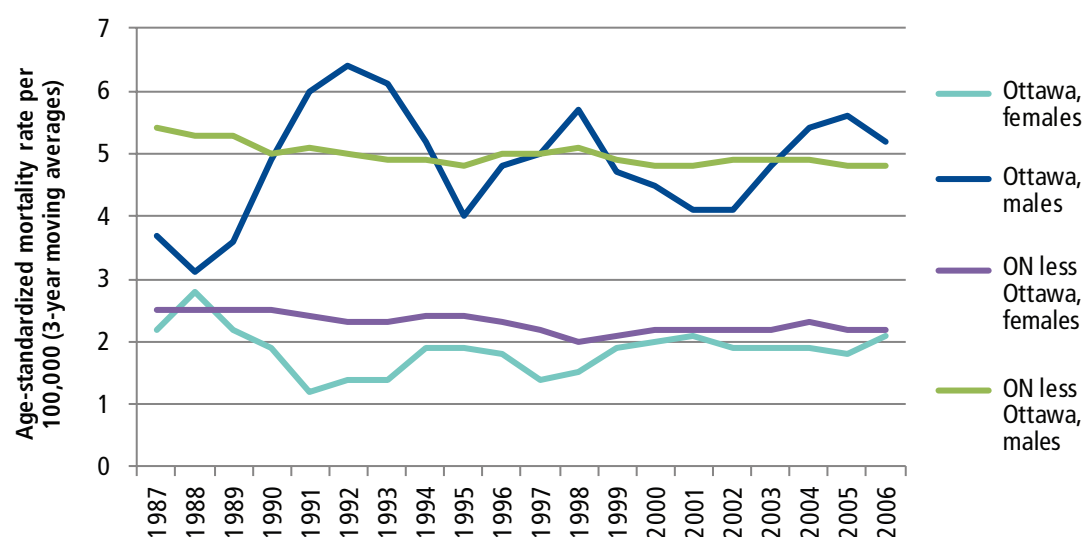
Cancer profiles

Mortality highlights

Average kidney and renal pelvis cancer mortality rates have remained stable in Ottawa and the rest of Ontario since 1987 (Figure 56). There are no significant differences in the average mortality rates between Ottawa and the rest of Ontario except in 1988 for males and 1991 for females when mortality rates in Ottawa were significantly lower.

In 2006, average mortality rates were 5.2 per 100,000, and 2.1 per 100,000 among Ottawa males and females, respectively. This is a statistically significant difference.

Figure 56: Age standardized kidney & renal pelvis cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

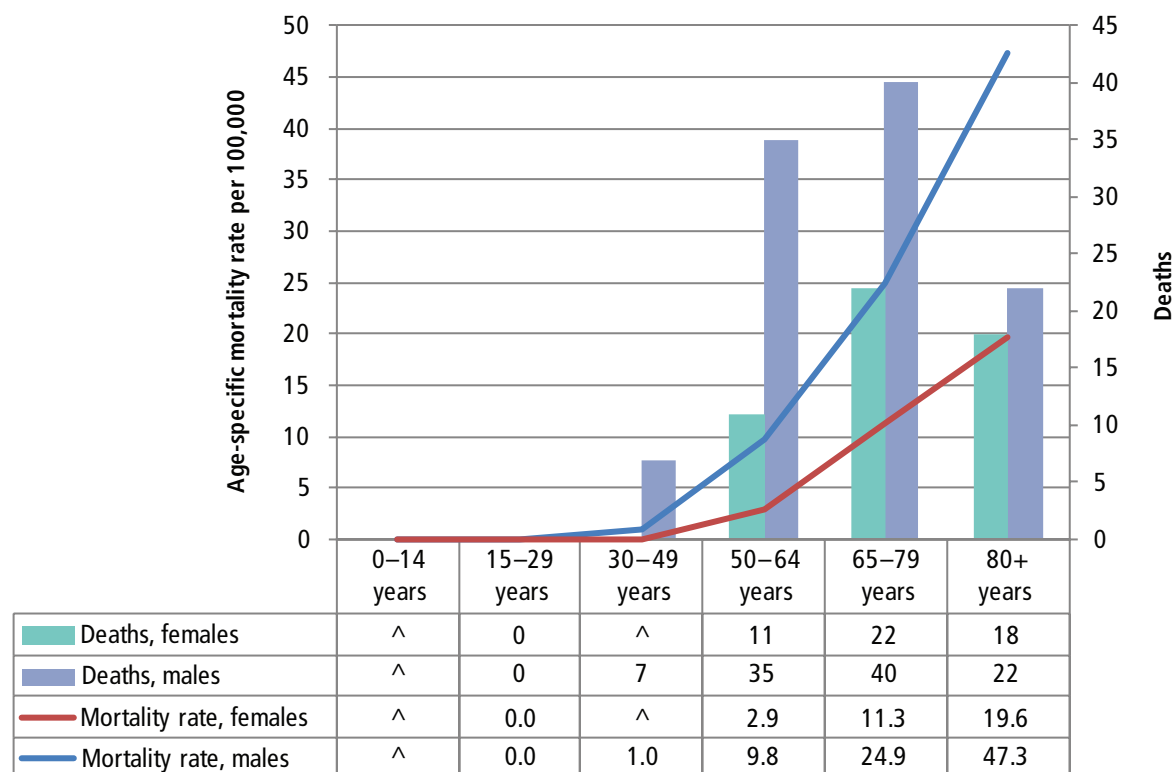
Cancer profiles

Age-specific kidney cancer mortality

Age-specific kidney cancer mortality rates increased significantly with age until 65–79 years (Figure 57). Ottawa males 50–64 and 65–79 years had significantly higher mortality rates than did females of the same age.

There were no significant differences between kidney cancer mortality rates between Ottawa and the rest of Ontario for either males or females (not shown).

Figure 57: Age-specific kidney cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Cervical cancer

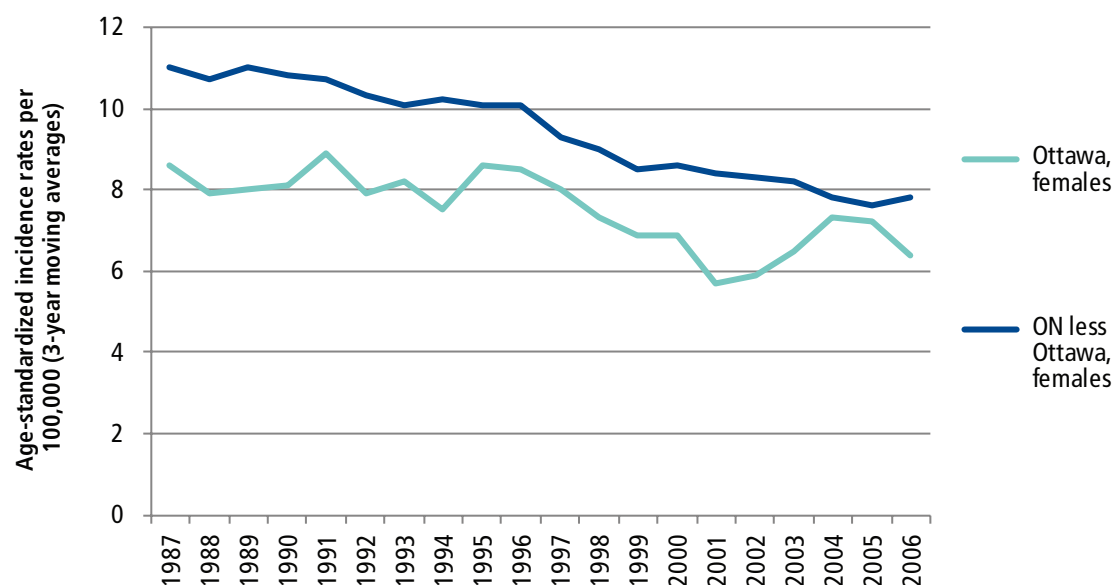
Incidence highlights

Historically, average cervical cancer incidence rates have been lower among Ottawa females than for females in the rest of Ontario (Figure 58). Ottawa incidence rates were significantly lower than the rest of Ontario from 1987-1990, 1992-1994, and 2000-2003.

Average incidence rates among females have been steadily decreasing since the late 1980s in Ottawa and the rest of Ontario.

Among Ottawa females, the average incidence rate decreased significantly from 10.6 per 100,000 in 1987 to 7.7 per 100,000 in 2006.

Figure 58: Age-standardized cervical cancer incidence rates per 100,000 (three-year moving average), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

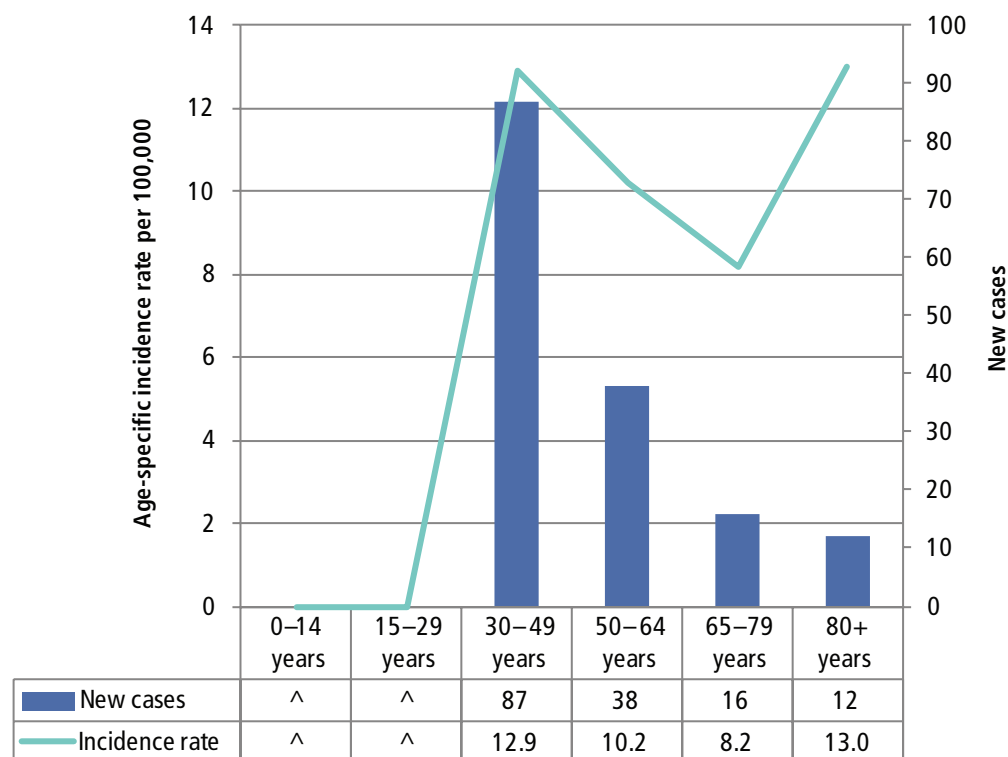
Age-specific cervical cancer incidence

Age-specific cervical cancer incidence rates for 2003 to 2007 peaked at 12.9 per 100,000 among females 30–49 years in Ottawa (Figure 59).

Among Ottawa females, age-specific cervical cancer incidence rates declined from a high of 12.9 per 100,000 at 30–49 years, to 10.2 per 100,000 and 8.2 per 100,000 in the 50–64 and 65–79 year age groups, respectively. These decreases were not significant.

Age-specific incidence rates increased slightly among females in the 80+ year age group, but this was not significant.

Figure 59: Age-specific cervical cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

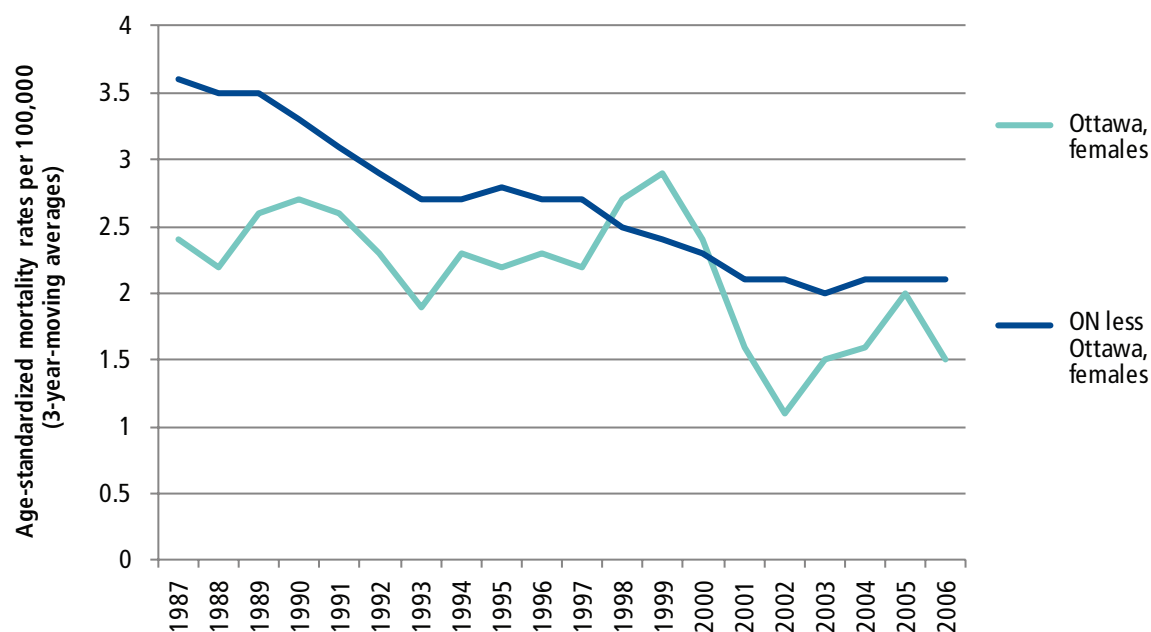
Cancer profiles

Mortality highlights

Among Ottawa females, average cervical cancer mortality rates remained stable from 1987 to 1998 before reaching 2.9 per 100,000 in 1999. Beginning in 2000, the average mortality rate declined to a low of 1.1 per 100,000 in 2002 (Figure 60).

For most years, average cervical cancer mortality rates were similar among females in Ottawa and the rest of Ontario, except in 1988 and 2002 when mortality rates were significantly lower for Ottawa females.

Figure 60: Age-standardized cervical cancer mortality rates per 100,000 (three-year moving average), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

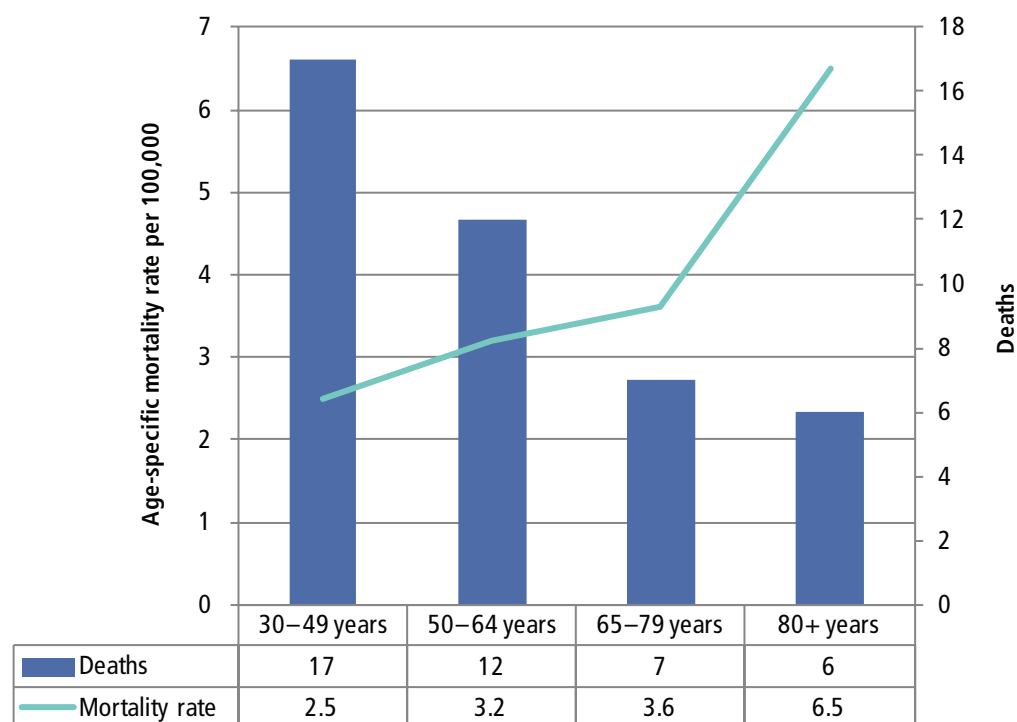
Cancer profiles

Age-specific cervical cancer mortality

Age-specific cervical cancer mortality rates increased slightly with age (Figure 61). These increases are not significant.

There were no significant differences in mortality rates by age among females in Ottawa and for the rest of Ontario (not shown).

Figure 61: Age-specific cervical cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

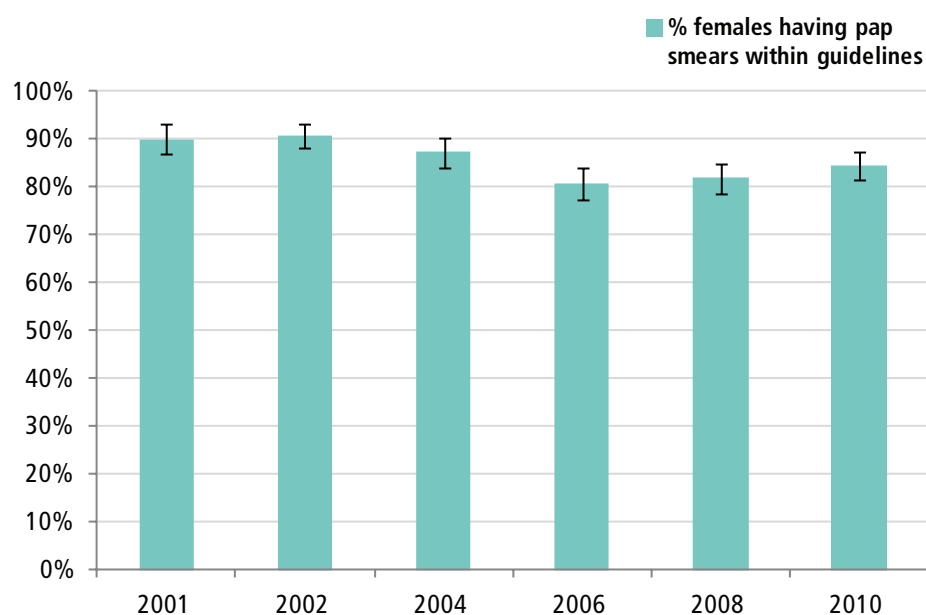
Cervical cancer screening

Regular Pap smear screening is an important aspect of cervical cancer screening.¹⁰ In Ontario, it is recommended that females begin screening within three years of having vaginal sexual activity. After three consecutive annual Pap tests with normal results, females should be screened every three years until age 70. Recommendations change accordingly if a test reports abnormal results.

From 2001 to 2004, about 90% of females 18–69 reported having a Pap smear test within recommended guidelines.

In 2010, 84.6% ($\pm 2.9\%$) of Ottawa females aged 18–69 reported having a Pap smear test within the recommended cervical cancer screening guidelines. This has not changed significantly since 2004.

Figure 62: Percentage of Ottawa females aged 18–69 reporting having a Pap smear test within recommended cervical cancer screening guidelines



Data source: Rapid Risk Factor Surveillance System

Data note: Ontario cervical cancer screening guidelines changed from having a recommended pap smear every 2 years to ever 3 years for females 18 and older in 2006

Cancer profiles

Knowledge of human papillomavirus

There are over 100 different human papillomaviruses (HPV)—some types can cause genital warts, while others can cause cervical cancer and other rare forms of cancers, such as oral, anal and penis cancers.¹¹ HPV can be spread through sexual activity and/or skin-to-skin contact. The risk for developing cervical cancer increases with persistent or recurring HPV infections.

In 2010, 86.1% ($\pm$ 2.6%) of females aged 18 and older reported they had heard or read about HPV, compared to 76.1% ($\pm$ 3.3%) in 2007. This is a significant difference of 10 percentage points.⁹

Knowledge of HPV declines significantly with age. Only 70.3% ($\pm$ 8.5%) of females aged 65+ reported having seen or heard about HPV, compared to 91.8% ($\pm$ 7.7%) of 18–24 year-olds; 88.3% ($\pm$ 4.2%) of 25–44 year-olds; and 90.5% ($\pm$ 3.4%) of 45–64 year-olds.

Of females aged 18 and older, 59.2% ($\pm$ 3.9%) believe there is a link between HPV and cervical cancer. This statistic has not changed significantly since 2007.

Cancer profiles

Body of uterus cancer

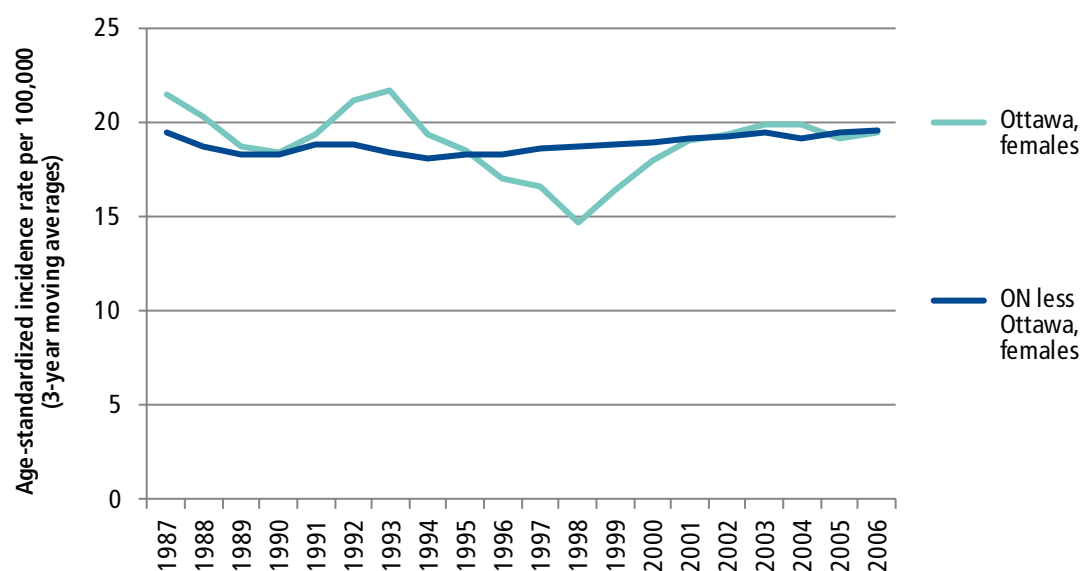
Incidence highlights

Among Ottawa females, average body of uterus cancer incidence rates peaked at 21.7 per 100,000 in 1993 before dropping significantly to 14.7 per 100,000 in 1998 (Figure 63).

After 1998, the average incidence rate among Ottawa females increased steadily to 19.5 per 100,000 in 2006. This was a statistically significant difference.

Average incidence rates among females were similar between Ottawa and the rest of Ontario for most years except 1993 and 1998 when rates between the two were statistically different.

Figure 63: Age-standardized body of uterus cancer incidence rates per 100,000 (three-year moving average), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

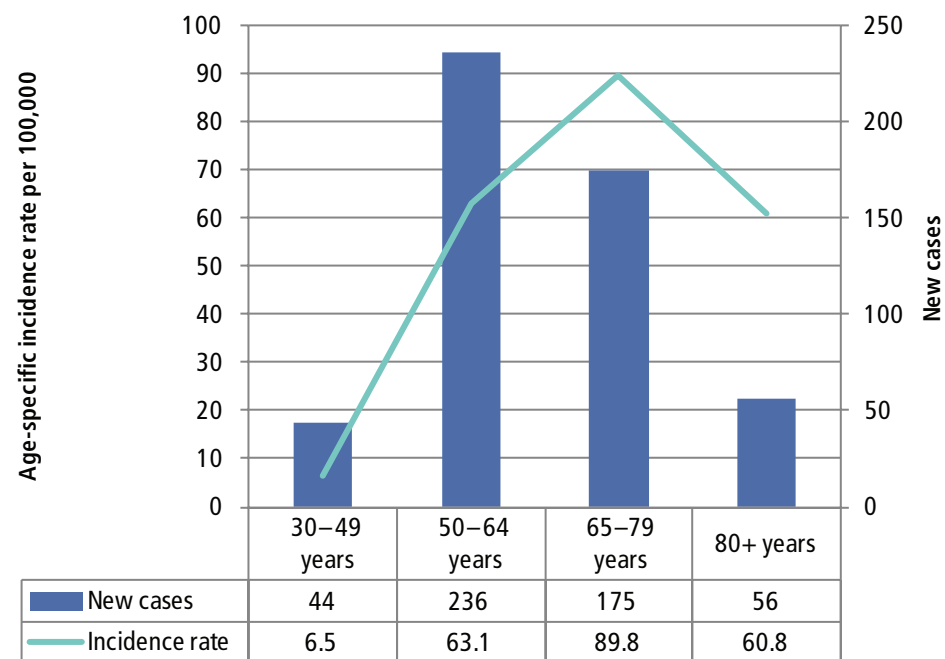
Age-specific body of uterus incidence

Age-specific body of uterus incidence rates increased significantly between age groups up to 65–79 years during 2003–2007 (Figure 64). There were no new cases of body of uterus cancer in the 0–14 year or 15–19 year age groups.

Females aged 65–79 had the highest body of uterus incidence rate. While rates did decline slightly in the 80+ age group, this was not statistically significant.

There were no differences in body of uterus cancer incidence rates among females by age in Ottawa and the rest of Ontario (not shown).

Figure 64: Age-specific body of uterus incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

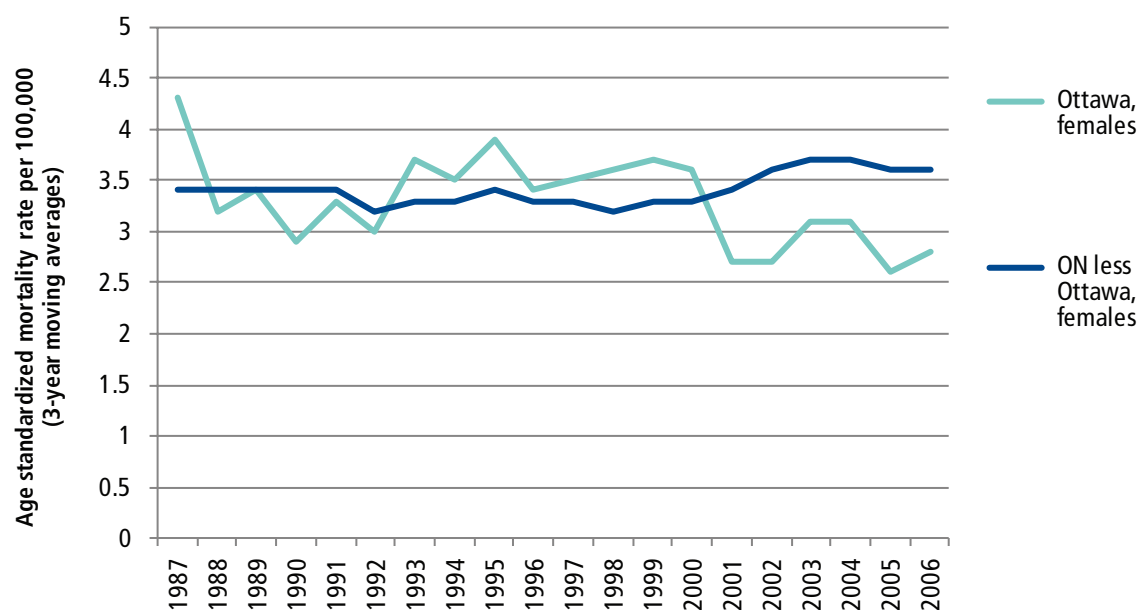
Mortality highlights

In Ottawa and the rest of Ontario, average body of uterus cancer mortality rates have remained stable since the late 1980s (Figure 65).

In 2006, the average rate among Ottawa females was 2.8 per 100,000, compared to 3.6 per 100,000 among Ontario-less-Ottawa females.

Average mortality rates among females in Ottawa and the rest of Ontario were similar during most years except 2005 when the mortality rate was significantly lower in Ottawa than the rest of Ontario.

Figure 65: Age-standardized body of uterus cancer mortality rates per 100,000 (three-year moving average), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

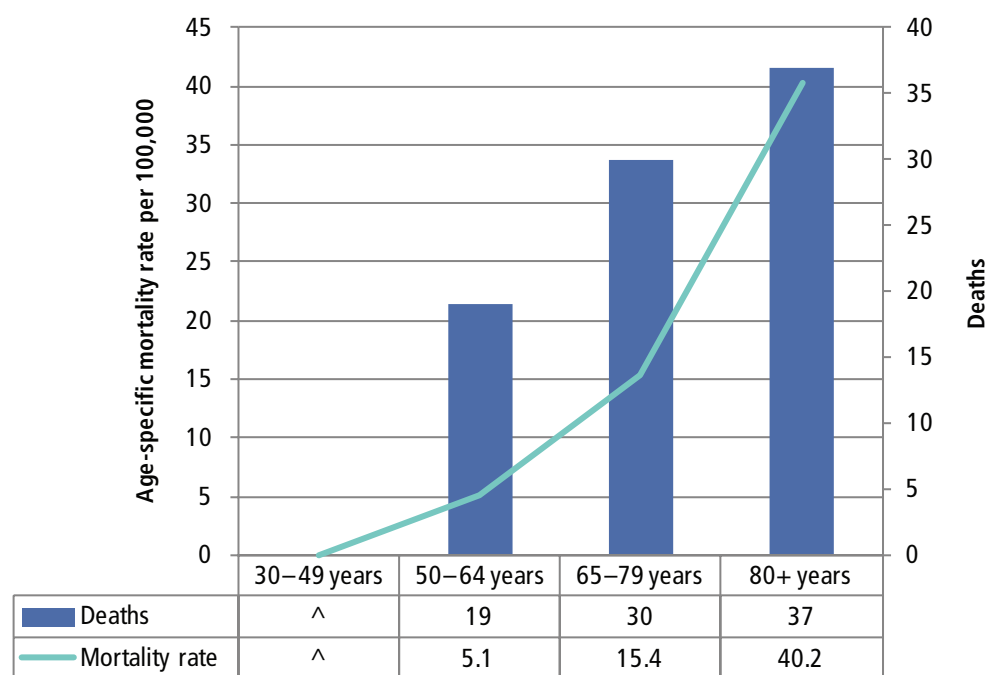
Cancer profiles

Age-specific body of uterus mortality

Age-specific body of uterus mortality rates increased significantly with age among females in Ottawa during 2003–2007 (Figure 66). There were no body of uterus cancer deaths in the 0–14 and 15–29 year age groups.

There were no significant differences in body of uterus mortality rates by age group between Ottawa and the rest of Ontario (not shown).

Figure 66: Age-specific body of uterus mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

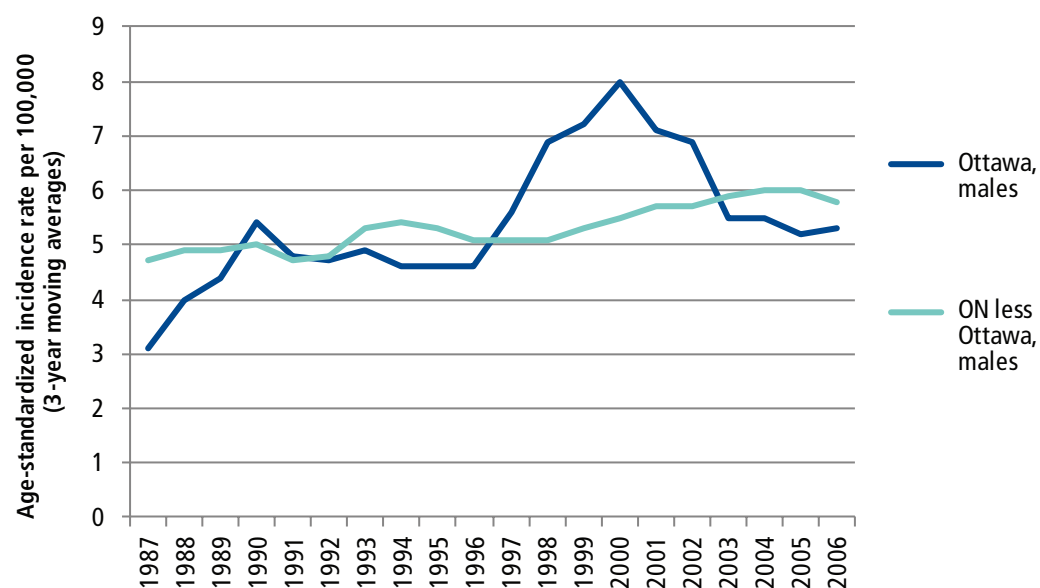
Testicular cancer

Incidence highlights

Between 1998 and 2000, average testicular cancer incidence among Ottawa males was significantly higher than for Ontario-less-Ottawa males (Figure 67).

Average testicular cancer incidence rates among Ottawa males peaked in 2000 at 8.0 per 100,000 before declining to 5.3 per 100,000 in 2006. This was not a significant decline.

Figure 67: Age-standardized testicular cancer incidence rates per 100,000 (three-year moving average), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

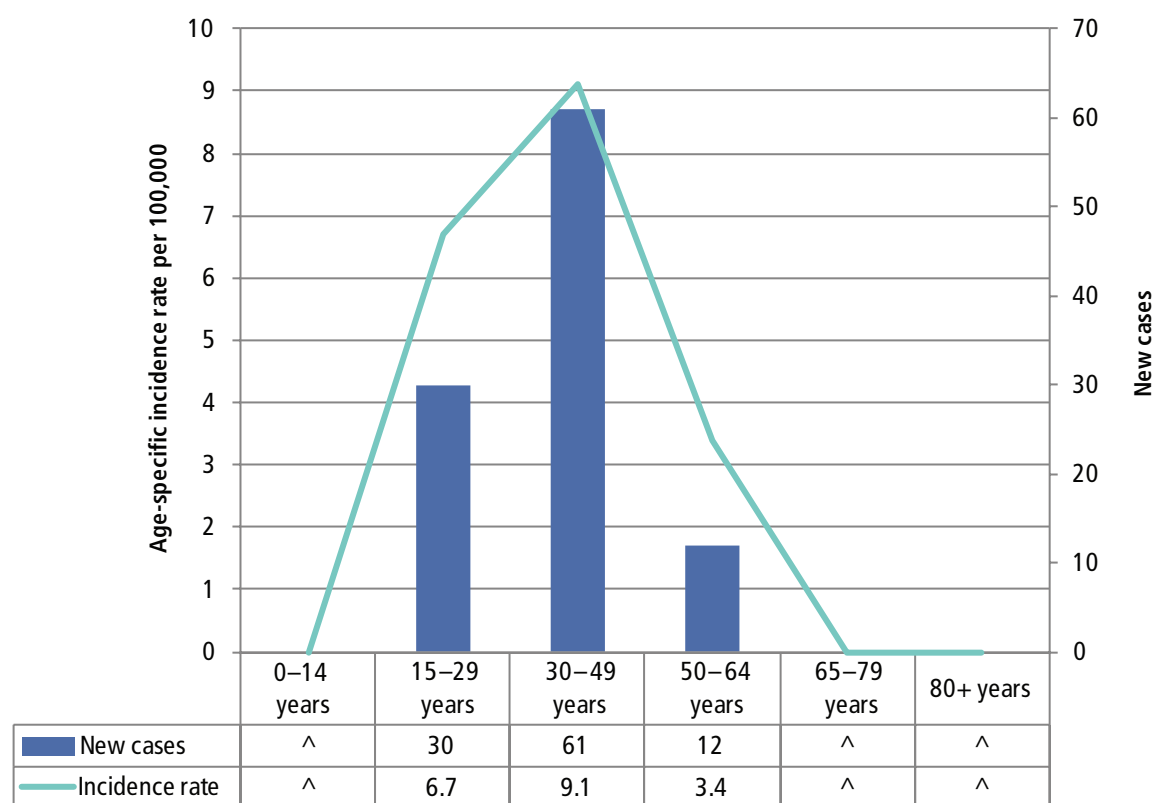
Cancer profiles

Age-specific testicular cancer incidence

Age-specific testicular cancer incidence rates were highest among males 15–29 and 30–49 years, decreasing significantly among males 50–64 years (Figure 68).

There were not sufficient testicular cancer cases to report incidence data for Ottawa males 0–14, 65–79 and 80+ years.

Figure 68: Age-specific testicular cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Mortality highlights

Three-year moving average testicular cancer mortality rates per 100,000 among Ottawa males by year cannot be reported because there were fewer than six testicular cancer deaths from 1987 to 2006.

Average mortality rates among males in the rest of Ontario have remained stable since the late 1980s.

In 2006, the three-year moving average mortality rate in the rest of Ontario was 0.2 per 100,000.

Cancer profiles

Pancreatic cancer

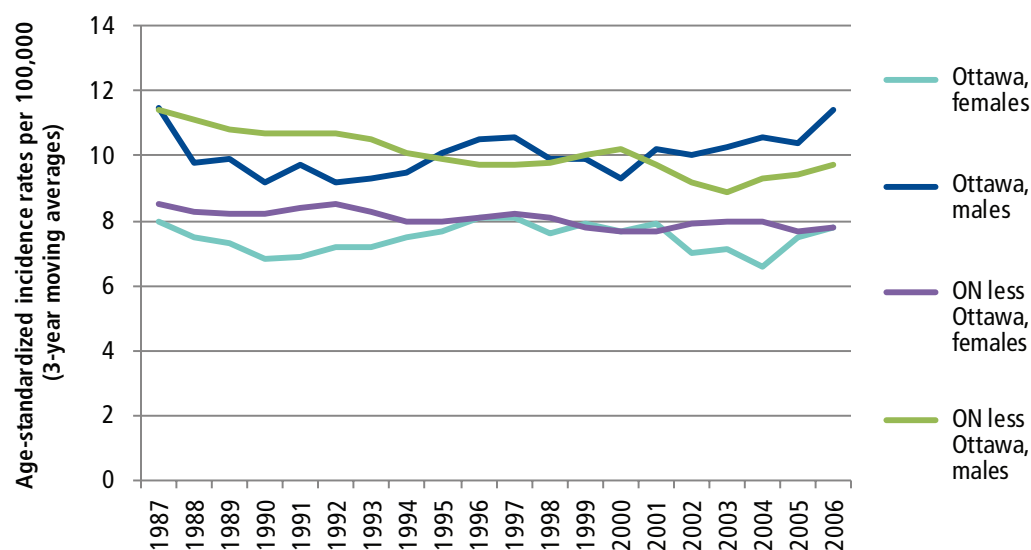
Incidence highlights

Average pancreatic cancer incidence rates have been historically higher among males than females in Ottawa and the rest of Ontario (Figure 69).

Average incidence rates have been stable since the late 1980s. In 2006, the average pancreatic cancer incidence rates among Ottawa males and females were 11.4 per 100,000, and 7.8 per 100,000, respectively.

Average incidence rates are similar in Ottawa and the rest of Ontario for both sexes.

Figure 69: Age-standardized pancreatic cancer incidence rates per 100,000 (three-year moving average), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

Age-specific pancreatic cancer incidence

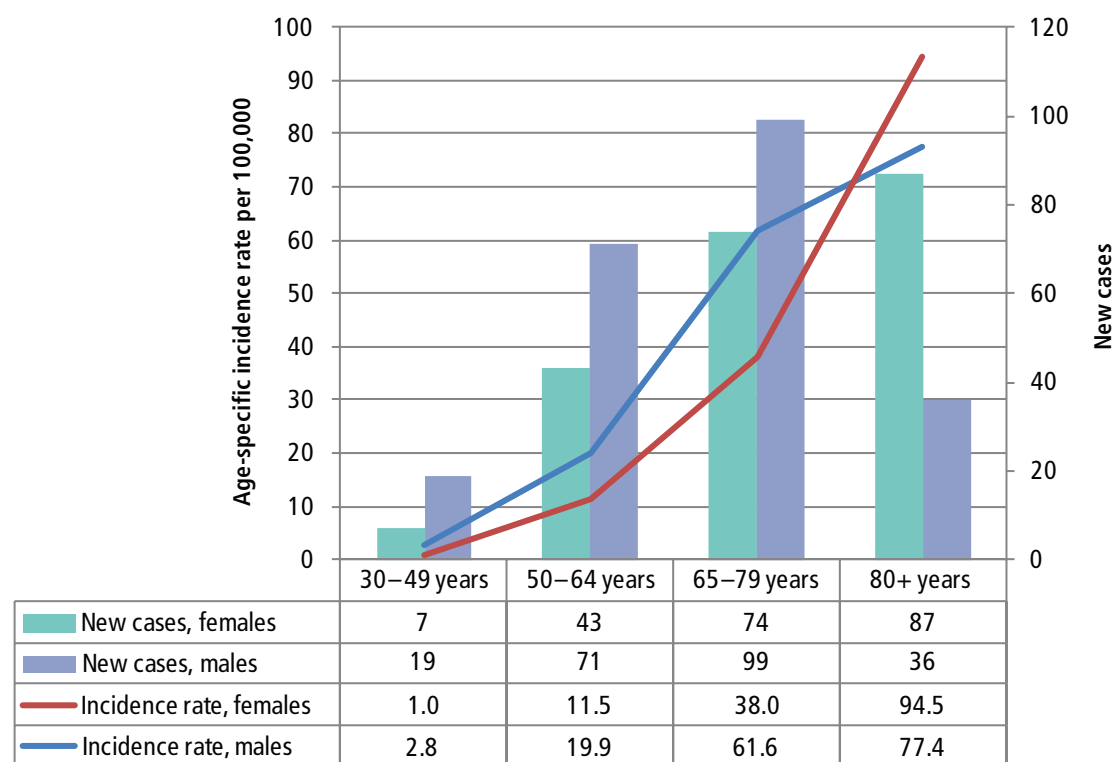
Age-specific pancreatic cancer incidence rates increased significantly with age (Figure 70). Among Ottawa males, incidence rates increased significantly at 65–79 years. Among females, incidence rates increased significantly through all age groups.

Ottawa males 65–79 years had a significantly higher incidence rate than did Ottawa females of the same age. There were no significant differences in incidence rates between sexes in the other age groups. There were no new cases of pancreatic cancer in the 0–14 and 15–29 year age groups in either sex.

While the pancreatic cancer incidence rate was higher among Ottawa females than for males in the 80+ age group, this difference is not statistically significant.

There were no significant difference in pancreatic cancer incidence rates by age group between Ottawa and the rest of Ontario (not shown).

Figure 70: Age-specific pancreatic cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

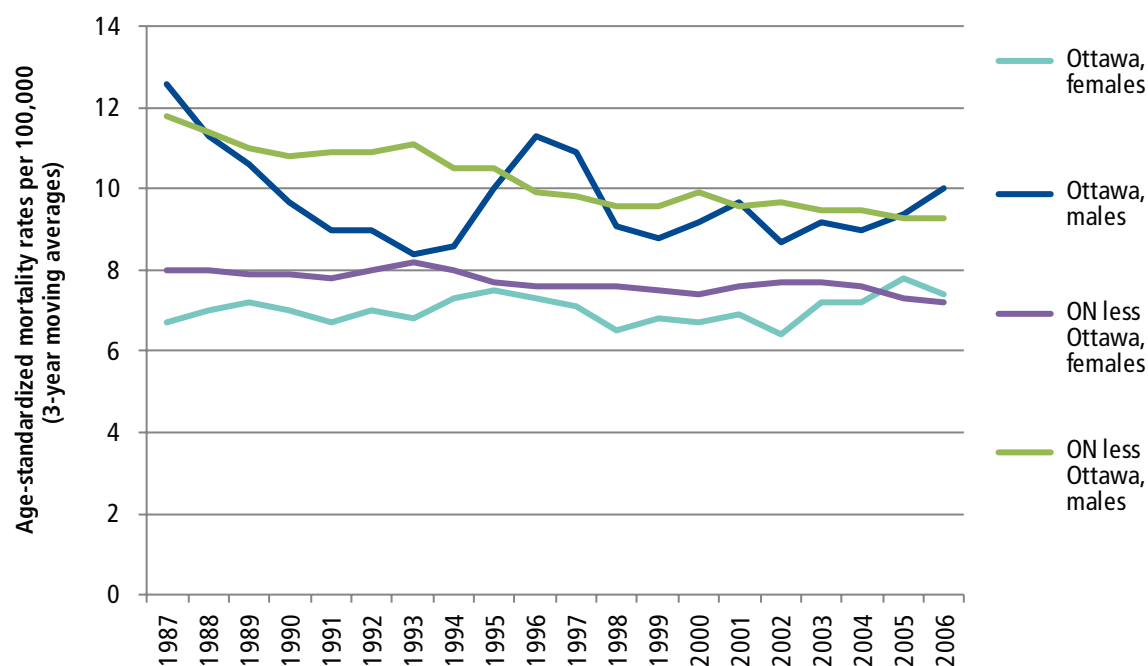
Mortality highlights

Among Ottawa males, the average pancreatic cancer mortality rate was highest in 1987 at 12.6 per 100,000 before decreasing to a low of 9.0 per 100,000 in 1992. This decline was not statistically significant. Average rates have been stable among Ottawa males since 1998 (Figure 71).

Among Ottawa females, average pancreatic cancer mortality rates have been stable since 1987. In 2006, the average rate was 7.4 per 100,000.

Average pancreatic mortality rates were similar between Ottawa and the rest of Ontario for both sexes except in 1993 when rates among Ottawa males were significantly lower than those of the rest of Ontario.

Figure 71: Age-standardized pancreatic cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011
Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance),
Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

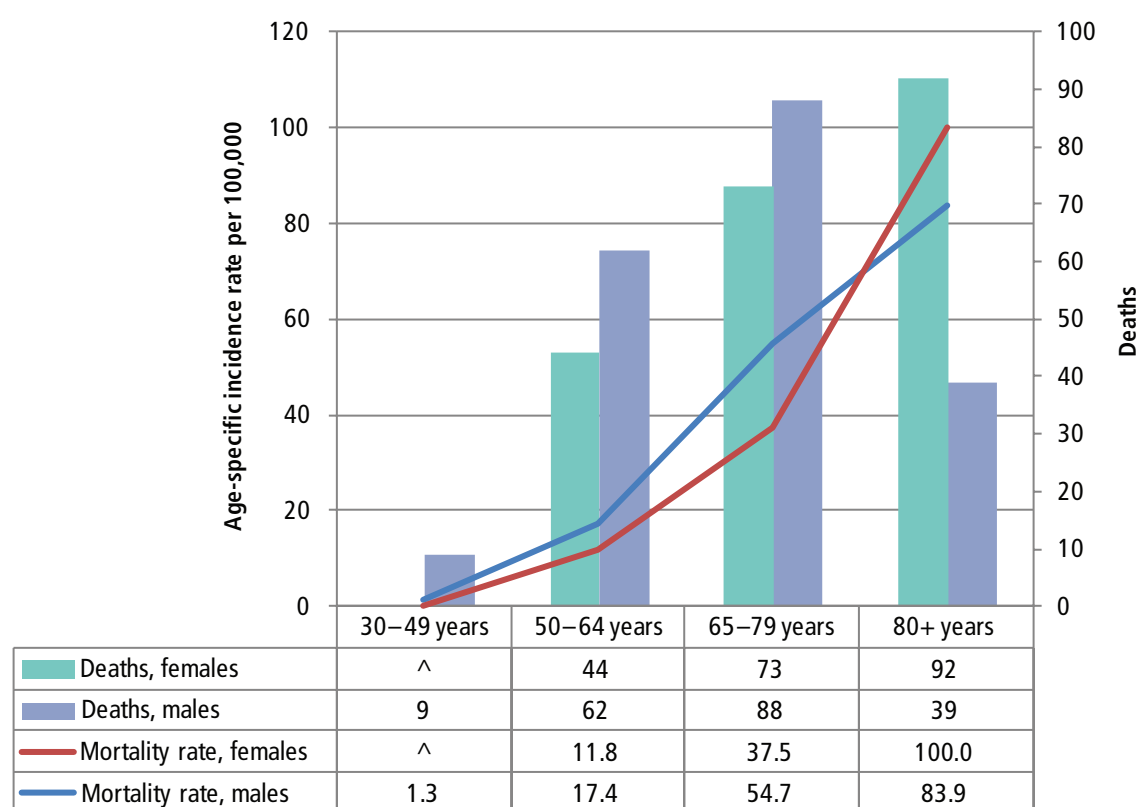
Age-specific pancreatic cancer mortality

Age-specific pancreatic cancer mortality rates increased with age (Figure 72). Among males, mortality rates increased significantly with age until 65–79. Among females, mortality rates increased significantly with age through all age groups.

There were no significant differences in age-specific pancreatic cancer mortality rates between sexes.

Pancreatic cancer mortality rates were not significantly different between Ottawa and the rest of Ontario (not shown).

Figure 72: Age-specific pancreatic cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths

Cancer profiles

Stomach cancer

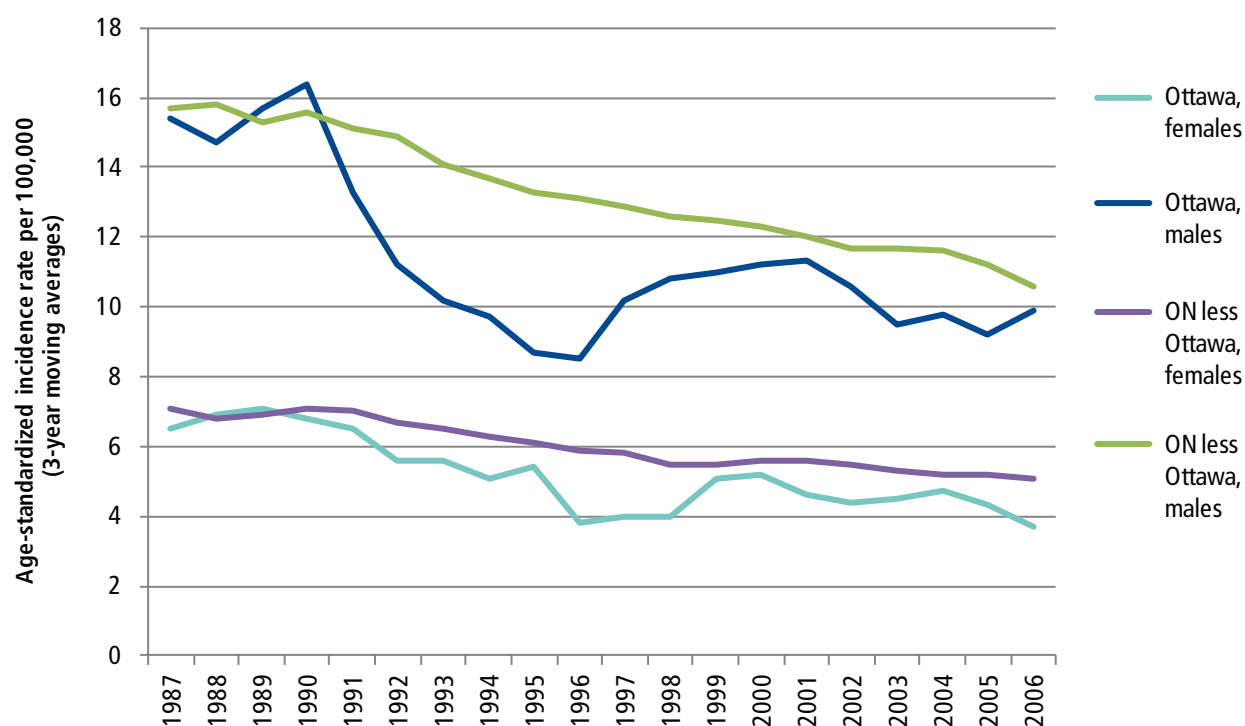
Incidence highlights

From 1987 to 2006, average stomach cancer incidence rates declined significantly among Ottawa both males and females (Figure 73).

In 2006, average stomach cancer incidence rates were 9.9 per 100,000 and 3.7 per 100,000 for Ottawa males and females compared to 15.4 per 100,000 and 3.7 per 100,000 in 1987 respectively.

There was a sharp decrease in incidence rates between 1990 and 1996 average incidence rates among Ottawa males. Rates were significantly lower among Ottawa males than Ontario-less-Ottawa males between 1992 and 1997, as well as during 2003 and 2005. Incidence rates among Ottawa females were similar to those of Ontario-less-Ottawa females except during 1997 and 2006 when they were significantly lower.

Figure 73: Age-standardized stomach cancer incidence rates per 100, 000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

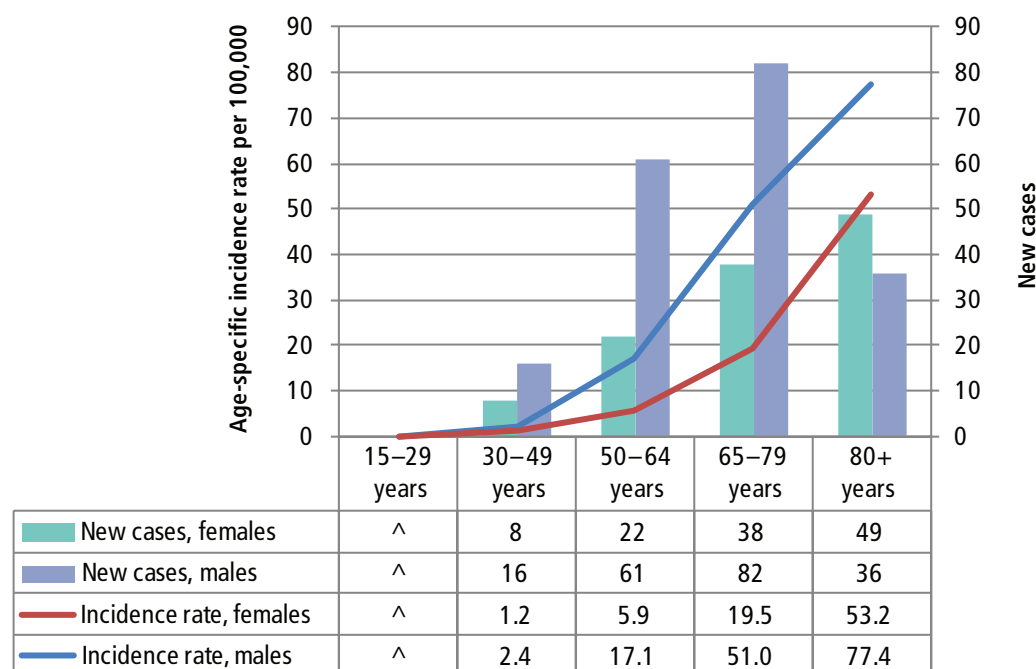
Age-specific stomach cancer incidence

Age-specific stomach cancer incidence rates increased with age among Ottawa males and females (Figure 74). Among males, incidence rates increased significantly until 64–79 years. Among females, incidence rates increased significantly through all age groups.

Males 50–64 and 65–79 years had significantly higher stomach cancer incidence rates than did females in the same age groups. There were no cases of stomach cancer in the 0–14 year age group for either sex.

There were no significant differences in incidence rates by age group between Ottawa and the rest of Ontario (not shown).

Figure 74: Age-specific stomach cancer incidence rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six cases

Cancer profiles

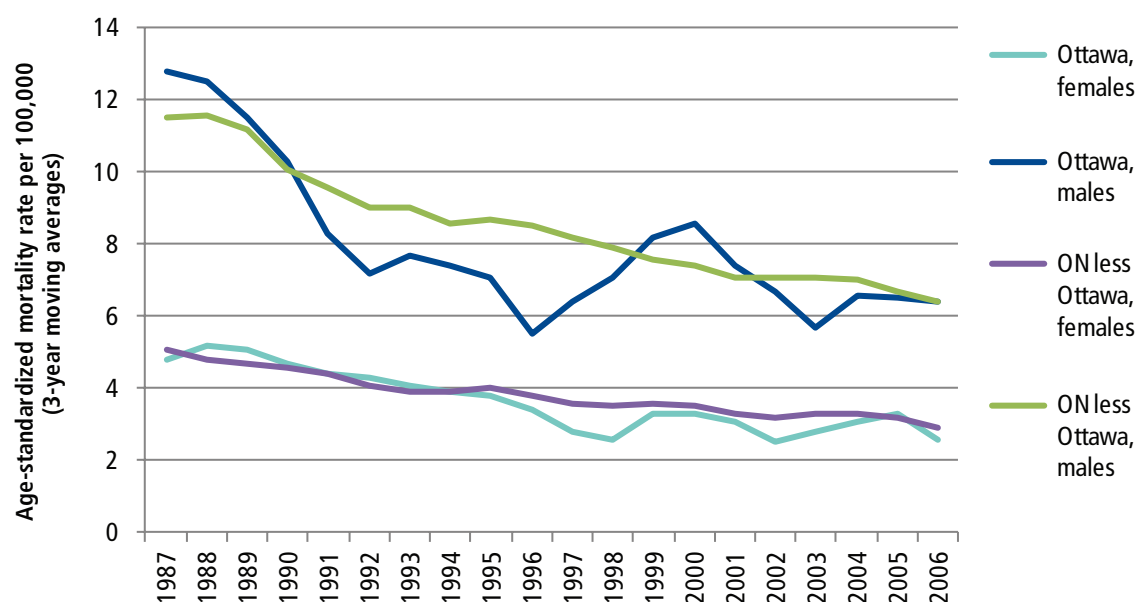
Mortality highlights

Historically, average stomach cancer mortality rates among males have been significantly higher than those among females.

In Ottawa and the rest of Ontario, average stomach cancer mortality rates declined significantly from 1987 to 2006 for both sexes (Figure 75).

From 1987 to 2006, average rates among Ottawa males declined significantly from 12.8 per 100,000 to 6.4 per 100,000. During the same period, average rates among Ottawa females declined significantly from 4.8 per 100,000 to 2.6 per 100,000. Mortality rates were significantly lower among Ottawa males than males in the rest of Ontario in 1996. There were no significant differences between Ottawa females and those of the rest of Ontario from 1987 to 2006.

Figure 75: Age-standardized stomach cancer mortality rates per 100,000 (three-year moving averages), Ottawa and the rest of Ontario, 1987–2006



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Cancer profiles

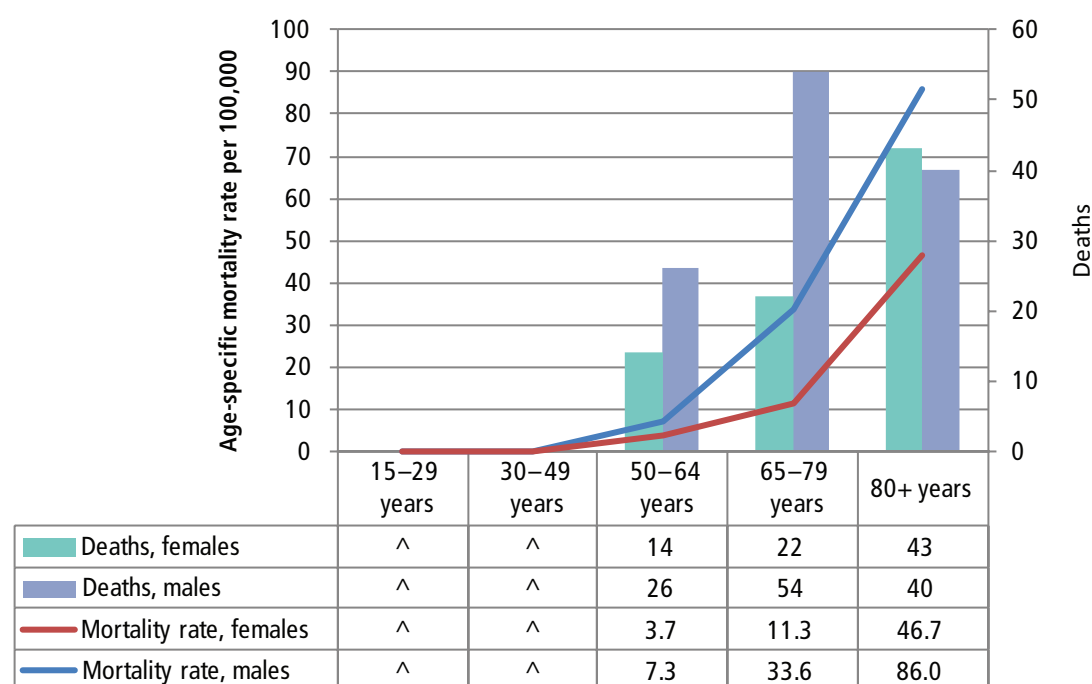
Age-specific stomach cancer mortality

Age-specific stomach cancer mortality rates increased with age during 2003–2007 (Figure 76). Among males, the mortality rate at 50–64 years was significantly lower than for males in the older age groups. Among females, the age-specific mortality rate increased significantly through all age groups.

Ottawa males had significantly higher stomach cancer mortality rates than did females in the 65–79 year age group.

Mortality rates by age group were similar between Ottawa and the rest of Ontario for both sexes (not shown).

Figure 76: Age-specific stomach cancer mortality rates per 100,000, Ottawa, 2003–2007 (combined)



Data source: Cancer Care Ontario–Seer*Stat Release–OCRIS (June 2010) released February 2011

Population data source: Pop Est Summary (Statistics Canada, Ontario Ministry Finance), Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted October 2010

Data note: ^ = statistic not released due to fewer than six deaths



Glossary of terms and methodology

Age-specific incidence/mortality rate

Number of new cancer diagnoses/deaths in an age group during a specified time divided by the number of people in that age group at risk for developing/dying from the cancer. In this report, the number is multiplied by 100,000 and is expressed as a rate per 100, 000 persons in the age group for the specified time. The age groups used to create age-specific rates are as follows: 0–14 years, 15–29 years, 30–49 years, 50–64 years, 65–79 years and 80+ years.

Age-standardized incidence/mortality rate

An age-standardized incidence rate is the number of new cancer diagnoses/deaths per 100,000 that would occur if the observed age-specific rates of the study population are assumed by the standard population. This technique produces an adjusted rate that is used to make comparisons between different populations over time by accounting for differences in age and sex distributions. In this report, the 1991 Canadian population is used as the standard population and the Ottawa population and the Ontario-less-Ottawa population are the study populations.

Age-standardized incidence/mortality ratio

Ratio of number of new cases/deaths of a particular type of cancer in the study population to the number of new cases expected in the study population if it had the same age-specific rates as the standard population. In this report, Ottawa is the study population and Ontario less Ottawa is the standard population. The age categories used to create the age-specific rates are as follows: 0–14 years, 15–29 years, 30–49 years, 50–64 years, 65–79 years and 80+ years.

Confidence interval

Range of values around an estimate of a particular indicator within which the true value of the indicator in the population is contained with a given probability.¹² In this report, 95% confidence intervals are calculated where appropriate. With a 95% confidence interval, it can be said that a person can be 95% confident that the range of values shown will contain the true value of the variable of interest.

Crude rate

Number of new cancer diagnoses/deaths relative to the population at risk of developing cancer. In this report, it shows the unadjusted rate for a specified cancer in Ottawa and the rest of Ontario, respectively. Crude rates cannot be compared between populations and over time because they do not take into consideration the underlying age and sex distribution of populations, which influence observed rates.

Appendix I

Incidence rate

Incidence rate is the rate at which new cancer diagnoses occur in a defined population. In this report, it is the total number of new cases divided by the total number of people at risk for developing the specified cancer in a defined population during a year or five-year period (2003–2007). In this report, this number is multiplied by 100,000 and is expressed as an incidence rate per 100,000 persons.

Mortality rate

Mortality rate is the rate at which cancer deaths occur in a defined population. In this report, it is the total number of cancer deaths divided by the total number of people at risk of dying from the specified cancer in a defined population in a year or five-year period (2003–2007). In this report, the result is multiplied by 100,000 and expressed as a mortality rate per 100,000 persons.

Most common cancer diagnoses

The number of new cases of cancer occurring in 2007 for males and females, respectively. In this report, cancers diagnoses were ranked by sex and the most frequent cancer diagnoses were selected to be summarized.

Most common cancer deaths

The number of cancer deaths occurring in 2007 for males and females, respectively. In this report, cancer deaths were ranked by sex and the most frequent cancer deaths were selected to be summarized.

Moving averages

Moving averages are calculated to smooth out annual fluctuations in trend data. In this report, a centered moving average is calculated using three years of combined data. For example, the three-year moving average incidence rate for breast cancer in 2005 is calculated by dividing the sum of the number of cases in 2004, 2005 and 2006 by the sum of the population at risk for the same years. The resulting averaged incidence rate is then multiplied by 100,000 and expressed as a rate per 100,000 persons. The graphic depiction of three-year moving averages in this report makes it easier to detect long-term trends in rates that might otherwise be obscured by short-term fluctuations.

Survival, observed (five-year)

Five-year observed survival is the proportion of people diagnosed with cancer still alive after five years.

Survival, relative survival (five-year)

Five-year relative survival is the proportion of people still alive five years after diagnosis, adjusted for the mortality expected for people of the same age, sex and time period in the general population. It is a net survival measure that represents cancer survival in the absence of other causes of death. In this report, the Ontario general population is used to generate the expected mortality.

Appendix I

Relative survival ratio

Is the ratio of the proportion of observed survivors in a cohort of cancer patients to the proportion of expected survivors in a comparable group of cancer-free patients adjusted for the mortality expected for people of the same age, sex and time period in Ontario. Five-year relative survival for cases diagnosed in the time periods 1988–1992, 1993–1997 and 1998–2002 were calculated using the relative cohort method using SEER*Stat. Five-year relative survival for cases diagnosed in the 2003–2007 period were calculated using the period method using SEER*Stat.

Statistical significance

Refers to a situation where an observed difference between two groups is a true difference and is unlikely to be a chance occurrence. In this report, the difference is calculated to the 95% probability of a true difference being observed.

Appendix II

Cancer definitions for all ages and age groups 30–49, 50–64, 65–79 and 80+

Short title	Full title *	ICD-0-3 site/ Histology (Incidence) [†]	ICD-10 (Mortality) [‡]
All cancers, combined	All cancers, combined	C00–C80 [†]	C00–C97
Body of uterus	Corpus and uterus, NOS	C54.0–C54.9, C55.9	C54, C55
Brain	Brain and other nervous system	C70 - C72	C70 - C72
Breast	Breast	C50.0–C50.9	C50
Cervical	Cervix uteri	C53.0–C53.9	C53
Colorectal	Colon and rectum	C18.0–C20.9, C26.0	C18–C20, C26.0
Esophagus	Esophagus	C150–C159	C15
Kidney	Kidney and renal pelvis	C64.9, C65.9	C64–C65
Leukemia [§]	Leukemia	9733, 9742, 9800–9801, 9805, 9820, 9826, 9831–9837, 9840, 9860–9861, 9863, 9866–9867, 9870–9876, 9891, 9895–9897, 9910, 9920, 9930–9931, 9940, 9945–9946, 9948, 9963–9964; C42.0, C42.1, C42.4 with histology codes 9823, 9827	C91–C95, C90.1
Liver	Liver & Intrahepatic Bile Duct	C22.0, C22.1	C22.0, C22.1, C22.2–C22.4, C22.7, C22.9
Lung	Lung and Bronchus	C34.0–C34.9	C34
Melanoma	Melanoma of the skin	C44.0–C44.9 with histology codes 8720–8790	C43
Myeloma	Myeloma	9731–9732, 9734	C90.0, C90.2
Non-Hodgkin lymphoma [§]	Non-Hodgkin lymphoma	9590–9596, 9670–9671, 9673, 9675, 9678–9680, 9684, 9687, 9689–9691, 9695, 9698–9702, 9705, 9708–9709, 9714–9719, 9727–9729; All sites other than C42.0, C42.1, C42.4 with histology codes 9823, 9827	C82–C85, C96.3
Ovary	Ovary	C56.9	C56
Pancreas	Pancreas	C25.0–C25.9	C25
Prostate	Prostate	C61.9	C61
Stomach	Stomach	C16.0–C16.9	C16

Appendix II

Short title	Full title *	ICD-0-3 site/ Histology (Incidence) [†]	ICD-10 (Mortality) [‡]
Testicular	Testes	C62.0–C62.9	C62
Thyroid	Thyroid	C73.9	C73
Urinary bladder	Urinary bladder	C67.0–C67.9	C67

*= Titles based on SEER Site Recode ICD-O-3 definition

[†] ICD-O-3 refers to the Third Edition of the International Classification of Diseases for Oncology (2000), ICD-O-3 site/histology code definitions were used for all ages and age groups 30–49, 50–64, 65–79 and 80+. See http://seer.cancer.gov/siterecode/icdo3_d01272003/

[‡] ICD-10 refers to the International Classification of Diseases and Health Problems, Tenth Edition

[†] all cancers exclude basal cell and squamous cell skin cancers and carcinomas in situ

[†] Histology types 9590-9989 (lymphomas, leukemias and hematopoietic diseases), 9050-9055 (mesothelioma) and 9140 (Kaposi sarcoma) are excluded from other specific organ sites

*Updated from *Cancer in Ottawa 2012* report posted on January 9th, 2012

Cancer definitions for age group 0–14

Short title	Full title*	ICD-O-3 Site [†]	Histology Type (Incidence)
Leukemia	I Leukemias, myeloproliferative diseases and myelodysplastic diseases	C00–C80	9800-9801, 9805, 9820, 9823, 9826–9827, 9831–9837, 9840, 9860, 9861, 9863, 9866–9867, 9870-9876, 9891, 9895–9897, 9910, 9920, 9930–9931, 9940, 9945–9946, 9948, 9950, 9960–9964, 9975, 9980, 9982–9987, 9989
Central nervous system (CNS)	III CNS and miscellaneous intracranial and intraspinal neoplasms	C00–C80	9393, 9390–9394, 9384, 9400–9411, 9420, 9421–9424, 9440–9442, 9470–9474, 9480, 9508, 9381, 9382, 9430, 9444, 9450, 9451, 9460, 8270–8281, 8300, 9350–9352, 9352, 9360–9362, 9412, 9413, 9492, 9493, 9505–9507, 9530–9539, 9582
		C70–C72, C75.1–C75.3	9380, 8000–8005
		C70–C72	9501–9504
Lymphoma	II lymphomas and reticuloendothelial neoplasms	C00–C80	9560–9655, 9659, 9661–9655, 9667, 9561, 9670, 9671, 9673, 9675, 9678–9680, 9684, 9689–9691, 9695, 9698–9702, 9705, 9708, 9709, 9714, 9716–9719, 9727–9729, 9731–9734, 9760–9762, 9764–9769, 9970, 9687, 9740–9742, 9750, 9754–9758, 9590, 9596

Appendix II

Short title	Full title*	ICD-O-3 Site†	Histology Type (Incidence)
Non-Hodgkin lymphoma	Non-Hodgkin lymphomas (except Burkitt's lymphoma)	C00–C80	9591, 9670, 9671, 9673, 9673, 9675, 9678–9680, 9684, 9689–9691, 9695, 9698–9702, 9705, 9708, 9709, 9714, 9716–9719, 9727–9729, 9731–9734, 9760–9762, 9764–9769, 9970
Neuroblastoma	IV Neuroblastoma and other peripheral nervous cell tumours	C00–C80	9490, 9500, 8680–9683, 8690–8693, 8700, 9520–9523
		C00–C69, C73.9–C76.8, C80.9	9501–9504

*= Titles based on International Classification of Childhood Cancer, Third Edition based on ICD-O-3 (ICCC-3) definition. ICC-3 site/histology recode definitions were used for age group 0–14. See <http://www.seer.cancer.gov/iccc/iccc3.html>

† ICD-O-# refers to the Third Edition of the International Classification of Diseases for Oncology (2000)

Cancer definitions for age group 15–29

Short title	Full title*	ICD-O-3 Site	Histology Type (Incidence)
Lymphoma	2 Lymphomas	C00–C80	9590–9591, 9596, 9670–9671, 9673, 9675, 9678–9680, 9684, 9687, 9689–9691, 9695, 9698–9702, 9705, 9708–9709, 9714, 9716–9719, 9727–9729, 9650–9655, 9659, 9661–9665, 9667
Non-Hodgkin lymphoma	2.1 Non-Hodgkin lymphoma	C00–C80	9590–9591, 9596, 9670–9671, 9673, 9675, 9678–9680, 9684, 9687, 9689–9691, 9695, 9698–9702, 9705, 9708–9709, 9714, 9716–9719, 9727–9729
Leukemia	1 Leukemias	C00–C80	9826–9827, 9835–9837, 9840, 9861, 9866–9867, 9871–9874, 9891, 9895–9897, 9910, 9920, 9863, 9875–9876, 9742, 9800–9801, 9805, 9820, 9823, 9831–9834, 9860, 9870, 9930–9931, 9940, 9945–9946, 9948, 9963–9964
Testes	6.1 Germ cell and trophoblastic neoplasms of gonads	C62	9060–9065, 9070–9073, 9080–9085, 9090–9091, 9100–9102, 9105
Melanoma	7.1 Melanoma	C00–C80	8720–8723, 8726, 8728, 8730, 8740–8746, 8761, 8770–8774, 8780

Appendix II

Short title	Full title*	ICD-O-3 Site	Histology Type (Incidence)
Central nervous system	3 CNS and other intracranial and intraspinal neoplasms (all behaviours)†	C00–C80	9410–9411, 9420–9421, 9424, 9401, 9440–9442, 9400, 9381–9384, 9423, 9430, 9450–9451, 9460, 9391–9394
		C72.3	9380
		C00–C722, C72.4–C80.9	9380
		C71.6	9470–9474
		C00–C71.5, C71.7–C80.9	9470–9474
		C00–C69.9, C73.0–C75.0, C75.4–C80.9	9350–9351, 9360–9362, 9390, 9480, 9530–9535, 9537–9539, 9541, 9550, 9562, 9570
		C700–C72.9, C751–C75.3	9161, 9361–9362, 9390, 9530–9531, 9535, 9538, 9540, 9560, 9571
		C700	9532, 9534, 9537, 9539
		C75.3	9360
		C71.1	9480, 9539
		C71.3	9480, 9533
		C71.9	9350
		C71.4, C71.7	9480
		C70.9	9539
		C700–C72.9, C75.1–C75.3	8000–8005
Thyroid	8.1 Thyroid carcinoma	C73.9	8010–8589

*=Titles based on SEER AYA Recode definition. AYA refers to Adolescent and Young Adults (AYA) site/histology code definitions based on scheme proposed by Barr et al. AYA site recode definitions were used for age group 15–29. See <http://www.seer.cancer.gov/ayarecode/index.html>

†ICD-O-3 refers to the Third Edition of the International Classification of Diseases for Oncology (2000)

‡Germ cell and trophoblastic neoplasms was restricted to males only

References

- ¹Public Health Agency of Canada. Cancer.
<http://www.phac-aspc.gc.ca/cd-mc/cancer/index-eng.php> Accessed: November 27, 2011.
- ²Cancer Care Ontario. Ontario Cancer Plan 2011-2015.
<https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=84204>
Accessed: November 29, 2011.
- ³Cancer Care Ontario. Breast Cancer Screening.
https://www.cancercare.on.ca/pcs/screening/breastscreening/?WT.mc_id=/obsp
Accessed: November 28, 2011.
- ⁴Ontario Ministry of Health & Long-Term Care. ColonCancerCheck.
<http://health.gov.on.ca/en/public/programs/coloncancercheck/fobt.aspx>
Accessed: November 28, 2011.
- ⁵Ontario Ministry of Health & Long-Term Care. Prostate Cancer and the PSA Test.
http://www.health.gov.on.ca/english/public/pub/cancer/psa/psa_test/prostate.html#9
Accessed November 28, 2011.
- ⁶Public Health Agency of Canada. Prevent Skin Cancer: Stay Safe in the Sun.
http://www.phac-aspc.gc.ca/cd-mc/cancer/prevent_skin_cancer-prevenir_cancer_peau-eng.php
Accessed: November 28, 2011.
- ⁷Green, A., Van Der Pols, J. & Hunter, D. (2008). Skin Cancer. In H. Adami, D. Hunter D, & D. Trichopoulos (Eds.), *Textbook of Cancer Epidemiology (2nd Ed.)* (pp. 378-402). Toronto: Oxford University Press.
- ⁸Rapid Risk Factor Surveillance System, 2009.
- ⁹Rapid Risk Factor Surveillance System, 2010.
- ¹⁰Cancer Care Ontario, Cervical Screening.
<https://www.cancercare.on.ca/cms/One.aspx?portalId=1377&pageId=9528>
Accessed: November 28, 2011.
- ¹¹Cancer Care Ontario, HPV and Cancer of the Cervix—Frequently Asked Question.
<https://www.cancercare.on.ca/cms/One.aspx?portalId=1377&pageId=9844>
Accessed: November 28, 2011.
- ¹²Last, J. M. (Ed.). (2001). *A Dictionary of Epidemiology*. (4th Ed.) Toronto: Oxford University Press.

