

Acknowledgements

The *City of Ottawa 2006 Health Status Report: "Measuring health in Ottawa to build a stronger and healthier community"*, was prepared by the Surveillance Unit, Ottawa Public Health under the direction and guidance of **Dr. David Salisbury, Medical Officer of Health** for the City of Ottawa. The report was written by:

Amira Ali, Senior Epidemiologist
Surveillance Unit, Ottawa Public Health

Katherine Haimes, Epidemiologist
Surveillance Unit, Ottawa Public Health

Janice Potter, Health Information Analyst
Surveillance Unit, Ottawa Public Health

Lindsay Whitmore, Epidemiologist
Surveillance Unit, Ottawa Public Health

Special thanks to Muy Labrecque and Lucie Laurion for their support and guidance with this report.

Many individuals contributed to the successful production of this report. For their enthusiasm, support and expert contribution, we would like to thank and acknowledge the following divisions from the City of Ottawa: Family and Community Health; Environmental and Health Protection; Infectious Disease Prevention and Control; Surveillance, Emerging Issues, Education and Research; Office of the Medical Officer of Health; French Language Services; and Client Services and Public Information.

Please use the following citation when referencing this document:

Ottawa Public Health. City of Ottawa 2006 Health Status Report: "Measuring health in Ottawa to build a stronger and healthier community" (2006) Ottawa, Ontario.

For more information on this report, please contact:

Surveillance Unit
Surveillance, Emerging Issues, Evaluation and Research Division (SEER)
Ottawa Public Health
100 Constellation Crescent
Ottawa, ON, K2G 6J8

Phone: 613-580-6744

Web site: ottawa.ca/health

Table of Contents

Table of Contents	i
Executive Summary	v
1. Introduction	1
2. City of Ottawa Demographics	3
Demographics	3
Health Services and Education	4
Crime Rate	5
3. Health Determinants	7
Income	7
Employment	8
Housing	8
Food Security	9
Seniors	9
4. Self-Rated Health	11
5. Overall Mortality and Morbidity	13
Life Expectancy	13
Overall Mortality	13
Infant and Perinatal Mortality	15
Leading Causes of Death	16
Standardized Mortality Ratio	19
Premature Mortality (Potential Years of Life Lost)	22
Health-Adjusted Life Expectancy	23
Overall Morbidity	23
All-Cause Hospitalization	24
Leading Causes of Hospitalization	25
Standardized Hospitalization Ratio	30
6. Chronic Conditions	33
Cancer	35
Lung Cancer	37
Colorectal Cancer	39
Early Detection of Colorectal Cancer	40
Malignant Melanoma	41
Prostate Cancer	41
Early Detection of Prostate Cancer	43
Breast Cancer	43
Early Detection of Breast Cancer	44
Cervical Cancer	45
Early Detection of Cervical Cancer	46
Other Major Chronic Conditions	47
All Circulatory Disease	49
Heart Disease	50
Stroke (Cerebrovascular Disease)	51
Lung Disease	52
Diabetes	54
7. Lifestyle Behaviours and Health	57
Tobacco Use	57
Smoke-Free Homes and Vehicles	59

Youth Tobacco Use	60
Body Mass Index	61
Healthy Weights for Adolescents	63
Physical Activity	64
Leisure-Time Physical Activity	67
Active Transportation	69
Energy Balance	69
Nutrition	70
Fruit and Vegetable Consumption	70
Eat Smart! Healthy Restaurants and Cafeterias Program	72
Fuel to Xcell	72
Alcohol	72
Low Risk Drinking	73
Binge Drinking	73
Sun Safety	74
8. Injuries and Injury Prevention	77
Injuries	77
Falls	79
Motor Vehicle Traffic Collisions	80
Traffic-Related Pedestrian Collisions	81
Intentional Self Harm (Suicide)	82
Unintentional Poisoning	83
Injury Prevention	84
Seat Belt Use	84
Child Car Seats and Booster Seats	85
Impaired Driving	86
Cell Phone Use While Driving	86
Bicycle Helmet Use	86
Use of Protective Equipment While In-Line Skating	88
9. Reproductive Health	89
Infant Outcomes	89
Birth Rate	89
Birth Weight	89
Preterm Birth	90
Stillbirth	90
Labour and Delivery Characteristics	90
Maternal Characteristics	90
Smoking During Pregnancy	90
Teen Pregnancy	91
Abortion	92
10. Children's Health	93
Children in Ottawa	93
Breastfeeding	93
Positive Parenting Interactions	96
Child Care	97
Difficulty accessing early childhood programs	97
Developmental Assistance	97
Injuries	98
Asthma	98
11. Oral Health	99

Self-Reported Oral Health	99
Teeth Brushing	99
Dental Visits	100
Dental Insurance	100
Access to Service	100
12. Immunization	101
Childhood Immunizations	101
Influenza Immunization.....	101
13. Communicable Disease	103
Sexually Transmitted Infections and Blood-borne Diseases	104
Chlamydia	104
Gonorrhea	105
Hepatitis C	106
HIV	107
Syphilis.....	107
Food-borne and Water-borne Enteric Diseases	107
Campylobacter.....	107
Salmonellosis	108
Giardiasis	108
Diseases Prevented by Routine Immunizations	108
Chicken Pox (Varicella).....	108
Influenza.....	109
Tuberculosis	109
Outbreaks.....	111
14. Environmental Health	113
Air Quality.....	113
Municipal Drinking Water.....	114
Private Well Water.....	115
Beaches	115
Food Safety	117
Rabies	117
Animal Immunization	117
West Nile Virus.....	117
Extreme Weather	118
Cold.....	118
Heat.....	118
References	119
Appendices	127
A. Acronyms.....	127
B. Glossary of Terms.....	129
C. Data Sources	133
D. Data Issues.....	136
E. Data Tables.....	138

Executive Summary

The *City of Ottawa 2006 Health Status Report: “Measuring health in Ottawa to build a stronger and healthier community”* examines a wide range of health-related information on mortality, morbidity, communicable diseases, reproductive outcomes, environmental indicators, and behavioural risk factors.

Findings from this report indicate that Ottawa residents are healthy and have shown encouraging improvements in their health over the last decade. Ottawa compared favourably with the province in most key health indicators. Despite promising trends in most areas, there are still many public health challenges remaining. These include obesity, diabetes, mental and behavioural disorders in young adults, suicide in young adult males, some chronic diseases such as heart disease and cancer, and communicable diseases such as HIV, chlamydia, syphilis, and tuberculosis.

The following highlights emerged from the data examined in the *City of Ottawa 2006 Health Status Report*:

Mortality

- Similar to Ontario, in Ottawa, the life expectancy at birth for females was 82.3 years and for males was 78.6 years in 2002. At age 65, the life expectancy for females was 20.6 additional years and for males was 17.7 additional years
- In Ottawa, the all-cause age-standardized mortality rate has significantly decreased since 1986 and is significantly lower than Ontario
- In 2002, the leading cause of death in Ottawa for men and women was ischaemic heart disease (IHD). However mortality rates of IHD have steadily decreased since 1986. Mortality rates of IHD continue to be significantly higher in males than females and increase with older age
- Lung cancer is the leading cause of death from all cancers and the second leading cause of death overall. Mortality rates of lung cancer were historically higher in males than females but this difference is getting smaller over time. In 2002, mortality due to lung cancer was lower in Ottawa than Ontario
- In 2001 and 2002, the most important cause of premature mortality in Ottawa males was IHD, followed by lung cancer, unintentional injuries, and suicide. Breast cancer, lung cancer, IHD, and unintentional injuries were the leading causes of premature mortality in females
- Although diabetes mortality was lower in Ottawa than Ontario in 2002, mortality rates of diabetes in Ottawa have increased since 1986

- Stroke was the third leading cause of death in 2002. Mortality due to stroke was lower in Ottawa compared to Ontario. Deaths due to stroke predominantly occurred in the oldest age groups
- Mortality due to HIV was significantly higher in Ottawa than Ontario in 2002
- Although the overall age-standardized mortality rate of suicide has significantly decreased since 1986, suicide remains a public health concern and it was the leading cause of death in male adults aged 20 to 44 years

Cancer Incidence

- In 2002, the most commonly diagnosed cancer among males was prostate cancer and among females it was breast cancer. After these gender-specific cancers, lung cancer was the most commonly diagnosed cancer followed by colorectal cancer

Hospitalizations

- From 1996 to 2004, all-cause hospitalization rates (including all chronic and infectious diseases, acute conditions and injuries) steadily decreased and were significantly lower in Ottawa than Ontario
- Diseases of the circulatory system are the leading cause of hospitalization in men, the second leading cause in women, and the leading cause in the elderly aged 65 years and older. In Ottawa, hospitalization rates of IHD have significantly decreased since 1996. Male hospitalization rates for IHD continue to be significantly higher than those for females
- For Ottawa residents aged 0 to 9 years old, the leading cause of hospitalization is due to diseases of the respiratory system
- Hospitalization rates of asthma have decreased since 1996 and were significantly lower than Ontario. Infants and children under 6 years old have the highest hospitalization rates of asthma
- Mental and behavioural disorders are the leading cause of hospitalization in males and females aged 20 to 44 years (after hospitalizations due to pregnancy and childbirth) and are also a significant cause of hospitalization in youth aged 10 to 19 years
- Since 1996, age-standardized hospitalization rates due to falls in Ottawa remain steady. Although the gap is narrowing, Ottawa rates are lower than Ontario

Lifestyle Behaviours and Health

- Between 2001 and 2005, the adult daily smoking rates in Ottawa declined significantly from 19% to 11%. Similarly the daily smoking rates among Ottawa high school students have significantly decreased. The proportion of smoke-free homes and vehicles in Ottawa has significantly increased
- Close to half of the population of Ottawa are either currently overweight or obese. Men are significantly more likely to be overweight or obese than women

- Between 2003 and 2005, over half of Ottawa residents aged 18 to 69 years reported total physical activity levels that would categorize them in either the high or the moderate physical activity levels. Males and residents with at least high school education are more likely to report high levels of physical activity
- In 2003, over half of Ottawa residents consumed less than five daily servings of fruits and vegetables

Injury Prevention

- In 2003, a very high proportion of Ottawa *drivers* reported always wearing a seat belt while driving, but only three quarters of *passengers* reported always wearing a seat belt while riding in a motor vehicle
- Although 71% of households with children aged 5 to 17 years reported that their children wore their bicycle helmet *all the time* in 2005, a low proportion of adults reported *always* wearing a helmet when cycling

Reproductive Health

- The number of live births in Ottawa remains close to nine thousand per year over the last several years and the general fertility rate is similar to Ontario
- In 2002, both pregnancy and births rates among Ottawa teens were lower than those of the province.

Communicable Disease

- There is a decrease in incidence rates of many enteric diseases since 1996 but an increase in most sexually transmitted diseases
- Chlamydia was the most commonly reported communicable disease in 2004. There is a significant increase in incidence rates of chlamydia for both genders from 1995 to 2004. Young people aged 15 to 24 years comprised 62% of the reported chlamydia cases
- Since 2001, syphilis has re-emerged in Ottawa males. The male incidence rate of infectious syphilis increased five fold between 2001 and 2004
- From 2001 to 2003, the most frequently reported risk factor for HIV infections in females is originating from or previously residing in an HIV-endemic country
- Crude incidence rates of all types of tuberculosis have decreased significantly since 1996

Health Determinants

- According to the 2001 Census, 15% of the population living in private households are living in low-income situations
- The proportion of children aged 17 and under living in low income families in Ottawa was higher than that of the province

1. Introduction

This report presents an overview of key population health indicators relevant to public health as well as a demographic profile of the residents of the City of Ottawa. The indicators include vital statistics such as births and deaths, morbidity statistics such as rates of disease, injury and hospitalizations, and information about certain lifestyle behaviours such as smoking, physical activity, and nutrition.

Population-based health information is important in providing a picture of the health status and burden of illness in a community. Information from this report is important to those who need to plan services that support and promote health, and prevent illness to make evidence-based decisions. This report is also intended to provide the residents of the City of Ottawa with an understanding of the factors that affect their health so that they are better able to adopt appropriate approaches to improve their health status.

The information provided in this report will be used as a baseline comparison for future similar or topic-focused reports.

This health status report is divided into 13 sections organized by topic. These have been closely linked to the goals and objectives set out by Ontario's Ministry of Health and Long-Term Care, which mandates that all public health units in the province deliver programs to residents that address their health needs and that are efficient, cost-effective and based on evidence. Where possible, comparisons between the City of Ottawa and Ontario are provided. Throughout the report, gender and age comparisons are provided and conditions where our population does well or needs improvement have been highlighted.

Data Sources

Several data sources were used in the preparation of this report. The most currently available data files were used.

Demographic information was obtained from Statistics Canada.

The Niday Perinatal Database of the Perinatal Partnership Program of Eastern and Southeastern Ontario (PPESO) as well as Ontario's Provincial Health Planning Database (PHPDB) of the Ministry of Health and Long-Term Care were used for births (2000-2005) and other reproductive health indicators. The Health Planning System (HELPS) of the Ministry of Health and Long-Term Care was used for Ontario births (2001-2002).

Population estimates (1986-2004), deaths (1986-2002), hospitalizations (1996-2004) were obtained from Ontario's Provincial Health Planning Database.

Lifestyle behaviours were obtained from the Canadian Community Health Survey (CCHS) (2001, 2003) of Statistics Canada, and the Rapid Risk Factor Surveillance System (RRFSS) (2001-2005) of the City of Ottawa.

Cancer incidence and mortality (1986-2002) were obtained from Cancer Care Ontario as well as Ontario's Provincial Health Planning Database.

Information on communicable diseases (1995-2004) was obtained from the Integrated Public Health Information System (iPHIS) of Ontario's Ministry of Health and Long-Term Care.

Data were also acquired from various other agencies including Ottawa Public Health and other departments within the City of Ottawa, the Federation of Canadian Municipalities and Success by Six. More information about various data sources is available in Appendix C.

To protect the confidentiality of all Ottawa residents, small numbers that would make it possible to identify any individual were suppressed.

2. City of Ottawa Demographics

Ottawa is the capital city of Canada. It is Canada's fourth largest city with a land area of 2,779 square kilometres. Around the main urban area is an extensive greenbelt of approximately 200 square kilometres comprising of mostly forest, farmland, and marshland. Large suburban and rural areas lie to the outside of the greenbelt.

The Rideau Canal winds its way through the city. During the winter season, the canal forms the world's longest skating rink (7.8km) and provides recreation and transportation for ice skaters from a point near Carleton University to the city's centre.

There is a large network of pedestrian and cycling trails throughout much of the city, including trails along the Ottawa River, Rideau River, and Rideau Canal. In combination with a growing network of on-street bicycle lanes, it is possible to cycle between many of the major sites, office areas, and residential areas in the region.

In Ottawa, there is much opportunity for many casual sporting activities, such as hockey and curling in the winter, cycling and jogging along the Ottawa River and Rideau Canal, or golfing on one of the many golf courses in the Ottawa area in the spring, summer, and fall. The greenbelt and the the Gatineau hills provide opportunities for skiing, snowshoeing, cycling and hiking, and the many nearby lakes and rivers are used for kayaking and sailing. There is also ice fishing on the Ottawa River during the coldest parts of winter.

The National Capital Region straddles the boundary between the provinces of Ontario and Quebec. This region contains the urban areas of the City of Ottawa in Ontario and the City of Gatineau in Quebec. The Gatineau Hills and the entrance to recreational lakes and parkland, used extensively by residents of the City of Ottawa, lie to the north of the City of Gatineau. Many residents on the Quebec side of the National Capital Region commute daily to Ottawa for employment which contributes to the bilingual nature of Ottawa.

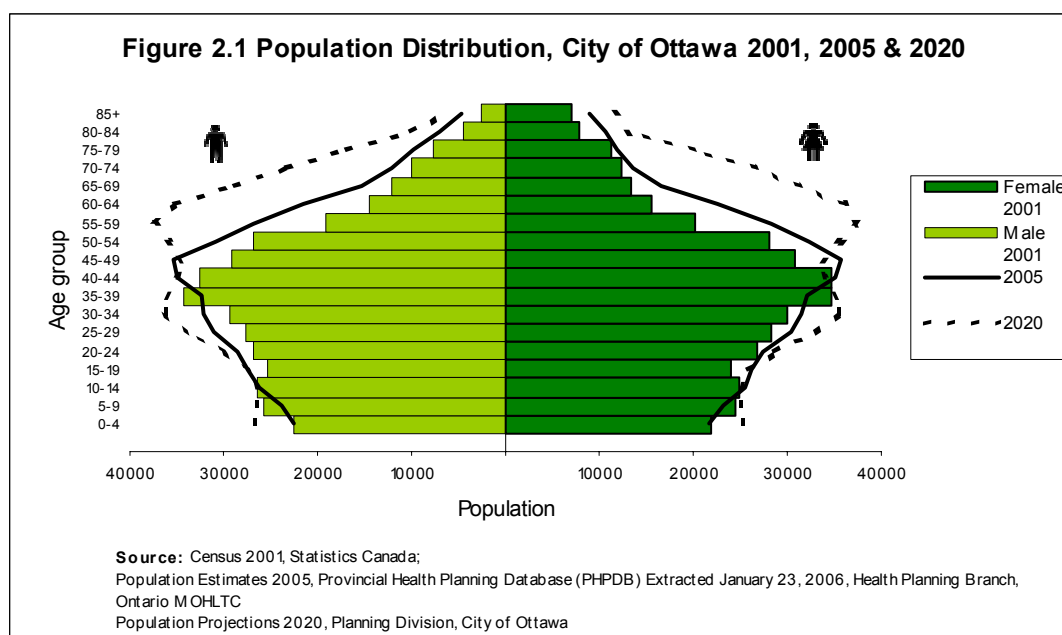
Ottawa's primary employers are the Canadian federal government and high technology companies. Major companies such as MBNA Canada Bank, Nortel, Alcatel, JDS Uniphase, Mitel, Bell Canada, TELUS, IBM, Corel and Cognos have offices in the city.

Demographics

Ottawa's Census population estimate in 2001 was 774,072 with a population density of 278.6 people/km². The population in 2005 is estimated to have increased to 839,620 residents.¹ Among the country's large urban areas, Ottawa has a young population with 47% of the population under 35 years of age.² The spoken language is predominately English (60%) with

French at 20% and non-official languages also at 20% of the total population. Between 1987 and 2002, migration to Ottawa added 131,816 people to the city's population, which represents 75% of the population growth for that period.²

Seniors aged 65 years and older form 12% of the population and the projected number of seniors in 2006 is 98,159 people.³ The highest percentage of seniors lives in the neighbourhoods of Westboro/Bayshore, Alta Vista, New Edinburgh, Vanier, Rockcliffe Park and Carlington. By 2010, the population in Ottawa is projected to change to a predominantly older distribution of residents (Figure 2.1).



According to the Canada 2001 Census, there were 210,875 families residing in the city. The number of children aged 0 to 6 living in Ottawa is estimated to be 64,419 in 2006. The newer suburban areas of Barrhaven, Kanata, Stittsville, Orleans, and Hunt Club as well as rural communities in old Fitzroy and Osgoode townships have the highest percentage of families with young children. The average household income in Ottawa in 2000 was \$75,351 with the median income being \$62,130.⁴

Health Services and Education

Post-secondary education is offered by two universities (University of Ottawa and Carleton University) as well as one community college (Algonquin College). Acute health care is provided by the Ottawa Hospital, Queensway-Carleton Hospital, the Children's Hospital of Eastern Ontario, and Hôpital Montfort.

Crime Rate

In 2004, the rate of total criminal code offences in Ottawa was 5,663 per 100,000 total population which was down from 6,326 per 100,000 in 2003. The rate for Canada was 8,051 per 100,000.^{5,6} The youth crime rate for ages 12 to 17 was 2,620 per 100,000 youth population in 2002 which was up from 2,038 in 1999. Nationally, the youth crime rate was 3,560 per 100,000 youth population.⁷

3. Health Determinants

Social determinants of health are the socio-economic conditions that influence the health of individuals, communities and jurisdictions as a whole.⁸ There is a proven link between the social determinants of health and health status.⁹ The main social determinants of health are income inequality, social inclusion and exclusion, employment and job security, working conditions, contribution of the social economy, early childhood care, education, food security and housing.⁸ For the purposes of this report, the following areas will be briefly examined for the population of the City of Ottawa: income inequality, food security and employment.

Income

“Canadians with the lowest income were five times more likely than those from the highest income groups to report their health as only fair or poor”.¹⁰ These include the unemployed as well as those earning a low wage. Low income may be defined as those earning less than 50% of the local average income.⁹ The amount which is designated as low income varies by family size and by urban or rural community. Families living in poverty make up a significant portion of the population of Ottawa struggling to maintain the necessities of life. The 2001 Census reported that 113,835 people in private households in Ottawa were living in low income situations. This represents 15% of the population living in private households. For people who are 15 years of age and over and who do not live with a family, this increases to 32% or 36,330 people.

It is useful to examine low income rates for economic families in order to assess the conditions in which children are raised. An economic family may be described as a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption.¹¹ Over 11% of economic families were reported to be living in low income situations in the year before the 2001 Census in Ottawa. According to the 2001 Census 18.3% of children aged 17 and under living in economic families in Ottawa were considered to be living in low income. This compares to 17% for the Province of Ontario.¹²

In Ottawa, 16% of families were identified as lone parent families and 84% were two parent families. Of lone parent families, female lone parents comprise 83% and male lone parents comprise 17% of the total.⁴ Lone parent families often face economic and social hardships to raise their children. Of lone parent families living in low income situations, 33% were female led and 17% were male led. Of families with no children, 6.6% can be defined as low income.

Employment

The unemployment rate for people aged 15 and over in Ottawa in 2005 was 6.0%.¹³ This rate is slightly lower than that of the Province of Ontario which was 6.6%. Unemployment is particularly hard on families with children. The 2001 Census indicates that of all unemployed families with children in Ottawa, 20.2% are lone parents. This compares to a rate of 19.5% of unemployed families with children in Ontario who are lone parents. The heads of lone parent families often encounter barriers to employment including the lack of affordable accessible childcare. This must be addressed if single parent mothers in particular are to be able to join the workforce and reduce the time that they spend in poverty and dependency.

Housing

Secure affordable housing is a basic necessity of life. In Ottawa, as of 2005, there were 23,870 social housing units which were all occupied.¹⁴ The City and other levels of government continue to build a minimal number of affordable housing units every year. Therefore, the total number of social housing is not a static figure as the number increases whenever the new housing units are built. These houses are normally allocated to people on a waiting list.

As of December 2005, there were 9,914 households on the waiting list for these affordable housing units. These are people who have applied for social housing but have not been housed. It takes an average of 5 to 8 years to secure a social housing unit particularly if a family is looking for a rent-geared-to-income house.

Due to a variety of circumstances, families are sometimes forced to stay in emergency shelters. A healthy community must provide a safe place for families with children in crisis. In 2005, there were 4,296 households with children identified in the Emergency Family Shelter System. Families with children under the age of six spent a total of 18,445 days in these shelters in 2003 which is an increase from 17,613 in 2002.¹⁵

Table 3.1: Social Housing Waiting List Data as of December 31, 2005

Household Type	Number of Applicants
Households with children	4296
Single Adults	3627
2 or more Adults (could be adult children over age 18 or roommates etc.)	696
Seniors	1295
Total	9914

Source: Direct Communication with Housing Branch, City of Ottawa, Communicated on January 12, 2006

Food Security

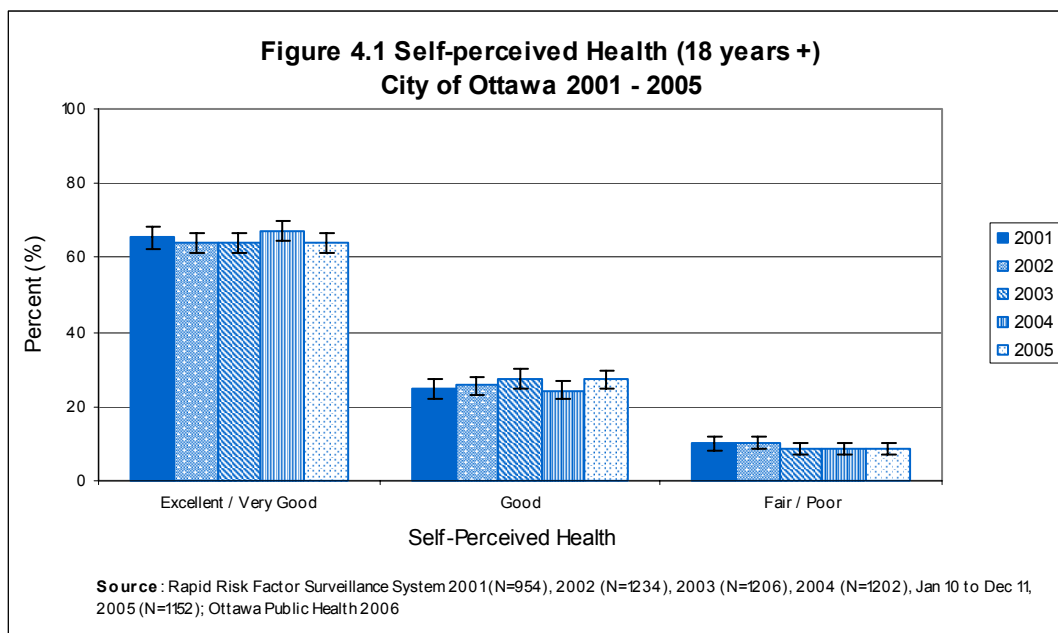
As stated by the Ottawa Food Security Group¹⁶, good nutrition means much more than the absence of illness caused by a lack of vitamins, minerals or other nutritional factors. Healthy food enhances the quality and productivity of everyday living. Unfortunately there are a number of people for whom access to an adequate healthy diet is a problem. Food security occurs when access to food is limited or uncertain because: food is not affordable, income is low, transport is lacking, food distribution is inadequate or choice is inadequate.¹⁷ Lone parent mothers most often report food insecurity.¹⁸ These families must make use of the food banks as there is often no alternative for feeding the family. The Success by Six Report Card states, “Use of food banks is a true marker of hunger. However, only a third of the hungry use their services”. There were over 840,000 visits to a food bank in Ottawa in 2004. In this same year, 37.6% of food bank users were children. This is down slightly from 40% in 2003. Approximately 20% of the 15,000 children using a food bank each month are under the age of three.¹⁹ It is important to note as well that 11% of food bank users are over the age of 60.²⁰

Seniors

Community services and support are in place for the almost 100,000 senior citizens in Ottawa. Many senior citizens in Ottawa are coping well as they age. Of some concern, however, are the 28.1% of seniors aged 65 and older who live alone. It is estimated that as many as 10% of seniors in Ottawa may be socially isolated with little real connection to the outside world.²¹

4. Self-Rated Health

One approach to measuring the health of a population is to ask people to rate their own general health. Self-rated health can reflect a combination of physical health problems (acute and chronic conditions and physical functioning), health behaviours, or mental health problems. Self-rated health has been shown to be a predictor of subsequent illness, health care utilization, and longevity.^{22,23} In 2005, 65.3% ($\pm 2.7\%$) of Ottawa residents aged 18 years and older reported that they were in excellent or very good health (Figure 4.1).²⁴



In 2005, females (67.2% \pm 3.6%) were slightly more likely than males (62.8% \pm 4.3%) to rate their own health as excellent or very good. The percent of residents reporting excellent or very good health significantly decreased with older age, lower education levels, and lower income. The percent of residents reporting excellent or very good health did not differ by whether they were of English or French mother tongue, except in 2003, when residents of English mother tongue were more likely to rate their health as excellent or very good compared to residents of French mother tongue.

5. Overall Mortality and Morbidity

Public health goals in Ontario are aimed at increasing the length and quality of life by preventing illness and injury and decreasing the disability, morbidity and death resulting from illness or injury.²⁵ This section focuses on indicators that describe the nature and extent of overall mortality and morbidity in Ottawa and where possible compares trends to Ontario.

Life Expectancy

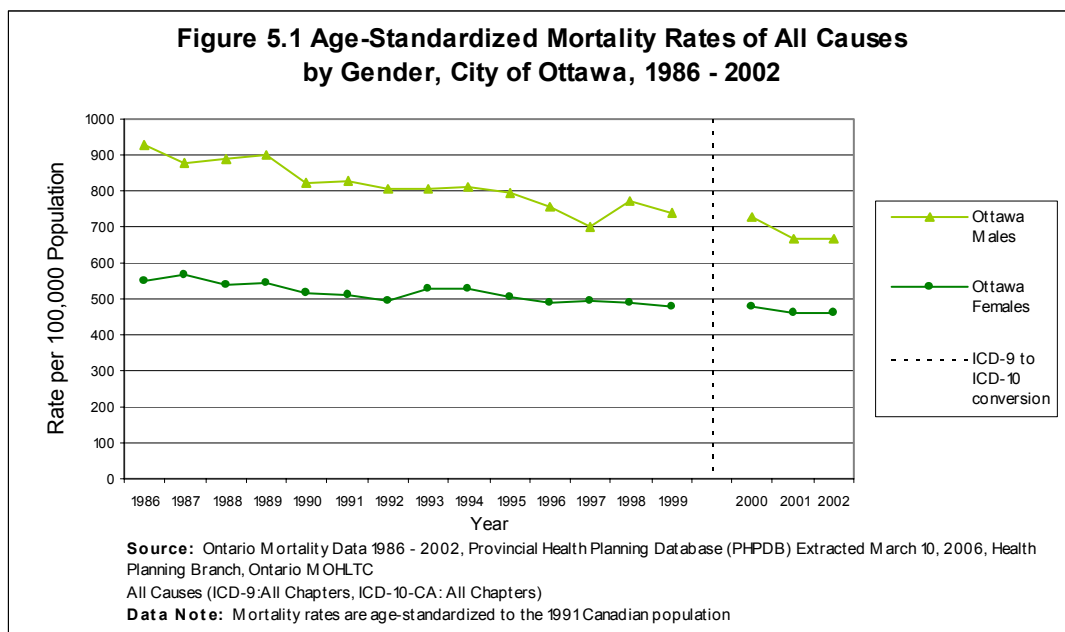
Life expectancy is a traditional population health indicator which measures the average number of years of life remaining to people of a particular age, reflecting the mortality conditions of the period at which it is calculated.²⁶ In Ottawa in 2002, the life expectancy at birth for females was 82.3 years and for males was 78.6 years. At age 65, the life expectancy for females was 20.6 years and for males was 17.7 years. This was very similar to the life expectancy in Ontario in 2002.²⁷

Overall Mortality

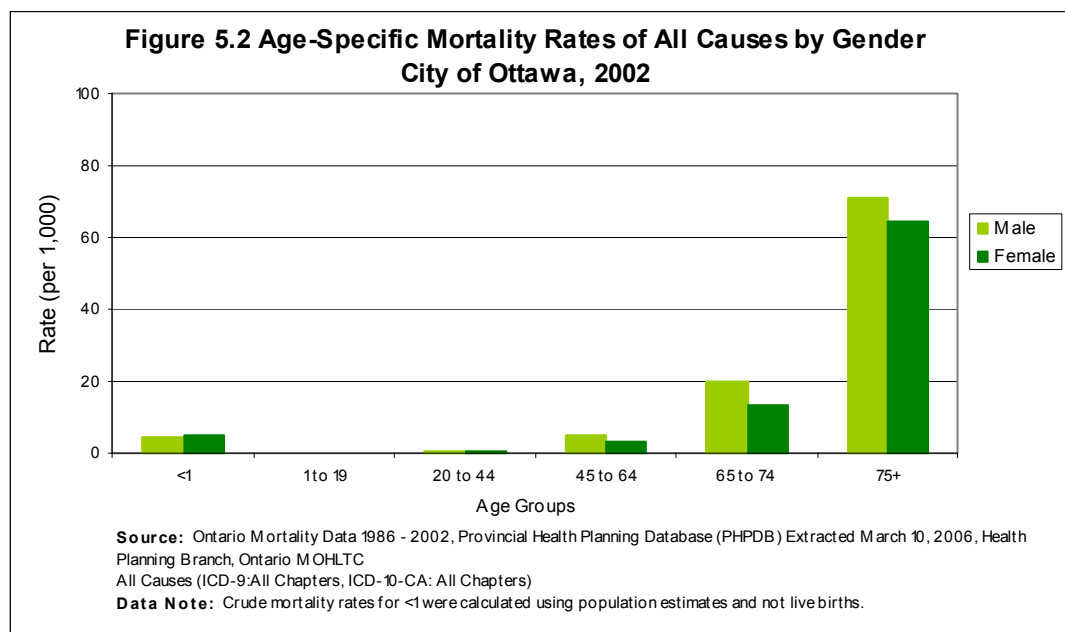
Overall mortality from all causes combined provides a good indicator of the mortality burden and overall health status of a community. Trends in overall mortality may indicate changes in health status, conditions, or events in a community. A decline in mortality rates may reflect improvements in overall standards of living, medical advancements in diagnosis and treatment of disease, changes in the environment or socioeconomic conditions, or awareness and change of behavioural health risks.

In Ottawa, the overall all-cause age-standardized mortality rates have significantly decreased since 1986 and were significantly lower than Ontario (except in 1989 when there was no significant difference). The Ottawa age-standardized mortality rate for all causes was 546.0 deaths per 100,000 population in 2002.

Since 1986, male age-standardized mortality rates were significantly higher than females. In 2002, the male age-standardized mortality rate was 669.3 deaths per 100,000 population and the female age-standardized mortality rate was 461.1 deaths per 100,000 population (See Figure 5.1). The risk of death is generally higher in males than females; however, the gap in mortality is closing with decreasing mortality rates among males.

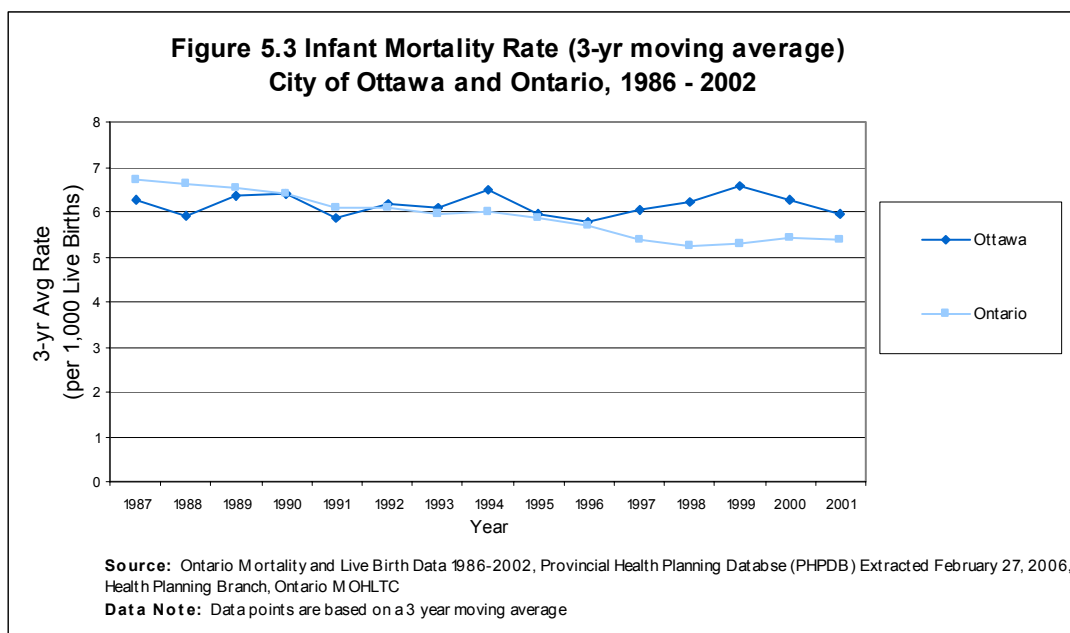


Crude mortality rates for males and females are lowest in the younger age groups (aged 1 to 44 years) and increase with older age, with the highest mortality rates occurring in seniors (Figure 5.2).



Infant and Perinatal Mortality

Infant mortality rates are indicators of health and they depict economic and social development in a community. High rates of infant mortality can reflect poor nutrition, education, sanitation, or maternal and child health care in a population.²⁸ Infant mortality (deaths of infants less than one year old) in Ottawa has been somewhat variable since 1986. A three-year moving average of infant mortality shows that there were no significant difference in infant mortality trends between Ottawa and Ontario since 1986 (Figure 5.3). In 2002, the crude infant mortality rate in Ottawa was 4.6 deaths per 1,000 live births (Table 5.1).



Perinatal mortality (stillbirths and deaths in infants less than seven days old) occurs for numerous reasons. The perinatal mortality rate reflects factors such as standards of perinatal care, maternal nutrition, obstetric and pediatric care.²⁹ In Ottawa, the perinatal mortality rate was 8.9 per 1,000 births in 2002, and the provincial rate was 9.8 per 1,000 births (Table 5.1).

Table 5.1: Infant and Perinatal Mortality, City of Ottawa and Ontario 1999 – 2002

	Ottawa				Ontario			
	1999	2000	2001	2002	1999	2000	2001	2002
Infant Mortality (per 1,000)	5.5	7.0	6.3	4.6	5.3	5.5	5.3	5.3
Perinatal Mortality (per 1,000)	9.4	9.9	9.8	8.9	9.5	9.5	9.5	9.8

Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 27, 2006, Health Planning Branch, Ontario MOHLTC

Leading Causes of Death

In 2002, the leading cause of death in Ottawa for men and women was ischaemic heart disease (IHD) (19.6%) (Table 5.2). Lung cancer and cerebrovascular disease (stroke) were in the top three leading causes of death for both men and women (Table 5.3). Since most deaths occur in the older age groups, a different pattern emerges when the leading causes of death in Ottawa are stratified by age group. In Ottawa residents aged 0 to 6 years old, the leading cause of death was due to certain conditions from the perinatal period (these are fetus and newborns affected by maternal factors and by complications of pregnancy, labour and delivery). The leading cause of death is not reportable for young residents aged 7 to 19 years because so few deaths occurred in this age group. Suicide was the leading cause of death in male adults aged 20 to 44 years old and breast and ovarian cancer tied for the leading cause of death in females aged 20 to 44 years old. In males aged 45 to 64 years, IHD was the leading cause of death and in females aged 45 to 64 years, breast and lung cancer tied for the leading cause of death (Table 5.4). The leading causes of death in seniors aged 65 years and older closely followed the overall mortality pattern presented in Table 5.2 – most of the top 3 leading causes of death (IHD, lung cancer and stroke) occurred in seniors.

Table 5.2: Leading Causes of Death, City of Ottawa 2002

Rank	Cause of Death	Number	Percent (%)
1	Ischaemic heart disease	956	19.6
2	Lung cancer	378	7.7
3	Cerebrovascular disease	322	6.6
4	Other heart disease	220	4.5
5	Chronic lower respiratory disease	188	3.8
6	Colorectal cancer	160	3.3
7	Diabetes	157	3.2
8	Breast cancer	136	2.8
9	Leukemias and Lymphomas	135	2.8
10	Alzheimers disease	112	2.3
11	Pneumonia	111	2.3
	All Cause Total	4887	

Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 22, 2006, Health Planning Branch, Ontario MOHLTC

Table 5.3: Leading Causes of Death by Gender, City of Ottawa 2002

Male				Female			
Rank	Cause of death	Number	Percent (%)	Rank	Cause of death	Number	Percent (%)
1	Ischaemic heart disease	464	19.9	1	Ischemic heart disease	492	19.2
2	Lung cancer	215	9.2	2	Cerebrovascular disease	198	7.7
3	Cerebrovascular	124	5.3	3	Lung cancer	163	6.4

Male				Female			
Rank	Cause of death	Number	Percent (%)	Rank	Cause of death	Number	Percent (%)
	disease						
4	Other heart diseases	97	4.2	4	Breast cancer	136	5.3
5	Colorectal cancer	86	3.7	5	Other heart diseases	123	4.8
6t	Diabetes	82	3.5	6	Chronic lower respiratory disease	106	4.1
6t	Chronic lower respiratory disease	82	3.5	7	Diabetes	75	2.9
8	Prostate cancer	79	3.4	8	Colorectal cancer	74	2.9
9	Leukemias and Lymphomas	70	3.0	9	Pneumonia	73	2.9
10	Nephritis, nephritic syndrome and nephrosis	53	2.3	10	Leukemias and Lymphomas	65	2.5
All Cause Total		2330		All Cause Total		2557	

Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 22, 2006, Health Planning Branch, Ontario MOHLTC

Table 5.4: Leading Causes of Death by Gender by Age Group, City of Ottawa 2002

Age 0 to 6 years					
Male (N=22)			Female (N=25)		
Rank	Cause of death	Percent (%)	Rank	Cause of death	Percent (%)
1	Certain conditions from the perinatal period	59.1	1	Certain conditions from the perinatal period	40.0
Age 7 to 19 years					
Male (N=13)			Female (N=18)		
Rank	Cause of death	Percent (%)	Rank	Cause of death	Percent (%)
	Not reportable			Not reportable	
Age 20 to 44 years					
Male (N=123)			Female (N=92)		
Rank	Cause of death	Percent (%)	Rank	Cause of death	Percent (%)
1	Intentional self-harm (suicide)	13.0	1t	Breast cancer	7.6
2	Motor vehicle traffic collisions	8.1	1t	Ovarian cancer	7.6
3t	HIV	5.7	3	Intentional self-harm (suicide)	5.4
3t	Leukemias and Lymphomas	5.7			
3t	Other heart disease	5.7			
3t	Accidental poisoning and	5.7			

Age 20 to 44 years					
Male (N=123)			Female (N=92)		
Rank	Cause of death	Percent (%)	Rank	Cause of death	Percent (%)
	exposure to noxious substances				
7t	Lung cancer	4.9			
7t	Ischaemic heart disease	4.9			

Age 45 to 64 years					
Male (N=494)			Female (N=320)		
Rank	Cause of death	Percent (%)	Rank	Cause of death	Percent (%)
1	Ischaemic heart disease	19.6	1t	Lung cancer	16.6
2	Lung cancer	14.0	1t	Breast cancer	16.6
3	Leukemias and Lymphomas	4.9	3	Ischaemic heart disease	7.8
4	Colorectal cancer	4.3	4t	Colorectal cancer	3.8
5	Chronic liver disease and cirrhosis	3.6	4t	Leukemias and Lymphomas	3.8
6	Intentional self harm (suicide)	3.0	6	Ovarian cancer	3.1
7t	Cancer of the central nervous system	2.8	7	Pancreatic cancer	2.8
7t	Cerebrovascular disease	2.8	8t	Cancer of the central nervous system	2.2
9	Other heart disease	2.6	8t	Other heart disease	2.2
10	Diabetes	2.0	10	Diabetes	1.9

Age 65 years and older					
Male (N=1678)			Female (N=2102)		
Rank	Cause of death	Percent (%)	Rank	Cause of death	Percent (%)
1	Ischaemic heart disease	21.5	1	Ischaemic heart disease	22.0
2	Lung cancer	8.3	2	Cerebrovascular disease	9.0
3	Cerebrovascular disease	6.4	3	Other heart disease	5.4
4	Other heart disease	4.5	4	Lung cancer	5.1
5	Chronic lower respiratory disease	4.4	5	Chronic lower respiratory disease	4.8
6	Prostate cancer	4.2	6	Breast cancer	3.6
7	Diabetes	4.1	7	Pneumonia	3.4
8	Colorectal cancer	3.7	8	Diabetes	3.2
9	Alzheimers disease	2.9	9	Colorectal cancer	2.9
10	Nephritis, nephritic syndrome and nephrosis	2.8	10	Alzheimers disease	2.9

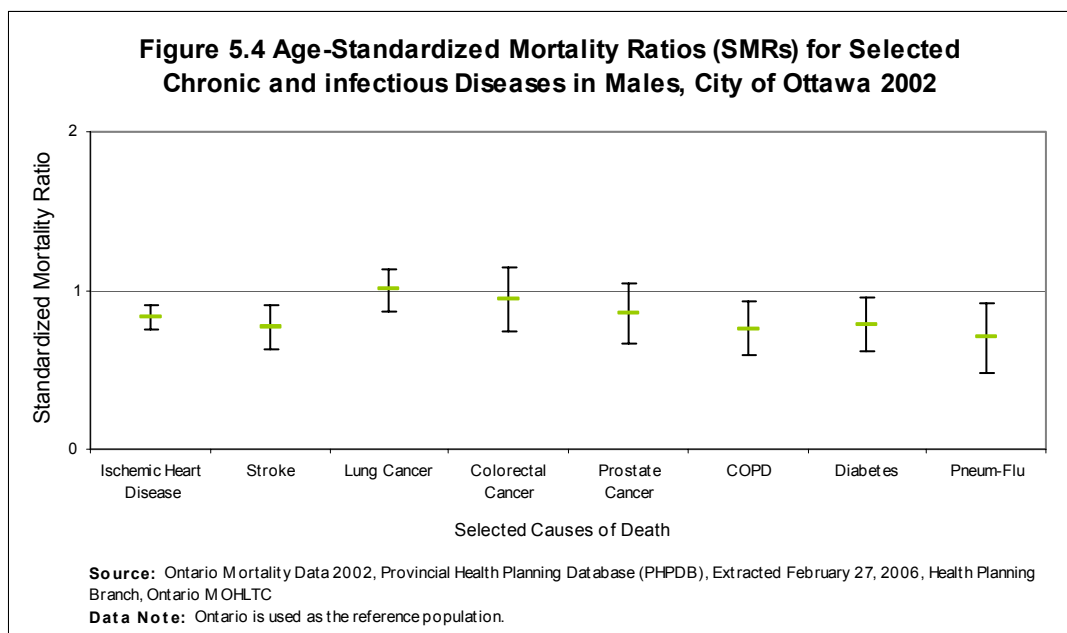
Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 22, 2006, Health Planning Branch, Ontario MOHLTC
t= Tie in rank

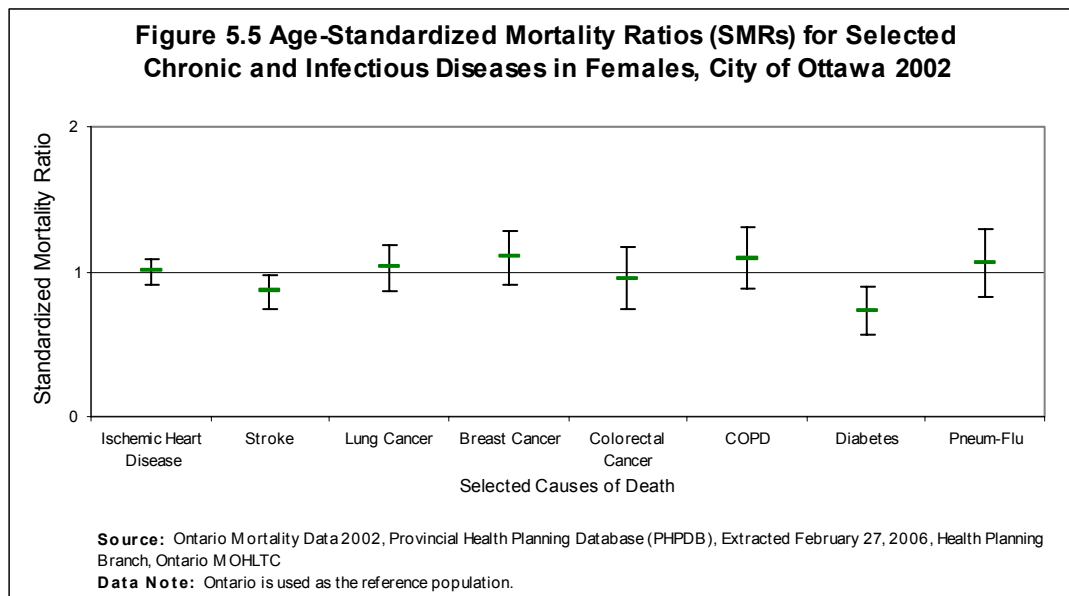
Standardized Mortality Ratio

The age-standardized mortality ratio (SMR) is the ratio of the number of deaths in the population of interest to the number expected if that population had the same age-specific rates as a reference population. The population of interest is Ottawa and the reference population is Ontario. If the confidence interval (CI) for an SMR includes 1.0, then the mortality rate for that condition is not different in Ottawa than Ontario. If the SMR and its CI are both above 1.0, this means that the mortality rate for the condition is significantly higher in Ottawa than Ontario. If the SMR and its CI are both below 1.0, this means that the mortality rate for the condition is significantly lower than Ontario. This section discusses SMRs due to selected causes of chronic and infectious diseases and injuries.

In 2002, mortality due to IHD, stroke, COPD, diabetes, and pneumonia/influenza was lower in Ottawa males than Ontario males. Mortality due to lung cancer, colorectal cancer and prostate cancer was not significantly different in Ottawa males than Ontario males (Figure 5.4).

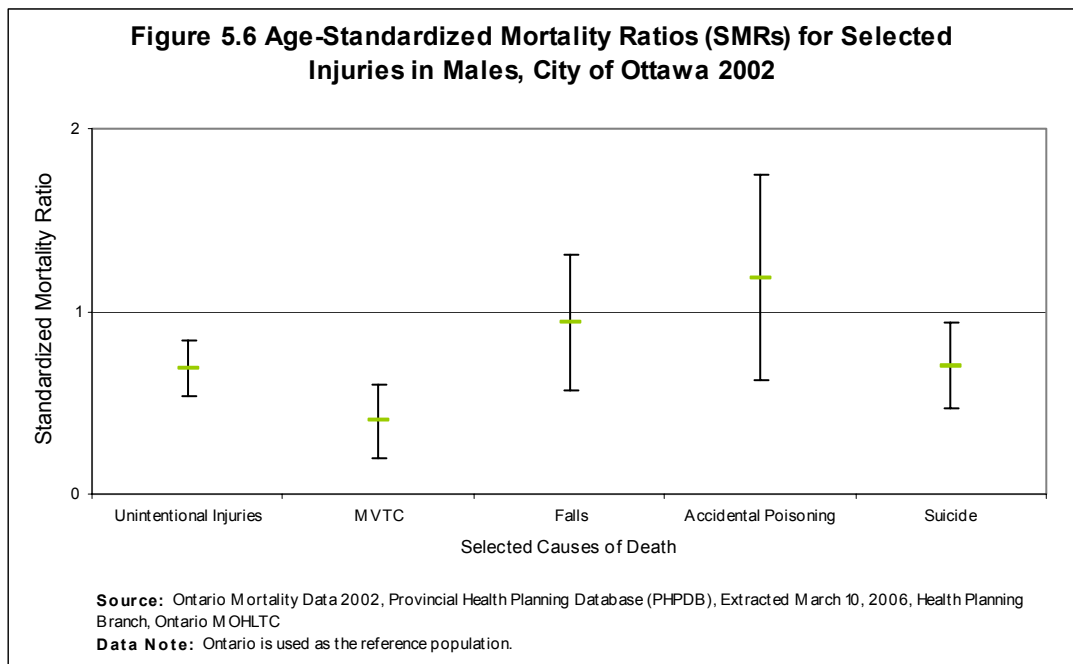
In 2002, mortality due to stroke and diabetes was lower in Ottawa females than Ontario females. Mortality due to IHD, lung cancer, breast cancer, colorectal cancer, COPD and pneumonia/influenza was not significantly different between Ottawa and Ontario females (Figure 5.5).



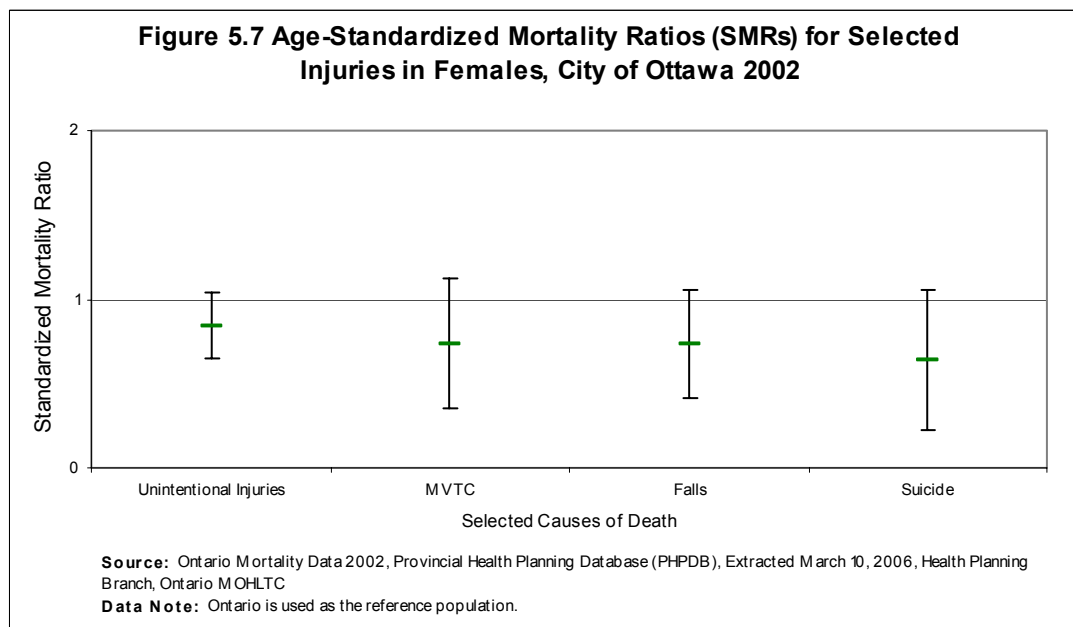


In the overall population, mortality due to lung cancer, stroke and diabetes was lower in Ottawa than Ontario in 2002. Mortality due to HIV was significantly higher in Ottawa than Ontario in 2002.

Of the selected causes of death due to injuries, in 2002, mortality due to unintentional injuries, motor vehicle traffic collisions (MVTC), and suicide was lower in Ottawa males than Ontario males. There was no difference in mortality due to falls and poisonings in Ottawa males than Ontario males (Figure 5.6).



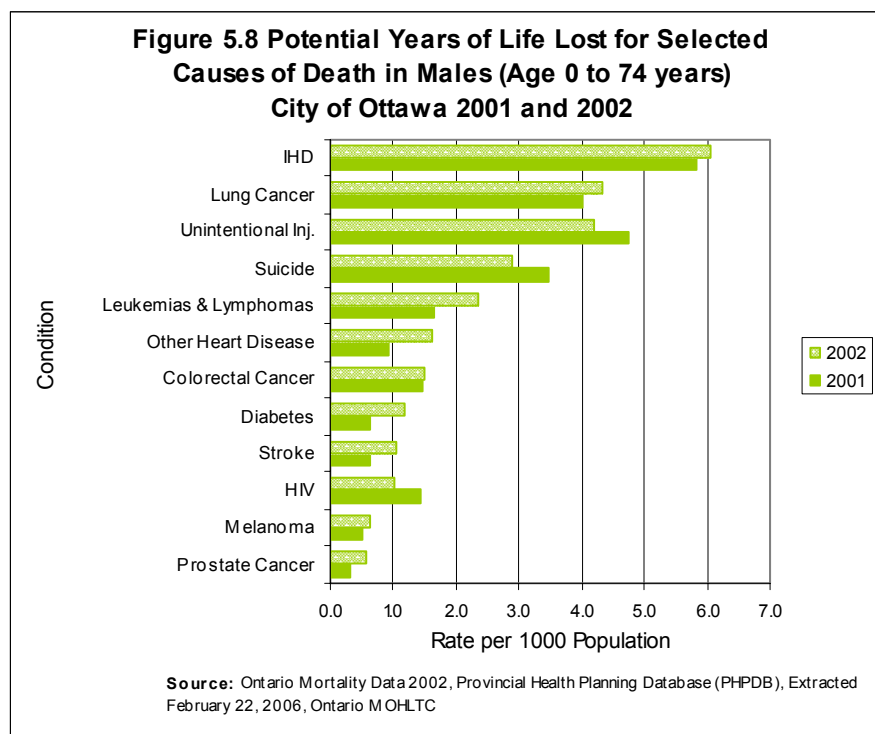
In 2002, mortality due to unintentional injuries, MVTC, falls, and suicide was not significantly different in Ottawa females than Ontario females (Figure 5.7).



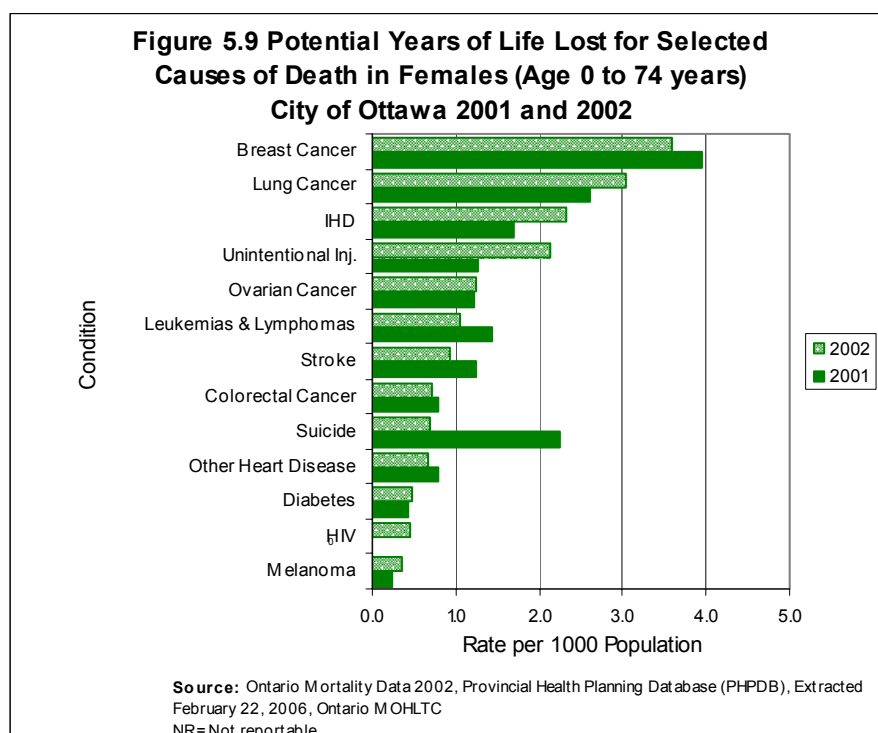
Premature Mortality (Potential Years of Life Lost)

Potential years of life lost (PYLL) are a measure of premature mortality. This measure represents the number of years not lived by an individual from birth who died before age 75 and gives more importance to the cause of early death than those at old age. Deaths among the elderly have little effect on these values.

In 2001 and 2002, the most important cause of premature mortality in Ottawa males was IHD, followed by lung cancer, unintentional injuries, and suicide (Figure 5.8). Males typically have higher rates of premature mortality than females because they are more likely to die before the age of 75.



In 2001 and 2002, the most important cause of premature mortality in Ottawa females was breast cancer, followed by lung cancer, IHD and unintentional injuries (Figure 5.9).



Health-Adjusted Life Expectancy

Health-adjusted life expectancy (HALE) is a measure of health expectancy and can be used as an indicator of health-related quality of life depicting the burden of morbidity in a community. HALE represents the number of expected years lived in full health, based on the current health status of the population. The health status of the population is quantified using the health utilities index (a health indicator based on six distinct attributes: sensory, mobility, emotion, cognition, dexterity, and pain), as surveyed on the Canadian Community Health Survey in 2000 to 2001. The difference between the estimates of life expectancy and HALE represent the burden of ill health in the population.

In 2001, at age 15, the HALE for Ottawa residents was 57.2 years for females and 54.7 years for males. At age 65, females were expected to live another 15.3 years in good health and males were expected to live 13.4 years in good health.

Overall Morbidity

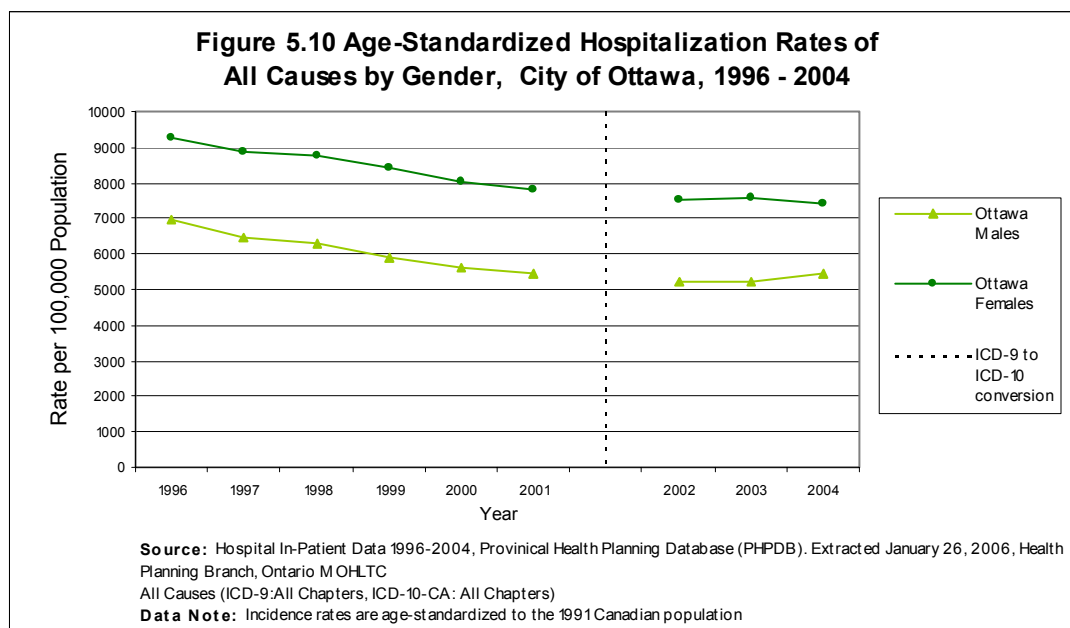
Morbidity refers to any departure from health or well-being, but often refers to the state of illness, disease or injury in a population.²⁶ Overall morbidity is difficult to quantify since no single source of information reflects all morbidity. Nevertheless, several sources of information can depict the extent of morbidity in a community.²⁹ In this section, health-adjusted life expectancy,

all-cause hospitalization rates and standardized morbidity ratios (of hospitalizations) are reported and used as a measure of the burden of morbidity in Ottawa. It is important to note that hospitalizations comprise inpatient data and do not include day procedures. Hospitalization data can include multiple admissions and data can be influenced by the availability of services in an area and the practice patterns of service providers. This measure of morbidity mainly reflects the middle to most severe range of morbidity. Other indicators of morbidity, such as incidence and prevalence of specific conditions, will be reported in the chronic disease and injury sections.

All-Cause Hospitalization

From 1996 to 2004, all-cause hospitalization rates (including all chronic and infectious diseases, acute conditions and injuries) steadily decreased and were significantly lower in Ottawa than Ontario. In 2004, the all-cause age-standardized hospitalization rate in Ottawa was 6319.1 per 100,000 population.

Similar to Ontario, Ottawa female age-standardized hospitalization rates were significantly higher than Ottawa male age-standardized hospitalization rates. In 2004, the female age-standardized hospitalization rate from all causes was 7393.0 per 100,000 population and the male age-standardized hospitalization rate was 5426.5 per 100,000 population (Figure 5.10). Hospitalizations are generally higher in females than males as a high proportion of hospitalizations are due to pregnancy, childbirth and the puerperium.



Leading Causes of Hospitalization

In 2004, the leading cause of hospitalization in Ottawa was due to pregnancy, childbirth and the puerperium (18.4%) (Table 5.5). Diseases of the circulatory system were the leading cause of hospitalization in men and were second in women (Table 5.6). In Ottawa residents aged 0 to 9 years old, the leading cause of hospitalization was due to diseases of the respiratory system. Excluding childbirth, pregnancy and the puerperium, the leading cause of hospitalization for young female residents aged 10 to 19 years was due to mental and behavioural disorders and injuries, and for males was due to poisonings and certain other consequences of external causes. Mental and behavioural disorders were the leading cause of hospitalization in both male and female adults aged 20 to 44 years old (excluding childbirth, pregnancy and the puerperium in females). Diseases of the circulatory system were the leading cause of hospitalization in males aged 45 to 64 years whereas neoplasms were the leading cause of hospitalization in females aged 45 to 64 years. Diseases of the circulatory system were the leading cause of hospitalization in seniors aged 65 years and older for both males and females (Table 5.7). The top three causes of hospitalization in seniors reflect the pattern of mortality in that age group for both males and females.

Table 5.5: Leading Causes of Hospitalization by ICD Chapter, City of Ottawa 2004

Rank	Cause of Hospitalization	Number	Percent (%)
1	Pregnancy, Childbirth & the Puerperium	9846	18.4
2	Diseases of the Circulatory System	6669	12.5
3	Diseases of the Digestive System	4994	9.3
4	Neoplasms	4848	9.1
5	Injuries, Poisonings, & Certain Other Consequences of External Causes	4421	8.3
6	Mental & Behavioural Disorders	4101	7.7
7	Diseases of the Respiratory System	4015	7.5
8	Diseases of the Genitourinary System	3089	5.8
9	Diseases of the Musculoskeletal System & Connective Tissue	2748	5.1
10	Factors Influencing Health Status & Contacts with Health Services	2530	4.7
	All Cause Total	53545	

Source: In-patient Hospitalizations, Provincial Health Planning Database (PHPDB) Extracted March 22, 2006, Health Planning Branch, Ontario MOHLTC

Table 5.6: Leading Causes of Hospitalization by Gender, City of Ottawa 2004

Male				Female			
Rank	Cause of Hospitalization	Number	Percent (%)	Rank	Cause of Hospitalization	Number	Percent (%)
1	Diseases of the Circulatory System	3943	18.5	1	Pregnancy, Childbirth & the Puerperium	9846	30.6

Male				Female			
Rank	Cause of Hospitalization	Number	Percent (%)	Rank	Cause of Hospitalization	Number	Percent (%)
2	Diseases of the Digestive System	2528	11.8	2	Diseases of the Circulatory System	2726	8.5
3	Injury, Poisonings, & Certain Other Consequences of External Causes	2203	10.3	3	Neoplasms	2710	8.4
4	Neoplasms	2138	10.0	4	Diseases of the Digestive System	2466	7.7
5	Mental & Behavioural Disorders	2058	9.6	5	Injuries, Poisonings & Certain Other Consequences of External Cause	2218	6.9
6	Diseases of the Respiratory System	2003	9.4	6	Mental & Behavioural Disorders	2043	6.3
7	Diseases of the Musculoskeletal System & Connective Tissue	1248	5.8	7	Diseases of the Respiratory System	2012	6.2
8	Diseases of the Genitourinary System	1238	5.8	8	Diseases of the Genitourinary System	1851	5.7
9	Factors Influencing Health Status & Contacts with Health Services	967	4.5	9	Factors Influencing Health Status & Contacts with Health Services	1563	4.9
10	Symptoms, Signs & Abnormal Clinical and Lab Findings	897	4.2	10	Diseases of the Musculoskeletal System & Connective Tissue	1500	4.7
	All Cause Total	21340			All Cause Total	32205	

Source: In-patient Hospitalization 2004, Provincial Health Planning Database (PHPDB) Extracted March 22, 2006, Health Planning Branch, Ontario MOHLTC

Table 5.7: Leading Causes of Hospitalization by Gender by Age Group, City of Ottawa 2004

Age 0 to 9 years					
Male (N=1328)			Female (N=962)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
1	Diseases of the Respiratory System	24.5	1	Diseases of the Respiratory System	21.5
2	Injury, Poisonings & Certain Other Consequences of External Causes	9.6	2	Certain Conditions Originating in the Perinatal Period	10.8
3t	Certain Conditions Originating in the Perinatal Period	9.3	3	Congenital Malformations, Deformations, & Chromosomal Anomalies	10.1
3t	Congenital Malformations,	9.3	4	Injury, Poisonings & Certain	9.3

Age 0 to 9 years					
Male (N=1328)			Female (N=962)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
	Deformations, & Chromosomal Anomalies			Other Consequences of External Causes	
5	Diseases of the Digestive System	8.3	5	Factors Influencing Health Status & Contacts with Health Services	7.9
6	Factors Influencing Health Status & Contacts with Health Services	6.4	6	Diseases of the Digestive System	7.1
7	Certain Infectious & Parasitic Diseases	5.2	7	Certain Infectious & Parasitic Diseases	5.7
8	Diseases of the Genitourinary System	5.1	8	Diseases of Genitourinary System	5.2
9	Diseases of Blood & Blood-Forming Organs & of Immune Mechanism	4.1	9	Symptoms, Signs & Abnormal Clinical & Lab Findings	5.1
10	Symptoms, Signs & Abnormal Clinical & Lab Findings	3.7	10	Diseases of Nervous System	3.0

Age 10 to 19 years					
Male (N=1009)			Female (N=1228)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
1	Injury, Poisonings & Certain Other Consequences of External Causes	21.1	1	Pregnancy, Childbirth & the Puerperium	21.6
2	Diseases of the Digestive System	18.2	2	Mental & Behavioural Disorders	19.7
3	Mental & Behavioural Disorders	16.3	3	Diseases of the Digestive System	12.1
4	Factors Influencing Health Status & Contacts with Health Services	9.5	4	Injury, Poisonings & Certain Other Consequences of External Causes	9.9
5	Diseases of the Musculoskeletal System & Connective Tissue	6.4	5	Factors Influencing Health Status & Contacts with Health Services	5.5
6	Diseases of the Respiratory System	6.0	6	Diseases of the Respiratory System	5.0
7t	Diseases of the Genitourinary System	3.0	7t	Diseases of the Musculoskeletal System & Connective Tissue	3.7
7t	Symptoms, Signs & Abnormal Clinical & Lab Findings	3.0	7t	Symptoms, Signs & Abnormal Clinical & Lab Findings	3.7

Age 10 to 19 years					
Male (N=1009)			Female (N=1228)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
9	Diseases of Blood & Blood-Forming Organs & of Immune Mechanism	2.9	9	Diseases of the Genitourinary System	3.6
10	Neoplasms	2.7	10	Diseases of Blood & Blood-Forming Organs & of Immune Mechanism	2.7

Age 20 to 44 years					
Male (N=3950)			Female (N=14236)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
1	Mental & Behavioural Disorders	28.6	1	Pregnancy, Childbirth & the Puerperium	67.2
2	Injury, Poisonings & Certain Other Consequences of External Causes	16.7	2	Mental & Behavioural Disorders	6.3
3	Diseases of the Digestive System	15.3	3	Diseases of the Genitourinary System	4.5
4	Diseases of the Circulatory System	6.4	4	Factors Influencing Health Status & Contacts with Health Services	4.4
5	Diseases of the Musculoskeletal System & Connective Tissue	5.2	5	Diseases of the Digestive System	4.1
6	Diseases of the Respiratory System	4.9	6	Neoplasms	3.5
7	Neoplasms	4.5	7	Injury, Poisonings & Certain Other Consequences of External Causes	3.0
8	Diseases of the Genitourinary System	3.4	8	Symptoms, Signs & Abnormal Clinical & Lab Findings	1.3
9	Symptoms, Signs & Abnormal Clinical & Lab Findings	3.0	9	Diseases of the Respiratory System	1.2
10	Factors Influencing Health Status & Contacts with Health Services	2.7	10	Diseases of the Musculoskeletal System & Connective Tissue	1.1

Age 45 to 64 years					
Male (N=6260)			Female (N=5842)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
1	Diseases of the Circulatory	23.1	1	Neoplasms	18.1

Age 45 to 64 years

Male (N=6260)			Female (N=5842)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
	System				
2	Neoplasms	12.6	2	Diseases of the Digestive System	11.2
3	Diseases of the Digestive System	12.5	3	Diseases of the Genitourinary System	10.4
4	Injury, Poisonings & Certain Other Consequences of External Causes	9.4	4	Mental & Behavioural Disorders	10.3
5	Mental & Behavioural Disorders	8.4	5	Injury, Poisonings & Certain Other Consequences of External Causes	9.8
6	Diseases of the Musculoskeletal System & Connective Tissue	7.0	6	Diseases of the Circulatory System	9.3
7	Diseases of the Respiratory System	5.4	7	Diseases of the Musculoskeletal System & Connective Tissue	8.3
8	Diseases of the Genitourinary System	5.1	8	Diseases of the Respiratory System	6.1
9	Factors Influencing Health Status & Contacts with Health Services	4.2	9	Symptoms, Signs & Abnormal Clinical & Lab Findings	4.3
10	Symptoms, Signs & Abnormal Clinical & Lab Findings	4.1	10	Factors Influencing Health Status & Contacts with Health Services	3.4

Age 65 years and older

Male (N=8793)			Female (N=9937)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
1	Diseases of the Circulatory System	25.2	1	Diseases of the Circulatory System	20.7
2	Neoplasms	12.8	2	Diseases of the Respiratory System	12.3
3	Diseases of the Respiratory System	12.3	3	Neoplasms	11.2
4	Diseases of the Digestive System	9.7	4	Diseases of the Digestive System	10.2
5	Diseases of the Genitourinary System	7.8	5	Injury, Poisonings & Certain Other Consequences of External Causes	10.2
6	Injury, Poisonings & Certain Other Consequences of External Causes	7.0	6	Diseases of the Musculoskeletal System & Connective Tissue	8.0

Age 65 years and older					
Male (N=8793)			Female (N=9937)		
Rank	Cause of Hospitalization	Percent (%)	Rank	Cause of Hospitalization	Percent (%)
7	Diseases of the Musculoskeletal System & Connective Tissue	5.7	7	Factors Influencing Health Status & Contacts with Health Services	5.9
8	Symptoms, Signs & Abnormal Clinical & Lab Findings	5.0	8	Symptoms, Signs & Abnormal Clinical & Lab Findings	5.2
9	Factors Influencing Health Status & Contacts with Health Services	4.8	9	Diseases of the Genitourinary System	5.1
10	Mental & Behavioural Disorders	2.4	10	Mental & Behavioural Disorders	2.9

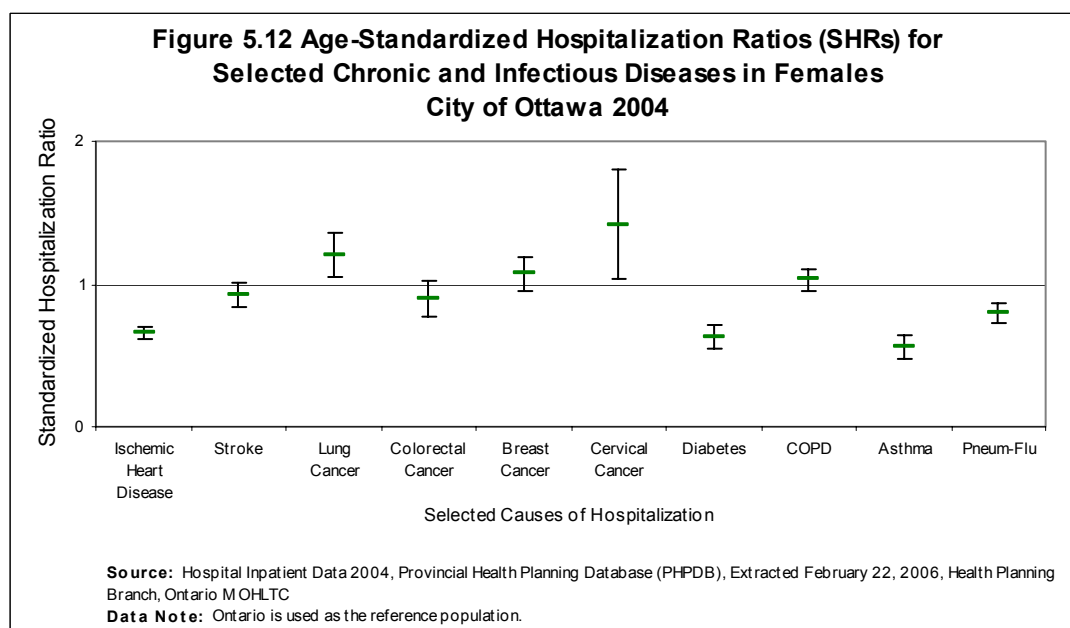
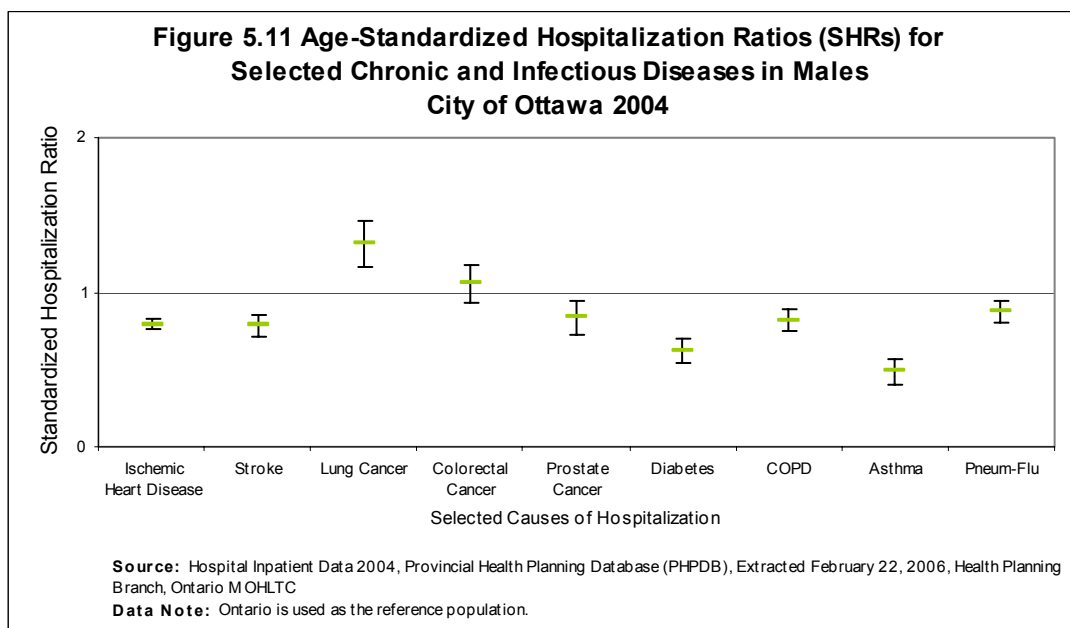
Source: In-patient Hospitalization Data 2004, Provincial Health Planning Database (PHPDB) Extracted March 22, 2006, Health Planning Branch, Ontario MOHLTC
 †= Tie in rank

Standardized Hospitalization Ratio

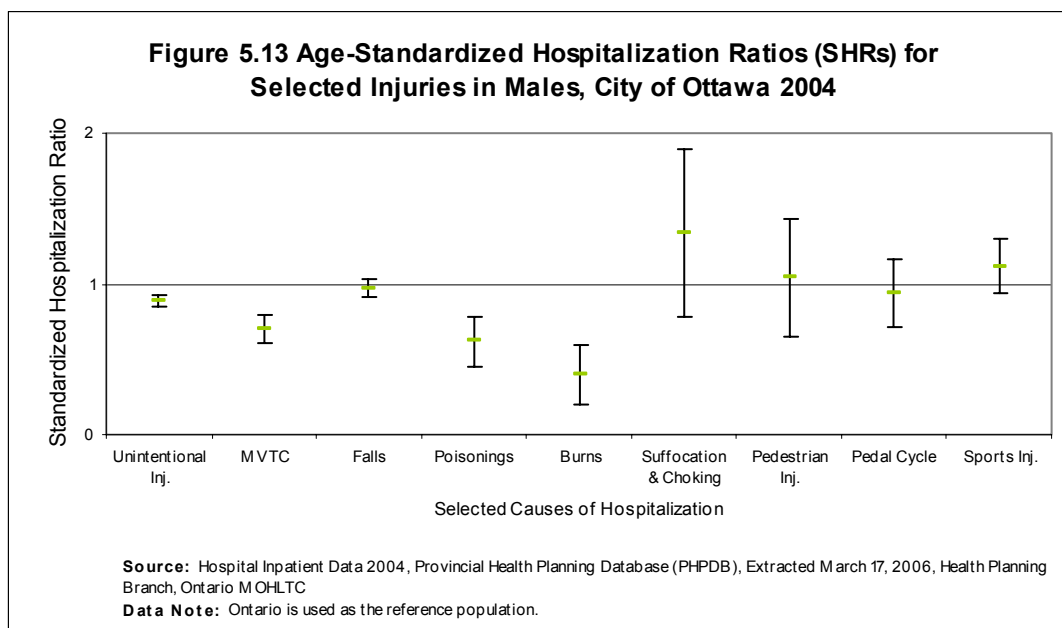
The age-standardized hospitalization ratio (SHR) is the ratio of the number of hospitalizations in the population of interest to the number expected if that population had the same age-specific rates as a reference population. The population of interest is Ottawa and the reference population is Ontario. If an SHR or its confidence interval (CI) includes 1.0, then the hospitalization rate for that condition is not different in Ottawa than Ontario. If the SHR and its CI are both above 1.0, this means that the hospitalization rate for the condition is significantly higher in Ottawa than Ontario. If the SHR and its CI are both below 1.0, this means that the hospitalization rate for the condition is significantly lower than Ontario. This section discusses SHRs due to selected causes of chronic and infectious diseases and injuries.

In 2004, hospitalizations from IHD, stroke, prostate cancer, diabetes, COPD, asthma, and pneumonia/influenza contributed less to morbidity in Ottawa males than in Ontario males. Hospitalizations from lung cancer contributed more to morbidity in Ottawa males than in Ontario males (Figure 5.11).

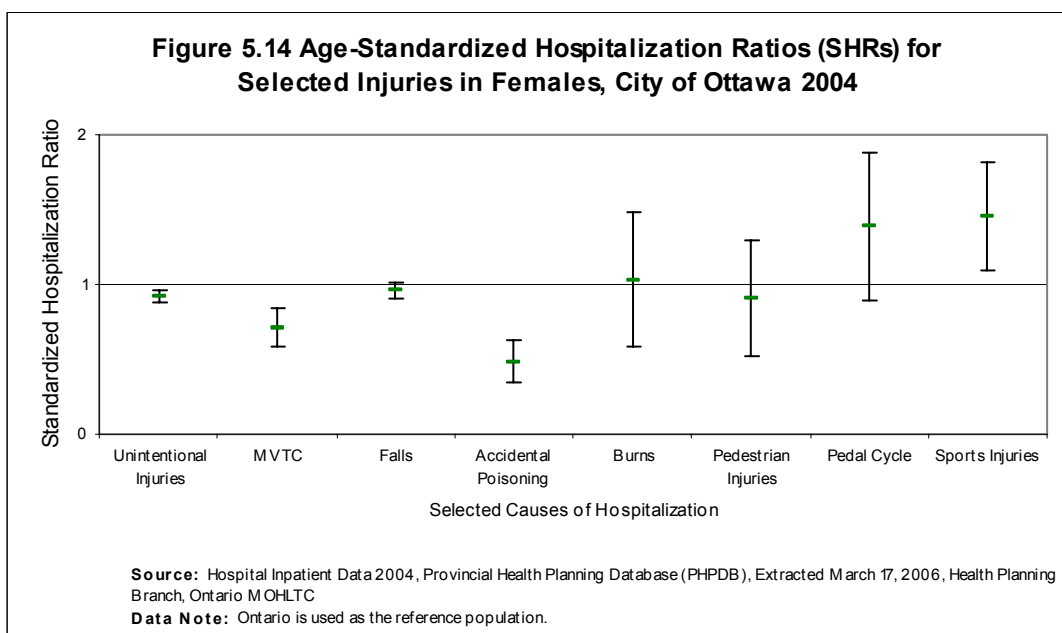
In 2004, hospitalizations from IHD, diabetes, asthma and pneumonia/influenza contributed less to morbidity in Ottawa females than in Ontario. Hospitalizations from lung cancer and cervical cancer contributed more to morbidity in Ottawa females than in Ontario females (Figure 5.12).



Overall, hospitalizations from unintentional injuries contributed less to morbidity in Ottawa males than in Ontario males. More specifically, hospitalizations from motor vehicle traffic collisions, poisonings, and burns were a significantly lower burden and there was no difference in falls, suffocation (including choking), pedestrian (traffic-related) injuries, pedal cycle injuries, and sports injuries (Figure 5.13).



Hospitalizations due to unintentional injury also contributed less to morbidity in Ottawa females than in Ontario females. Specifically, hospitalizations from MVTC and accidental poisonings were a significantly lower burden and there was no difference in falls, burns, pedestrian (traffic-related) injuries, and pedal cycle injuries. Sports injury hospitalizations contributed to a higher burden of morbidity in Ottawa females than Ontario females (Figure 5.14).



6. Chronic Conditions

In Ottawa, chronic conditions are the leading cause of illness, disability, and death. Chronic conditions lead to a poor quality of life and generate a major burden on individuals, their families and communities, the work force, and the health care system. Components of a strategy to control chronic conditions include prevention, early detection, and treatment.²⁵ While some risk factors such as age, gender, ethnicity, and genetic composition cannot be changed, behavioural risk factors can be improved. Healthy everyday living including eating a healthy diet, being physically active, living smoke free, and maintaining a healthy weight significantly reduce the incidence of chronic disease. Early detection of disease through routine screenings and regular visits to a primary health care provider are important in reducing ill health, hospitalization, and death. Major risk factors for chronic conditions include: tobacco and alcohol consumption, high blood pressure, physical inactivity, high blood cholesterol, being overweight, an unhealthy diet, older age, gender, and ethnicity.³⁰ To address the control of chronic conditions, public health in Ontario has set the goal of increasing the length and quality of life by reducing the illness, hospitalization, and death associated with chronic disease.²⁵

Prevalence of Selected Chronic Conditions

According to the 2003 Canadian Community Health Survey (CCHS), approximately 478,100 residents or 68.9% ($\pm 2.6\%$) of Ottawa residents aged 12 years and older reported having at least one chronic condition diagnosed by a health professional. Females (73.1% $\pm 3.2\%$) were significantly more likely than males (64.6% $\pm 4.2\%$) to report having at least one chronic condition. In residents aged 65 years and older, 94.3% ($\pm 2.7\%$) reported having at least one chronic condition. As the Ottawa population ages, we are more likely to see more people with chronic conditions.

In residents aged 12 years and older, the five most commonly reported chronic conditions include non-food allergies, back problems, arthritis, high blood pressure, and migraine headaches (Table 6.1).

Table 6.1: Prevalence of Selected Chronic Conditions (Age 12 years and older), City of Ottawa and Ontario 2003

Chronic Condition	Ottawa (% \pm 95% CI)	Ontario (% \pm 95% CI)
Non-Food Allergy	31.4 \pm 2.6	29.4 \pm 0.7
Back Problems	20.3 \pm 2.2	20.2 \pm 0.6
Arthritis or Rheumatism	15.2 \pm 1.8	17.5 \pm 0.4
High Blood Pressure	12.4 \pm 1.7	14.7 \pm 0.5

Chronic Condition	Ottawa (% ± 95% CI)	Ontario (% ± 95% CI)
Migraine Headaches	10.1 ± 1.6	11.0 ± 0.5
Asthma	8.6 ± 1.5	8.3 ± 0.4
Food Allergies	7.9 ± 1.6	7.5 ± 0.4
Diabetes	4.3 ± 1.0	4.6 ± 0.3
Heart Disease	3.8 ± 1.0	5.3 ± 0.3
Cancer	1.9 ± 0.6*	1.8 ± 0.2
Heart Attack	1.6 ± 0.7*	2.2 ± 0.2
Effects of Stroke	1.2 ± 0.5*	1.0 ± 0.1
Angina	0.8 ± 0.4*	1.7 ± 0.2
Emphysema/COPD	0.7 ± 0.7*	1.0 ± 0.4

Source: Canadian Community Health Survey 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

* Interpret with caution – high sampling variability

A different pattern emerges for the most commonly reported chronic conditions in residents aged 65 years and older. Conditions of the cardiovascular and musculoskeletal system are prevalent. In 2003, half of these elderly residents in Ottawa reported ever having a heart attack and almost half reported high blood pressure. Almost half of elderly residents were living with arthritis and one quarter were living with back problems (Table 6.2).

Table 6.2: Prevalence of Selected Chronic Conditions (Age 65 years and older), City of Ottawa and Ontario 2003

Chronic Condition	Ottawa (% ± 95% CI)	Ontario (% ± 95% CI)
Heart Attack	50.5 ± 15.3	44.7 ± 3.2
Arthritis or Rheumatism	46.1 ± 5.8	50.3 ± 3.2
High Blood Pressure	42.3 ± 6.0	43.2 ± 1.6
Non-Food Allergy	29.4 ± 5.8	25.3 ± 1.3
Back Problems	25.1 ± 5.3	27.3 ± 1.3
Heart Disease	15.6 ± 4.2	20.9 ± 1.2
Diabetes	13.7 ± 4.6*	13.8 ± 1.2
Cancer	8.7 ± 3.3*	6.0 ± 0.7
Food Allergy	7.7 ± 3.5*	6.6 ± 0.7
Asthma	7.2 ± 2.9*	7.3 ± 0.8
Migraine headaches	4.7 ± 2.7*	5.3 ± 0.8

Source: Canadian Community Health Survey 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

*Interpret with caution – high sampling variability

Cancer

There are many types of cancers affecting different parts of the body and each has different characteristics, causes, and potential risk factors. Cancers are characterized by the uncontrolled growth and spread of abnormal cells in the body.³¹ Table 6.3 and Table 6.4 present the age-standardized incidence and mortality rates for the most common cancers for all ages of Ottawa and Ontario residents in 2002.

Table 6.3: Summary of Age-Standardized* Incidence Rates of Selected Cancers, City of Ottawa and Ontario 2002

Age-Standardized Incidence Rate (cases per 100,000 population)						
Cancer	Ottawa Total	Ontario Total	Ottawa Males	Ontario Males	Ottawa Females	Ontario Females
Breast	---	---	---	---	107.8	103.5
Prostate	---	---	105.8	136.0	---	---
Lung	52.1	52.1	66.0	66.7	41.9	41.8
Colorectal	51.0	51.9	61.4	63.9	43.0	42.8
Uterine	---	---	---	---	18.6	21.2
Ovarian	---	---	---	---	16.6	13.4
Non-Hodgkins Lymphoma	15.8	15.9	17.2	18.6	14.7	13.8
Malignant Melanoma	12.9	12.8	14.8	14.8	12.3	11.6
Bladder	10.7	12.0	17.3	20.7	5.6	5.7
Kidney	8.8	9.7	10.9	12.9	6.7	7.2
Pancreas	8.4	8.2	10.3	8.6	7.0	7.9
Leukemia	8.6	11.5	9.8	15.3	7.7	8.7
Oral Cavity and Pharynx	7.8	9.1	9.8	12.9	5.9	6.0
Stomach	5.8	7.5	8.7	11.2	3.4	4.8
Brain	5.2	6.0	6.7	7.2	3.8	4.9
Cervical	---	---	---	---	4.2	7.9
Esophageal	4.0	3.9	6.2	6.3	2.0	1.9

Source: Cancer Incidence 2002, Cancer Care Ontario

*Age-standardized to 1991 Canadian Population

Table 6.4: Summary of Age-Standardized* Mortality Rates of Selected Cancers, City of Ottawa and Ontario 2002

Mortality Rate (deaths per 100,000 population)						
Cancer	Ottawa Total	Ontario Total	Ottawa Males	Ontario Males	Ottawa Females	Ontario Females
Lung	44.1	43.5	58.5	59.2	33.1	32.6
Breast	---	---	---	---	28.0	24.6
Colorectal	18.4	19.1	23.4	25.1	14.2	14.9
Prostate	---	---	22.8	27.3	---	---
Ovarian	---	---	---	---	8.4	8.4
Pancreas	7.8	8.4	9.1	9.6	7.0	7.7
Non-Hodgkins Lymphoma	6.3	7.0	8.3	9.1	4.6	5.6
Leukemia	5.6	5.9	6.0	8.4	5.0	4.3
Brain	3.9	4.2	4.7	5.3	3.2	3.3
Esophageal	3.9	4.4	5.8	7.3	2.4	2.1
Bladder	3.4	4.4	6.6	8.3	1.5	2.0
Stomach	3.5	4.7	4.4	7.1	2.4	3.1
Kidney	3.3	3.3	4.5	4.9	2.3	2.0
Oral Cavity and Pharynx	3.0	3.1	4.5	4.7	1.7	1.8
Malignant Melanoma	2.7	2.6	3.9	3.8	1.7	1.8
Uterine	---	---	---	---	1.9	3.5
Cervical	---	---	---	---	0.8	1.8

Source: Cancer Mortality 2002, Cancer Care Ontario

*Age-standardized to 1991 Canadian Population

Since some cancers may take many years to develop, they are typically a disease of older age. See Table 6.5 and Table 6.6 for a list of crude incidence and mortality rates of selected cancers for Ottawa residents aged 65 years and older. The rest of this section of the report further focuses on trends of selected cancers among Ottawa residents from 1986 to 2002. Where possible, comparisons of rates between Ottawa and Ontario are presented.

Table 6.5: Summary of Crude Incidence Rates of Selected Cancers (65 years and older), City of Ottawa 2002

Crude Incidence Rate (cases per 100,000 population)			
Cancer	Ottawa Total	Males	Females
Prostate	---	569.4	---
Breast	---	---	381.0
Lung	302.7	403.8	229.7

Crude Incidence Rate (cases per 100,000 population)			
Cancer	Ottawa Total	Males	Females
Colorectal	301.6	341.6	272.7
Non-Hodgkins Lymphoma	66.2	69.9	63.5
Bladder	65.1	106.1	35.5
Ovary	---	---	63.5
Pancreas	56.4	62.1	52.3
Malignant Melanoma	49.9	77.6	29.9
Kidney	38.0	41.4	35.5
Leukemia	38.0	44.0	33.6

Source: Cancer Incidence 2002, Cancer Care Ontario

Table 6.6: Summary of Crude Mortality Rates of Selected Cancers (65 years and older), City of Ottawa 2002

Crude Mortality Rate (deaths per 100,000 population)			
Cancer	Ottawa Total	Males	Females
Lung	269.0	362.3	201.7
Prostate	---	178.6	---
Breast	---	---	141.9
Colorectal	131.3	155.3	113.9
Pancreas	51.0	59.5	44.8
Ovary	---	---	46.7
Non-Hodgkins Lymphoma	41.2	44.0	39.2
Leukemia	31.5	28.5	33.6
Bladder	30.4	49.2	16.8
Esophageal	27.1	38.8	18.7
Kidney	27.1	33.6	22.4
Stomach	21.7	20.7	22.4

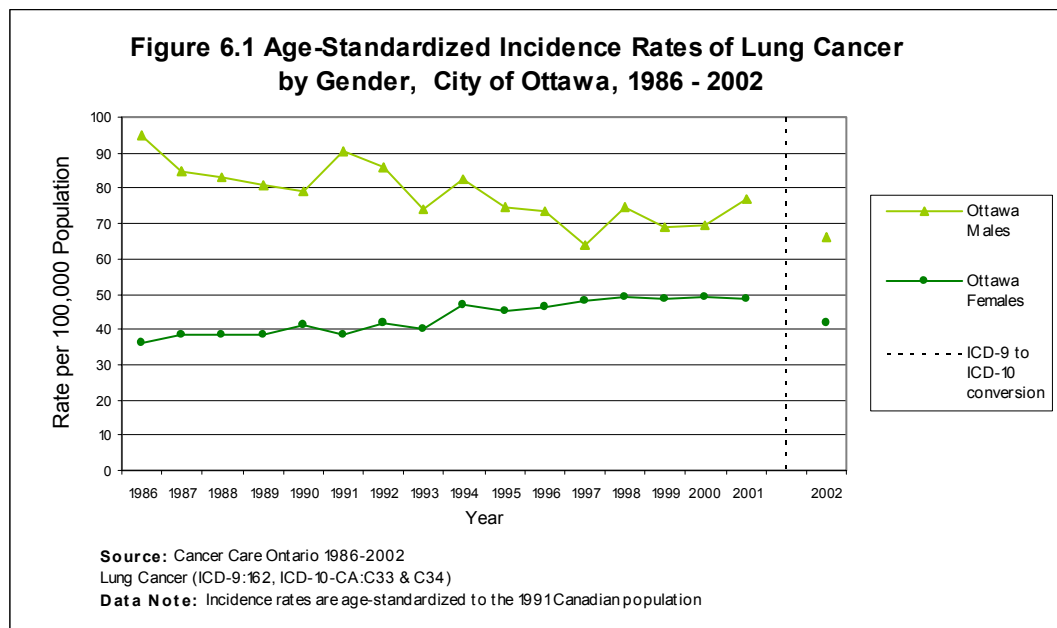
Source: Cancer Mortality 2002, Cancer Care Ontario

Lung Cancer

In Ottawa, lung cancer was the third most commonly diagnosed cancer in 2002. It is well known that tobacco use and exposure to second-hand smoke are the most important preventable causes of lung cancer.³² (See *Lifestyle Behaviours and Health for prevalence of tobacco use*).

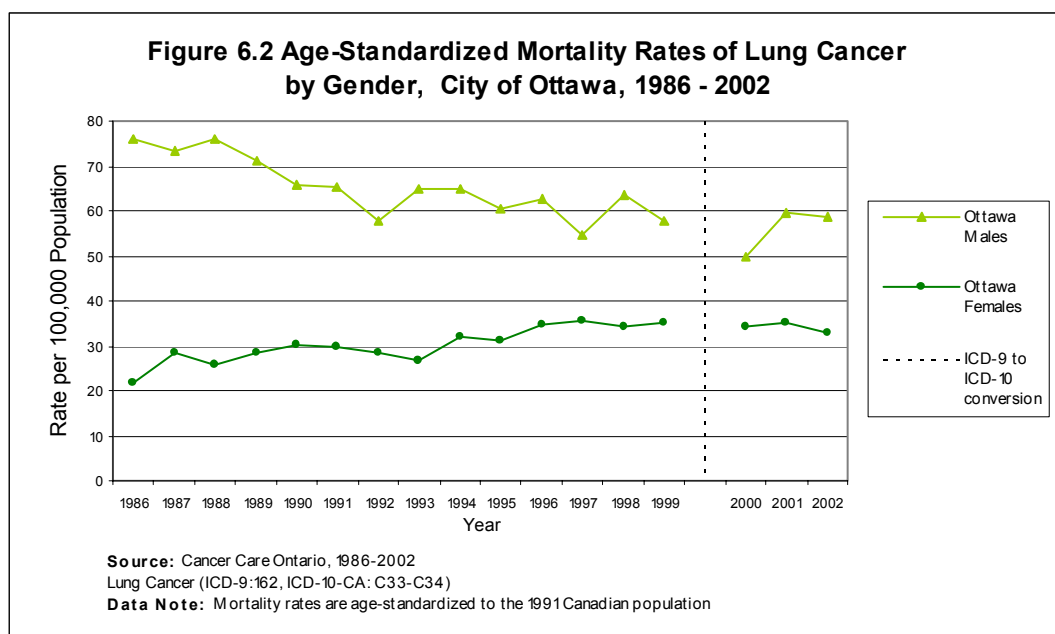
From 1986 to 2002, incidence rates of lung cancer in Ottawa remained relatively consistent and similar to Ontario rates. In 2002, the age-standardized incidence rate of lung cancer in Ottawa was 52.1 cases per 100,000 population.

In the past, incidence rates of lung cancer were higher in males than females; however, the gap is closing as male rates have declined and female rates have increased. Age-standardized male incidence rates of lung cancer significantly declined from 94.7 per 100,000 in 1986 to 66.0 per 100,000 in 2002. Age-standardized female incidence rates of lung cancer increased from 36.1 per 100,000 in 1986 to 48.3 per 100,000 in 2001 (Figure 6.1). One goal of public health in Ontario is to slow the rise of incidence rates of lung cancer.²⁵ Ottawa is meeting this goal in the male population.



In Ottawa, lung cancer is the leading cause of death from all cancers and the second leading cause of death overall (see *Overall Mortality and Morbidity section*). Since 1986, Ottawa mortality rates from lung cancer were relatively stable and similar to Ontario. In 2002, the Ottawa age-standardized mortality rate from lung cancer was 44.0 per 100,000.

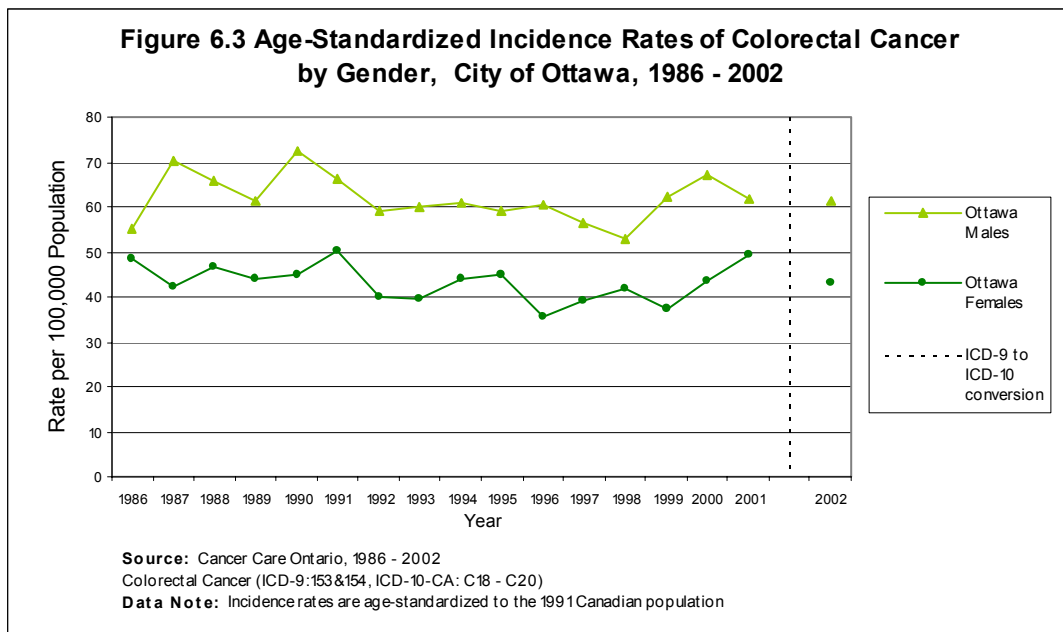
Similar to incidence rates, mortality rates of lung cancer were historically higher in males than females. However, this gap in mortality is closing. Age-standardized male lung cancer mortality rates decreased from 76.1 per 100,000 in 1986 to 58.5 per 100,000 in 2002. Age-standardized female lung cancer mortality rates significantly increased from 21.9 per 100,000 in 1986 to 33.1 per 100,000 in 2002 (Figure 6.2).



Colorectal Cancer

Based on number of diagnoses per year, colorectal cancer was the second most common cancer in Ottawa in 2002. Individuals at increased risk for colorectal cancer are those with risk factors including: men and women 50 or older, personal or family history of benign colorectal polyps, ovarian, endometrial or breast cancer, history of inflammatory bowel disease, obesity, low levels of physical activity, alcohol consumption, tobacco use, and consumption of a diet high in saturated fats and low in fibre, fruits and vegetables (*See Lifestyle Behaviours and Health Section for prevalence of selected risk factors*). Regular screening for colorectal cancer can detect the disease at an early stage, when it is more treatable, therefore reducing death.^{33,34}

Incidence rates of colorectal cancer in Ottawa were steady and similar to those in Ontario. In 2002, the Ottawa age-standardized incidence rate of colorectal cancer was 51.0 cases per 100,000 population. Age-standardized incidence rates were significantly higher for Ottawa males (Figure 6.3), which is explained by the higher incidence rate in elderly males.



Although incidence rates of colorectal cancer in Ottawa have remained relatively consistent since 1986, age-standardized mortality rates of colorectal cancer have fluctuated between 27.9 per 100,000 in 1989 and 15.0 in 1997. In 2002, the Ottawa age-standardized mortality rate from colorectal cancer was 18.4 deaths per 100,000 population. In the last two years, age-standardized mortality rates of colorectal cancer in Ottawa were significantly higher in males than females.

Early Detection of Colorectal Cancer

Several types of cancer can be detected in their early stages with accurate screening tests. Early detection of cancer can lead to a decrease in morbidity and mortality. Public health goals in Ontario aim to reduce mortality from certain cancers by increasing early detection through screening.²⁵

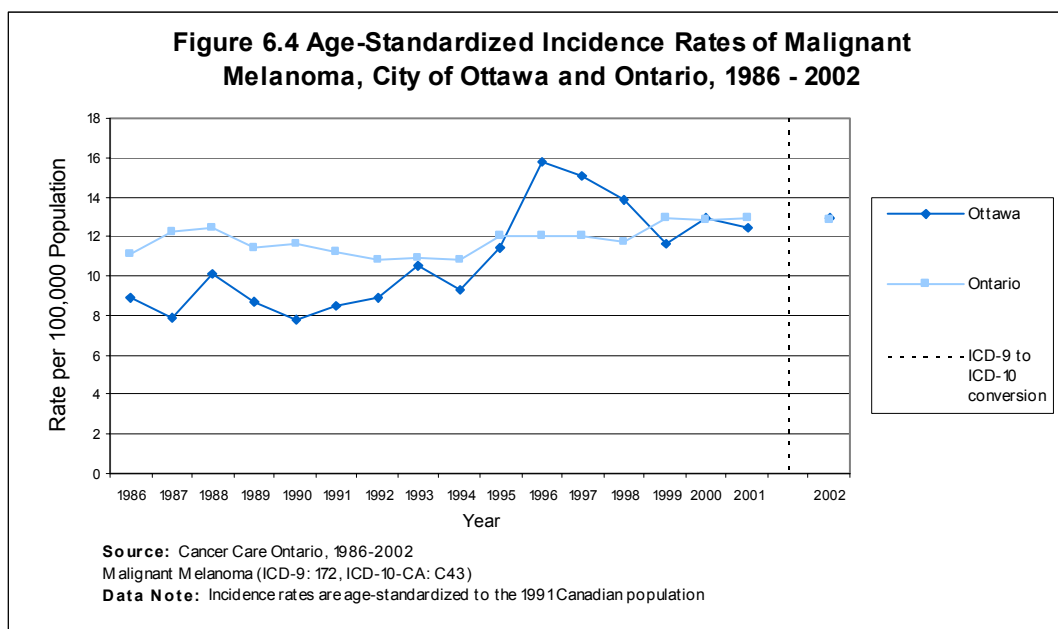
The Canadian Cancer Society recommends that men and women aged 50 years and older have a fecal occult blood test every two years to screen for colorectal cancer.³⁵ A positive test should be followed up with further testing to identify cancerous growths.

In 2005, almost half of Ottawa residents aged 50 years and older ($48.7\% \pm 4.6\%$) reported that they had been screened for colorectal cancer; less than a third ($29.3\% \pm 4.2\%$) reported that they had been screened for colorectal cancer within the last two years.³⁶

Malignant Melanoma

Malignant melanoma is the most serious type of skin cancer. Risk factors for skin cancer include: exposure to ultraviolet radiation (overexposure to the sun), history of severe and frequent sunburns, skin that is fair or has many freckles or moles, childhood and adolescent sun exposure, and genetic history of skin cancer.^{37,38} (See *Lifestyle Behaviours and Health Section for prevalence of sun screen and sun safety behaviours*).

In Ottawa, the age-standardized incidence rate of malignant melanomas increased significantly from 8.9 per 100,000 population in 1986 to 15.8 per 100,000 population in 1996. After the peak in 1996, incidence rates have remained relatively consistent though higher than the previous decade (the Canadian Dermatology Association and Canadian Cancer Society launched a campaign in the late 1990s promoting use of sun screen and avoidance of sun exposure). In 2002, the age-standardized incidence rate was 12.9 per 100,000 population (Figure 6.4). One goal of public health in Ontario is to slow the rise in incidence of skin cancers.²⁵

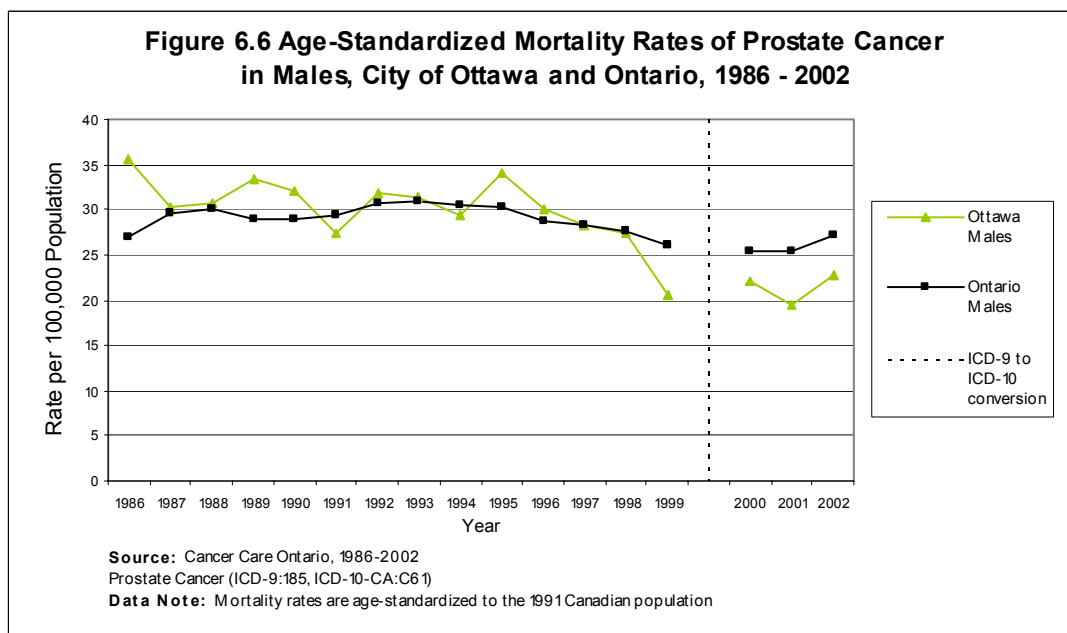
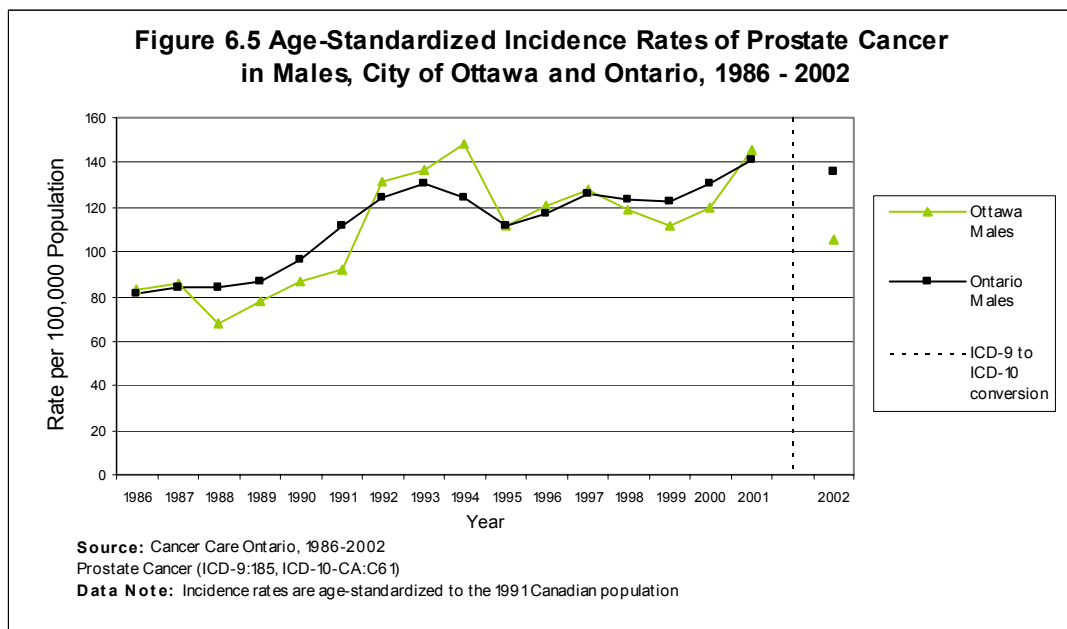


From 1986 to 2002, mortality rates of malignant melanomas in Ottawa have remained consistent and similar to Ontario. In 2002, the age-standardized mortality rate of malignant melanomas in Ottawa was 2.7 deaths per 100,000 population.

Prostate Cancer

Prostate cancer is the most commonly diagnosed cancer among Ottawa males. From 1988 to 1994, the age-standardized incidence of prostate cancer rapidly increased from 67.7 to 148.6

per 100,000 population. The prostate-specific antigen (PSA) test used to screen for prostate cancer was introduced in the late 1980s and has been widely utilized in Canada since 1990.³⁹ The rapid increase in detected cases of prostate cancer can be attributed to the availability of PSA testing. In 2001, age-standardized incidence rates reached another peak of 145.7 per 100,000 population (Figure 6.5).



Although incidence rates of prostate cancer increased in the early 1990s, mortality due to prostate cancer has gradually declined, similar to the rates of Ontario males. In 2002, the Ottawa age-standardized mortality rate from prostate cancer was 22.8 deaths per 100,000 (Figure 6.6.).

Early Detection of Prostate Cancer

Cancer Care Ontario and the Canadian Cancer Society advise men over the age of 50 years to discuss the potential benefits and risks of early detection of prostate cancer using the Prostate Antigen Specific (PSA) and digital rectal examination with their doctor. Men at high risk due to family history or those of African descent should discuss the need to test at an earlier age.⁴⁰

In 2003, three quarters (74.7% \pm 6.1%) of men in Ottawa over the age of 50 years had been screened for prostate cancer using the PSA test.⁴¹

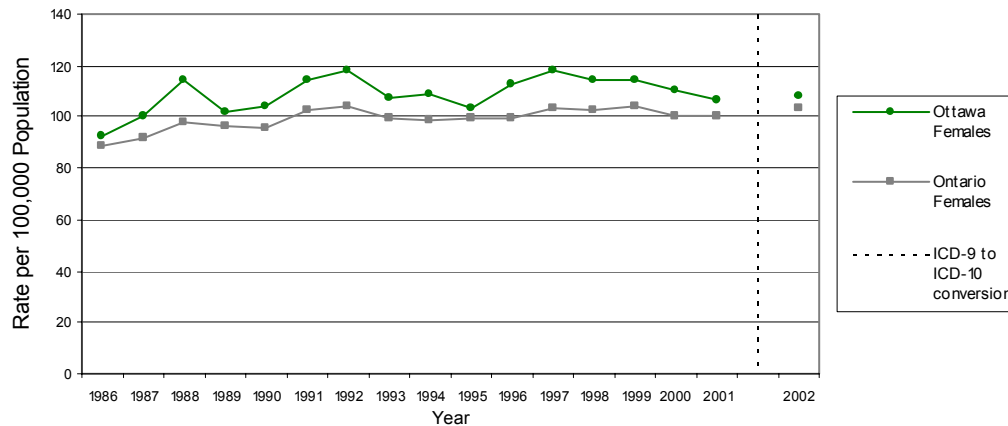
Breast Cancer

Breast cancer is the most commonly diagnosed cancer among Ottawa women. Known risk factors for breast cancer in females include: older age, being overweight after menopause, physical inactivity, having no children or having them after the age of thirty, never having breastfed, hormone replacement therapy, having a first degree relative (mother or sister) with breast cancer, early menstruation (before age 12), late menopause (after age 55). Possible risk factors for breast cancer in females include: a diet low in fruits and vegetables, alcohol consumption, tobacco use or second-hand smoke exposure, and using birth control pills.^{42,43} (See *Lifestyle Behaviours and Health Section for prevalence of selected risk factors*). Screening for breast cancer includes regular mammography for at-risk females.

From 1996 to 1998, Ottawa incidence rates of breast cancer were significantly higher than provincial rates. In 2002, the Ottawa age-standardized incidence rate of breast cancer was 107.8 per 100,000 (Figure 6.7).

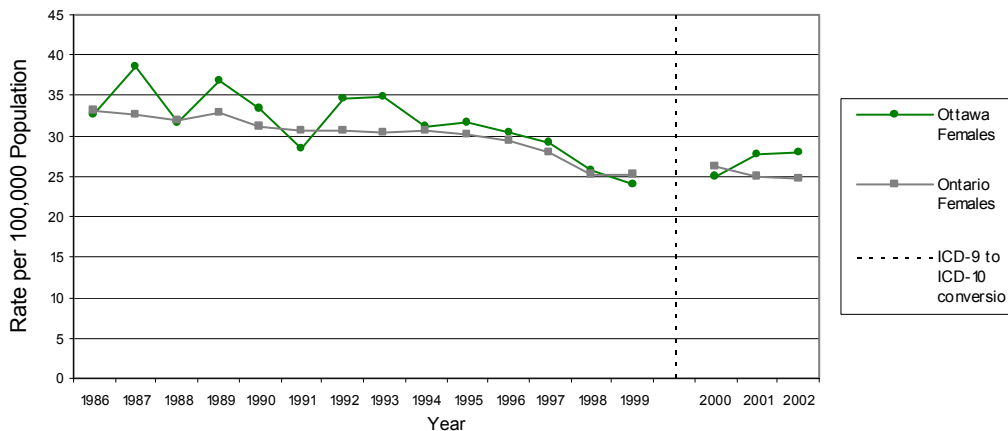
Mortality rates of breast cancer in Ottawa declined from 1993 to 1999, similar to Ontario trends. The decline in breast cancer mortality is in accordance with the Ontario public health goal of reducing breast cancer mortality by 10% by the year 2010.²⁵ In 2002, the age-standardized mortality rate of breast cancer in Ottawa was 28.0 per 100,000 (Figure 6.8).

Figure 6.7 Age-Standardized Incidence Rates of Breast Cancer in Females, City of Ottawa and Ontario, 1986 - 2002



Source: Cancer Care Ontario, 1986-2002
 Breast Cancer (ICD-9:174-175, ICD-10-CA:C50)
Data Note: Incidence rates are age-standardized to the 1991 Canadian population

Figure 6.8 Age-Standardized Mortality Rates of Breast Cancer in Females, City of Ottawa and Ontario, 1986 - 2002



Source: Cancer Care Ontario, 1986-2002
 Breast Cancer (ICD-9: 174-175, ICD-10-CA: C50)
Data Note: Mortality rates are age-standardized to the 1991 Canadian population

Early Detection of Breast Cancer

Screening for breast cancer has been shown to reduce the mortality rate from the disease.⁴³ Methods to screen for breast cancer include mammography and clinical breast examination by a health professional.

The purpose of mammography is to detect developing breast cancer as early as possible to allow for effective treatment. Mammography is an imaging technique that uses X-rays to provide a picture of the internal structure of the breast. Mammography can detect abnormal growths or changes in the breast tissue before they can be found by other methods such as breast self-examination. The Canadian Cancer Society recommends mammograms every 2 years for women between the age of 50 and 69 years.⁴⁴

In 2003, 93.7% ($\pm 6.5\%$) of Ottawa women aged 50 to 74 years reported ever receiving a mammogram and 76.9% ($\pm 11.2\%$) reported that they had received a mammogram less than two years ago.⁴¹ The proportion of Ottawa women aged 50 to 74 screened for breast cancer with mammography increased from 2001 to 2003, but not significantly (Table 6.7).

Table 6.7: Proportion of Women (Aged 50 to 74 Years) Who Have Been Screened for Breast Cancer with a Mammogram Ever and Within the Last Two Years, City of Ottawa and Ontario, 2001 and 2003

	Ottawa (% \pm 95% CI)		Ontario (% \pm 95% CI)	
	2001	2003	2001	2003
Ever Had a Mammogram	81.8 \pm 13.7	93.7 \pm 6.5	82.1 \pm 3.7	90.0 \pm 2.0
Had a Mammogram <2 Years Ago	71.4 \pm 16.1	76.9 \pm 11.2	62.3 \pm 4.5	64.7 \pm 3.9

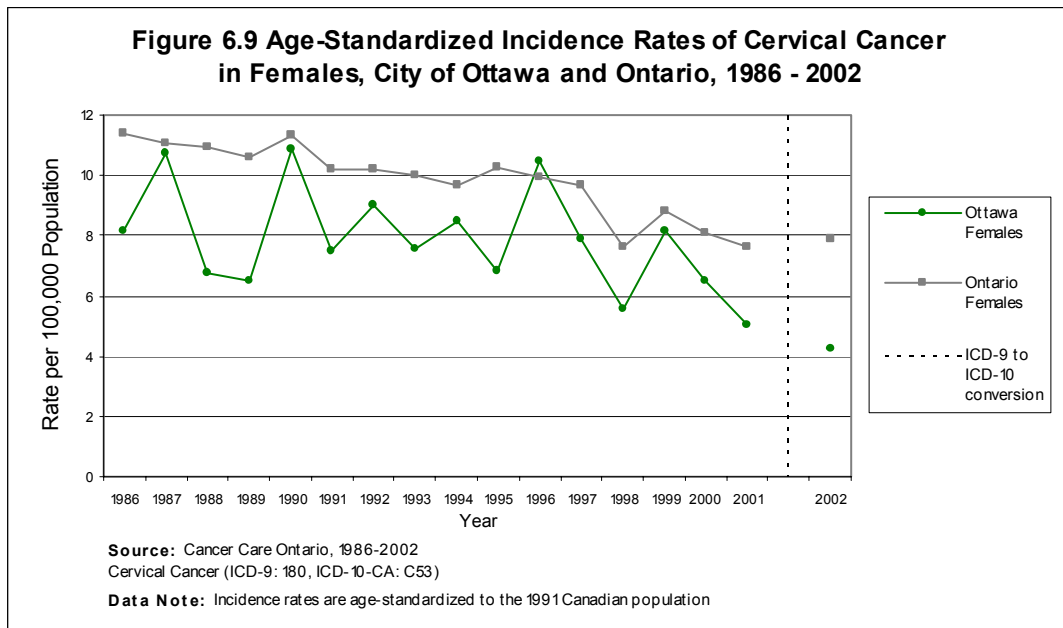
Source: Canadian Community Health Survey 2001 and 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

The Ontario Breast Screening Program (OBSP) encourages women over the age of 50 years to receive a routine mammogram every two years and offers breast screening for women at four locations in Ottawa. The Ontario public health goal is to increase to 70% the proportion of women ages 50 to 69 who receive screening mammography through the OBSP by the year 2010.²⁵ In 2003, 71.6% ($\pm 7.1\%$) of women age 50-69 in Ottawa reported that they had a mammogram less than 2 years ago.⁴¹

Cervical Cancer

Cervical cancer is one of the most preventable cancers due to the availability of early detection through screening with the Papanicolaou (Pap) smear test.⁴⁵ Risk factors for cervical cancer include: infection with human papillomavirus (HPV), HIV infection, older age (age 40-59), multiple sexual partners, becoming sexually active at an early age and tobacco use.^{45,46}

Age-standardized incidence rates of cervical cancer in Ottawa females significantly decreased from 10.5 per 100,000 in 1996 to 4.2 per 100,000 in 2002 (Figure 6.9).



Since 1986, mortality rates of cervical cancer in Ottawa females have fluctuated. In 2002, the Ottawa age-standardized mortality rate from cervical cancer was 0.8 per 100,000. The Ontario goal is to reduce mortality from cervical cancer by 50% by the year 2005.²⁵

Early Detection of Cervical Cancer

The Ontario Cervical Screening Guidelines recommend that all women who are or have ever been sexually active should be screened for cervical cancer, beginning within three years of first vaginal sexual activity. Cervical screening should be done annually until there are three consecutive negative Pap tests, after which screening should continue every two to three years.⁴⁷

In 2003, the percent of women aged 18 to 29 years who reported ever having a Pap test was 72.6% ($\pm 8.6\%$), similar to Ontario. The percent of women 18 to 29 years who report ever having a Pap test is lower than the Ontario goal, which is to increase the proportion of women ever screened to 95% by the year 2010. The proportion of Ottawa women aged 30 to 70 years who reported ever having a Pap test (96.5% $\pm 1.8\%$) met the Ontario goal in 2003 (Table 6.8).⁴¹

In 2003, the proportion of women aged 18 to 29 years who reported having a Pap test less than 3 years ago was 69.7% ($\pm 8.8\%$), similar to Ontario. This proportion is lower than the Ontario goal, which is to have 85% of women screened according to the guidelines of the Ontario Cervical Screening Collaborative Group. The proportion of Ottawa women aged 30 to 70 years

who reported having a Pap test less than 3 years ago ($88.6\% \pm 2.9\%$) met the Ontario goal in 2003 (Table 6.8).⁴¹

Table 6.8: Proportion of Women Who Have Been Screened for Cervical Cancer with a Pap Test Ever and Within the Last Three Years by Age Group, City of Ottawa and Ontario, 2001 and 2003

Women aged 18 to 29 years				
	Ottawa (% \pm 95% CI)		Ontario (% \pm 95% CI)	
	2001	2003	2001	2003
Ever Had a Pap Test	70.5 \pm 7.3	72.6 \pm 8.6	75.2 \pm 2.3	69.0 \pm 2.8
Had a Pap Test <3 Years Ago	67.4 \pm 7.7	69.7 \pm 8.8	71.9 \pm 2.4	66.9 \pm 2.8

Women aged 30 to 70 years				
	Ottawa (% \pm 95% CI)		Ontario (% \pm 95% CI)	
	2001	2003	2001	2003
Ever Had a Pap Test	96.9 \pm 1.6	96.5 \pm 1.8	92.7 \pm 1.0	93.7 \pm 0.9
Had a Pap Test <3 Years Ago	90.3 \pm 2.7	88.6 \pm 2.9	83.5 \pm 1.2	83.2 \pm 1.2

Source: Canadian Community Health Survey 2001 and 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Data Note: Women who have received any type of hysterectomy are excluded.

Other Major Chronic Conditions

This section of the report focuses on in-patient hospitalization rates from 1996 to 2004 and mortality rates from 1986 to 2002 of other major chronic conditions in Ottawa compared to Ontario. Table 6.9 and Table 6.10 present the age-standardized hospitalization and mortality rates for the major chronic conditions affecting Ottawa and Ontario residents.

Table 6.9: Summary of Age-Standardized* Hospitalization Rates of Selected Chronic Conditions, City of Ottawa and Ontario, 2004

Age-Standardized Hospitalization Rate (cases per 100,000 population)						
	Ottawa Total	Ontario Total	Ottawa Males	Ontario Males	Ottawa Females	Ontario Females
All circulatory diseases	725.8	984.6	998.7	1284.3	502.4	725.3
IHD	326.1	441.4	501.8	630.7	178.9	273.6
COPD	147.3	161.2	156.2	191.7	146.1	142.9
Stroke	101.7	121.3	111.2	143.1	93.4	103.4

Age-Standardized Hospitalization Rate (cases per 100,000 population)						
	Ottawa Total	Ontario Total	Ottawa Males	Ontario Males	Ottawa Females	Ontario Females
Diabetes	52.9	86.9	60.5	100.4	46.3	75.2
Asthma	38.5	73.5	38.0	77.5	38.4	68.4

Source: Hospital In-patient Data 2004, Provincial Health Planning Database (PHPDB) Extracted December 29, 2005, Health Planning Branch, Ontario, MOHLTC

*Age-standardized to 1991 Canadian Population

Table 6.10: Summary of Age-Standardized* Mortality Rates of Selected Chronic Conditions, City of Ottawa and Ontario, 2002

Age-Standardized Mortality Rate (cases per 100,000 population)						
	Ottawa Total	Ontario Total	Ottawa Males	Ontario Males	Ottawa Females	Ontario Females
All circulatory diseases	182.1	200.3	224.7	266.8	150.8	157.9
IHD	104.2	114.6	132.7	163.7	82.2	82.4
Stroke	34.7	41.9	36.9	48.5	33.0	37.9
COPD	19.5	21.5	23.6	32.0	16.4	16.5
Diabetes	17.7	23.1	23.6	30.2	13.3	18.6

Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 2, 2006, Health Planning Branch, Ontario, MOHLTC

*Age-standardized to 1991 Canadian Population

Although these chronic conditions can occur at any age, the burden of disease is greater in older age groups. See Table 6.11 and Table 6.12 for a list of crude hospitalization and mortality rates of selected chronic conditions for Ottawa residents aged 65 years and older.

Table 6.11: Summary of Crude Hospitalization Rates of Selected Chronic Conditions (Aged 65 years and older), City of Ottawa, 2004

Hospitalization Rate (cases per 100,000 population)			
	Ottawa Total	Males	Females
All circulatory diseases	4488.4	5570.9	3711.4
IHD	1766.1	2502.3	1237.7
COPD	1085.6	1110.2	1067.9
Stroke	712.1	704.9	717.3
Diabetes	215.6	234.1	202.4
Asthma	18.9	NR	32.5

Source: Hospital In-patient Data 2004, Provincial Health Planning Database (PHPDB) Extracted December 29, 2005, Health Planning Branch, Ontario, MOHLTC

NR= Data is not reportable

Table 6.12: Summary of Crude Mortality Rates of Selected Chronic Conditions (Aged 65 years and older), City of Ottawa, 2002

Mortality Rate (deaths per 100,000 population)			
	Ottawa Total	Males	Females
All circulatory diseases	1586.0	1594.3	1580.0
IHD	893.9	934.3	864.7
COPD	183.3	186.3	181.2
Stroke	322.2	279.5	353.0
Diabetes	147.5	176.0	127.0

Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 2, 2006, Health Planning Branch, Ontario, MOHLTC

All Circulatory Disease

There are many types of circulatory diseases including myocardial infarction, ischemic heart disease, valvular heart disease, peripheral vascular disease, arrhythmias, high blood pressure and stroke. Each type of circulatory disease presents different characteristics, causes, and risk factors. Together, all circulatory diseases are a major cause of illness, disability, and death in Ottawa. Major risk factors for circulatory disease include tobacco use, high blood pressure, high total blood cholesterol, physical inactivity, obesity, and diabetes.⁴⁸

Since 1996, in-patient hospitalization rates of all circulatory diseases in Ottawa and Ontario have declined. Hospitalization rates of all circulatory diseases in Ottawa were significantly lower than Ontario. In 2004, the age-standardized hospitalization rate in Ottawa was 725.8 per 100,000 population (Figure 6.10). Hospitalization rates of all circulatory diseases were significantly higher in males than females.

Mortality rates of all circulatory diseases have significantly declined in Ottawa since 1986, similar to Ontario. In 2002, the age-standardized mortality rate from all circulatory diseases was 182.1 deaths per 100,000. Since 1986 the age-standardized mortality rates were significantly higher in males than females (Figure 6.11), which is explained by the higher incidence rate in elderly males.

Figure 6.10 Age-Standardized Hospitalization Rates of All Circulatory Diseases, City of Ottawa and Ontario, 1996 - 2004

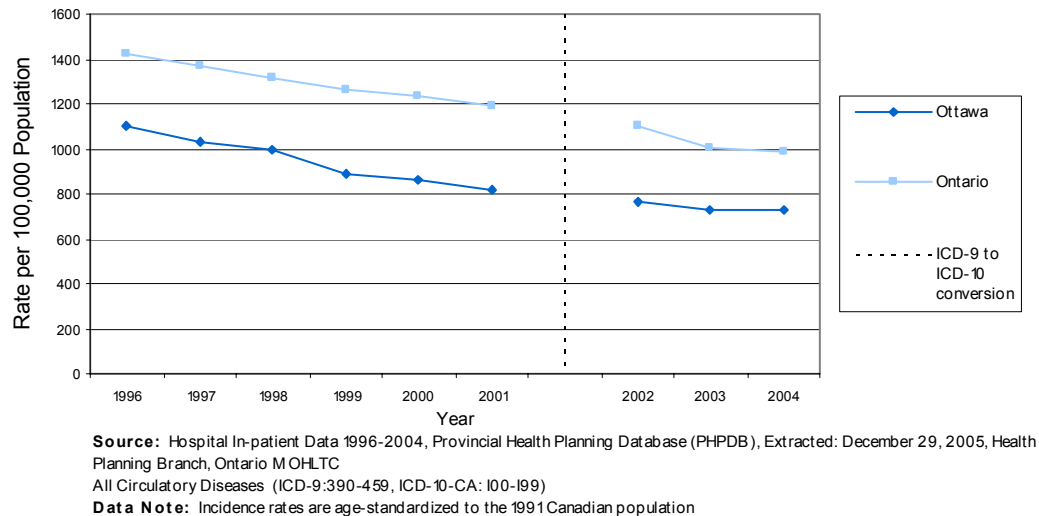
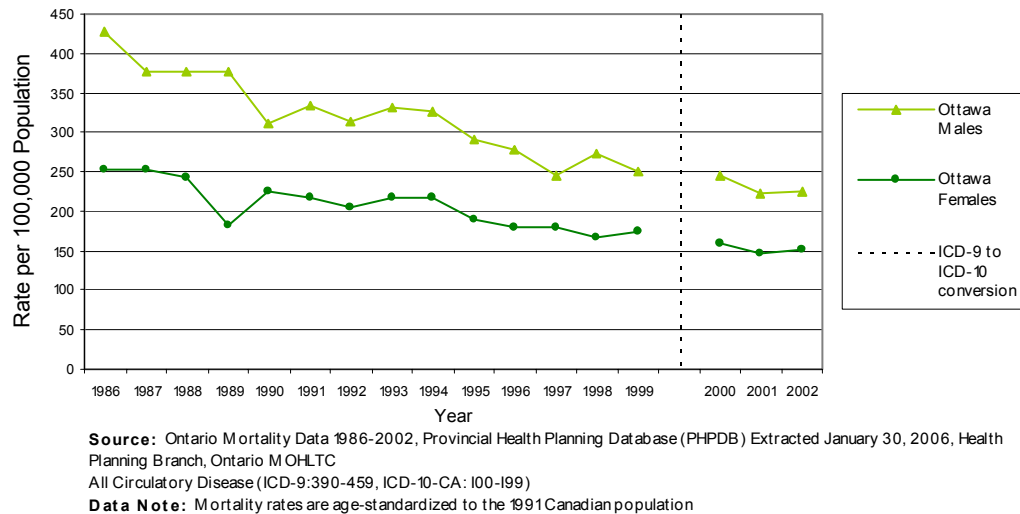


Figure 6.11 Age-Standardized Mortality Rates of All Circulatory Disease by Gender, City of Ottawa, 1986 - 2002

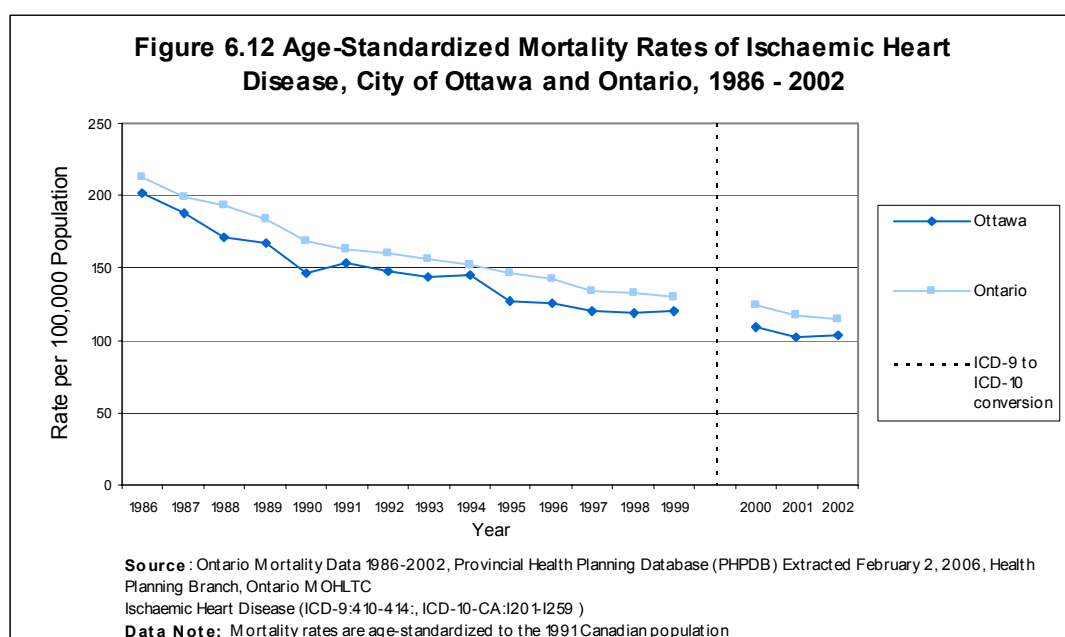


Heart Disease

In Ottawa, hospitalization rates of ischaemic heart disease (IHD) have significantly decreased since 1996. In 2004, age-standardized hospitalization rates of IHD in Ottawa (326.1 per

100,000 population) were significantly lower than Ontario (441.4 per 100,000 population). Male hospitalization rates for IHD continue to be significantly higher than those for females.

In 2002, IHD was the number one killer in Ottawa (*see Overall Mortality and Morbidity section*) however, mortality rates of IHD have steadily decreased since 1986. In 2002, the age-standardized mortality rate of IHD was 104.2 deaths per 100,000, similar to Ontario (Figure 6.12). Ottawa is on track to meet one of Ontario's public health goals, which is to reduce the mortality from IHD by 25% by 2010.²⁵ Mortality rates of IHD continue to be significantly higher in males than females and they increase with older age.

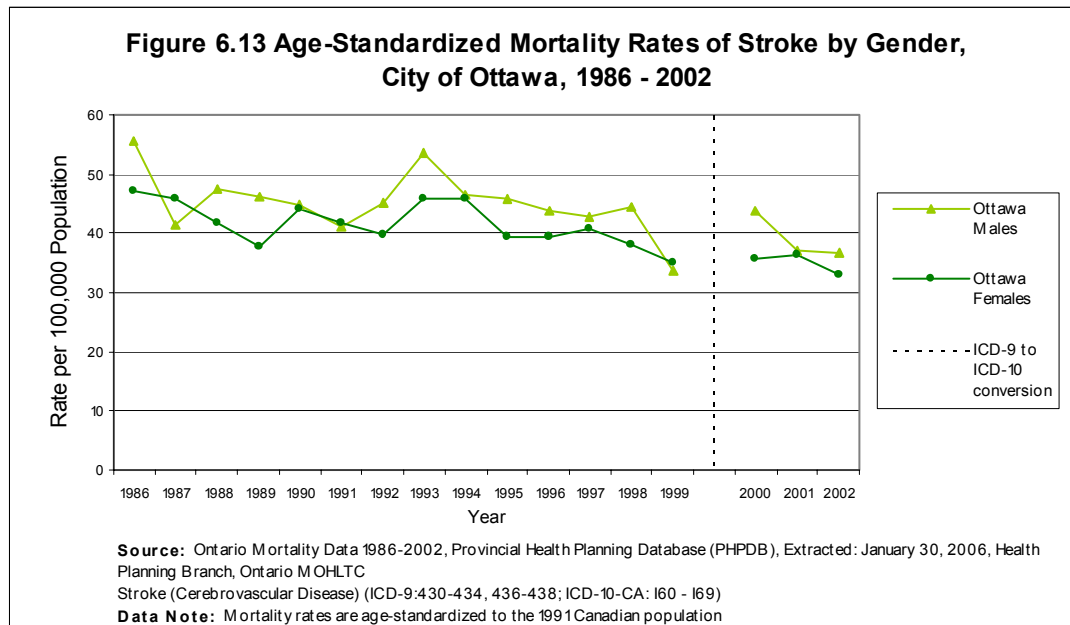


Stroke (Cerebrovascular Disease)

Hospitalization rates of stroke (cerebrovascular disease) have decreased significantly since 1996. In 2004, the age-standardized hospitalization rate of stroke in Ottawa (101.7 per 100,000) was significantly lower than Ontario (121.3 per 100,000). Since 1996, age-standardized hospitalization rates were significantly higher in males than females.

In 2002, stroke (cerebrovascular disease) was the third leading underlying cause of death in Ottawa residents (*see Overall Mortality and Morbidity section*). Deaths due to stroke have predominantly occurred in the oldest age groups. One goal of public health in Ontario is to reduce the mortality from stroke by 10% by the year 2010.²⁵ Age-standardized mortality rates of stroke in Ottawa were significantly lower in 2002 (34.7 deaths per 100,000) than in 1986 (50.7 deaths per 100,000). Although crude mortality rates of stroke were higher in Ottawa females,

there were no significant differences between male and female age-standardized stroke mortality rates in Ottawa since 1986 (Figure 6.13). The majority of females dying from stroke are aged 85 and older.



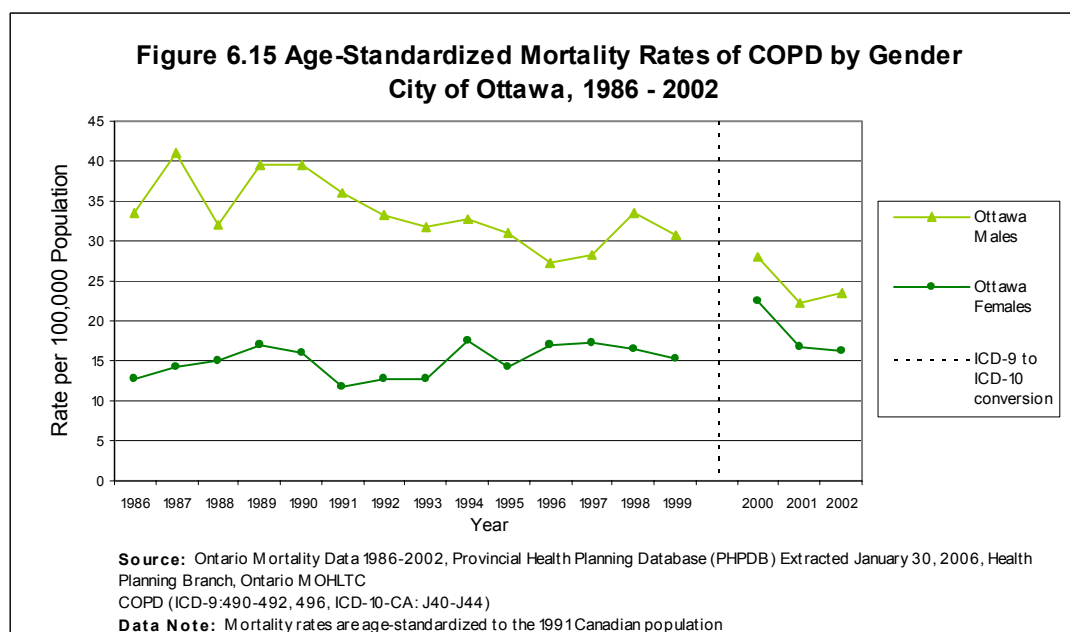
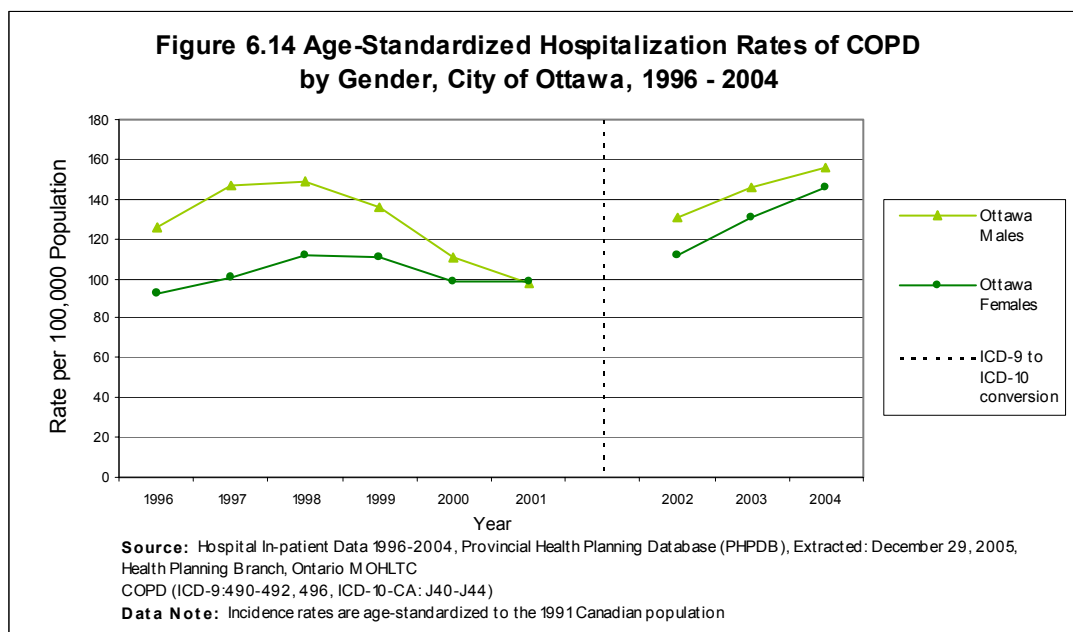
Lung Disease

Lung disease is a major cause of morbidity and mortality in Ottawa. In 2002, chronic obstructive lung disease (bronchitis, emphysema, asthma, and other chronic obstructive pulmonary disease) was the fifth leading cause of death in Ottawa residents (*see Overall Mortality and Morbidity section*). Public health in Ontario aims to slow the rise in mortality from these chronic lung diseases.²⁵

Chronic obstructive pulmonary disease (COPD), which includes bronchitis and emphysema, is a chronic respiratory disease that is most common among the older age groups in Ottawa. In the last three years, hospitalization rates of COPD have started to rise and in 2004, the age-standardized hospitalization rate from COPD in Ottawa was 147.3 per 100,000, similar to Ontario. Although male age-standardized hospitalization rates of COPD are higher than females, the difference is not statistically significant (Figure 6.14).

Although there has not been a decrease in crude mortality rates of COPD in males, age-standardized rates have decreased. The narrowing of the gap between male and female mortality rates of COPD echoes trends of lung cancer mortality. These trends reflect the adoption of different behavioural patterns between genders, specifically the decrease in tobacco consumption among males and the increase in tobacco consumption among females from the

mid-1960's to early 1980's.⁴⁹ Age-standardized mortality rates for Ottawa and Ontario are not significantly different and have followed a similar trend.



Asthma is one of the most prevalent chronic conditions in children and, in 2003, an estimated 10,500* Ottawa residents aged 12 to 19 years reported that a health professional had previously diagnosed them with asthma (*see Children's Health section for hospitalization rates in children*). Asthma is also a burden on adults and, in 2003, approximately 49,200 Ottawa residents aged 20 years and older reported that they had been diagnosed with asthma by a health professional.⁴¹

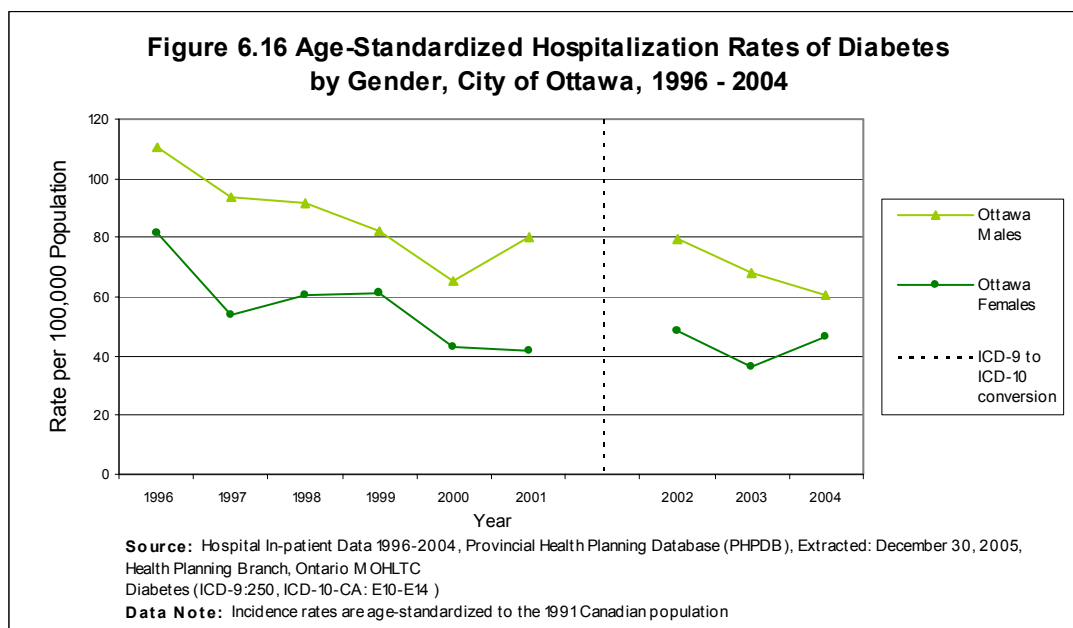
Hospitalization rates of asthma have decreased since 1996 and were significantly lower than Ontario. In 2004, the age-standardized hospitalization rate for asthma was 38.5 per 100,000 in Ottawa and 73.5 per 100,000 in Ontario. In 2004, there was no difference in hospitalization rates between Ottawa females and males.

Diabetes

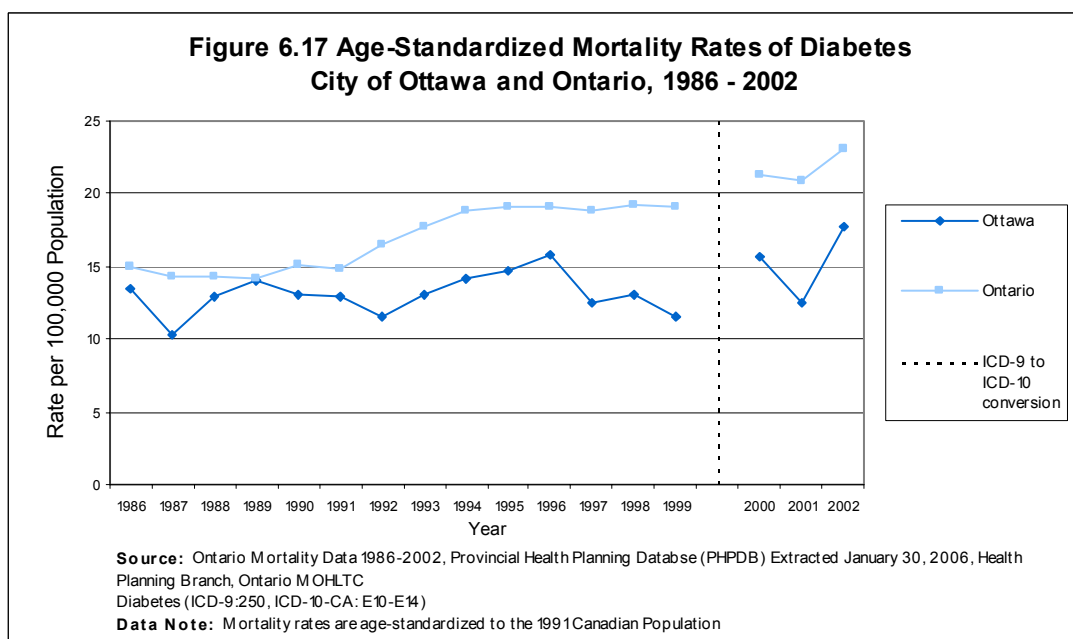
In 2003, approximately 29,500 Ottawa residents aged 12 years and older reported that a health professional had previously diagnosed them with diabetes.⁴¹ One goal of public health in Ontario is to reduce the morbidity from diabetes. Since 1996, hospitalization rates of diabetes (including Type I and Type II) in Ottawa have decreased; however, this does not reflect the true morbidity trend since most diabetes cases are managed at home or in community health settings. In 2004, the age-standardized hospitalization rate of diabetes in Ottawa was 52.9 per 100,000 population (Figure 6.16), significantly lower than Ontario. Age-standardized hospitalization rates of diabetes were significantly higher in males than females in Ottawa. (Figure 6.16)

Type II diabetes, a major concern for public health, can be delayed or prevented by exercising regularly and eating a healthy diet. Between 2002 and 2004, the age-standardized hospitalization rates of Type II diabetes in Ottawa were significantly lower than those of the province. In 2004, the age-standardized hospitalization rate of Type II diabetes in Ottawa was 36.9 per 100,000 population and that of Ontario was 48.0 per 100,000 population. Moreover, males were significantly more likely to be hospitalized as a result of Type II diabetes than females.

* Interpret with caution – high sampling variability



Both crude and age-standardized mortality rates of diabetes (Type I and Type II) in Ottawa have increased since 1986. In 2002, the age-standardized mortality rate of diabetes was 17.7 per 100,000. Diabetes is a growing problem in all ages and in 2002, it rose to the seventh leading cause of death in Ottawa residents (*See Overall Mortality and Morbidity section*).



7. Lifestyle Behaviours and Health

Behaviours such as smoking, physical inactivity, unhealthy food choices, excessive alcohol consumption, excessive and unprotected exposure to sunlight are linked to adverse health outcomes such as heart disease, lung cancer, and other chronic conditions. Most of these lifestyle and behavioural risk factors are modifiable and avoidable. Ontario has set a list of behavioural and policy objectives aimed at achieving the ultimate goal to reduce the premature mortality and morbidity from preventable chronic diseases. This section examines some of these behavioural risk factors for Ottawa and where possible makes comparisons to Ontario.

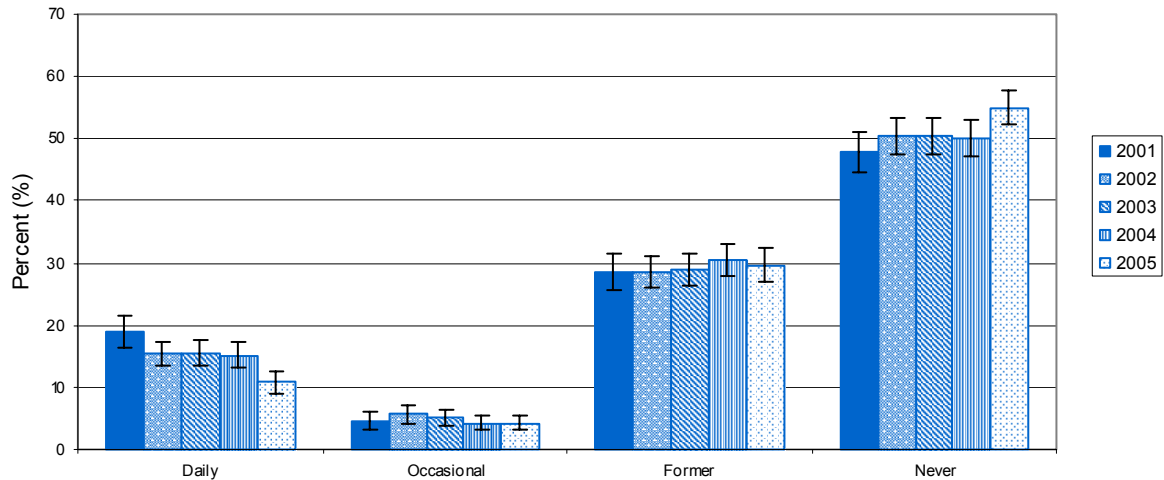
Tobacco Use

Smoking tobacco remains the leading cause of preventable death and has harmful health impacts on people of all ages. Tobacco use reduces overall health and has negative effects on nearly every organ of the body. It is the single most important preventable cause of lung cancer, accounting for 85% of all new cases of lung cancer in Canada. In addition to its links with lung cancer, smoking tobacco can lead to respiratory and upper digestive tract cancers, particularly cancer of the mouth, pharynx, larynx and esophagus. Research also indicates that smoking tobacco is a contributing cause of leukemia and cancers of the bladder, stomach, kidney and pancreas. Female smokers are at greater risk for developing cervical cancer.⁵⁰

Between 2001 and 2005, the adult daily smoking rates in Ottawa showed a significant decline from 19.0% ($\pm 2.5\%$) to 10.8% ($\pm 1.8\%$) (Figure 7.1).²⁴ One of Ontario's behavioural and policy objectives aimed at reducing premature mortality and morbidity due to chronic diseases is to reduce the proportion of adult women and men who smoke daily to 15% by 2005.²⁵ Ottawa has achieved this goal since 2004 and surpassed it in 2005.

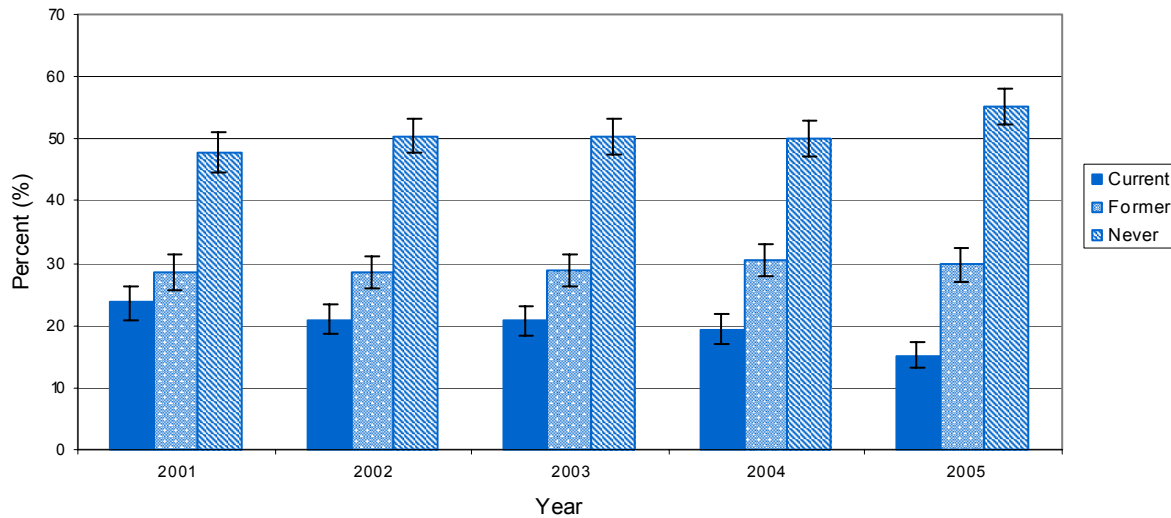
Males are more likely than females to be daily smokers and this difference was significant with 14.3% ($\pm 3.1\%$) males being daily smokers compared to 8.3% ($\pm 2.1\%$) females in 2005. Daily smoking rates were significantly higher in those with lower educational attainment (high school or lower) compared to those with at least some post secondary education. Throughout the past five years, residents of French mother tongue had higher daily smoking rates (16.5% $\pm 4.4\%$ in 2005) compared to those of English mother tongue (10.4% $\pm 2.3\%$ in 2005), although these differences were not statistically significant. However, the proportion of French mother tongue residents who are former smokers has steadily increased since 2003 and was significantly higher than those of English mother tongue.

**Figure 7.1 Daily Smoking Status, (19 years +)
City of Ottawa 2001 - 2005**



Source: Rapid Risk Factor Surveillance System 2001 (N=916), 2002 (N=1195), 2003 (N=1159), 2004 (N=1151), 2005 (N=1171); Ottawa Public Health 2006

**Figure 7.2 Smoking Status (19 years +)
City of Ottawa 2001 - 2005**

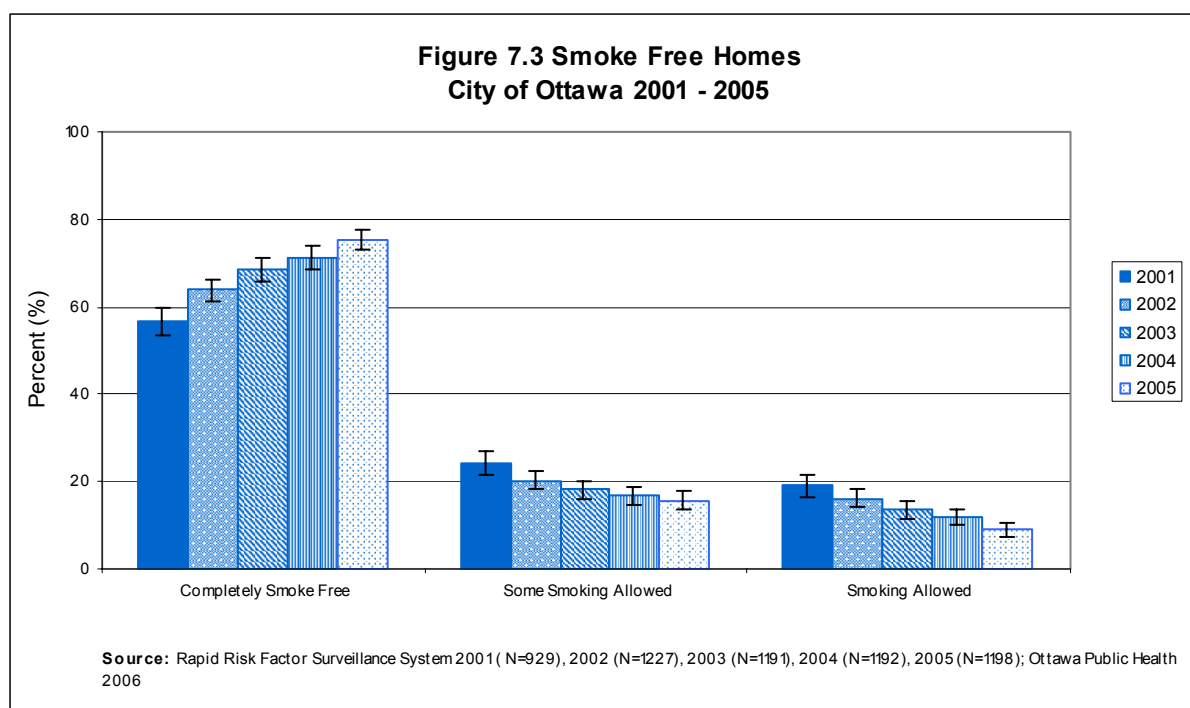


Source: Rapid Risk Factor Surveillance System 2001 (N=916), 2002 (N=1195), 2003 (N=1159), 2004 (N=1151), 2005 (N=1171); Ottawa Public Health 2006

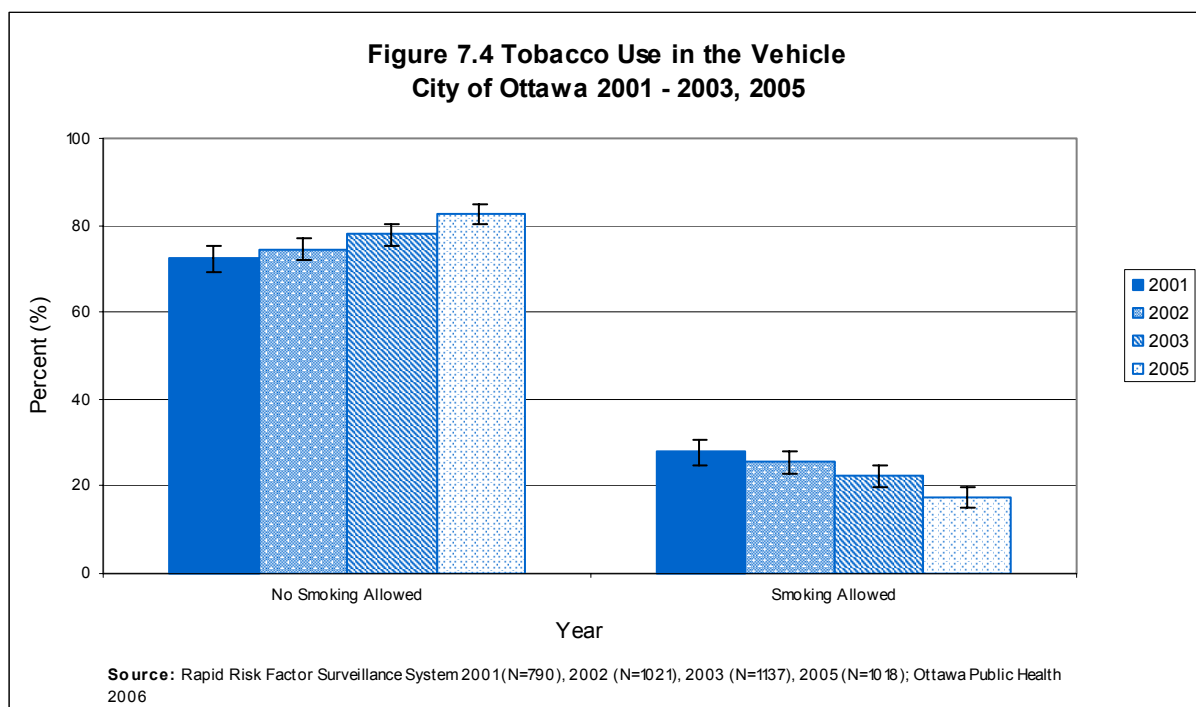
Since 2002, the proportion of former smokers was significantly higher than current smokers (daily and occasional) and the gap has steadily increased over time (Figure 7.2). This observation reinforces the effectiveness of tobacco control measures in reducing tobacco consumption. Such measures include: tobacco bylaws banning smoking in public places, targeted media campaigns that increase the awareness of health risks related to smoking, access to smoking cessation services, tobacco industry denormalization initiatives, youth to youth programming, and restricting minor's access to tobacco.

Smoke-Free Homes and Vehicles

Increasingly, Ottawa residents are protecting themselves and their families from the dangers of second-hand smoke by having smoke-free homes and vehicles. The proportion of smoke-free homes (neither household members nor visitors smoked inside the home) in Ottawa significantly increased from 56.6% ($\pm 3.2\%$) in 2001 to 75.4% ($\pm 2.4\%$) in 2005²⁴ (Figure 7.3). Similarly, since 2001, the proportion of households with some degree of smoking allowed inside the home for household members and/or visitors significantly decreased. One of Ontario's behavioural and policy objectives aimed at reducing premature mortality and morbidity due to chronic diseases is to increase the proportion of smoke-free homes by the year 2010.²⁵ Ottawa is on track to achieve this objective.



The same pattern of smoking behaviour was observed in the vehicles. The proportion of drivers that did not allow smoking inside their vehicles significantly increased from 72.4% ($\pm 3.1\%$) in 2001 to 82.6% ($\pm 2.3\%$) in 2005 (Figure 7.4).²⁴



Youth Tobacco Use

Ottawa Public Health has set a goal to reduce the youth current smoking rate to 15% by the year 2007 and 10% by 2012. The definition of current smoker includes daily and occasional smokers.

The proportion of current youth smokers in Ottawa was lower than that of Ontario in 2001, however the difference was not statistically significant. Between 2001 and 2003, the Ottawa youth smoking rates did not significantly change and were not different from Ontario (Table 7.1).

Table 7.1: Percent of Current Youth Smokers (15 – 19 years old), City of Ottawa and Ontario 2001 and 2003

	2001 (% \pm 95% CI)	2003 (% \pm 95% CI)
Ottawa	17.9 \pm 5.7	20.5 \pm 7.3*
Ontario	23.6 \pm 1.9	20.6 \pm 1.9

Source: Canadian Community Health Survey 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC
 *Interpret estimate with caution due to high sampling variability
 Current=daily and occasional smokers

In 2003 and 2005, Ottawa Public Health in collaboration with the University of Waterloo surveyed students in a selected sample of Ottawa high schools on smoking. Results of the survey show that the proportion of current Ottawa high school smokers decreased significantly from 20.9% ($\pm 0.6\%$) in 2003 to 15.9% ($\pm 0.7\%$) in 2005. Significant decreases were also seen in current male smokers (21.2% $\pm 0.9\%$ in 2003 vs. 15.9% $\pm 1.0\%$ in 2005) and current female smokers (20.6% $\pm 0.9\%$ in 2003 vs. 15.9% $\pm 0.9\%$ in 2005). The lower smoking rate was also noted in both daily (10.2% $\pm 0.5\%$ in 2003 vs 7.0% $\pm 0.5\%$ in 2005) and occasional smokers (10.7% $\pm 0.5\%$ in 2003 vs 9.0% $\pm 0.5\%$ in 2005).⁵¹ Ottawa is on track to meet its 2007 youth smoking rate goal.

Body Mass Index

The Body Mass Index (BMI) is a ratio of weight-to-height and can be used as an indicator of a person's risk of health problems. BMI is classified into ranges associated with health risk. The four BMI ranges in the Canadian weight classification system are underweight, normal weight, overweight, and obese (Table 7.2).

Table 7.2: Health Risk According to BMI

Classification	BMI	Risk of Developing Health Problems
Underweight	Less than 18.5	Increased
Normal weight	18.5 to 24.9	Least
Overweight	25.0 to 29.9	Increased
Obese	Greater than 30	High to extremely high

Source: Health Canada. Body Mass Nonogram.

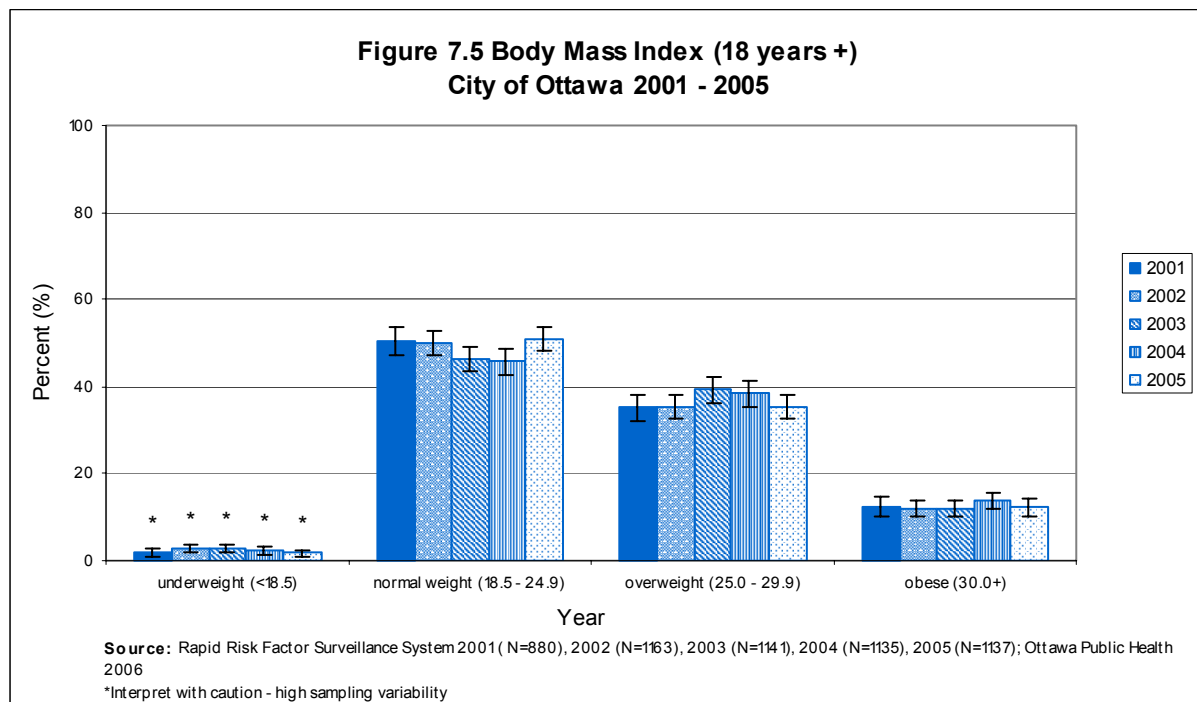
Note: This BMI classification is not intended for use with persons who are under the age of 18, pregnant or lactating.

Most persons with a BMI classified as overweight or obese have a high percentage of body fat. Extra body fat is associated with an increased risk of health problems such as heart disease, Type II diabetes, hypertension, osteoarthritis, gallbladder disease, and some types of cancer.⁵² A BMI classified as underweight is associated with an increased risk of some health problems such as osteoporosis, undernutrition, and eating disorders. Persons classified in the normal weight category are at least risk of developing weight-related health problems. However, other factors such as lifestyle, fitness, and presence or absence of health conditions need to be considered when assessing individual health risk.⁵³

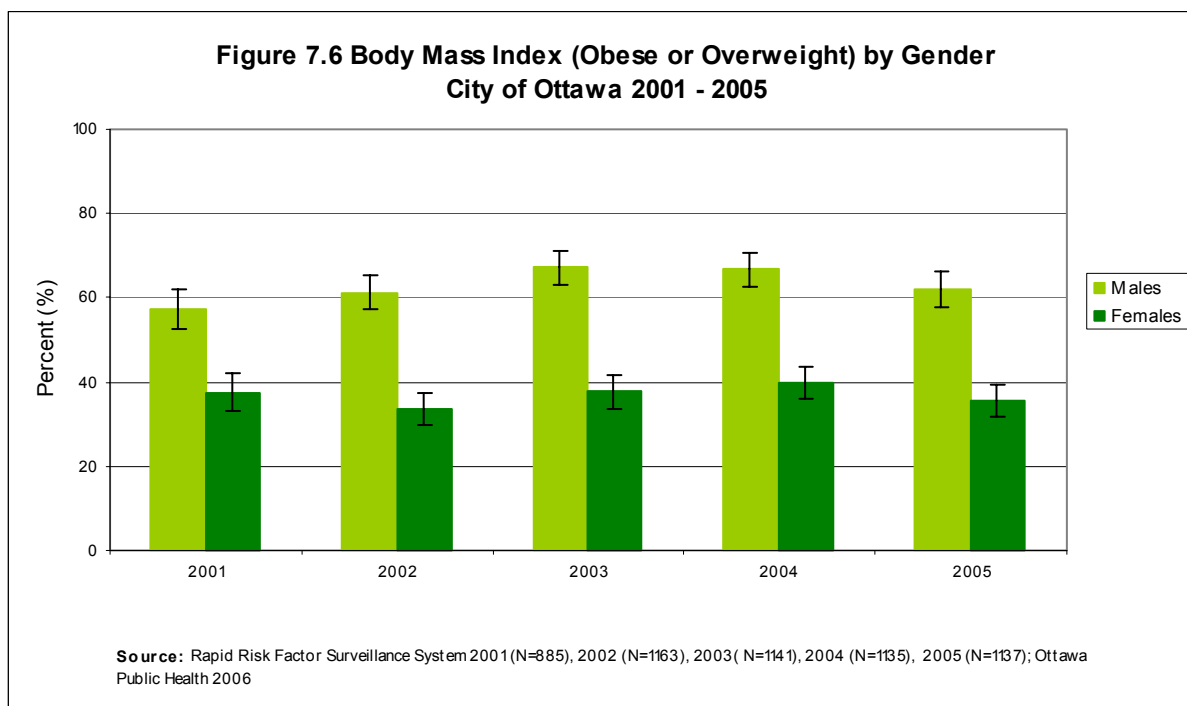
Since 2001, the proportion of Ottawa residents aged 18 years and older who reported a normal BMI has remained steady at approximately 51% (50.5% $\pm 3.3\%$ in 2001; and 50.9% $\pm 2.9\%$ in 2005) (Figure 7.5).³⁶ One of the Cancer 2020 targets for healthy weights states that: less than 10% of Ontarians will be obese, as measured by a BMI greater than 30.⁵⁴ Although the proportion of residents who were overweight or obese has remained stable since 2001 with 47.5% ($\pm 3.3\%$) being overweight or obese in 2001; and 47.5% ($\pm 2.9\%$) being overweight or

obese in 2005, it is of concern to observe that close to half of the population of Ottawa are either overweight or obese. This finding indicates that the risk of developing health problems in the population is still persistent with no significant decline over time. Moreover, since the data were based on self-reported measures of weight and height, and since people tend to over-report their height and under-report their weight, the actual number of individuals who are overweight or obese may actually be much higher.⁵²

When compared provincially, the distribution of BMI in Ottawa was similar to Ontario in 2003.⁴¹



Men were significantly more likely to be overweight or obese than women. These differences were observed throughout the period from 2001 to 2005. Figure 7.6 shows the gender differences in the overweight and obese BMI categories (57.3% \pm 4.6% overweight or obese males in 2001 vs. 37.6% \pm 4.5% females) and (61.9% \pm 4.2% overweight or obese males in 2005 vs. 35.4% \pm 3.8% females). It is important to note however that all of the significant differences in the BMI between males and females were in the overweight category, with no significant differences observed in the obese category. The tendency to be overweight or obese increased with age up to age 64. There were no significant differences in the overweight or obese categories by mother tongue and education.



Maintaining a healthy weight is one component of good health; however, unhealthy behaviours such as poor nutrition and eating habits, low levels of physical activity, and tobacco use will increase the risk of health problems even for those persons within the 'normal weight' range.

Healthy Weights for Adolescents

Children with excess body fat are at increased risk for health problems such as cardiovascular disease, hypertension, abnormal lipids, Type II diabetes as well as social and psychological problems. Children who are obese are also more likely to be obese in their adulthood.⁵⁵

To monitor healthy weight and growth, BMI categories for adolescents aged 12 to 17 years have been developed and include: underweight (BMI below the 5th percentile for that age), normal weight (5th percentile to below 85th percentile), overweight (85th percentile to below 95th percentile), and obese (95th percentile or greater).^{56**}

Similar to Ontario, 80.4% (\pm 6.6%) of Ottawa residents aged 12 to 17 years were at a normal weight and 12.1%* (\pm 5.3%) were at risk of overweight in 2003.⁴¹

** The US Centres for Disease Controls and Prevention (CDC) categories are not labelled in the same way as those recommended by the Canadian Collaborative Statement. Above 95% in Canada is "obese", but in the CDC terms, it is "overweight"
 * Interpret with caution – high sampling variability

Physical Activity

Physical activity reduces the risk of premature morbidity and mortality. Scientific research strongly supports the role of physical activity in disease prevention and in the treatment of chronic disabling conditions, including: cardiovascular disease, cancer, type II diabetes, osteoporosis, arthritis, obesity and depression.^{54,57} Physical activity also lowers the risk for obesity, which is a risk factor for cancer.

There are many benefits of physical activity such as: prevention of a number of diseases; reduction of anxiety and stress, maintenance of a healthy weight, improvement of fitness, confidence and self-esteem, and extension of independence later in life.⁵⁸

The need for public health to focus on physical activity has been highlighted by many provincial organizations and agencies. In 1997, the Ontario Ministry of Health and Long-Term Care identified the following physical activity objectives aimed at reducing premature mortality and morbidity due to chronic diseases:²⁵

- To increase to 40 percent the proportion of all adults who include at least 30 minutes of accumulated, moderate physical activity on most if not all days of the week by the year 2010
- To increase to 60 percent the proportion of youth who include at least 30 minutes of accumulated moderate physical activity on most if not all days of the week by the year 2010.

In May 2003, the Canadian Cancer Society and Cancer Care Ontario released the Cancer 2020 Summary Report with long-term provincial targets aimed at reducing the impact of cancer in Ontario, prevention and early detection of cancer and monitoring progress in the reduction of cancer incidence and mortality in Ontario. Their physical activity target is to: have at least 90 percent of Ontarians participate in moderate to vigorous activity (as defined in Canada's Physical Activity Guide⁵⁹) on most days of the week.⁵⁴

These definitions include:

- 30 to 60 minutes of moderate physical activity four days per week, or
- 20 to 30 minutes of vigorous physical activity at least three days per week.

Most recently in 2005, Ontario's Ministry of Health Promotion released its Active 2010 – Ontario's Sports and Physical Activity Strategy. The physical activity component focuses on reducing sedentary lifestyles and encouraging Ontarians to add physical activity to their daily lives. The Active 2010 document sets a provincial target: by 2010, to increase to 55% the

proportion of the Ontario population that is active. Active is defined as performing the equivalent of 30 minutes of walking daily.⁵⁷

Since 2003, the City of Ottawa has been gathering monthly data on physical activity levels using the International Physical Activity Questionnaire (IPAQ) through RRFSS. The IPAQ assesses physical activity undertaken across a comprehensive set of domains including: leisure time, domestic and gardening activities, work-related and transport-related physical activity. Table 7.3 describes the IPAQ physical activity levels and their impact on health.⁶⁰

Table 7.3: IPAQ physical activity levels and their impact on health

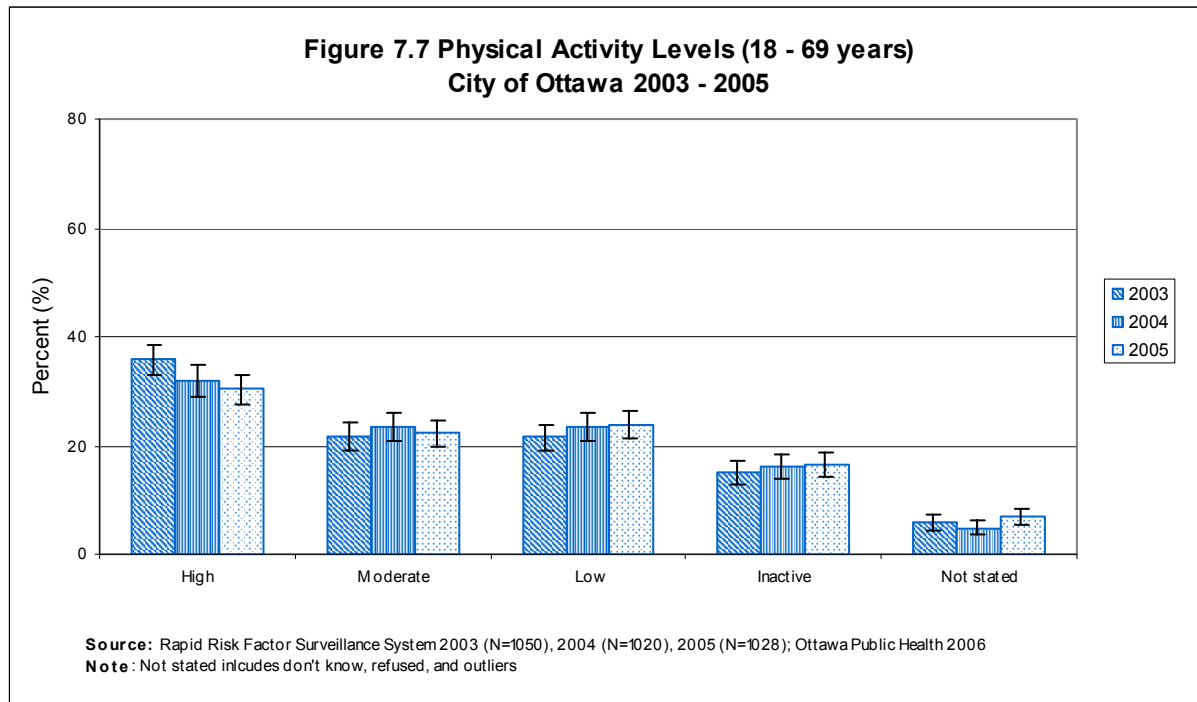
Activity Level	Risk Indicator	Description/Criteria	Equivalent to:	Impact
High	Lower Risk	At least 7 days and 3000 MET minutes per week OR 3+ vigorous days and 3000 MET minutes per week	10,000+ steps per day	Minimum amount of physical activity to reduce risk of obesity
Moderate	Reduced Risk	At least: 7 days of activity and 1500 MET minutes per week OR 3 or more days of vigorous activity and 1500 MET minutes per week	Approx 5,000 to 9,000 steps per day	At reduced risk for chronic disease and coronary heart disease
Low	Significant Risk	At least: 3 to 6 days of vigorous activity of at least 20 minutes per day OR 5 to 6 days of moderate activity or walking of at least 30 minutes per day OR 5 days of any combination of activities per week and achieving a 600 MET-min per week	Approx 2,000 to 4,999 steps per day	At significant risk of chronic disease and obesity
Inactive	Highest Risk	Does not meet any of above criteria.	<2,000 steps per day	At highest risk of risk of premature death due to cardiovascular disease

Source: IPAQ Physical Activity Levels – Communication with Canadian Fitness and Lifestyle Research Institute (CFLRI) 2004
Note: In November 2005 the IPAQ activity levels were modified to three levels . The data presented here do not reflect this modification.

In 2005, 30.4% ($\pm 2.8\%$) of adults aged 18-69 years in Ottawa were in the high activity level; 22.2% ($\pm 2.5\%$) were in the moderate level; 23.9% ($\pm 2.6\%$) were in the low level; and 16.6% ($\pm 2.2\%$) were inactive.⁶¹

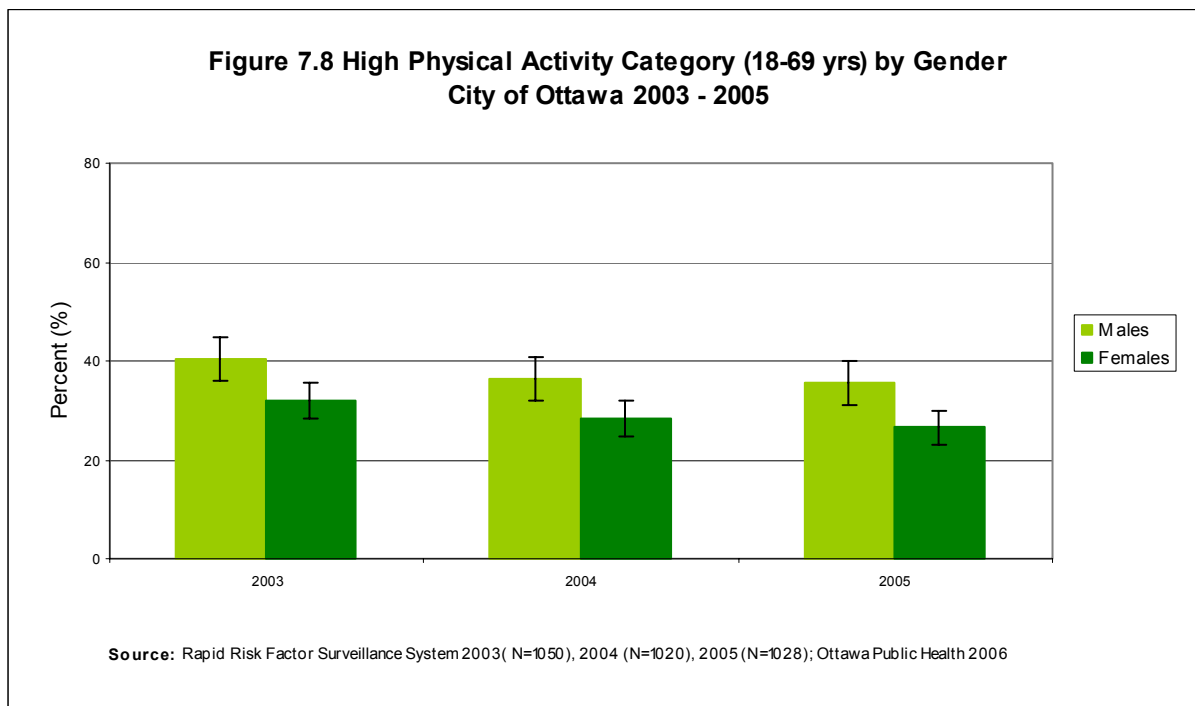
Between 2003 and 2005, over 50% of Ottawa residents aged 18-69 years reported total physical activity levels that would categorize them as in either the high or the moderate physical

activity levels. The high levels of physical activity in 2003 have decreased in 2005 and the low and inactive levels in 2003 have increased in 2005 (Figure 7.7).



In both 2003 and 2005, a significantly higher proportion of males than females were in the high physically active level (Figure 7.8). There were no significant differences between the genders in the other three physical activity levels. For both genders, there was a higher proportion reporting low or inactive levels in 2005 compared to 2003 and a lower proportion reporting high levels of activity in 2005 compared to 2003.

There were significant differences in the proportion of residents in the high physically active levels by education group in 2003 and 2004. The proportions of the physically active category in those with high school level of education ($44.1\% \pm 5.4\%$ in 2003; $40.6\% \pm 5.6\%$ in 2004) were higher than those with some post secondary education ($31.5\% \pm 3.5\%$ in 2003; $29.2\% \pm 3.4\%$ in 2004). The same pattern was seen in 2005 however it was not statistically significant. There were no significant differences in the activity levels between those with English versus French mother tongue.



Although the overall current combined total high and moderate activity levels of over 50% in Ottawa are above the targets set by Ontario's mandatory services guidelines and are within the bulk part of the Active 2010 target, they are far from satisfactory when the Cancer 2020 targets are considered. Moreover, there is still 16% of the adult population in Ottawa that are physically inactive and at are the highest risk of premature mortality. This percentage of inactive individuals has remained steady since 2003.

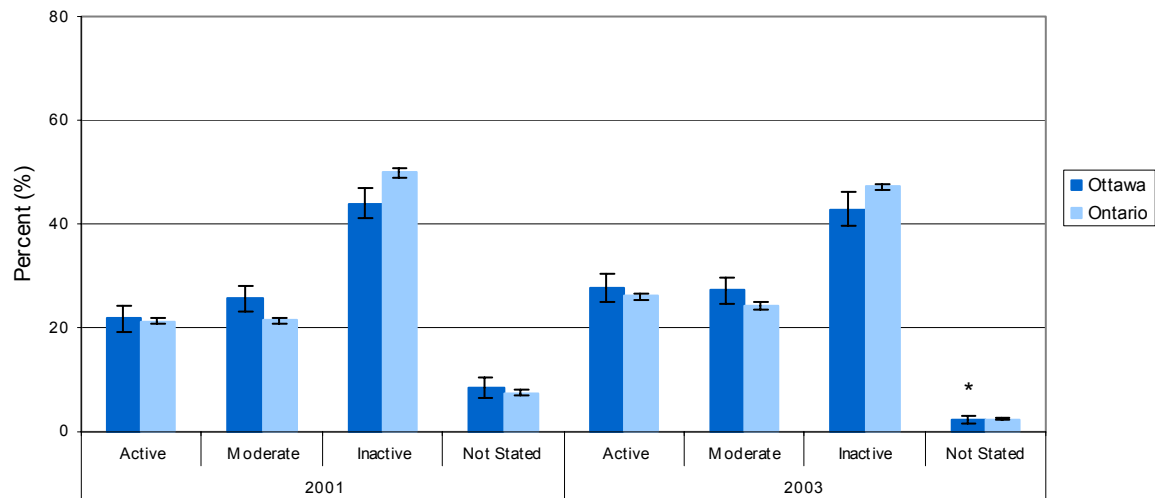
Leisure-Time Physical Activity

Another way to measure physical activity is the amount of time individuals spend performing any type of physical activity in their leisure time.

The percent of Ottawa residents who are physically active in their leisure time increased significantly from 2001 (21.8%, 95% CI \pm 2.4%) to 2003 (27.6%, 95% CI \pm 2.6%).^{41,62} In 2003, the proportion of Ottawa residents who were physically inactive (42.9%, 95% CI \pm 3.1%) was significantly lower than that of Ontario residents (47.2%, 95% CI \pm 0.7%) (Figure 7.9).

Since 2001, the proportion of males classified as active (25.7% \pm 3.3% in 2001; 33.1% \pm 4.0% in 2003) in their leisure time was significantly higher than females (18.0% \pm 3.0% in 2001; 22.4% \pm 3.2% in 2003) (Figure 7.10).

**Figure 7.9 Leisure-Time Physical Activity (12 years +)
City of Ottawa and Ontario 2001 & 2003**

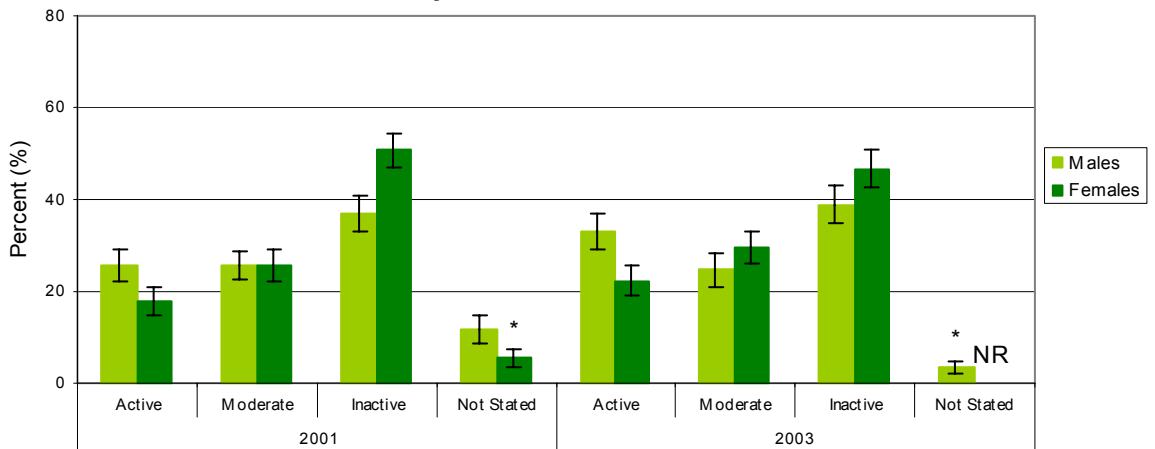


Source: Canadian Community Health Survey 2001 & 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, MOHLTC

*Interpret with caution - high sampling variability

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

**Figure 7.10 Leisure-Time Physical Activity by Gender (12 years +)
City of Ottawa 2001 & 2003**



Source: Canadian Community Health Survey 2001 & 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, MOHLTC

*Interpret with caution - high sampling variability

NR=Data is not reportable

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

Active Transportation

Active transportation is any form of transportation that is human-powered such as walking or cycling. Active transportation has several benefits including individual health and environmental health.⁶³

In 2001, 7.6% of Ottawa residents aged 15 years and over in the labour force walked and 2.1% bicycled to work. Most residents (68.9%) in the labour force used a motor vehicle to commute to work (Table 7.4).⁶²

Table 7.4: Primary Mode of Transportation to Work (15+ years in the labour force), City of Ottawa and Ontario 2001

Primary Mode of Transport to Work	Ottawa			Ontario		
	Total (%)	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)
Automobile	68.9	72.6	64.8	80.0	83.8	75.7
Public Transit	20.8	17.4	24.7	12.8	9.7	16.3
Walk	7.6	6.8	8.6	5.6	4.6	6.8
Cycle	2.1	2.7	1.3	1.0	1.4	0.6
Other	0.5	0.5	0.6	0.6	0.6	0.7

Source: 2001 Census, Statistics Canada

In 2005, Ottawa Public Health in collaboration with the University of Waterloo surveyed students in a selected sample of Ottawa high schools on physical activity. When asked how they usually get to school each day, 18.1% ($\pm 1.0\%$) of high school students said that they use active modes such as cycling, walking, running or skateboarding; 60.6% ($\pm 1.3\%$) use inactive mode such as getting a ride or taking a bus; and 21.3% ($\pm 1.1\%$) use a combination of active and inactive modes of transport.⁵¹

Energy Balance

A person's weight is determined by the energy they consume in terms of food and beverages (Energy in) and how much they expend in terms of activity (Energy out).⁵² This energy balance is impacted by a series of factors including genetic makeup and the socio-cultural, physical and economic environments which influence the choices that individuals make about what to eat and how physically active they are.⁵³ To achieve and maintain a healthy weight, people have to make healthy food choices and be physically active enough each day to achieve the balance between energy in and energy out. While over 50% of the population reported physical activity levels that are within the Active 2010 targets, there was still a significant proportion of the population who were overweight or obese, probably due to "energy in" exceeding "energy out". It is important to note that the measurements of physical activity levels and obesity are quite complex and relying on the BMI alone may not provide an accurate assessment of risk. Due to

the intricate relationship between activity levels, nutrition and obesity, it is necessary to use a multi-strategy approach that incorporates these lifestyle behaviours.

Nutrition

Adequate nutrition is essential for proper growth and development and a healthy diet can be an important factor in reducing the risk of developing chronic diseases and conditions such as heart disease, cancer, obesity, hypertension, osteoporosis, diabetes, anaemia, dental decay, and some bowel disorders. Healthy food intake can also contribute to an overall sense of well-being and can help people to look, feel, and perform better. To help people make healthy food choices, Canada's Food Guide to Healthy Eating provides detailed information on the recommended number of servings for each food group and how to establish healthy eating habits.⁶⁴ Canada's Food Guide recommends the way to establish healthy eating is to:

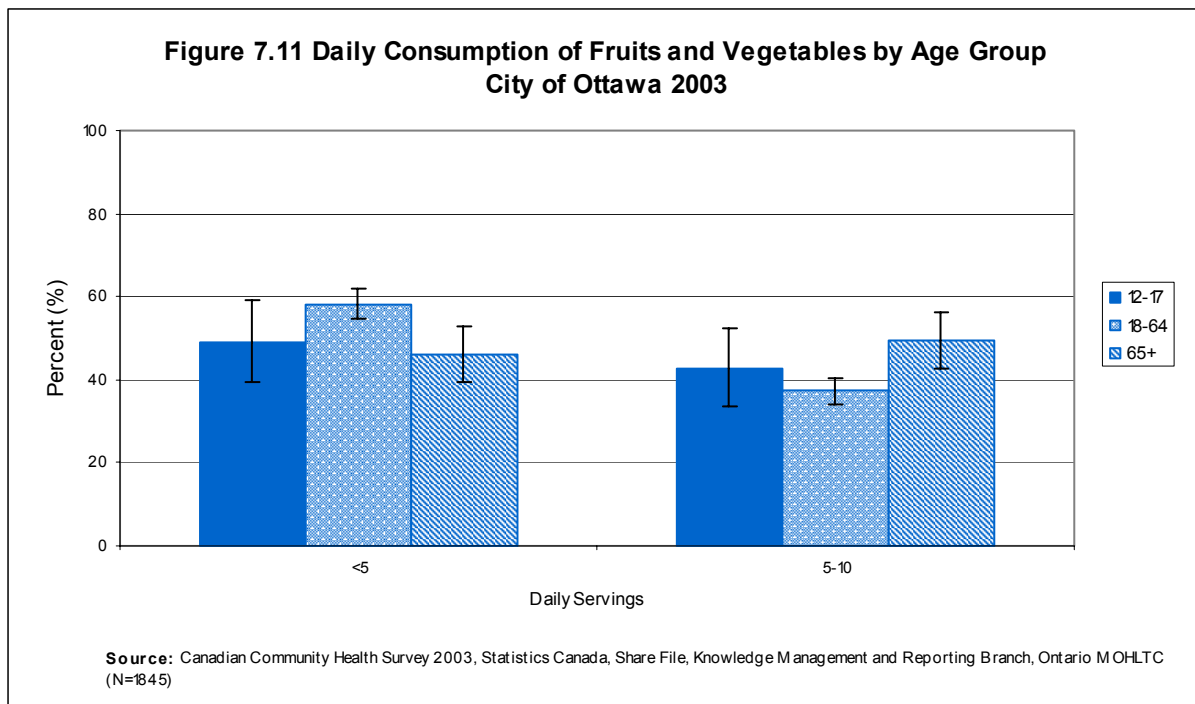
- Enjoy a variety of foods
- Emphasize cereals, breads, other grain products, vegetables and fruits
- Choose lower-fat dairy products, leaner meats and foods prepared with little or no fat
- Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating
- Limit salt, alcohol, and caffeine

Fruit and Vegetable Consumption

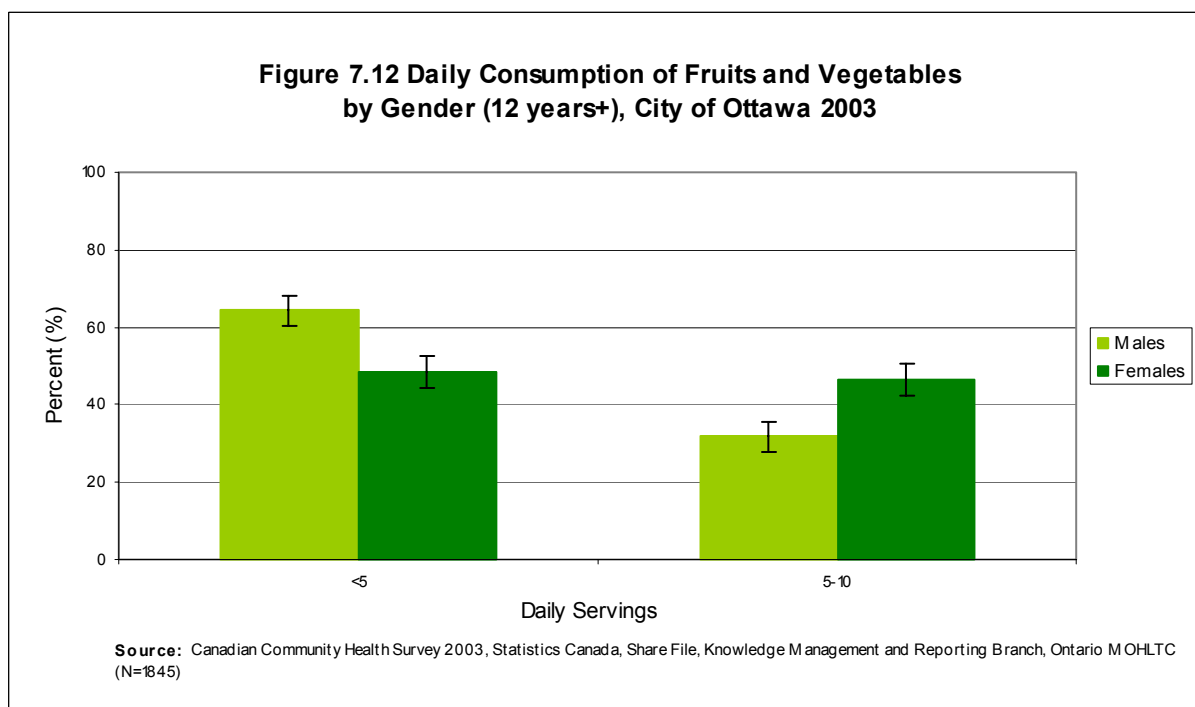
Canada's Food Guide to Healthy Eating recommends eating five to ten servings of fruits and vegetables daily for those people aged four years old and over.⁶⁴

In 2003, over half of Ottawa residents ($56.2\% \pm 3.1\%$) consumed less than five servings of fruits and vegetables daily and $39.2\% (\pm 2.9\%)$ consumed five to ten servings of fruits and vegetables daily.⁴¹ Daily fruit and vegetable consumption in Ottawa was similar to Ontario in 2003. The proportion of Ottawa residents aged 12 and older consuming five or more servings of fruits and vegetables daily falls short of the Ontario public health goal which is to increase to 75% the proportion of the population aged four and older consuming five or more servings of fruits and vegetables by the year 2010.²⁵

In 2003, daily consumption of five to ten servings of fruits and vegetables was $42.9\% (\pm 9.4\%)$ for Ottawa residents aged 12 to 17 years, $37.3\% (\pm 3.3\%)$ for those aged 18 to 64 years, and $49.5\% (\pm 6.6\%)$ for seniors aged 65 years and over (Figure 7.11).⁴¹



In 2003, females (46.2% \pm 4.1%) were significantly more likely than males (31.8% \pm 3.9%) to consume five to ten servings of fruits and vegetables daily (Figure 7.12).⁴¹



Eat Smart! Healthy Restaurants and Cafeterias Program

The Eat Smart! Healthy Restaurants and Cafeterias Program encourages healthy food choices and healthy weights to promote the reduction of chronic disease and food-borne illness in Ontario. A restaurant, school or workplace cafeteria with Eat Smart! recognition offers:⁶⁵

- A variety of healthy food choices, on the menu and by request
- High standards in food safety
- 100% compliance with City of Ottawa Smoke-Free Bylaws

On average, Ottawa residents eat at a restaurant (not including fast food or drive-through places) just over one time per week and eat fast food (e.g., Chinese food, pizza, fried chicken, hamburgers, etc.) less than one time per week.³⁶ Most (79.0% \pm 2.4%) Ottawa residents think that an “Award of Excellence” would influence their restaurant selection.³⁶

In 2005, 60 restaurants, 20 schools and 11 workplace cafeterias in Ottawa were recognized as Eat Smart! participants for their healthy food choices, food safety standards and compliance with smoke-free bylaws.

Fuel to Xcell

Schools are an important venue for promoting nutritional messages and healthy food choices. Recently, there was much concern over vending machines in schools as many products sold in vending machines contain minimal nutritional value. The Fuel to Xcell program was introduced in the 2003-2004 school year. The Fuel to Xcell Healthy Vending program not only increases the number of healthy options in vending machines but provides a colour-coded guide to educate students and school staff on what are the healthier choices. Preliminary results have demonstrated an increase in consumption of healthier items while maintaining overall sales. This program has received a national award and is receiving interest from colleges, universities, school boards and hospitals across the country. Currently, Fuel to Xcell is in over 40 high schools and 52 recreational facilities in Ottawa.

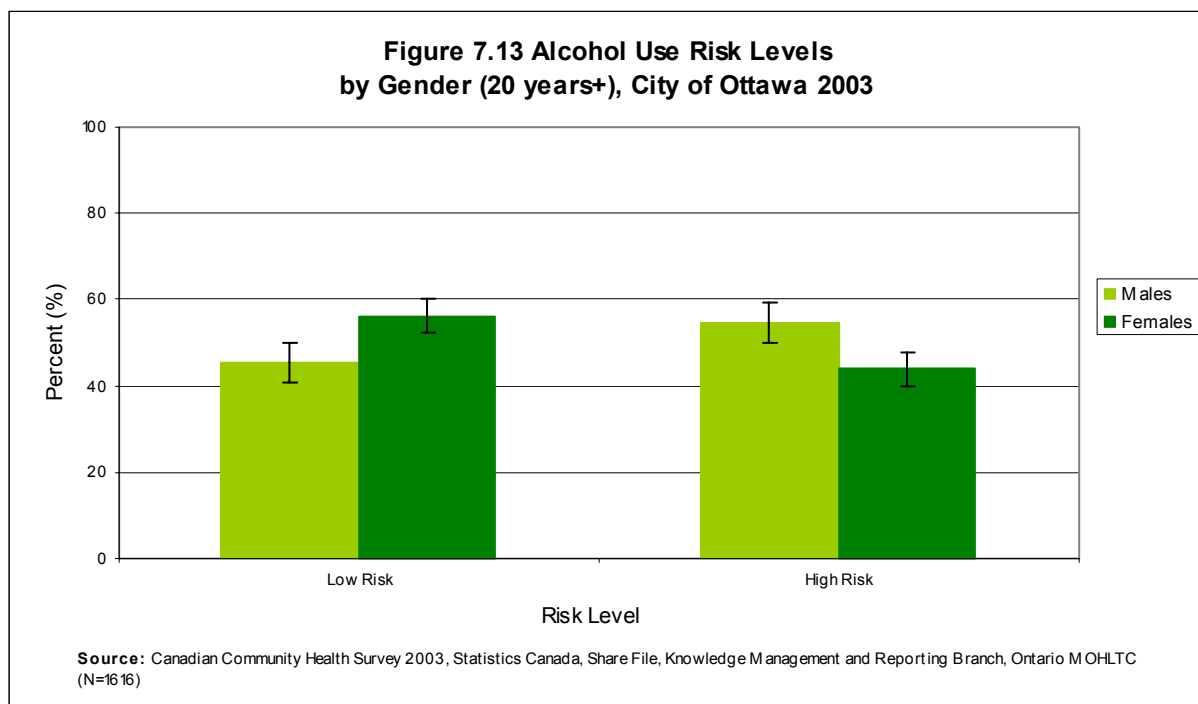
Alcohol

Alcohol consumption is associated with a number of health problems including liver disease, various cancers, certain cardiovascular effects, trauma, fetal effects, abuse and dependence. This section focuses on two indicators related to alcohol use: low risk drinking and binge drinking.

Low Risk Drinking

Medical and social researchers from the University of Toronto and the Centre for Addiction and Mental Health (CAMH) developed the low risk drinking guidelines. The guidelines specify drinking no more than 2 standard drinks on any day with a weekly intake limit of up to 9 standard drinks for women and up to 14 for men. One of Ontario's goals is to reduce the percentage of the adult population who drink more than two drinks per day by 20% by the year 2010.²⁵ One standard drink is defined as the equivalent of 13.6 grams of alcohol, which can be found in: 5 oz/142mL of wine (12% alcohol), 1.5oz/43mL of spirits (40% alcohol), or 12 oz/341mL of regular strength beer (5% alcohol). Higher alcohol beers and coolers have more alcohol than one standard drink.

In 2001 and 2003, half of residents aged 20 years and older in Ottawa were considered to be low risk alcohol drinkers (51.5% \pm 2.8% in 2001; 51.0% \pm 3.0% in 2003) and there was no difference when compared to Ontario. Females were significantly more likely than males to be low risk alcohol drinkers (Figure 7.13).



Binge Drinking

CAMH defines binge drinking as consuming five or more drinks on one occasion, and a heavy drinker would have 12 or more binge drinking episodes per year. This behavioural drinking

pattern necessitates attention because of the potentially harmful consequences it presents such as injury, impaired driving, violence and health related problems.

In 2003, 45.6% ($\pm 3.6\%$) of Ottawa residents aged 20 years and older reported having at least one occasion of binge drinking in the past year, and this was not different from Ontario. Adult males (58.3% $\pm 5.2\%$) were significantly more likely to report at least one occasion of binge drinking in the past year than females (32.9% $\pm 4.3\%$). A higher, though not statistically significant, proportion of youth aged 12 to 19 years reported at least one episode of binge drinking in the last 12 months (51.5% $\pm 9.1\%$).⁴¹

In 2003, similar to Ontario, 20.7% ($\pm 2.9\%$) of Ottawa adults aged 20 years and older reported heavy drinking behaviour in the last 12 months. Similar to Ontario, adult males were significantly more likely to report heavy drinking behaviour (29.0% $\pm 4.4\%$) than females (12.5% $\pm 3.3\%$).⁴¹

Sun Safety

Sunlight contains ultraviolet (UV) rays that can harm the skin and eyes. Although most ultraviolet radiation exposure is from the sun, tanning equipments also emit harmful UV rays. Prolonged or frequent sun exposure can lead to skin cancer.^{66,67} Sunburns, skin cancers, and other sun-related adverse health effects are largely preventable when sun protection is practiced early and consistently.

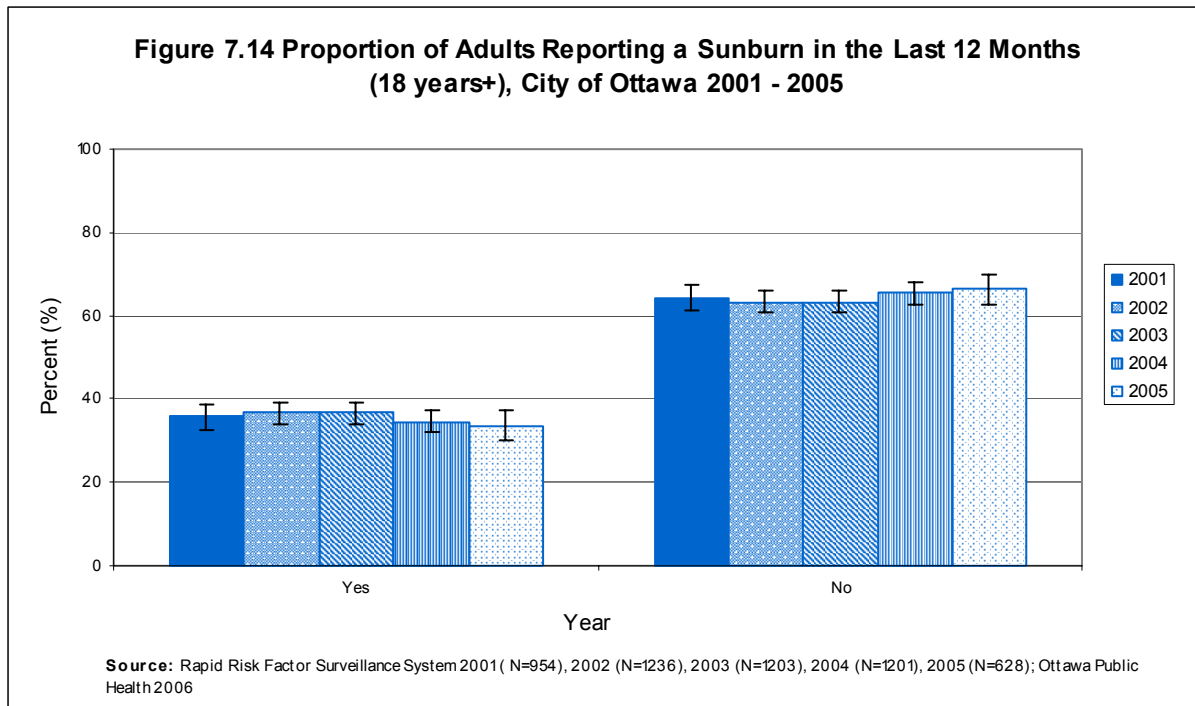
Some of the recommended sun safety practices include:^{66,67}

- Limiting exposure to the sun when it's highest in the sky - between 11 a.m. and 4 p.m.
- Wearing protective clothing that cover the arms, back and legs as well as using hats
- Applying broad-spectrum sunscreen with a Sun Protection Factor (SPF) of at least 15 to exposed skin
- Avoiding the use of tanning equipment
- Using UV-protective sunglasses when in the sun

To slow the rise in incidence of skin cancers, Ontario has set a goal to increase the proportion of the population of all ages who limit sun exposure, use protective clothing and sunscreens when exposed to sunlight, and avoid artificial sources of ultraviolet light.²⁵

In 2001, nearly two thirds (62.6% $\pm 2.7\%$) of Ottawa parents reported that their child under the age of 6 years always wears a hat when he/she goes outside. Just over half (55.3% $\pm 2.8\%$) of parents reported that their child always wore sunscreen when he/she went outside.⁶⁸

In 2005, the proportion of adults reporting having at least one sunburn per year was 33.7% (\pm 3.7%). This proportion was similar to results from previous years (Figure 7.14).²⁴



In 2004, sun safety practices by Ottawa residents included: 42.1% (\pm 4.4%) of adults always or often avoided the sun between 11 a.m. and 4 p.m. when the UV rays are strongest; 43.3% (\pm 4.4%) always or often wore protective clothing when in the sun; 43.6% (\pm 4.4%) always or often used sunscreen; and 66.0% (\pm 4.2%) always or often wore sunglasses with UV protection when in the sun. These proportions have remained stable since 2001.⁶⁹

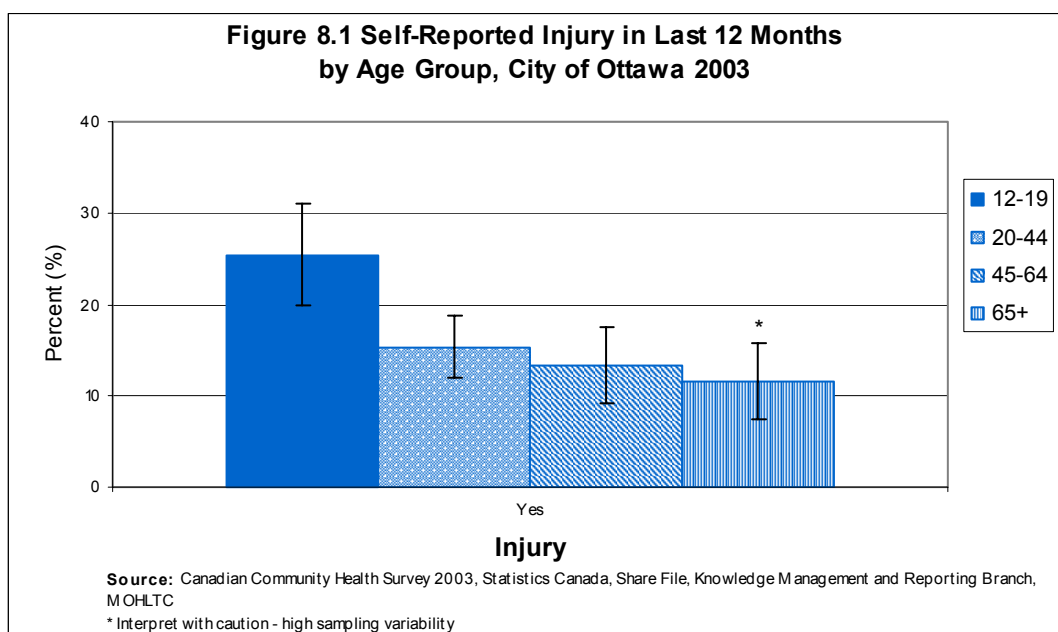
8. Injuries and Injury Prevention

Injuries

Injury is an important cause of mortality and morbidity. Injuries were the fifth highest cause of hospitalizations for Ottawa in 2004 (see *Overall Mortality and Morbidity* section). When the number of hospitalizations due to injuries is analyzed by age and gender, injuries are the highest to the seventh highest cause overall depending on the age group. In 2002, injuries were a leading cause of death in Ottawa residents under the age of 45 years.

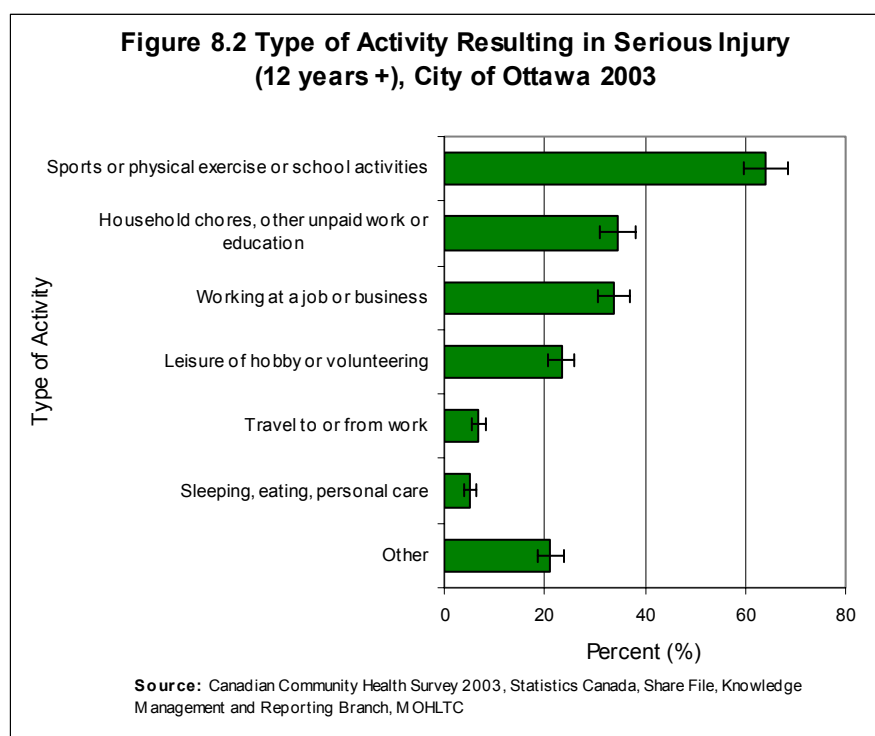
Although many people use the word 'accident' to describe injuries, this can be misleading as many injuries can be prevented. Ottawa Public Health focuses on the prevention of unintentional injuries in the general population including road safety, correct helmet use for recreational activities, prevention of falls, drowning, alcohol, and other substance-related injuries.

According to the Canadian Community Health Survey⁴¹, in 2003, 107,400 (15.5% \pm 2.5%) Ottawa residents aged 12 and older reported that they had suffered an injury serious enough to limit normal activities (for example a broken bone, a bad cut or burn, a sprain, or a poisoning) in the last 12 months.



Youths aged 12 to 19 years were significantly more likely than older age groups to report being seriously injured in the last 12 months (25.5% \pm 5.6%) (Figure 8.1). Males were slightly more

likely to report being seriously injured in the last 12 months than females (18.6% \pm 3.5% vs 12.6% \pm 2.5%). Most of the reported serious injuries occurred during sports or physical exercise (including school activities) (64.2% \pm 4.4%) (Figure 8.2)



Injuries can be intentional such as homicide, assault, and self-harm (suicide) or unintentional such as those as a result of motor vehicle and other collisions, falls, and poisonings. The following table lists selected injuries in Ottawa by age-standardized hospitalization rates (2004) and age-standardized mortality (2002). Details on the more common types of unintentional injuries and suicide are included in the remainder of this section. Please see the Children's Section for injuries that affect children.

Table 8.1: Summary of Age-Standardized Hospitalization Rates (2004) and Age Standardized Mortality Rates (2002) of Selected Injuries, City of Ottawa

Age-Standardized Rates (cases per 100,000 population)						
	Ottawa Total		Males		Females	
	Hospitalization Rate	Mortality Rate	Hospitalization Rate	Mortality Rate	Hospitalization Rate	Mortality Rate
All Unintentional Injuries (excludes suicide)	462.08	16.85	459.50	21.13	383.58	12.87
Falls	261.57	4.99	242.43	7.08	270.81	3.33

Age-Standardized Rates (cases per 100,000 population)

	Ottawa Total		Males		Females	
	Hospitalization Rate	Mortality Rate	Hospitalization Rate	Mortality Rate	Hospitalization Rate	Mortality Rate
Motor-driven Vehicle Traffic Collisions	40.75	3.49	52.68	3.72	29.21	3.25
Sports Injuries	26.07	-	37.25	-	14.64	-
Suicide		4.92		7.78		2.08
Traffic-Related Pedestrian Collisions	5.83	0.80	6.73	0.50	5.12	1.10
Poisonings	11.51	2.32	14.04	3.93	9.38	-
Suicide		4.92		7.78		2.08
Suffocation	4.43	0.85	5.63	-	3.71	-
Burns	4.47	-	4.19	-	4.62	-
Off-Road Motor Vehicle Collisions	1.49	-	1.75	-	1.24	-
Motor Driven Snow Vehicle Incidents	1.34	-	2.37	-	-	-
Drowning and Near Drowning	-	-	-	-	-	-

Source: Hospital In-patient Data 2004, Provincial Health Planning Database (PHPDB) Extracted March 17, 2006, Health Planning Branch, Ontario, MOHLTC; Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted March 10, 2006, Health Planning Branch, Ontario, MOHLTC

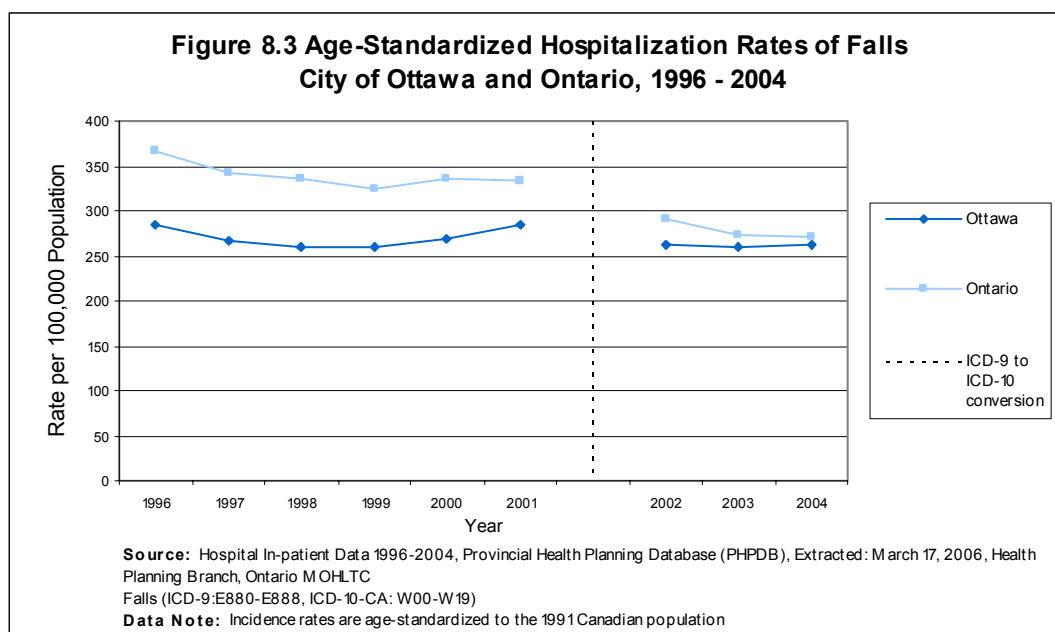
Data Note: If the counts are less than five incidents in a given year, the number is not releasable and is indicated by '-'.

Falls

According to the Public Health Agency of Canada, injuries due to falls are a costly and complex issue for seniors. They can have a devastating effect on the health and independence of seniors and have consequences for their family, friends, and caregivers.⁷⁰ The public health goal for falls is to reduce the rate of fall-related injuries in the elderly (aged 65+ years) that lead to hospitalization or death by 20 per cent by the year 2010.

Of the 107,400 Ottawa residents estimated to have a serious injury in 2003, 35.7% ($\pm 7.2\%$) of the reported serious injuries were as a result of a fall. Of all serious injuries reported by seniors aged 65 years and older, 69.0% ($\pm 19.6\%$) older were as a result of a fall.

Since 1996, age-standardized hospitalization rates due to falls in Ottawa were steady and lower than Ontario although the gap is narrowing. In 2004, 261.6 per 100,000 Ottawa residents were hospitalized due to falls (Figure 8.3).



Most people who die as a result of a fall are aged 65 and over. In Ottawa, the 2002 mortality rate from falls for all ages was 5.5 deaths per 100,000 population while the mortality rate from falls for people aged 65 and over was 39.1 deaths per 100,000 population.

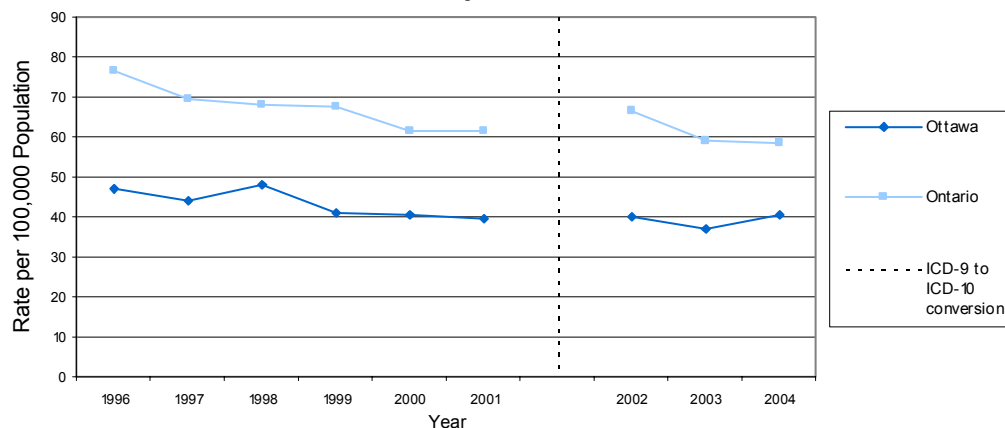
Motor Vehicle Traffic Collisions

In 2003, the City of Ottawa developed an Integrated Road Safety Program with the goal of reducing mortality, morbidity and disability related to the motor vehicle traffic collisions (MVTC) that were experienced from 1998 to 2002 by 30 per cent. The City's goal is to reach this target by the year 2010.

Age-standardized hospitalization rates for MVTC have remained relatively stable in Ottawa although there has been a significant decrease in hospitalization rates in Ontario since 1996. The 2004 age-standardized hospitalization rate due to MVTC in Ottawa was 40.75 hospitalizations per 100,000 population (Figure 8.4).

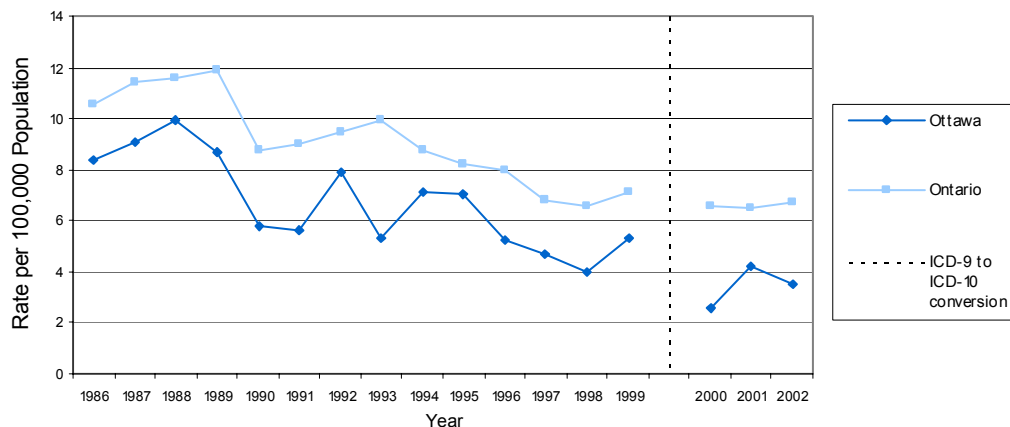
Age-standardized mortality rates due to MVTC have decreased from 1986 (8.35 deaths per 100,000) to 2002 (3.49 deaths per 100,000) (Figure 8.5). The decline in the 80's and early 90's may be attributed to the use of seat belts and child restraints, stringent impaired driving regulations, education, enforcement, safer vehicles, helmet use, better road infrastructure and engineering, and improved emergency medical response and medical care.⁷¹

Figure 8.4 Age-Standardized Hospitalization Rates for Motor Vehicle Traffic Collisions, City of Ottawa and Ontario, 1996-2004



Source: Hospital In-patient Data 1996-2004, Provincial Health Planning Database (PHPDB), Extracted: March 17, 2006, Health Planning Branch, Ontario MOHLTC
Motor Vehicle Collisions (ICD-9: E810-819, ICD-10-CA: V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2)
Data Note: Incidence rates are age-standardized to the 1991 Canadian population

Figure 8.5 Age-Standardized Mortality Rates for Motor Vehicle Traffic Collisions, City of Ottawa and Ontario, 1986 - 2002

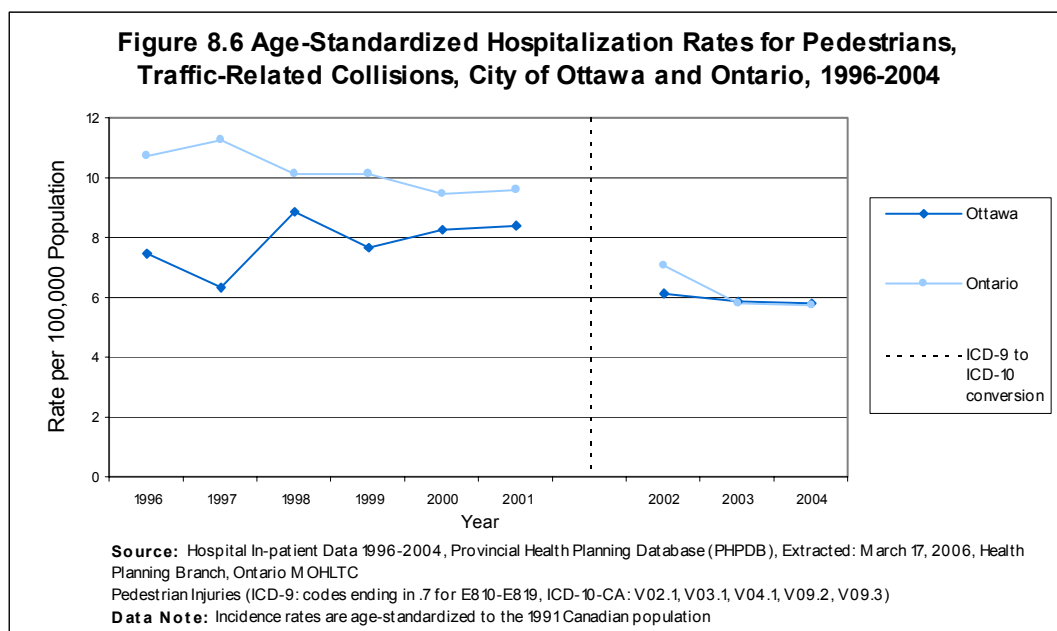


Source: Ontario Mortality Data 1986-2002, Provincial Health Planning Database (PHPDB) Extracted March 10, 2006, Health Planning Branch, Ontario MOHLTC
Motor Vehicle Collisions (ICD-9: E810-819, ICD-10-CA: V02-V04, V09.0, V09.2, V1)
Data Note: Mortality rates are age-standardized to the 1991 Canadian population

Traffic-Related Pedestrian Collisions

Pedestrian collisions are a public health concern especially in urban areas. Nationally, over 95% of total pedestrian injuries occurred in urban areas.⁷²

There has not been a significant decrease in age standardized hospitalization rates for traffic-related pedestrian injuries in Ottawa between 1996 (7.46 hospitalizations per 100,000 population) and 2004 (5.83 hospitalizations per 100,000 population) (Figure 8.6). Children aged 10-19 and seniors especially those over age 70 years have the highest hospitalization rates for traffic-related pedestrian injuries in Ottawa and Ontario.



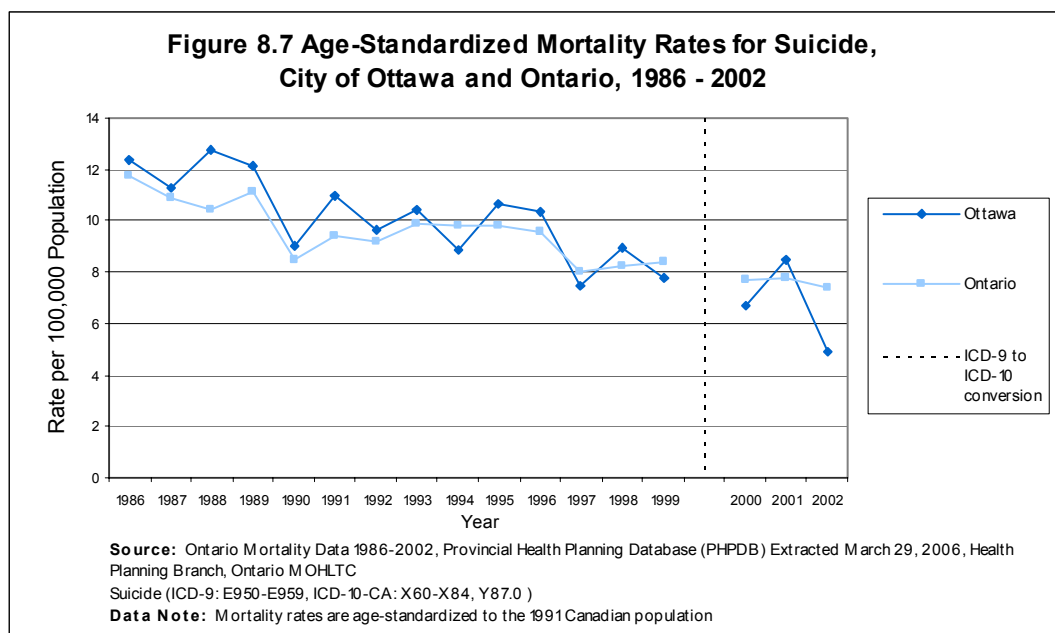
In Ottawa, mortality rates due to traffic-related pedestrian collisions appear to have decreased but this decrease does not represent a significant change between the 1986 age-standardized mortality rate (1.9 deaths per 100,000 population) and the 2002 rate (0.8 deaths/100,000 population) mainly due to the fact that there are relatively few deaths per year. There was no significant difference in 2002 age-standardized mortality rates between Ontario (0.95 deaths per 100,000 population) and Ottawa (0.8 deaths per 100,000 population).

Intentional Self Harm (Suicide)

Suicide and attempted suicide are serious public health issues. Risk factors for suicide include a history of mental illness particularly depression, substance abuse, family history of suicide, feelings of hopelessness and isolation, and physical illness.⁷³ In Ottawa, suicide was the most common cause of death in males aged 20 to 44 and the third most common cause of death in females aged 20 to 44 in 2002 (see *Overall Mortality and Morbidity section*).

For most years since 1986, the mortality rate due to suicide was significantly greater among males than among females in Ottawa. In 2002, the age-standardized mortality rate for males

was 7.78 deaths per 100,000 population and for females was 2.08 deaths per 100,000 population. The overall age-standardized mortality rate of suicide has significantly decreased from 1986 (12.37 deaths per 100,000 population) to 2002 (4.92 deaths per 100,000 population). The rates over time closely parallel those for the province of Ontario (Figure 8.7).



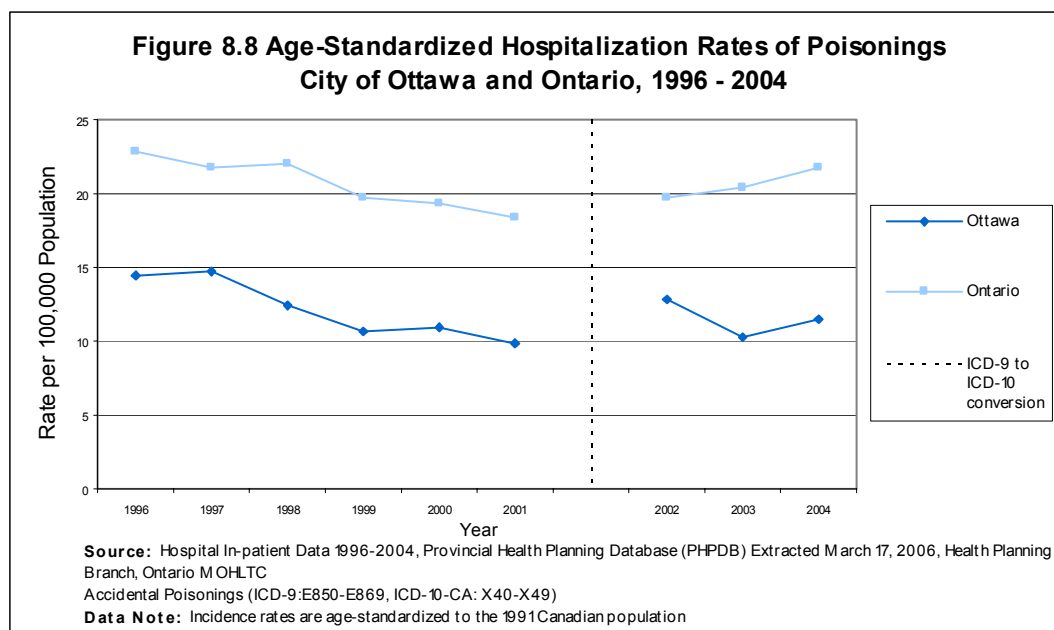
Unintentional Poisoning

Deaths and hospitalizations due to unintentional poisoning or exposure to noxious substances do not include administration with intent to harm or an adverse effect of the use of the correct drug properly administered.

Age-standardized hospitalization rates remained relatively constant in Ottawa since 1996 (Figure 8.8). There was a significant difference in age-standardized hospitalization rates due to unintentional poisonings between Ottawa and Ontario. In 2002, the age-standardized hospitalization rate due to unintentional poisonings in Ottawa was 11.51 hospitalizations per 100,000 population.

Unintentional poisoning and exposure to noxious substances was the third highest cause of death among males aged 20-44 in Ottawa in 2002, tied with HIV, heart disease, and leukemias and lymphomas (*See Overall Mortality and Morbidity section*). There was no significant changes in the age-standardized mortality rate due to unintentional poisonings in Ottawa since 1986 nor was there a significant difference from Ontario age-standardized rates. In 2002, the

age-standardized mortality rate due to unintentional poisonings in Ottawa was 2.32 deaths per 100,000 population.



Injury Prevention

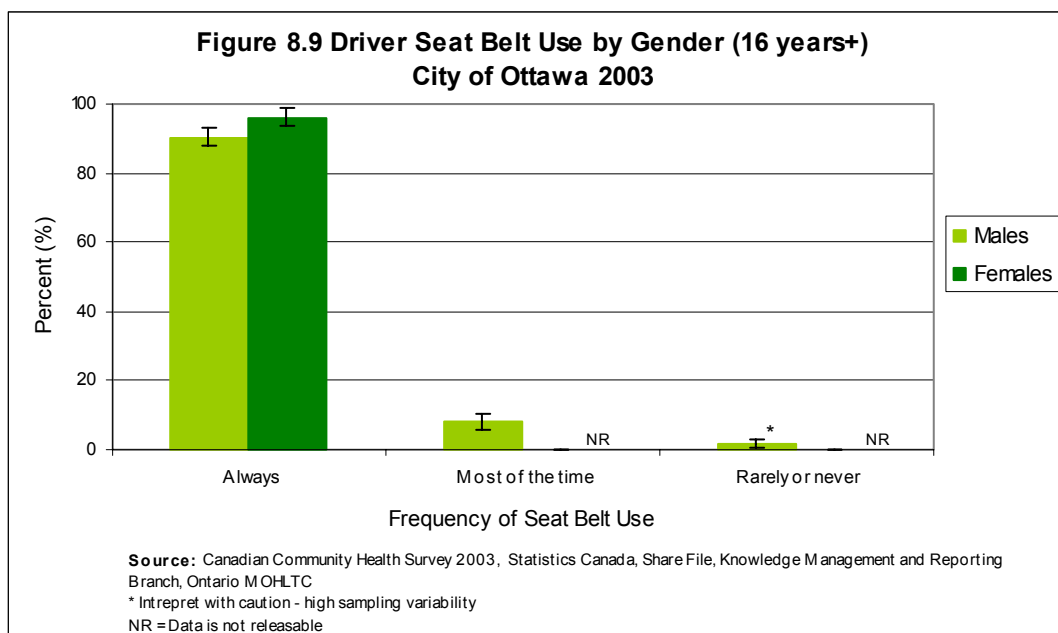
In 2002, injuries were one of the leading causes of death in children, youth, and adults under the age of 40 years living in the City of Ottawa (See Mortality section). Most injuries are often referred to as unavoidable “accidents”. However, the majority of injuries are due to specific causes that can be predicted and prevented. Public health goals related to injury prevention in both Ontario and the City of Ottawa are aimed at reducing the disability, morbidity and mortality caused by motorized vehicle collisions, bicycle crashes, the use of alcohol and other substances, falls in the elderly, drowning in specified recreational water facilities, or other risks specific to young children, such as burns, falls, poisonings, and choking.²⁵

Seat Belt Use

The proper use of seat belts can reduce the incidence of injury or death in a motor vehicle collision. In Ontario, all motor vehicle drivers and passengers occupying a seating position for which a seat belt is provided must wear the seat belt.⁷⁴ One goal of Public Health in the City of Ottawa and the Province of Ontario is to increase the proportion of vehicle occupants who are properly restrained in motor vehicles.²⁵

In 2003, 93.2% ($\pm 1.8\%$) of Ottawa *drivers* (residents aged 16 years and over who have driven a motor vehicle in the past 12 months) reported that they always wear their seatbelts when driving

a motor vehicle. A significantly higher proportion of female drivers ($96.2\% \pm 2.4\%$) than male drivers ($90.3\% \pm 2.6\%$) reported that they always wear their seat belt when driving a motor vehicle (Figure 8.9). However, only $76.5\% (\pm 2.6\%)$ of motor vehicle *passengers* aged 12 and over reported that always wear a seat belt when riding in the front or back seat.⁴¹



Child Car Seats and Booster Seats

All motor vehicle drivers are responsible for ensuring that all children under 16 years of age are properly secured in an appropriate child car seat, a booster seat, or a seat belt system.⁷⁴

Proper use of an approved child car seat or booster seat is necessary to protect children from the risk of serious injury or death in the event of a crash. In September 2005, booster seats became mandatory in Ontario for children up to the age of 8 years, who weigh between 18 kg and 36 kg (40-80 lbs), and who are less than 145 cm (4 feet 9 inches) tall.

In 2005, $52.4\% (\pm 9.6\%)$ of children in Ottawa ages 4 to 7 years travelled in a booster seat and $18.7\%^* (\pm 7.5\%)$ travelled in a car seat with harness straps.³⁶ It is unknown how many of these children met all three of the mandatory booster seat criteria (up to 8 years of age, between 18 and 36 kg, and less than 145 cm) and would, therefore, be required by law to be transported in a booster seat.

* Interpret with caution – high sampling variability

The safest location for children when travelling in a motor vehicle is in the back seat, but one in five (20%) children ages 4 to 11 years did not sit in the back seat of the vehicle they travelled in “all of the time”.³⁶

Impaired Driving

Consuming alcohol can reduce the ability to concentrate, impair coordination, affect judgement and slow the ability to react to things that happen while driving. Driving while under the influence of alcohol can lead to traffic collisions resulting in severe injury, disability, and even death. Public health goals related to drinking and driving in Ottawa and Ontario are aimed at increasing the proportion of adults who safely operate motorized vehicles and reducing the rate of alcohol or other substance-related injuries or deaths.²⁵

In 2003, 8.5% ($\pm 2.2\%$) of Ottawa drivers (residents with a driver’s license who are 16 years and older) reported that they had driven a motor vehicle after having two or more alcoholic drinks in the hour before driving.⁴¹

Women aged 35 years and older were significantly more likely than men to report that they did not drink and drive (Table 8.2).⁴¹

Table 8.2 Proportion of Those Who Did Not Drink and Drive by Gender and Age (Did not have 2 or more alcoholic drinks in the hour before driving), City of Ottawa 2003

Age	Males (% \pm 95% CI)	Females (% \pm 95% CI)
16 to 34 years	90.8 \pm 4.5	96.7 \pm 2.4
35 years and older	84.5 \pm 5.1	96.8 \pm 2.9

Source: Canadian Community Health Survey 2003, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Cell Phone Use While Driving

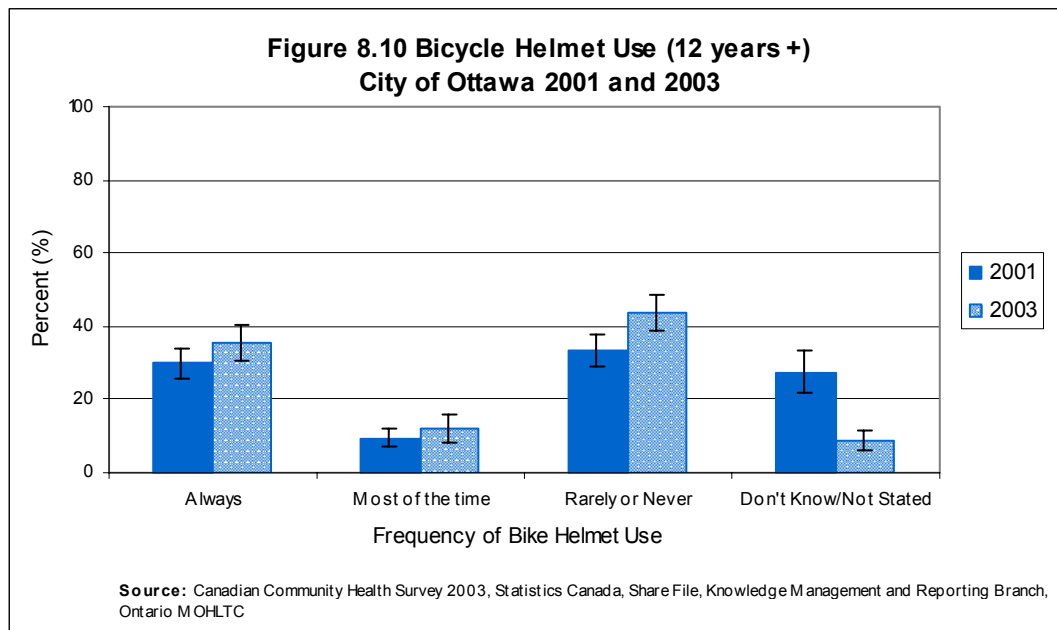
Driver distraction and inattention are important driving safety issues. Cell phone use while driving can cause driver distraction and can increase the risk of collision. Transport Canada recommends against using cell phones when driving.⁷⁵ In 2003, one in five Ottawa residents reported using a cell phone (including hands-free cell phones) while driving (6.7% \pm 1.7% often use a cell phone; 12.5% \pm 2.4% sometimes use cell-phones while driving).⁴¹

Bicycle Helmet Use

One of Ottawa’s injury related public health goals is to have people of all ages wear a helmet for all recreational wheeled activities (e.g. bicycle, tricycle scooter, skateboard, in-line skates). An approved bicycle helmet can greatly reduce the risk of severe head injury or death in the event

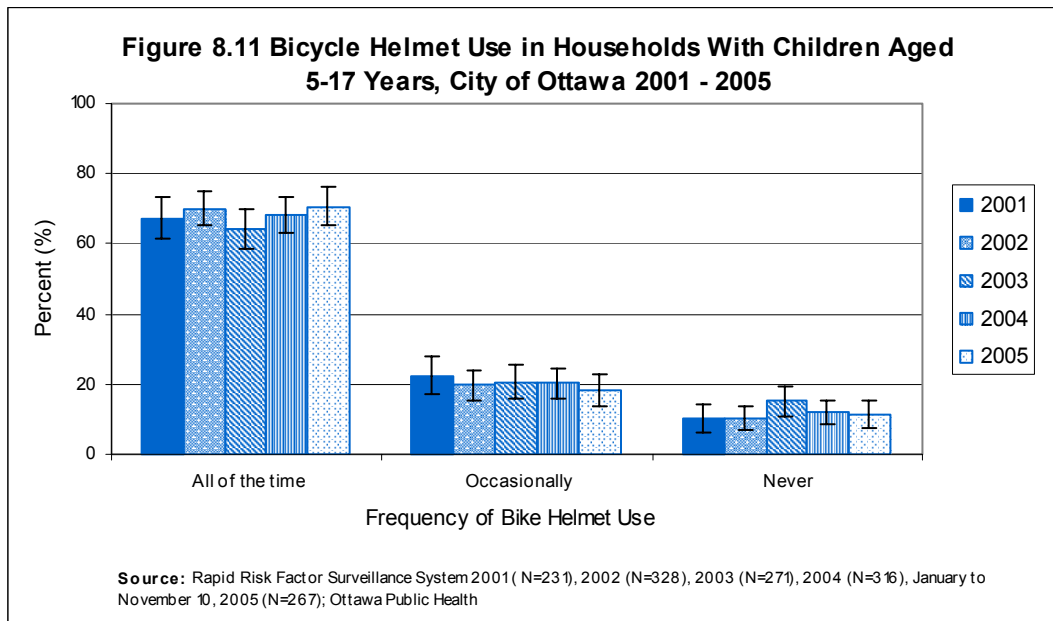
of a fall or a crash when worn properly. In Ontario, every cyclist under the age of 18 years is required to wear an approved bicycle helmet.⁷⁶

In 2003, 35.4% ($\pm 7.2\%$) of Ottawa residents aged 12 years and older reported that they always wear a bicycle helmet when cycling. From 2001 to 2003, a significantly higher proportion of residents aged 12 years and older reported that they rarely or never use a bicycle helmet when cycling (Figure 8.10).⁴¹



In 2005, 70.7% ($\pm 5.5\%$) of households with children aged 5 to 17 years reported that their children wore their bicycle helmet all of the time; 18.0% ($\pm 4.6\%$) reported that their children wore the bicycle helmets occasionally and 11.3%* ($\pm 3.8\%$) reported never wearing bicycle helmets. These percentages remained unchanged since 2001 (Figure 8.11). From 2001 to 2005, younger children aged 5 to 8 years old were significantly more likely than older children aged 13 to 17 years to wear a bicycle helmet all of the time.²⁴

* Interpret with caution – high sampling variability



Use of Protective Equipment While In-Line Skating

Unintentional injuries can occur to the most experienced in-line skaters. Proper use of approved in-line skating protective equipment can greatly reduce the risk of injury or death in the event of a fall or a crash. In 2003, 86.9% ($\pm 6.6\%$) of Ottawa residents aged 12 and over who use in-line skates reported that they rarely or never use a helmet, wrist guards and elbow pads when in-line skating.⁴¹

9. Reproductive Health

The Ontario Ministry of Health mandates Ontario public health units to deliver a Family Health Program with the goal to protect and promote the health of families, prevent disease and assist in the attainment of an optimal level of health.²⁵ The goal of the Reproductive Health Program, a component of the Family Health program, is to promote healthy pregnancies and healthy birth outcomes. Ottawa Public Health achieves this mandate in the City of Ottawa by providing educational activities and resources for people who are pregnant or planning a pregnancy, by enhancing knowledge and skills among health care professionals and other community workers who provide programs and services to this population and by providing public health expertise, particularly in the area of reproductive health to community groups, coalitions and workplaces. The Reproductive Health Program also supports issues identified in other program standards e.g. breastfeeding, infant safety, chronic disease prevention. The sections below highlight some key reproductive health indicators.

Infant Outcomes

Birth Rate

The number of live births in Ottawa has remained close to nine thousand over the last several years. Crude birth rates in Ottawa range between 10 and 11 births per 1,000 total population, similar to the provincial rates. The general fertility rate has remained stable over the past four years at about 41 pregnancies for every 1,000 women between the ages of 15 and 49 years. This compares to the provincial rate of 41 pregnancies per 1,000 women aged 15 to 49 in 2002, the most recent year for which there is provincial data available (Table 9.1).

Birth Weight

Low birth weight (a weight of less than 2500 grams) is an indicator of possible health and developmental problems of infants and young children. Sequelae of low birth weight are often life long.

One of Ontario's reproductive health objectives is to reduce the low birth weight rate to 4 percent by the year 2010.²⁵ In 2004, the overall low birth weight rate in Ottawa was 5.3%, which is slightly lower than the 6% low birth weight rate in 2002. This is very close to the 2002 provincial rate of 5.8%. For singleton live births the rate in 2004 was 4.2%, which again is very close to the 2002 provincial rate of 4.4%. The low birth weight rate for multiple births in Ottawa has decreased from 50.9% in 2001 to 45.9% in 2004. The 2002 provincial rate was 53.1%.

Between 2001 and 2004, approximately 14% of live births in Ottawa had high birth weights of over 4000 grams. High birth weight infants may be at higher risk of health problems in the first few days of life (Table 9.1).

Preterm Birth

Preterm birth (a birth before 37 weeks of gestation) is the most important determinant of perinatal mortality in industrialized countries and attempts at reducing its occurrence have been described as the most serious perinatal challenge confronting those countries today.⁷⁷ Although preterm births generally constitute less than 10% of all live births, over 80% of all neonatal deaths occur among infants born before 37 weeks of gestational age. In 2002, the overall preterm birth rate in Ottawa⁷⁸ was 8.1%. The 2004 rate was slightly lower at 7.5%. The provincial preterm birth rate was 7.3% in 2002. Between 2001 and 2004, the singleton preterm birth rate in Ottawa ranged from 6.1% to 6.4%. The provincial rate was 5.7% in 2001 and 2002.

Stillbirth

In 2004, the stillbirth rate in Ottawa was 4.2 stillbirths per 1,000 births. The stillbirth rate in Ottawa in 2002 was 5.8 per 1,000 births, which was lower than the provincial rate of 6.3 per 1,000 in that same year (Table 9.1).

Labour and Delivery Characteristics

Births delivered by caesarean section in Ottawa are slowly rising from 22.6% in 2001 to 27.6% in 2004. The most recent provincial information indicates a rate of 22.9% in 2001-2002 (Table 9.1).⁷⁹ Currently, 62.5% of vaginal births in Ottawa use an epidural. The proportion of vaginal births using an epidural is lower provincially at 47%.⁷⁹

Maternal Characteristics

Smoking During Pregnancy

Smoking during pregnancy has significant adverse effects on the unborn child. Women who smoke during pregnancy risk health problems such as pregnancy complications, premature birth, low birth weight, stillbirth and Sudden Infant Death Syndrome (SIDS).⁸⁰ Smoking rates of pregnant women in Ottawa are under-reported with between 5% and 10% of the data missing. The Ottawa rates indicate that between 7.5% and 5.9% of pregnant women smoked beyond the 20th week of pregnancy in 2001 and 2004 respectively (Table 9.1).

Teen Pregnancy

Between 2001 and 2004, the rate of births to teen mothers in Ottawa has been steady at just over 8 births per 1,000 females aged 15 to 19 years. This rate is considerably lower than the provincial rate of 11.9 births per 1,000 females aged 15 to 19 years (2002). Teen pregnancy rates in Ottawa, which include all live births, stillbirths and abortions, are also lower than those of the province at 26.5 per 1,000 females aged 15 to 19 years. In 2004, the percent of low birth weight infants born to teen mothers (5.7%) was lower than previous years. However, the teen rate of low birth weight babies is slightly higher than the overall low birth weight rate (Table 9.1).

Table 9.1: Key Reproductive Health Outcomes, City of Ottawa 2001-2004 and Ontario, 2001-2002

Indicator	Ottawa*				Ontario†	
	2001	2002	2003	2004	2001	2002
Live Births	8645	8864	9152	9033	131360	128202
Crude Birth Rate (per 1,000 population)	10.7	10.8	11.1	10.1	11.1	10.6
General Fertility Rate (per 1,000 women aged 15-49 years)	39.7	40.3	41.4	40.8	42.5	40.8
Pregnancies delivered by caesarean section (% of pregnancies)	22.6	23.2	25.6	27.6	21.7 [‡]	N/A
Low birth weight rate (% of live births <2,500g)	5.3	6.0	5.8	5.3	5.6	5.8
Singleton low birth weight rate (% of total singleton live births)	4.1	4.3	4.4	4.2	4.3	4.4
Multiple low birth weight rate (% of total multiple live births)	50.9	52.5	49.8	45.9	49.5	53.1
High birth weight rate (% of live births >4,000g)	14.9	14.2	14.5	13.6	13.8	N/A
Preterm birth rate (% of live births delivered before 37 weeks gestation)	7.6	8.1	8.0	7.5	7.1	7.3
Singleton preterm birth rate (% of singleton live births delivered before 37 weeks gestation)	6.4	6.1	6.4	6.1	5.7	5.7
Multiple preterm birth rate (% of multiple live births)	54.3	60.9	59.1	55.7	51.6	54.9
Stillbirth rate (per 1,000 total births)	5.5	5.8	3.5	4.2	6.3	6.3

Teen Reproductive Health Indicator						
Indicator	Ottawa*				Ontario†	
	2001	2002	2003	2004	2001	2002
Teen crude birth rate (Live births per 1,000 females aged 15-19 years)	8.1	8.6	8.1	8.1	12.8	11.9
Teen pregnancy rate (pregnancies per 1,000 females age 15-19 years) †	27.6	26.5	-	-	30.5	28.8
Teen low birth weight rate (% of live births to 15-19 year olds <2500g)	7.0	8.2	7.9	5.7	7.4	7.0

Tobacco Use During Pregnancy						
Indicator	Ottawa*				Ontario†	
	2001	2002	2003	2004	2001	2002
Smoking in Pregnancy (Pregnant women who smoke per 100 births)‡	7.5	5.8	5.7	5.9	15.8 (1998-1999) ‡	

Source: *Ottawa: Perinatal Partnership Program of Eastern and Southeastern Ontario, Niday Perinatal Database 2001-2004
†Health Canada. Canadian Perinatal Health Report 2003. Ottawa: Minister of Public Works and Government Services Canada, 2003.

‡Ontario Live Birth Database 2001-2002, HELPS (Health Planning System), Public Health Branch, Ontario MOHTLC
Note: ‡ Smoking rates of pregnant women are underreported and data are often missing. The percent of missing data by year was: 5.6% in 2001; 7.3% in 2002; 5.1% in 2003; 10.3% in 2004

Abortion

Therapeutic abortions may be an indicator of unwanted and unplanned pregnancies. Hospitals and clinics collect information on therapeutic abortions and provide this to the Ministry of Health and Long-term Care.

In 2003, the overall rate of abortion in Ottawa (11.4 per 1,000) was similar to the provincial abortion rate. In Ottawa, the abortion rate for teen women was 16.4 per 1,000, which is similar to that of the province at 15.9 per 1,000.

Table 9.2: Abortion Rate, City of Ottawa and Ontario 2003

Indicator	Ottawa	Ontario
Abortion Rate (abortions per 1,000 females age 15-49)	11.4	11.5
Teen Abortion rate (abortions per 1,000 females age 15-19)	16.4	15.9

Source: Ontario Therapeutic Abortion Database 2003, HELPS (Health Planning System) Release: August 2004, Public Health Branch, Ontario Ministry of Health and Long-term Care (MOHLTC)

10. Children's Health

The early years in life are critical for cognitive, social and emotional development. Experiences in early childhood can have a significant impact on child development and health in later years. Investing in early intervention and prevention strategies beginning in the perinatal period and continuing into the teenage years can lead to healthier and more productive lives.⁸¹

Public health aims to promote early childhood health and development so that, to their fullest potential, children will be physically and emotionally healthy, safe and secure, ready to learn, and socially engaged and responsible. This section will report on several determinants of children's health including breastfeeding, parenting interactions, access to children's services, childhood injuries, and childhood chronic diseases.

Children in Ottawa

In 2001, there were 195,585 children and youth under the age of 20 residing in the City of Ottawa. Of this group, there were 54,400 children under the age of six.¹⁵ In 2005, the number of children and youth under the age of 20 is estimated to have risen to 200,954 with those aged 0 to 6 years rising to 63,355.¹ The highest percentage of children under the age of 20 live in the suburban areas of Ottawa such as Barrhaven, Kanata, Stittsville, Orleans, Hunt Club, old Fitzroy and Osgoode townships. Parts of Ottawa West, Beacon Hill and Ottawa East also have large numbers of children.²

Breastfeeding

Most pregnant women in Ottawa plan to breastfeed their babies. In 2003, 92.4% of new mothers planned to breastfeed. In 2004, this proportion remained high at 91.2%.⁷⁸

In 2000, a survey of mothers of 3 and 6 month old infants conducted by Ottawa Public Health found that 88.8% of mothers initiated breastfeeding *within the first 48 hours after delivery* (70.1% were exclusively breastfeeding[∞]; 18.8% were breastfeeding with a supplement) (Figure 10.1).⁸² A similar survey repeated in 2005 found that 91.0% of mothers initiated breastfeeding in the *first few days after birth* (56.3% were exclusively breastfeeding); 34.7% were breastfeeding

[∞] Note: Due to differences in question wording between the 2000 and 2005 Infant Care Surveys, comparisons of the exclusive breastfeeding rates at birth should not be made.

with a supplement) (Figure 10.2).⁸³ In Ontario, in 2003, 86.9% of mothers reported that they initiated* breastfeeding.⁴¹

At 3 months after birth, the proportion of mothers exclusively breastfeeding was lower than at birth and the proportion of mothers who switched to formula increased. In 2000, 63.1% of mothers of 3 month old infants were exclusively breastfeeding and a further 14.3% were breastfeeding with at least one supplemental bottle (Figure 10.1).⁸³ In 2005, the proportion of mothers exclusively breastfeeding was lower (50.0%) and the proportion of women breastfeeding with supplement increased (21.2%) (Figure 10.2).⁸³ Overall, from 2000 to 2005, the proportion of mothers still breastfeeding their infants at 3 months decreased slightly (77.4% to 71.2%, respectively).

At 6 months after birth, the proportion of mothers who exclusively breastfeed is lower than at 3 months and the proportion of mothers who have switched to formula further increases. In 2005 the proportion of mothers exclusively breastfeeding at 6 month after birth (39.1%) is higher than in 2000 (31.9%). The number of women bottle-feeding (either exclusively or breastfeeding with supplement) at six months rose to 60.8% from the 9.0% at birth(Figure 10.2).⁸³ One goal of public health in Ontario is to increase to 50% the proportion of infants breast-fed up to six months by the year 2010.²⁵ Ottawa met this goal with 51.3%, in 2000, and 59.8%, in 2005, of mothers still breastfeeding their infants 6 months after birth. In Ontario, in 2003, 39.4% of mothers reported that they were still breastfeeding at 6 months (20.2% of mothers were exclusively breastfeeding).⁴¹

* Note: Initiated breastfeeding refers to women who breastfed or tried to breastfeed their last child even if only for a short time

Figure 10.1 Infant Feeding at Birth, at 3 Months, and at 6 Months, City of Ottawa, 2000

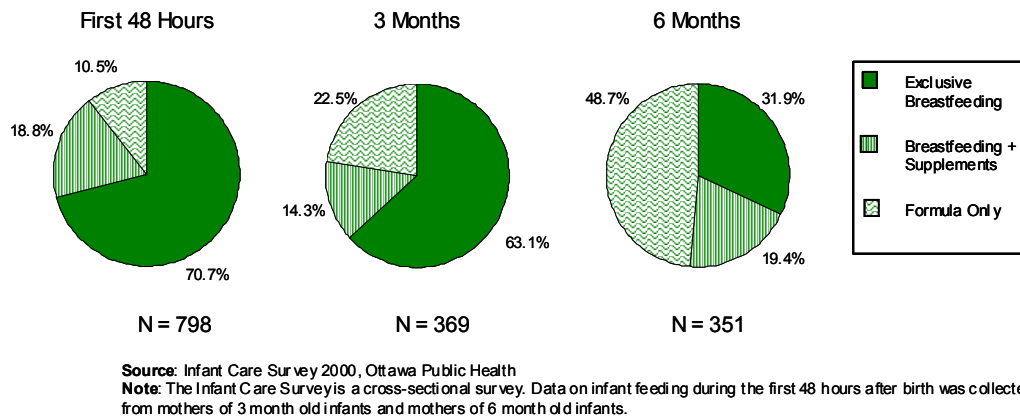
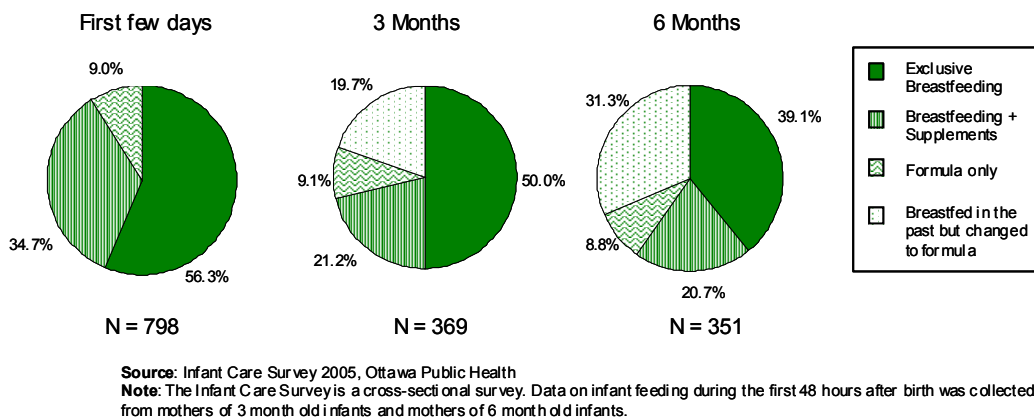


Figure 10.2 Infant Feeding at Birth, at 3 Months, and at 6 Months, City of Ottawa, 2005



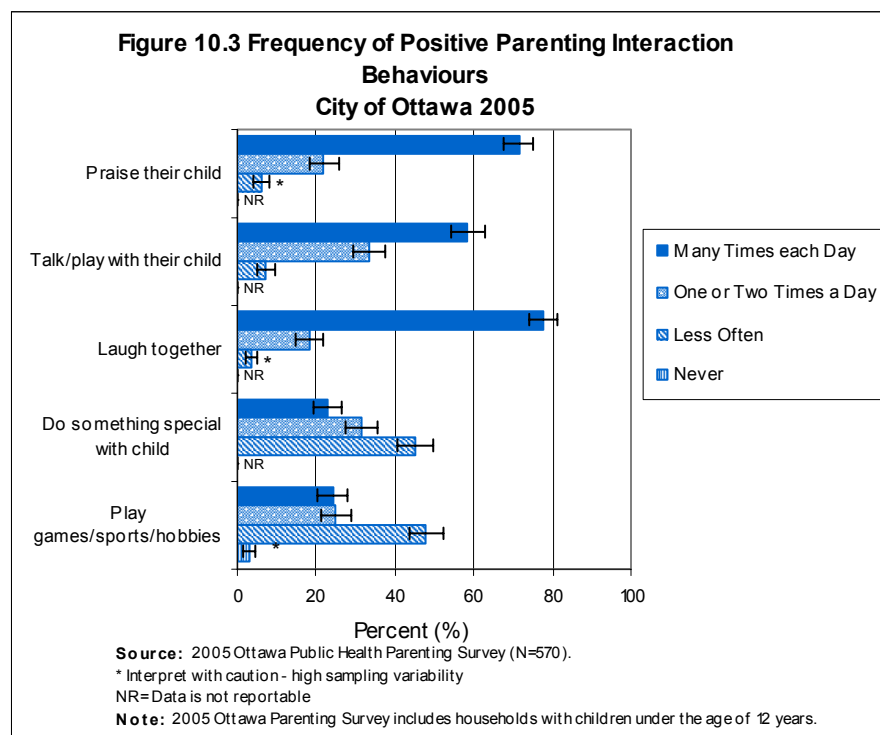
In 2005, 90.9% of mothers decided to breastfeed because they felt it was better for themselves as well as better for the health of the baby. Less than half (44.1%) of mothers planned to breastfeed for more than six months up to a year. The most common reasons given for stopping breastfeeding were that mothers thought their baby was not getting enough milk (44.4%) and they had difficulty with breastfeeding techniques (16.7%).⁸³

Positive Parenting Interactions

Parenting is one of the most important variables in childhood health and development. As well as being an influential role in a child's life, parents or guardians are responsible for all aspects of a child's health and well-being. Parents are typically the first people with whom children experience relationships. These relationships need to be positive experiences for children so they can learn to form other healthy relationships and develop social skills.

In 2005, Ottawa Public Health conducted a survey of households with children under 12 years old. The survey found:

- Most parents (71.4% \pm 3.9%) praise their child many times each day
- The majority of parents (77.7% \pm 3.6%) laugh together with their child many times each day
- Over half (58.4% \pm 4.3%) of parents talk or play with their child many times each day
- About half of parents (45.9% \pm 4.4%) do something special with their child less than once a day
- About half of parents (47.8% \pm 4.4%) play games, sports, or participate in hobbies with their child less than once a day (Figure 10.3).



In 2001, two thirds ($66.4\% \pm 2.7\%$) of Ottawa parents read or told a story to their child (under 6 years of age) more than five times per week. However, fewer ($38.8\% \pm 3.6\%$) parents have their child read or tell a story to them. Almost half ($47.2\% \pm 3.1\%$) of parents with children under the age of 6 years never use the library.

Child Care

A supportive community enables parents to raise children in a caring, safe environment. One important ingredient of such a supportive community is reliable and affordable child care. Child care is becoming essential as the number of families with two working parents increases. Since 2002, the number of licensed child care spaces has increased significantly by approximately 28% or 3200 spaces. Similarly, there was a 6% increase (381) in the number of subsidized spaces.⁸⁴

Unfortunately, there are times when parents are unable to care for their children. The Children's Aid Society of Ottawa places children at risk in a safe environment. As of October 2005, there were 691 children over the age of 6 years in care of CAS. There were 98 children up to the age of 2 years as well as 61 children aged 3 to 6.⁸⁵

Difficulty accessing early childhood programs

In 2001, just over half ($53.5\% \pm 2.8\%$) of parents with children under 6 years of age reported that their child participated in an early childhood program such as a nursery school, preschool, active program, or play group. One fifth ($20.9\% \pm 2.3\%$) of parents indicated that they had difficulty accessing one or more of the early childhood programs available in the city. The top four barriers to accessing these programs include: cost ($41.2\% \pm 6.1\%$), transportation ($26.0\% \pm 5.4\%$), hours of operation ($20.4\% \pm 5.0\%$), and location ($14.4\% \pm 4.4\%$).⁶⁸

Developmental Assistance

In 2004/2005, there were 24 children who were born in 2004 referred to First Words Preschool Speech and Language Program. This program strives to identify children with speech delays by their second birthday.⁸⁶

The Ottawa Carleton Headstart Association for Preschools (OCHAP) programs provide families with an opportunity to have their children assessed for speech and language problems. Services are targeted towards families with limited financial resources, newcomers and children with special needs. Between September 2001 and September 2002, 436 children were assessed and/or referred to early enrichment services.⁸⁷

Injuries

Since most injuries are predictable and preventable, childhood injuries have been identified as an important public health problem and childhood injury prevention has become a high priority issue. In 2004, more than 500 children in Ottawa aged 0 to 19 years sustained injuries serious enough to be hospitalized. Injuries, poisonings and certain other consequences of external causes were the second leading cause of hospitalization among males aged 0 to 9 and the top cause among males aged 10 to 19 years. Though lower among females, injuries, poisonings and certain other consequences of external causes were high in the leading causes of hospitalization for females less than 19 years of age (See *Overall Mortality and Morbidity Section*).

In 2004, the hospitalization rate for unintentional injuries for children aged 0 to 6 years in Ottawa was 210.2 per 100,000. Males aged 0 to 6 had a slightly higher (though not significantly) hospitalization rate of unintentional injuries at 245.6 per 100,000 than females aged 0 to 6 years at 173.8 per 100,000. Falls were the leading type of unintentional injury hospitalization from 1996 to 2004 in children aged 0 to 6 years. In 2004, the hospitalization rate for falls in males aged 0 to 6 years was 125.9 per 100,000 and in females aged 0 to 6 years was 85.3 per 100,000. Overall, the hospitalization rate for falls in children aged 0 to 6 was 105.9 per 100,000 in Ottawa in 2004. (See *Injury and Injury Prevention Section* for more information on the general population).

Asthma

In 2004, the leading cause of hospitalization in children aged 0 to 9 years was diseases of the respiratory system. Asthma is a respiratory disease with symptoms that include wheezing, cough, shortness of breath, as a result of airway inflammation and obstruction with mucous. Exercise, viral infection, temperature changes, chemicals, drugs, environmental allergens, and emotions can trigger asthma attacks.

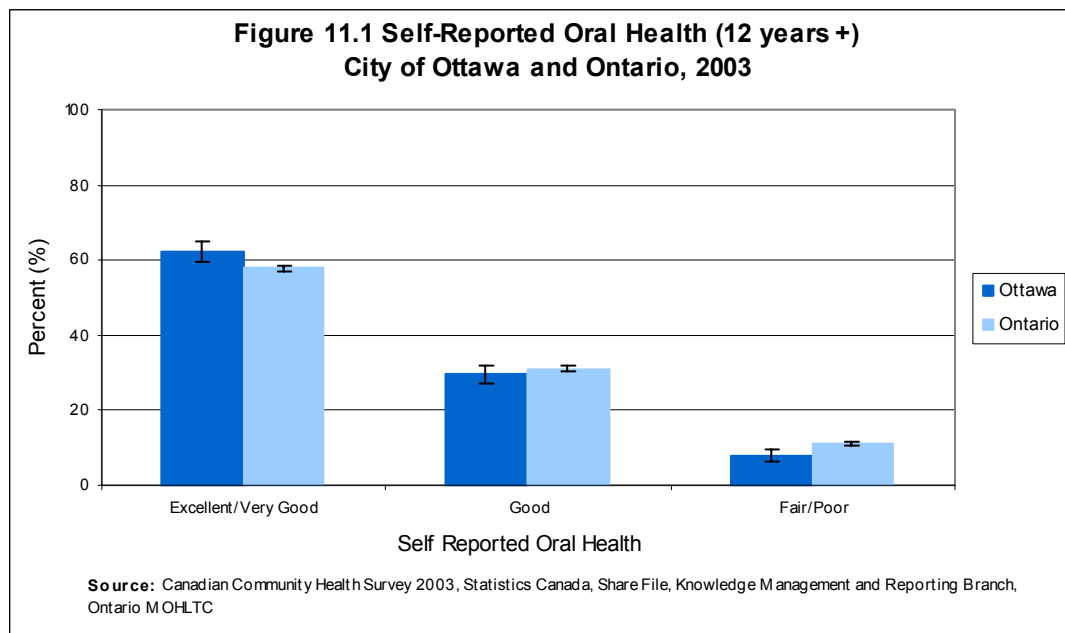
Asthma is one of the leading chronic conditions for children. Among infants and children aged 0 to 6 years, the crude hospitalization rates of asthma was significantly higher than the general population at 185.3 per 100,000 and significantly lower than Ontario. Crude hospitalization rates were significantly higher among male children aged 0 to 6 years (262.3 per 100,000) than female children (113.7 per 100,000) in 2004.

11. Oral Health

The Canadian Dental Association defines oral health as “a state of the oral and related tissues and structures that contribute positively to physical, mental and social well-being and the enjoyment of life’s possibilities, by allowing the individual to speak, eat and socialize unhindered by pain, discomfort or embarrassment”.⁸⁸

Self-Reported Oral Health

Self-reported oral health is a measure of a person’s perceived health of their teeth and mouth. In 2003, 62.4% ($\pm 2.8\%$) of Ottawa residents aged 12 years and older reported that the health of their teeth and mouth was excellent or very good.⁴¹ This is significantly higher than the percent of Ontario residents reporting excellent or very good oral health (57.8% $\pm 0.8\%$) (Figure 11.1).



Teeth Brushing

Proper oral care including teeth brushing can prevent the onset of tooth decay and gum disease. The Ontario Dental Association recommends properly brushing teeth at least twice each day, ideally after meals and before bed.⁸⁹

In 2003, 83.2% ($\pm 2.2\%$) of Ottawa residents reported that they brush their teeth twice or more each day and 16.1% ($\pm 2.1\%$) reported that they brush their teeth once per day. Females

(87.4% \pm 3.0%) were significantly more likely than males (78.8% \pm 3.3%) to report that they brush their teeth twice or more each day.

Dental Visits

The Ontario Dental Association recommends that frequency of dental visits be based on individual patient needs; however, a minimum of twice yearly visits are in the best interest of the oral health of the majority of patients in Ontario.⁸⁹

Visiting a dentist regularly is important to maintaining good oral health and can provide early identification of dental disease. Measuring dental visits can provide indication of the accessibility, availability and need for services in a population.⁹⁰ In 2003, 70.6% (\pm 2.5%) of Ottawa residents reported that they had visited a dentist in the past 12 months; 43.5% (\pm 3.1%) report that they usually visit the dentist more than once per year for check-ups; 33.3% (\pm 2.9%) visit the dentist once per year for check-ups; and 15.3% (\pm 2.0%) report that they usually visit the dentist for emergency care only.⁴¹

Dental Insurance

In 2003, 71.3% (\pm 2.8) of adults aged 12 and over in Ottawa reported that they have private, government, or employer-paid dental insurance that covers all or part of their dental expenses.⁴¹

Access to Service

In Ottawa, an integrated dental program is offered to improve the dental health of eligible children and adults at significant risk through improved access to dental services and emphasis on education and prevention. Current services include screening of children at risk in the school setting, referral to treatment services of children identified with urgent dental conditions, providing preventive dental care to low income families without insurance and providing or administering dental services to target groups. In 2005, the following was provided:

- screened 31,000 children in schools and referred 3,600 for follow-up dental care of which 2,300 children were in urgent need of dental care
- provided 2,500 dental visits related to denture assessments primarily for disabled and elderly clients
- provided 22,500 service visits to eligible Ontario Works recipients
- processed 12,300 claims for dental services from private dental offices.

12. Immunization

Childhood Immunizations

Ottawa Public Health monitors the immunization status of children attending licensed childcare facilities and schools in the City of Ottawa. Students attending school in Ontario are required to be immunized against diphtheria, tetanus, polio, measles, mumps, and rubella (German Measles) unless they have a valid exemption. For the 2004-2005 Ottawa school year, the immunization coverage rate was 92% at school entrance (age 5).

Since January 2005, the Ontario Ministry of Health provides meningococcal vaccine for youth 12 to 20 years of age to protect against invasive meningococcal disease (IMD). In 2005, Ottawa Public Health ran 11 free meningococcal meningitis vaccination clinics in the Ottawa area for children 12 years of age and youth 15-19 years of age.

Influenza Immunization

During the fall and winter of 2004-2005, approximately 460,000 doses of influenza vaccine were distributed to area physicians, hospitals, long term care and residential facilities, nursing service providers, emergency service workers and workplaces. A total of 32,700 people were immunized at 35 Ottawa Public Health community influenza clinics. Public Health Nurses from Ottawa Public Health's Street Health program immunized 948 people in the homeless shelters and different social outreach sites. These groups are particularly at risk for diseases.

The Ontario Ministry of Health aims to have at least 90% of residents and 70% of staff in hospitals and long term care homes immunized against influenza to help prevent outbreaks, hospitalizations and deaths among vulnerable populations. Residential, palliative care, psychiatric and other such group homes are also targeted for the same reason. The influenza vaccine is also recommended for health care workers and other personnel who have significant contact with people at high-risk for influenza.⁹¹ The known* influenza immunization rates for Ottawa's facilities in the fall of 2004 were:

- 95% of 4,000 residents and 77% of 5000 staff in 25 of 28 homes for the aged and nursing homes;
- 90% of approximately 2700 residents and 81% of approximately 1,700 staff in 33 of Ottawa's 54 retirement homes;

* Not all of the institutions reported their immunization rates

- 43% of approximately 18, 000 staff in 6 acute care hospitals.

As for the general population, 54.1% (\pm 4.7%) of Ottawa residents reported that they had received the influenza vaccine during the 2004-2005 influenza season. This is significantly higher than the 2001-2002 and 2002-2003 influenza seasons.⁹²

13. Communicable Disease

This section will report on communicable diseases that are designated reportable and communicable under the Health Protection and Promotion Act. Physicians, hospital operators, laboratory operators, school principals and child care facilities must report any person who may be infected with one of these diseases. Only the diseases that are most commonly reported are included in detail in this section. Unless otherwise specified, the data in this section were extracted from the Integrated Public Health Information System (iPHIS). West Nile virus and rabies will be discussed in the Environmental Health section.

It was once thought that communicable diseases were a problem of the past; however, morbidity and mortality from communicable disease remain an issue today. In recent years, there was a resurgence in diseases, such as syphilis, which had been dwindling. There is also a concern about emerging diseases such as SARS. Public health surveillance, case-finding and treatment, contact tracing, infection control, and immunization are all a part of managing communicable diseases. Public health goals related to communicable diseases are disease-specific and focus on reducing or eliminating the burden of these diseases in our community.

Table 13.1: Number and crude incidence rate of reported communicable disease cases and carriers, City of Ottawa, 2004

Rank	Disease	Number of Reported Cases	Incidence Rate (cases per 100,000)
1	Chlamydia	1326	160.01
2	Chickenpox*	981	118.38
3	Hepatitis C	311	37.53
4	Influenza	244	29.44
5	Campylobacter enteritis	219	26.43
6	Hepatitis B - Carriers	199	24.01
7	Gonorrhea	158	19.07
8	Salmonellosis	138	16.65
9	Giardiasis	134	16.17
10	HIV Infections	92	11.10
11	Streptococcus pneumoniae, Invasive	75	9.05
12	Amebiasis	68	8.21
13	Tuberculosis	47	5.67
14	Pertussis	44	5.31
15	Syphilis	40	4.83
16	Encephalitis/Meningitis	31	3.74
17	Streptococcal Infections, Group A Invasive	29	3.50
18	Shigellosis	20	2.41
19	Cryptosporidiosis	12	1.45

Rank	Disease	Number of Reported Cases	Incidence Rate (cases per 100,000)
20	Verotoxin-producing E. Coli infection (VTEC)	12	1.45
21	Malaria	11	1.33
22	Hepatitis A	9	1.09
23	Yersiniosis	8	0.97
24	Cyclospora	7	0.84
25	Hepatitis B - Cases	6	0.72
26	Meningococcal Meningitis	6	0.72
27	Typhoid Fever	5	0.60

Source: iPHIS, Ottawa Public Health, data extracted December 1, 2005

* The reported number for chicken pox is received as aggregate reports received from schools and child-care facilities

There were less than five new reported cases of the following diseases in 2004: AIDS, Group B neonatal streptococcal infections, listeriosis, paratyphoid fever, mumps, ophthalmia neonatorum, rubella, leprosy, brucellosis, Lyme disease, West Nile virus, and transmissible spongiform encephalopathy.

There were no reported cases of the following diseases in 2004: anthrax, hepatitis D, neonatal herpes, botulism, cholera, diphtheria, haemophilus influenzae b, measles, polio, rabies, congenital rubella, tetanus, legionella, psittacosis/ornithosis, Q fever, tularemia, and yellow fever.

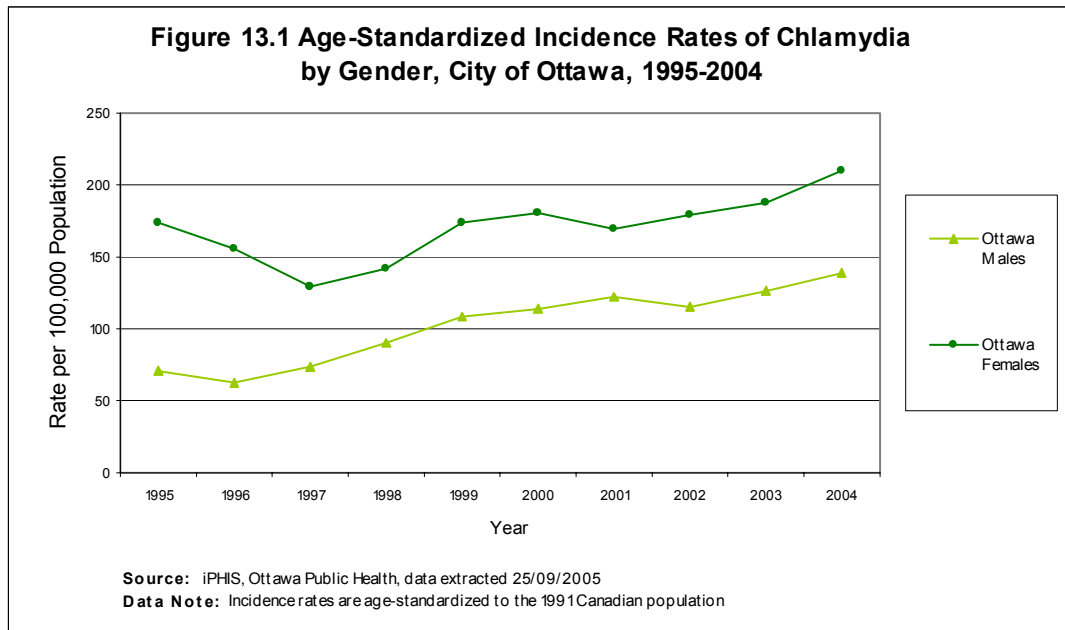
Sexually Transmitted Infections and Blood-borne Diseases

Sexually transmitted infections (STIs) are diseases that can be transmitted through sexual contact and other types of direct contact such as intra-venous drug use. The infectious agents are found in body fluids such as blood, semen, vaginal secretions, breast milk and saliva. This group of diseases accounts for the highest number of reported cases in the City of Ottawa and the rates are increasing over time.

Chlamydia

Chlamydia was the most commonly reported communicable disease in 2004. There was a significant increase in incidence rates of chlamydia for both genders from 1995 to 2004 (Figure 13.1). More than half (59.5%) of the 1,326 reported cases of chlamydia in 2004 were females. In 2004, young people aged 15 to 24 years comprised 61.8% of the reported chlamydia cases. A different pattern emerges by gender and age. Female cases predominate the cases reported among 15 to 24 year olds and males represent most of the cases in age groups over 25 years of age.

One of the goals of public health in Ontario is to reduce the incidence rate of chlamydia to 500 cases per 100,000 women aged 15 to 24 years by 2005.²⁵ Ottawa has not yet met this goal as the incidence rate of chlamydia in females aged 15 to 24 years was 1042.8 cases per 100,000 females aged 15 to 24 years in 2004.

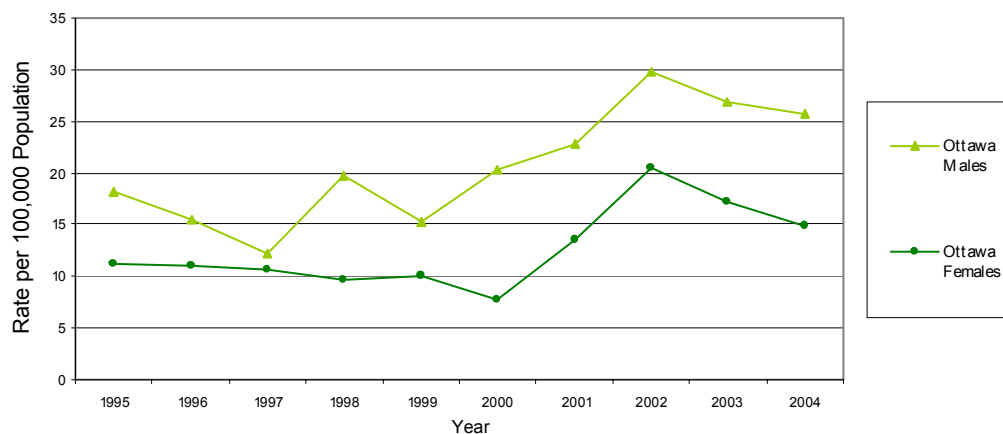


Gonorrhea

One of the goals of public health in Ontario is to reduce the incidence rate of gonorrhea to 15 cases per 100,000 population by 2005.²⁵ There was an upward trend in gonorrhea rates in Ottawa between 1995 and 2002 but it is difficult to determine whether this trend is continuing as rates were lower in 2003 and 2004. In 2004, the crude incidence rate of gonorrhea was 19.1 cases per 100,000 indicating that Ottawa has not yet met this Ontario public health goal (Figure 13.2).

The 2004 crude incidence rate for gonorrhea is significantly higher in males (25.08 cases per 100,000 population) than females (13.27 cases per 100,000 population). In 2004, young people aged 15 to 24 years comprised 51.9% of reported gonorrhea cases.

Figure 13.2 Age-Standardized Incidence Rates of Gonorrhea by Gender, City of Ottawa, 1995 - 2004



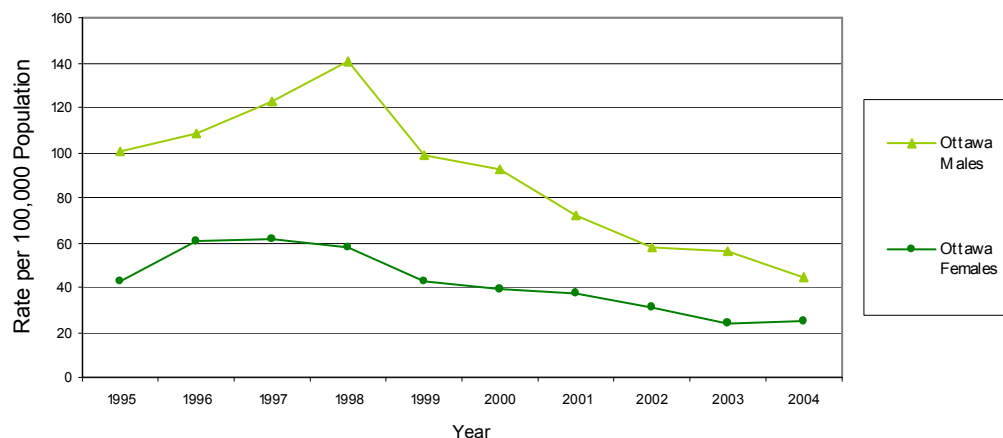
Source: iPHIS, Ottawa Public Health, data extracted 25/09/2005

Data Note: Incidence rates are age-standardized to the 1991 Canadian population

Hepatitis C

Incidence rates of hepatitis C were decreasing since 1998 for both genders. In 2004, the crude incidence rate for hepatitis C was significantly higher in males than females and males accounted for 64.3 % of all hepatitis C cases (Figure 13.3).

Figure 13.3 Age-Standardized Incidence Rates of Hepatitis C by Gender, City of Ottawa, 1995-2004



Source: iPHIS, Ottawa Public Health, data extracted 25/09/2005

Data Note: Incidence rates are age-standardized to the 1991 Canadian population

HIV

The incidence rate for HIV has remained relatively stable for both males and females since 1995. In 2004, the age-standardized incidence rate of HIV was 11.5 cases per 100,000 population. With the exception of the rates in 1996, males consistently have a significantly higher incidence rate of HIV than females.

From 2001 to 2003, more than half (54.9%) of new male HIV cases with known risk factors reported having sex with other men (MSM) and 18.4% were born in or had lived in countries that have been designated as endemic for HIV (HIV-endemic). From 2001 to 2003, the most frequently reported risk factor for females was originating from or previously residing in an HIV-endemic country (65.8%).

In 2001, the HIV/AIDS mortality rate in Ottawa was 4.28 deaths per 100,000 population.

Syphilis

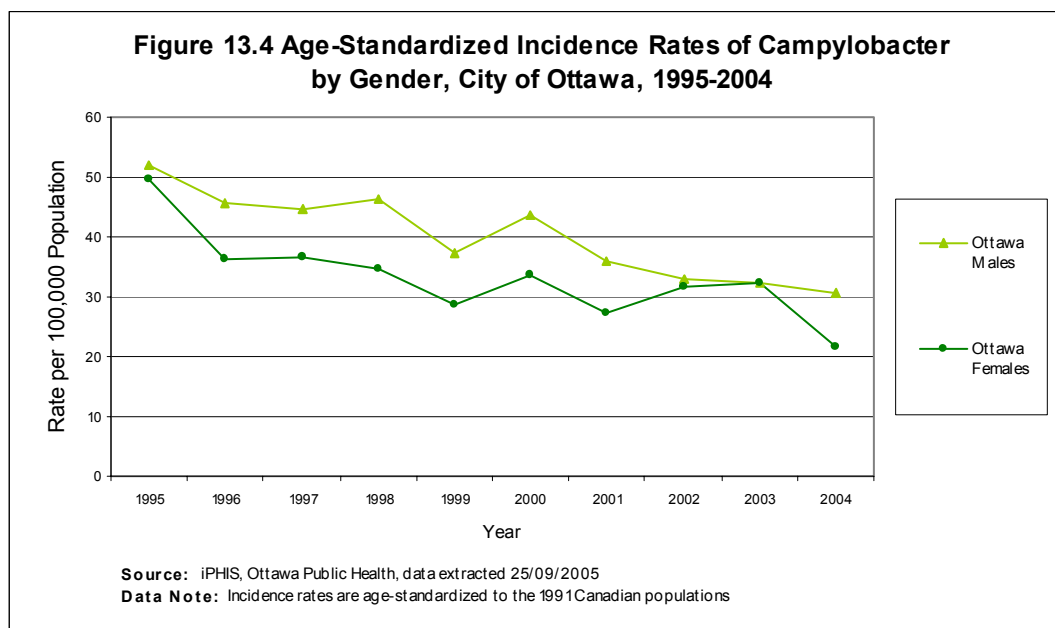
Since 2001, syphilis has re-emerged in Ottawa males. The incidence rate of infectious syphilis significantly increased five fold between 2001 (0.75 cases per 100,000 males) and 2004 (4.92 cases per 100,000 males). Among females, the crude incidence rate of syphilis remained lower than 1 case per 100,000 females from 1995 to 2004, which meets one of the Ontario public health goals.²⁵

Food-borne and Water-borne Enteric Diseases

Food-borne and water-borne enteric diseases are transmitted primarily through ingestion of contaminated food and water but can also be transmitted through direct or fecal-oral contact. In Ottawa, this group of diseases are reported second to STIs in frequency. The goal of public health is to reduce the incidence of water-borne illness and to improve the health of the population by reducing the incidence of food-borne illness.²⁵ The cases reported in this section represent sporadic cases of disease. There were no outbreaks associated with reportable enteric disease in 2004.

Campylobacter

Disease from campylobacter accounted for 34.4% of all enteric diseases and 5.3% of all communicable diseases reported in 2004. Crude incidence rates of campylobacter enteritis have decreased significantly from 1995 (50.86 cases per 100,000) to 2004 (26.43 cases per 100,000) (Figure 13.4). There is a seasonal trend to reports of campylobacter enteritis and the highest number of reports occurs in the summer months.



Salmonellosis

Crude incidence rates of salmonellosis have not changed significantly since 1995 (23.47 cases per 100,000); however, the highest crude incidence rate of salmonella since 1995, which occurred in 1998 (28.92 cases per 100,000), is significantly higher than the 2004 rate (16.65 cases per 100,000). There was no significant difference in male and female incidence rates of salmonellosis for 2004.

Giardiasis

There was a significant decrease in crude incidence rates of giardiasis between 1994 (35.01 cases per 100,000) and 2004 (16.17 cases per 100,000). There is not a significant difference between male and female incidence rates of giardiasis for 2004.

Diseases Prevented by Routine Immunizations

This section of the report will highlight diseases that are transmitted in a variety of ways but can be prevented by routine vaccination. Many of these diseases are rare in Ottawa due in large part to the success of routine vaccination programs.

Chicken Pox (Varicella)

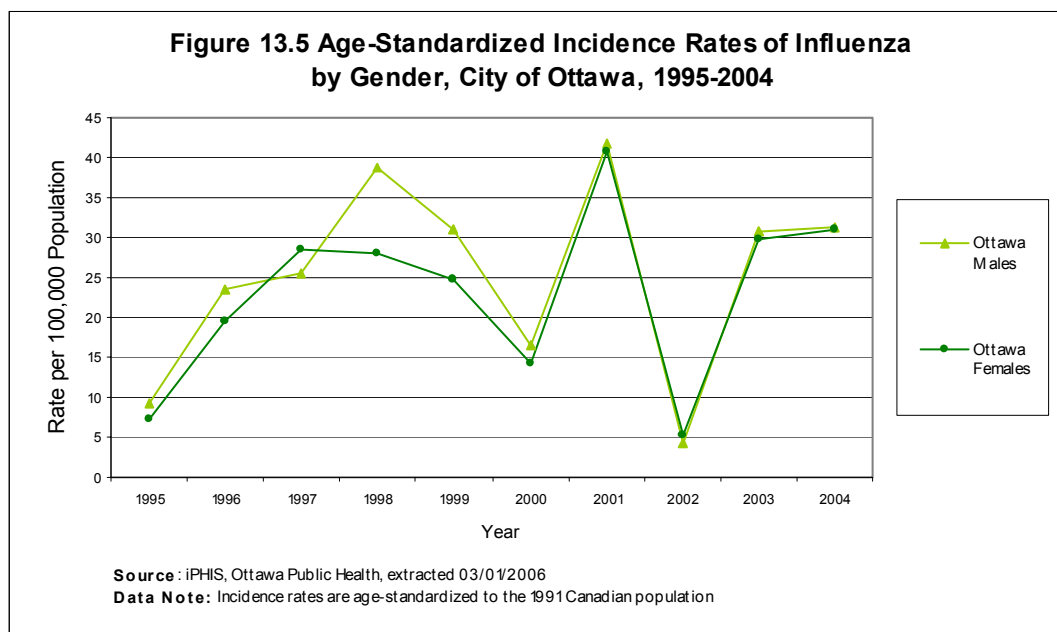
Chicken pox is the most frequently reported vaccine-preventable communicable disease. Reports of aggregate counts are received from schools and child-care institutions, which

provide a rough estimate of the burden of illness in the community at one time. A vaccine for chicken pox is now available in Ontario.

Influenza

Influenza is a seasonal respiratory disease and it is difficult to comment on trends in incidence rates as they can change significantly from year to year (Figure 13.5). Local influenza surveillance consists of the collection of laboratory-confirmed cases from the community but also includes reports of influenza outbreaks from long-term care facilities, hospitals, and childcare facilities (*See Outbreak Section*).

The data collected on sporadic community cases represent only a small proportion of all community influenza cases since relatively few affected individuals who seek medical attention are subsequently tested. The reported cases tend to over represent those individuals who are more likely to get tested such as the elderly and residents of long-term care facilities. Indeed, most of the positive laboratory tests (54.1%) from 2004 are from the over age 65 group.

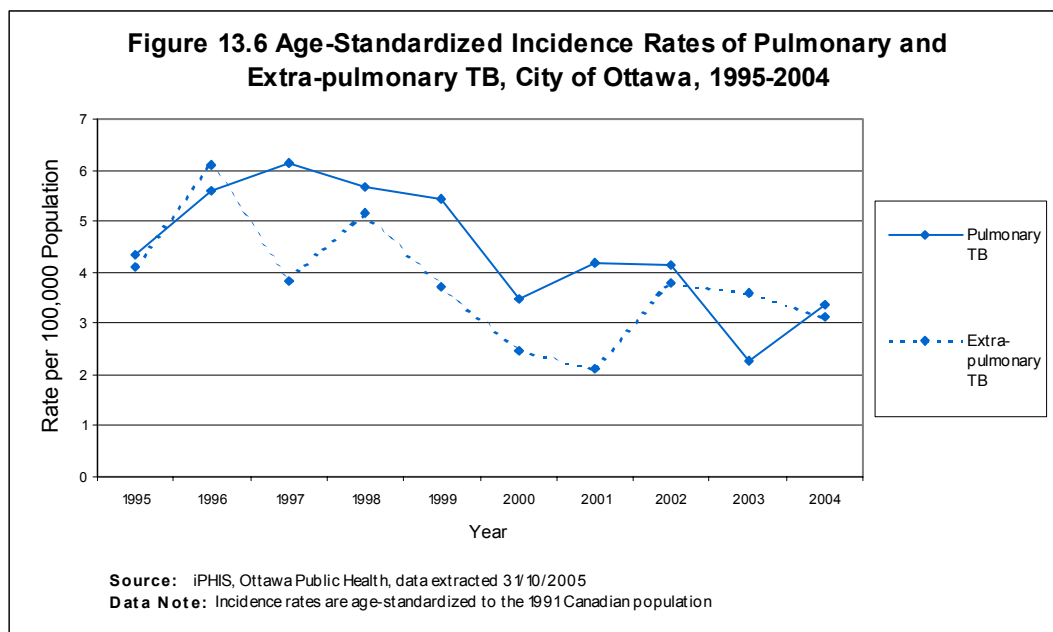


Tuberculosis

At the beginning of the 20th century, tuberculosis (TB) was one of the main causes of mortality and morbidity in Canada.⁹³ Although TB still exists in Ottawa today, it exists at much lower rates due to treatment, prevention, screening, and education strategies.

Tuberculosis typically affects the lungs (pulmonary TB), but the TB bacteria can travel through the blood to infect other parts of the body (extrapulmonary TB). Pulmonary TB accounted for approximately 50% of all TB cases in 2004 in Ottawa (3.26 cases per 100,000) (Figure 13.6). Tuberculosis is infectious when the affected person can produce sputum from an infected lung. Transmission of TB usually requires prolonged contact with a person infected with TB who is coughing or sneezing the bacteria into the air.

In Ottawa, crude incidence rates of all types of TB have decreased significantly since 1996 (11.58 cases per 100,000) and in 2004 the incidence rate was 5.67 cases per 100,000. Ottawa has not yet met the goal of reducing the incidence rate of TB to 3.5 cases per 100,000²⁵ however the rate is decreasing. In 2004, there was not a significant difference between incidence rates of TB in males and females. At present, deaths from TB in Ottawa are rare.



Tuberculosis remains an endemic disease in many countries and 87.5% of all TB cases in 2003 reported having travelled to or lived in a tuberculosis endemic country as a risk factor for transmission.

HIV coinfection with tuberculosis is a growing concern. In 2004, 7 of the 47 cases (14.9%) of tuberculosis in Ottawa occurred in individuals with HIV.

Outbreaks

An outbreak occurs when there is greater than expected incidence for a particular disease in a defined location. Ottawa Public Health investigates all potential respiratory and enteric outbreaks at long-term care residences, hospitals, day care centres, schools and other institutions. Investigations also occur for potential outbreaks reported from the community or those detected by routine communicable disease surveillance. Outbreak investigations can include case-finding, contact tracing, infection control, risk assessment, and immunization.

In 2004, there were 196 confirmed outbreaks in the City of Ottawa. This was double the number of confirmed outbreaks in the previous year (N= 95). There were 62 outbreaks related to respiratory infections and 134 outbreaks related to enteric infections (Table 13.2). Of the 25 respiratory outbreaks for which the organism was identified in 2004, 76% were influenza A and 4% were influenza B. Of the 20 enteric outbreaks for which the organism was identified, 45% were attributed to norovirus which is a non-reportable disease when it occurs sporadically within the community.

Table 13.2: Respiratory and Enteric Outbreaks by Location, City of Ottawa 2004

	Respiratory	Enteric
Total	62	134
Organism Identified	25	20
Location	Respiratory	Enteric
Childcare facility	0	65
Long-term care facility	56	48
Hospital	6	9
Other institution	0	2
Community	0	4
Other	0	6

Source: Surveillance Unit, Ottawa Public Health 2006

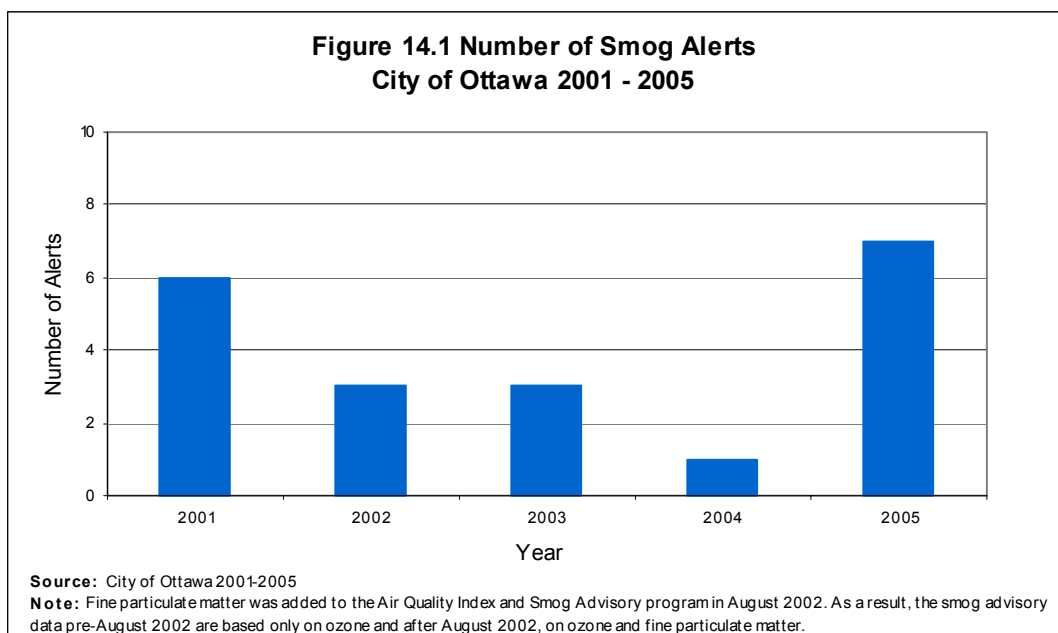
14. Environmental Health

Air and water quality, food safety, zoonotic diseases and extreme weather are environmental health indicators that are monitored regularly in order to protect and promote the health of everyone. This section will report on the impact of these environmental indicators on the health status of residents of Ottawa.

Air Quality

Air contaminants come from both natural and industrial sources and can be carried from far distances across borders and bodies of water. The most commonly measured air pollutants in Canada include ground level ozone, fine particulate matter, carbon monoxide, sulphur dioxide and nitrogen oxides.⁹⁴ In warm conditions, a mix of these airborne contaminants forms smog.

Smog can have adverse effects on human health and can cause damage or irritation to the heart and lungs. The impact of smog on health depends on several factors including the levels and types of airborne pollutants, the length of exposure, age and general state of health.



The Air Quality Index (AQI) is an indicator of air quality and is based on measurements of six key pollutants (ozone (O_3), fine particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2), and total reduced sulphur (TRS) compounds.⁹⁴ An AQI value below 32 indicates that air quality is relatively good and a range of 32 to 49 indicates moderate air quality. An index value over 49 indicates poor air quality and in this case, some

people may experience adverse health effects. If poor air quality is predicted over a period of time, a smog alert is issued. In 2005, seven smog alerts lasting a total of 25 days were issued in Ottawa (Figure 14.1).

Municipal Drinking Water

The public health goals for the safety of municipal drinking water are aimed at reducing the incidence of water-borne illness in the population and ensuring that community drinking water systems meet the health-related chemical, physical, microbiological and radionuclide objectives of the *Ontario Drinking Water Quality Standards* and the *Guidelines for Canadian Drinking Water Quality*.²⁵ The main source of drinking water in Ottawa is from the Ottawa River. The City of Ottawa operates two central water distribution systems (Britannia Water Purification Plant and Lemieux Island Water Purification Plant) to serve more than 750,000 residents. The City also operates four groundwater wells servicing residents in Vars, Carp, Munster Hamlet and part of the town of Richmond. All municipal water systems are regulated and the City of Ottawa is required by law under the *Safe Drinking Water Act* and the *Drinking Water Systems Regulation* to ensure that measures are taken to protect the quality of the drinking water. Water samples are routinely tested to ensure safety for consumers and Certificates of Approval are issued for each City owned and operated drinking water system meeting the requirements and health parameters for quality drinking water systems.

Since not all health parameters of drinking water quality can be described, four of the most common parameters are discussed below: trihalomethanes (THMs), coliforms, E.coli and fluoride.

Trihalomethanes are disinfection by-products. Since 2000, there were no days in which the level of THM's in municipal drinking water has exceeded the drinking water quality standard (THMs no greater than 0.10mg/L).

Fluoride is added to water to reduce tooth decay. Since 2000, there were 67 days in which the levels of fluoride were below the recommended range (0.50 – 1.50 mg/L). On these days, the fluoride feed system was shut down for maintenance purposes.

Coliform are a microbial indicator used to assess the bacteriological quality of drinking water. E.coli indicates faecal contamination and the possible presence of enteric pathogens in the water. Between 2000 and 2003, there were no confirmed reports of Total Coliforms or E-coli exceeding the drinking water quality standard (0 colonies per 100 mL water). However, in 2004 there were 20 days when total Coliforms and/or E-coli concentrations had exceeded the drinking water quality standard for a portion of the city. This was an isolated event, affecting approximately 35 homes within a 2-3-block radius that were on a temporary water service while

water main construction was taking place. The investigation of these positive bacteria results indicated the contamination was due to a fire hydrant that was supplying water to the homes in the affected area, and had been inadvertently broken during the construction work. There were no positive Total Coliform or E.coli levels in the rest of the City of Ottawa for 2004. Over the course of the investigation, there were no cases of illness reported as a result of the adverse drinking water results.

The responsibility to test the water in public-access buildings on a well system falls on the owner/operator of the building. Public Health is advised of any adverse result. If a parameter does not meet the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) of the Ontario Drinking Water Quality Standards (ODWQS), the Medical Officer of Health may issue a boil water advisory or a drinking water advisory for that building. As of December 2005, 24 boil water advisories were issued for these buildings in 2005 and 27 boil water advisories were issued in 2004.

Private Well Water

Approximately 50,000 private wells service residential dwellings, businesses, and places of public access such as community centres, libraries and churches in the City of Ottawa.

It is recommended that residents who get their tap water from private water wells should get their water tested at least three times a year. In 2001, only 16.0%* ($\pm 7.0\%$) of residents who get their tap water from private water wells reported that the well had been tested three or more times in the last year. Approximately one quarter of residents with private wells reported that the well had not been tested in the last year (22.6%* $\pm 8.0\%$) (Table 14.1).⁹⁵

Table 14.1 Frequency of Private Well Water Testing in Last 12 Months, City of Ottawa, 2001

Frequency of Testing	Percent (% \pm 95% CI)
Never	22.6* \pm 8.0%
Once or Twice	51.9 \pm 9.5%
Three or more times	16.0* \pm 7.0%
Don't Know	9.4* \pm 5.6

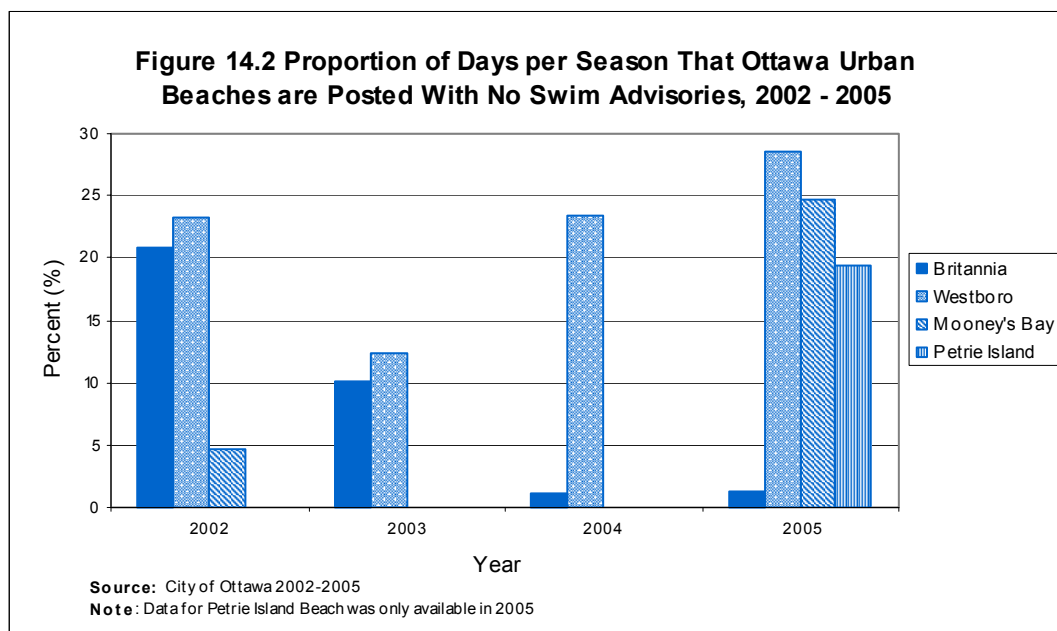
Source: Rapid Risk Factor Surveillance System 2001 (N=108); Ottawa Public Health 2006

*Interpret with caution – high sampling variability

Beaches

The goal of public health is to reduce communicable disease transmission from waters used for bathing at public beaches. In 2005, the City of Ottawa monitored four supervised beaches including Westboro Beach, Britannia Beach and Petrie Island on the Ottawa River and

Mooney's Bay Beach on the Rideau River, and twenty-two sampling points along the Ottawa and Rideau rivers. The supervised beaches were monitored at least 6 days a week for levels of bacteria (E.coli) in the water. Bacterial levels in beach water are influenced by rainfall, current, wind direction, presence of birds or other animals, and management of storm or other sewers. High levels of bacteria can cause gastrointestinal disease, skin rashes, and throat and ear infections.⁹⁶ A no-swim advisory is posted for a beach when either one of the followings is present: level of E.coli is greater than 100 E.coli colonies per 100 ml of water on 2 consecutive days; or greater than 200 E.coli colonies per 100 ml of water; or another health hazard is identified.



The water quality history at Ottawa's four supervised beaches varied between the beaches and across the years. Figure 14.2 shows a breakdown of the proportion of days per season that beaches were posted with no-swim advisories relative to the days the beaches were monitored. In 2005, Britannia beach had the lowest proportion of no-swim advisory posted days compared to Westboro beach which has been having the highest proportion of no-swim advisory posted days since 2002. Mooney's Bay had no swim advisory postings in 2003 and 2004 but had approximately one out of every four (24.5%) days in the 2005 beach season posted as no-swim advisories. Complete data on Petrie Island advisory postings were available only in 2005 when it had approximately one out of every five (19.5%) days in the 2005 beach season posted as no-swim advisories.

Food Safety

Ottawa Public Health performs public health inspections of all food premises in order to ensure that food is store, prepared, served and distributed in a manner consistent with accepted public health practice. Premises are designated as high (risk 1), medium (risk 2), or low risk (risk 3) according to the Ontario Ministry of Health *Hazard Analysis Critical Control Point Protocol* and are inspected accordingly. The risk levels are assigned based on the complexity of the menu and the type of food served and the vulnerability of the population served. The assignment of a higher risk level is based primarily on the above factors and is not a reflection on the sanitary conditions of a food premises.

In 2004, public health inspectors completed 7629 inspections of the 5555 premises that were registered at the end of the year. In total, 42% of (risk 1) premises received at least 3 inspections, 40% of (risk 2) premises had at least 2 inspections, and 52% of (risk 3) premises had 1 inspection. All complaints from the public resulted in a premise inspection. (See *Communicable Disease section for rates of food- and water-borne related communicable diseases*)

Rabies

Rabies is a viral disease that attacks the central nervous system and is fatal once symptoms appear. Rabies is transmitted to humans through the bite of an infected animal. Bats and skunks are the animals that most commonly test positive for rabies in Ontario. The number of rabid animals in Ottawa is low. Of the animals tested for rabies, only five tested positive in 2004 in the City of Ottawa. After exposure to a known or suspected rabid animal, ninety-eight people were given rabies prophylaxis in Ottawa in 2004. The goal of public health is to prevent the occurrence of rabies in humans. There were no human case of rabies in over 35 years in Ottawa.

Animal Immunization

In 2004, 84.1% ($\pm 4.4\%$) of households with dogs reported that all dogs in the household had been vaccinated against rabies in the past 12 months and 63.0% ($\pm 5.9\%$) of households with cats reported that all cats in the household were vaccinated against rabies in the past 12 months.⁹⁷

West Nile Virus

West Nile virus is a new reportable disease in Canada. It is a viral disease that can infect humans through a bite from an infected mosquito. Approximately 80% of people infected with

WNV do not show any symptoms. The first case of West Nile virus was reported to Ottawa Public Health in 2003 and there were a total of 8 cases since that first report. In order to determine the presence of West Nile Virus in the community, the City of Ottawa tests dead birds such as crows, ravens, and blue jays and mosquitoes. There were 6 birds that tested positive for WNV in 2004 and 6 birds that tested positive in 2005. The province requests that birds not be submitted after 4 to 6 have tested positive in any local health unit since it is confirmed that WNV exists in the health unit at that point.

Extreme Weather

Cold

Ottawa is one of the coldest capitals in the world. Cold winter temperatures together with wind, snow and ice can lead to injuries and even death. Extreme cold weather means that unprotected skin can quickly freeze outside causing frostbite. There is also an increased risk of hypothermia for people who stay outside for long periods of time without adequate protection. Populations particularly vulnerable to cold weather include the homeless, seniors, children and infants, outdoor workers, sports enthusiasts, and those persons with certain medical conditions.⁹⁸

Warnings are issued for people when extra caution should be taken against cold weather. A frostbite alert goes into effect when Environment Canada forecasts a wind chill of –25 or lower and a frostbite warning is issued when a wind chill of –35 or lower is forecasted. During the 2004-2005 winter, 5 frostbite alerts lasting a total of 8 days and 2 frostbite warnings lasting a total of 4 days were issued for Ottawa. The 2003-2004 winter was colder with 11 frostbite alerts and 8 frostbite warnings issued for Ottawa.

Heat

Temperatures and humidity can be high in the summer months in Ottawa . The combination of heat and a lack of protective factors can lead to serious health effects, illness, and even death for those who are susceptible. People who are susceptible include seniors, young children, people who are not acclimatized, people with chronic diseases and those taking certain medications.⁹⁹

A heat alert is issued for the City when Environment Canada forecasts a humidex of 36 or higher for at least 2 consecutive days. A heat warning is issued when the humidex is forecasted to be 40 or higher for at least 2 consecutive days. The summer of 2005 was very hot. Five heat alerts were issued lasting a total 13 days and 5 heat warnings were issued lasting a total of 12 days.

References

1. Population Estimates 2005, Provincial Health Planning Database (PHPDB) Extracted: January 23, 2006 Health Planning Branch, Ontario Ministry of Health and Long-Term Care (MOHLTC).
2. City of Ottawa. Ottawa Counts, Vol.3, Ottawa Facts and Research, 2003. http://www.ottawa.ca/city_services/planningzoning/facts/data_handbook/index_en.shtml Accessed: February 1, 2006.
3. City of Ottawa. Where We Are Going, Projected Population By Ward, 2001-2009. Ottawa Facts, Data Handbook 2004. http://www.ottawa.ca/city_services/planningzoning/facts/data_handbook/where_we_going/table_49_en.shtml Accessed: February 1, 2006.
4. Statistics Canada. 2001 Census data. <http://www.statcan.ca> Accessed: January 20, 2006.
5. Statistics Canada, The Daily. Crime Statistics 2004. [Released July 24, 2005]. Accessed: February 15, 2006.
6. Statistics Canada, The Daily. Crime Statistics 2003. [Released July 28, 2004]. Accessed: February 15, 2006.
7. Federation of Canadian Municipalities . Domains and Indicators: Personal Safety: PS1 Young Offenders 2004. http://www.fcm.ca/english/qol/2004IndicatorTables/PS1_YoungOffenders_Qolrs.xls Accessed: November 8, 2005.
8. Raphael D. Social Determinants of Health, Canadian Perspectives. Canadian Scholars Press, 2004.
9. Marmot MG, Wilkinson RG. Social determinants of health. Oxford: Oxford University Press, 1999.
10. Statistics Canada. Statistical Report on the Health of Canadians, chapter 6, p.40. 1999. www.statcan.ca
11. Statistics Canada. Economic Family: Definition. <http://www.statcan.ca/english/concepts/definitions/eco-family.htm> Accessed: February 10, 2006.
12. Statistics Canada. Health Indicators. [Catalogue no 82-221-XIE]. 2003.
13. Statistics Canada. Labour Force Characteristics. <http://www40.statcan.ca/l01/cst01/lfss04d.htm> Accessed: February 10, 2006.
14. Direct Communication - Ottawa Housing Branch. Communicated: January 12, 2006.

15. Success by 6. "Report Card to the Community" 2003. Supporting Parents.
<http://successby6ottawa.ca/rc/suppar.htm> Accessed: February 1, 2006.
16. Food Security in Ottawa: A Community Profile, March 2001.
<http://www.perc.ca/library/resources/food/food-security/index.en.html> Accessed:
November, 26, 2005.
17. Kalina L. Building Food Security in Canada. A Community Guide for Action on Hunger.
Canadian Cataloguing in Publishing Data. Kamloops. 1993.
18. Public Health Agency of Canada. The Social Determinants of Health: An Overview of the
Implications for Policy and the Role of the Health Sector.
http://www.phac-aspc.gc.ca/ph-sp/phdd/overview_implications/01_overview Accessed:
February 1, 2006.
19. Success by 6. Special Report: Child Hunger in Ottawa.2003.
<http://www.successby6ottawa.ca/rc/hunger.htm> Accessed: February 1, 2006.
20. The Food Bank. <http://www.theottawafoodbank.ca> Accessed: February 10, 2006.
21. Successful Aging Ottawa: 2004 Seniors Survey, Report of Results. Social Data
Research Ltd. Released: June 16,2005.
22. Shadbolt S. Some correlates of self-rated health for Australian women. American
Journal of Public Health 1997; 87(6):951-956.
23. DeSalvo KB, Fan VS, Fan VS, MCDonell M.D, Fihn SD. Predicting Mortality and
Healthcare Utilization with a Single Question . Health Services Research 2005;
40(4):1234-1246.
24. Rapid Risk Factor Surveillance System (RRFSS) - January 2001 to December 2005,
date extracted (February 2006).
25. Ontario Ministry of Health and Long-Term Care, Public Health Branch. Mandatory Health
Programs and Services Guidelines. Toronto, Ontario, Queen's Printer for Ontario.1997.
26. Last JM, Spasoff RA, International Epidemiological Association. A dictionary of
epidemiology. 4th ed ed. Oxford: Oxford University Press, 2001.
27. Statistics Canada. Deaths 2003. [Catalogue no. 84F0211XIE].
28. Public Health Agency of Canada. Perinatal Health Indicators for Canada.
<http://www.phac-aspc.gc.ca/rhs-ssg/phic-ispc/pdf/indperie.pdf> Accessed: February 27,
2006.
29. Shah C. Public Health and Preventive Medicine in Canada. 5 ed. Toronto: Elsevier,
2003.

30. Chronic Disease Prevention Alliance of Canada (CDPAC).
http://www.chronicdiseaseprevention.ca/content/case_for_change/case_for_change.asp
Accessed: January 16, 2006.
31. Public Health Agency of Canada, Centre for Chronic Disease Prevention and Control.
Cancer. http://www.phac-aspc.gc.ca/ccdpc-cpcmc/cancer/index_e.html Accessed:
October 10, 2005.
32. Public Health Agency of Canada. Lung Cancer. Centre for Chronic Disease Prevention
and Control. http://www.phac-aspc.gc.ca/ccdpc-cpcmc/cancer/publications/lung_e.html
Accessed: October 12, 2005.
33. Public Health Agency of Canada. It's Your Health: Screening for Colorectal Cancer.
http://www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/colorectal_e.html Accessed: October
12, 2005.
34. Cancer Care Ontario. Focus on Colorectal Cancer in Ontario.
<http://www.cancercare.on.ca/documents/ClinicalFocusColorectal.pdf> Accessed: October
14, 2005.
35. Canadian Cancer Society. Screening For Colorectal Cancer -.
[http://www.cancer.ca/ccs/internet/standard/0,3182,3543_10175_74549480_langId-
en,00.html](http://www.cancer.ca/ccs/internet/standard/0,3182,3543_10175_74549480_langId-en,00.html) Accessed: February 17, 2006.
36. Rapid Risk Factor Surveillance System (RRFSS) - January to December 2005, date
extracted (February 2006).
37. Public Health Agency of Canada. It's Your Health: Preventing Skin Cancer.
http://www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/cancer_e.html Accessed: October 12,
2005.
38. Cancer Care Ontario. Cancer Incidence and Mortality in Ontario, 1964 – 2002: Malignant
Melanoma of Skin (ICD9 172). http://www.cancercare.on.ca/index_statisticsSkin.htm
Accessed: October 12, 2005.
39. Levy I. Trends in incidence and mortality of prostate cancer in Canada. Chronic
Diseases In Canada 1995; 16(1):S2-S6.
40. Cancer Care Ontario. Prostate Cancer Mortality Declining.
<http://www.cancercare.on.ca/documents/CF-Sept2004-prostatemortdeclining.pdf>
Accessed: December 20, 2005.
41. Statistics Canada. Canadian Community Health Survey (CCHS) 2003, Share File,
Knowledge Management and Reporting Branch, Ontario MOHLTC.
42. Public Health Agency of Canada. It's Your Health: Breast Cancer. [http://www.hc-
sc.gc.ca/iyh-vsv/diseases-maladies/breast-sein_e.html](http://www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/breast-sein_e.html) Accessed October 12, 2005

43. Public Health Agency of Canada. Breast Cancer in Canada. http://www.phac-aspc.gc.ca/publicat/updates/breast-99_e.html Accessed: October 10, 2005
44. Canadian Cancer Society. Mammography. <http://www.cancer.ca> Accessed: November 17, 2005.
45. Public Health Agency of Canada. It's Your Health: Screening for Cervical Cancer. http://www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/cervical-uterus_e.html Accessed: October 12, 2005.
46. Canadian Cancer Society. What Causes Cervical Cancer? http://www.cancer.ca/ccs/internet/standard/0,3182,3543_10175_275935_langId-en,00.html Accessed: January 16, 2006.
47. McLachlin CM, Mai V, Murphy J, Fung Kee Fung M, Chambers A. Cervical Screening: A Clinical Practice Guideline. Members of the Cervical Screening Guidelines Development Committee of the Ontario Cervical Screening Program and the Gynecology Cancer Disease Site Group of Cancer Care Ontario. May 20, 2005.
48. Public Health Agency of Canada- Centre for Chronic Disease Prevention and Control. Cardiovascular Disease. http://www.phac-aspc.gc.ca/ccdpc-cpcmc/cvd-mcv/index_e.html Accessed: January 19, 2006.
49. Stephens M, Siroonian J. *Smoking prevalence, quit attempts and successes*. Health Reports 1998; 9:31-37.
50. Health Canada. Smoking and Your Body. http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/body-corps/index_e.html Accessed: April 4, 2006
51. University of Waterloo O, Centre for Behavioural Research and Program Evaluation. The School Health Action Planning & Evaluation System (SHAPES) survey (2003 and 2005).
52. Ontario Ministry of Health and Long-Term Care, Chief Medical Officer of Health Report. Healthy Weights, Healthy Lives. Toronto: Queens Printer for Ontario. 2004.
53. Canadian Institute for Health Information. Improving the Health of Canadians: Promoting Healthy Weights. 2006.
54. Cancer Care Ontario, Canadian Cancer Society. Targeting Cancer - An Action Plan for Cancer Prevention and Detection - Cancer 2020 (Background Report). May 2003.
55. Maureen F. Kennedy. Moving our children to health: Active play every day. Canadian Family Physician. <http://www.cfpc.ca/cfp/2004/Apr/vol50-apr-fpwatch-4.asp> Accessed: May 1, 2006.
56. A collaborative statement from Dietitians of Canada, Canadian Paediatric Society, The College of Family Physicians of Canada, Community Health Nurses Association of Canada. The Use of Growth Charts for Assessing and Monitoring Growth in Canadian Infants and Children. Can J Diet Prac Res 2004; 65:22-32.

57. Ontario Ministry of Health Promotion .Active 2010 - Ontario's Sport and Physical Activity Strategy. 2005.
58. Public Health Agency of Canada. Research Layer - Key Benefits of Physical Activity. http://www.phac-aspc.gc.ca/pau-uap/fitness/work/res_layer3_e.html Accessed: April 1, 2006.
59. Public Health Agency of Canada and the Canadian Society for Exercise Pysiology. Canadian Physical Activity Guide to Healthy Active Living. <http://www.phac-aspc.gc.ca/pau-uap/paguide/> Accessed: April 1, 2006.
60. Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ) - Short Form, Version 2.0 (April 2005).
61. Rapid Risk Factor Surveillance System (RRFSS) - January 2003 to December 2005, date extracted (February 2006).
62. Statistics Canada. Canadian Community Health Survey (CCHS) 2001, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC.
63. Public Health Agency of Canada. What is Active Transportation? Physical Activity Unit. http://www.phac-aspc.gc.ca/pau-uap/fitness/active_trans.htm Accessed: October 17, 2005.
64. Public Health Agency of Canada. Canada's Food Guide to Healthy Eating. http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html Accessed: April 1, 2006.
65. Eat Smart! Ontario's Healthy Restaurant Program. <http://eatsmart.web.ca> Accessed: October 25, 2005.
66. Cancer Care Ontario. *Ontario Cancer Facts*. http://www.cancercare.on.ca/index_cancerfactSkinCancerCommon.htm Accessed: April 20, 2006.
67. Cancer Care Ontario. Probing the Sun's Rays for Skin Cancer Links. http://www.cancer.ca/ccs/internet/standard/0,3182,3543_14075_110332037_langId-en,00.html Accessed: April 20, 2006.
68. Flett Consulting Group, Social Data Research Ltd. A profile of Ottawa Families and Young Children - 2001 City of Ottawa Parenting Survey - Final Report . 2006.
69. Rapid Risk Factor Surveillance System (RRFSS) - May to September 2001-2004, date extracted (February 2006).
70. Public Health Agency of Canada, Division of Aging and Seniors. Report on Seniors Falls in Canada. [Catalogue no HP25-1/20005E]. Minister of Public Works and Government Services Canada, 2005.

71. Health Canada and Road Safety TC. Road Safety in Canada - An Overview, Injury Surveillance Canada - March 2004.
<http://www.tc.gc.ca/roadsafety/stats/overview/2004/menu.htm> Accessed: April 1, 2006.
72. Transport Canada, Road Safety. Pedestrian Fatalities and Injuries (1992-2001).
<http://www.tc.gc.ca/roadsafety/tp2436/rs200401/menu.htm> Accessed: February 1, 2006.
73. Centres for Disease Prevention and Control, National Centre for Injury Prevention and Control. Suicide Fact Sheet. <http://www.cdc.gov/ncipc/factsheets/suifacts.htm> Accessed: February 1, 2006.
74. Ontario Government. Highway Traffic Act 106: Definition, "seat belt assembly".
http://www.elaws.gov.on.ca/DBLaws/Statutes/English/90h08_e.htm#BK150 Accessed: November 25, 2005.
75. Transport Canada Road Safety. Cell Phones and Driving: Safety Tips.
<http://www.tc.gc.ca/roadsafety/tp2436/rs200106/tips.htm> Accessed: February 2, 2006.
76. Ontario Government. Highway Traffic Act 104 2.1: Bicycle Helmets. http://www.elaws.gov.on.ca/DBLaws/Statutes/English/90h08_e.htm#BK150 Accessed: February 2, 2006.
77. Berkowitz GS, Papiernik E. Epidemiology of preterm birth. [Review] [271 refs].
Epidemiologic Reviews 1993; 15(2):414-443.
78. Perinatal Partnership Program of Eastern and Southern Ontario (PPESO). Niday Database (2001 - 2004).
79. Canadian Institute for Health Information. Giving Birth in Canada, A Regional Profile. 2004.
80. Health Canada. Canadian Perinatal Health Report. 2003. Minister of Public Works and Government Services Canada, Ottawa. <http://www.hc-sc.gc.ca/pphb-dgspsp/rhs-ssg/index.html> Accessed: February 1, 2006.
81. Ottawa Public Health. Birth to Six - Parenting Young Children.
http://www.ottawa.ca/residents/health/families/birth_6/index_en.html . Accessed: April 6, 2006.
82. City of Ottawa. Infant Care Survey, Family Health, Community Services.2000.
83. City of Ottawa, Ottawa Public Health. Infant Care Survey 2005.
84. Success by 6. "6 Years of Working Together for Children in Ottawa" 1999 to 2005.
<http://successby6ottawa.ca> Accessed: April 10, 2006.
85. Direct communication with Children Aid Society (CAS) staff. Communicated: October 19, 2005.

86. Direct communication with staff of First Words and Infant Hearing Program-Ottawa. Communicated: November 25, 2005.
87. Direct communication with Ottawa Carleton Headstart Association for Preschoolers (OCHAP). Communicated: October 18, 2005.
88. Canadian Dental Association. Oral Health. http://www.cda-adc.ca/en/oral_health/index.asp Accessed October 14, 2005.
89. Ontario Dental Association. Preventive Dentistry: How to Make Your Smile Last. http://www.oda.on.ca/pub_443.asp Accessed October 14, 2005.
90. Association of Public Health Epidemiologists of Ontario. Dental Health Data. <http://www.apheo.on.ca/indicators/index.html> Accessed: February 12, 2006.
91. Health Canada. National Advisory Committee on Immunization. Canadian Immunization Guide. 6 ed. Ottawa: 2002.
92. Rapid Risk Factor Surveillance System (RRFSS) - January to April 2005, date extracted (February 2006).
93. The Canadian Lung Association. Tuberculosis in Canada and the World. 2006. http://www.lung.ca/diseases-maladies/tuberculosis-tuberculose/world-monde/index_e.php Accessed: April 25, 2006.
94. Health Canada, Environmental and Workplace Health. A Health-based National Air Quality Index. http://www.hc-sc.gc.ca/ewh-semt/air/out-ext/air_quality_e.html Accessed April 2, 2006.
95. Rapid Risk Factor Surveillance System (RRFSS) - April 2001 to December 2001, date extracted (December 2005).
96. Health Canada. Environmental and Workplace Health. Recreational Water Quality. http://www.hc-sc.gc.ca/ewh-semt/water-eau/recreat/recreat_water-recreatives_e.html Accessed: February 3, 2006.
97. Rapid Risk Factor Surveillance System (RRFSS) -January to December-2004, date extracted (February 2006).
98. Ottawa Public Health, Healthy Environments, Environmental Issues. Cold Weather. http://www.ottawa.ca/residents/health/environments/issues/cold/letter_en.html Accessed: February 15, 2006.
99. Ottawa Public Health, Healthy Environments, Environmental Issues. Hot Weather. http://www.ottawa.ca/residents/health/environments/issues/hot/heat_alert_en.html Accessed: February 15, 2006.

Appendices

A. Acronyms

Acronym	Description
AIDS	Acquired Immunodeficiency Syndrome
AQI	Air Quality Index
BMI	Body Mass Index
CAS	Children's Aid Society
CCHS	Canadian Community Health Survey
CCO	Cancer Care Ontario
CIHI	Canadian Institute for Health Information
COPD	Chronic Obstructive Pulmonary Disease
CV	Cerebrovascular Disease
HALE	Health Adjusted Life Expectancy
HELPS	Health Planning System
HIV Virus	Human Immunodeficiency Virus
ICD	International Classification of Diseases
IHD	Ischaemic Heart Disease
IMAC	Interim Maximum Acceptable Concentration
IMD	Invasive Meningococcal Disease
IPAQ	International Physical Activity Questionnaire
IPHIS	Integrated Public Health Information System
MAC	Maximum Acceptable Concentration
METs	Metabolic Equivalent
MHSPG	Mandatory Health Services and Programs Guidelines
MOHLTC	Ministry of Health and Long-Term Care
MSM	Men who have sex with other men
MVTC	Motor Vehicle Traffic Collisions
OBSP	Ontario Breast Screening Program
OCHAP	Ottawa Carleton Headstart Association for Preschools
ODWQS	Ontario Drinking Water Quality Standards
Pap Test	A screening test for cervical cancer named after George Papanicolaou
PHPDB	Ontario Provincial Health Planning Database
PPESO	Niday Perinatal Database of the Perinatal Partnership Program of Eastern and Southeastern Ontario
PSA	Prostate-specific antigen
PYLL	Potential Years of Life Lost
RRFSS	Rapid Risk Factor Surveillance System
SHAPES	School Health Action Planning and Evaluation System

Acronym	Description
SHR	Standardized Hospitalization Ratio
SIDS	Sudden Infant Death Syndrome
SMR	Standardized Mortality Ratio
STI	Sexually Transmitted Infection
TB	Tuberculosis
THM	Trihalomethanes
VPD	Vaccine Preventable Disease
WNV	West Nile Virus

B. Glossary of Terms

Term	Definition
Abortion rate	The number of abortions per 1,000 females aged 15 to 49 years in a given time period
Age-Specific Rate	The rate for a specified age group. The numerator and denominator refer to the same age group. (Last, 2001)
Age-Standardized Rate	An age-standardized rate is formed by weighting age-specific rates according to the age distribution of the population to which they are to be generalized (Kelsey, 1996) The age-standardized rate is not the actual rate (crude rate) in the population but a derived rate that is used for comparison with another population that might have a different age distribution
Air Quality Index (AQI)	The Air Quality Index is an indicator of air quality and is based on measurements of six key pollutants (ozone (O ₃), fine particulate matter (PM _{2.5}), nitrogen dioxide (NO ₂), carbon monoxide (CO), sulphur dioxide (SO ₂), and total reduced sulphur (TRS) compounds
Birth rate	The number of live births in a given population in a given time period usually per year
Confidence interval (CI)	The interval within which the true value of a variable such as a mean, proportion, or rate is contained (Last 2001). This is calculated to a 95% probability in this report
Crude Rate	A crude rate is the number of events occurring in a specified population per year. This rate reflects the actual rate in the population under study but it should not be used for making comparisons between different populations when the age, race, and sex distributions of the populations are different
Fertility rate or General Fertility Rate (GFR)	The general fertility rate is the ratio of the number of live births during a given period to the total number of females aged 15-49 in the population. This differs from the crude birth rate as the denominator is restricted by the number of women of childbearing age (Last, 2001)
Health Adjusted Life Expectancy (HALE)	The health adjusted life expectancy represents the number of expected years lived in full health, based on the current health status of the population
High Birth Weight Rate	The number of live births weighing more than 4,000 grams at time of delivery per 1,000 live births in a given time period
Hospitalization Rate	The number of hospitalizations in a given year divided by the number of people within that population. In this report, the hospitalization rate is comprised of inpatient data only and does not include day procedures
Humidex	A calculation combining air temperature and relative humidity given in degrees Celsius. It represents the heating effect felt due to a lack of body moisture evaporation
Immunization Coverage Rate	The number of people immunized against a specific disease divided by the number of people eligible to be immunized against a specific disease
Incidence	The total number of new cases of a selected disease or condition in a defined time period in a defined population
Incidence Rate	The incidence rate is the total number of new cases of a selected disease or condition relative to the total number of people at risk in the population in a defined time period

Term	Definition
Infant Mortality Rate	The ratio of the number of deaths of live born infants less than one year of age, during a calendar year per 1,000 live births in the same calendar year
International Classification of Diseases (ICD)	The ICD is the international standard diagnostic classification system for all general epidemiological and many health management purposes. It is used to classify diseases and other types of health problems. The current version is ICD-10 that was endorsed by the World Health Organization in 1990 and came into use by the WHO member states in 1994 (WHO). In Canada, there is a subset of the international system known as ICD 10-CA
Live births	The term 'live' refers to the birth of a baby who breathes or shows other signs of life at the time of delivery, even if the infant dies shortly after birth
Low birth weight rate	The number of live births weighing less than 2,500 grams at the time of delivery per 1000 live births in a given time period
Low Income	Percentage of economic families or unattached individuals who spend 20% or more than average on food, shelter and clothing
Low Income Cut-Off (LICO)	For 2004, the 1992 based before-tax Low Income Cut-off (LICO) in an urban community with a population of over 500,000 ranged from \$20,337 for one person to \$37,791 for a family of four
Mandatory Health Services Program Guidelines (MHSPG)	The Ontario Ministry of Health and Long-term Care publish these guidelines as minimum requirements for fundamental public health programs and services targeted at prevention of disease, health promotion and health protection
MET minutes	METs are multiples of the resting metabolic rate. A MET-minute is computed by multiplying the MET score of an activity by the minutes performed. MET-minute scores are equivalent to kilocalories for a 60 kilogram person. One measure of the volume of activity can be computed by weighting each type of activity by its energy requirements defined in METs to yield a score in MET-minutes
Morbidity	Morbidity refers to any departure from health or well-being, but often refers to the state of illness, disease or injury in a population (Last, 2001)
Mortality Rate	The mortality rate is the total number of deaths in a population divided by the total population in a given time period. The mortality rate can be specific for diseases, events, age groups, gender, etc
Moving Average	A method of smoothing irregularities in trend data. Graphical display of 3-year moving averages makes it easier to discern long-term trends in rates that otherwise might be obscured by short-term fluctuations (Last, 2001)
Outbreak	An outbreak occurs when there is greater than expected incidence for a particular communicable disease in a defined location
Perinatal mortality rate	The total number of deaths of a fetus or infant between the end of the 20th week gestation and the end of the 6th day of life in a calendar year per 1,000 total births (live and still) in the same calendar year
Physical Activity Index	The Physical Activity Index is calculated as the sum of the average daily energy expenditures of all leisure time activities. Individuals are classified as follows: 3.0kcal/kg/day or more = physically active; 1.5 - 2.9 kcal/kg/day = moderately active; less than 1.5 kcal/kg/day = inactive

Term	Definition
Potential Years of Life Lost (PYLL)	Potential years of life lost (PYLL) are a measure of premature mortality. This measure represents the number of years not lived by an individual from birth who died before age 75 and gives more importance to the cause of early death than those at old age
Preterm birth rate	The total number of live births at less than 37 completed weeks of gestation per 1,000 live births
Prevalence	The number of events, e.g. instances of a given disease or other condition, in a given population at a designated time (Last, 2001). Prevalence refers to all existing cases while incidence refers only to new cases
Prevalence Rate	The total number of all individuals who have an attribute or disease at a particular time (or during a particular period) divided by the population at risk of having the attribute or disease at this point in time or midway through the period (Last, 2001)
Proportion	A type of ratio in which the numerator is included in the denominator (Last, 2001)
Puerperium	Covers the 6 week period following birth during which time the various changes that occurred during pregnancy revert to the non-pregnant state
Ratio	The value obtained by dividing one quantity by another. A ratio is an expression of the relationship between a numerator and a denominator where the two usually are separate and distinct quantities, neither being included in the other (Last, 2001)
Risk Factor	A factor which is associated with an elevated frequency of occurrence of the disease (Kelsey, 1996)
Sampling Variability	Sampling variability is the inconsistency among samples drawn from the same population, which can occur as individuals are selected by chance from that population. High sampling variability can indicate that an estimate is not as precise as it could be. Factors that increase sampling variability include a small sample size and an event with low prevalence or a rare condition
Singleton	A singleton is a baby which is not part of a twin or other multiple birth
Smog Alert	A smog alert has two levels: a smog watch which means that there is a 50% chance of a smog day within the next three days and a smog advisory which means that there is a strong likelihood of the smog day in the next 24 hours or there was a smog day without warning. A smog day occurs when there is a real or predicted AQI reading of at least 50 over several days
Smoking Rate in Pregnancy	The proportion of women who smoke during pregnancy out of the total number of pregnant women in a given period of time
Standardized Hospitalization Ratio (SHR)	The age-standardized hospitalization ratio is the ratio of the number of hospitalizations in the population of interest to the number expected if that population had the same age-specific rates as a reference population
Standardized Mortality Ratio (SMR)	The age-standardized mortality ratio is the ratio of the number of deaths in the population of interest to the number expected if that population had the same age-specific rates as a reference population
Statistical Significance	This term is used to describe an observed difference between groups that is most likely to be a real difference and is unlikely that it occurred by chance. This difference is often calculated to the 95% probability of a true difference being observed

Term	Definition
Stillbirth	A product of conception with a gestational age of 20 or more weeks or a fetal weight of 500 grams or more, which did not breathe or show other signs of life at delivery
Stillbirth rate	The total number of stillbirths divided by the total number of births (live and still)
Teen abortion rate	The number of abortions for females aged 15 to 19 years per 1,000 females aged 15 to 19 years in a given time period
Teen birth rate	The number of live births to females aged 15 to 19 years per 1,000 females aged 15 to 19 years (includes live births, still births and abortions) in a given time period
Teen low birth weight rate	The number of live births to females aged 15 to 19 years per 1,000 live births to females aged 15 to 19 where the infant's weight is less than 2,500 grams at delivery in a given time period
Teen pregnancy rate	The number of pregnancies for females aged 15 to 19 years per 1,000 females aged 15 to 19 years in a given time period
Unemployment rate	The percentage of the labour force that actively seeks work but is unable to find work at a given time. Persons not seeking work are not counted as unemployed or as part of the labour force

C. Data Sources

Database	Source	Description
Canadian Community Health Survey (CCHS)	Statistics Canada, distributed by the Ontario MOHLTC	This is a national population household survey for all provinces and territories in Canada, excluding populations on Indian Reserves, Canadian Forces Bases, and some remote areas. The survey collects information on the health of the Canadian population aged 12 and older as well as socio-economic data. The survey runs in a two-year collection cycle and is comprised of two distinct parts: a health region-level survey in the first year with a total sample of 130,000 and a provincial-level survey in the second year with a total sample of 30,000. Data collection commenced in 2000. A broad range of topics are examined in the survey on health status, determinants of health and health system utilization. Data available for Ottawa includes 2000-01 and 2003, and the sample size is approximately 1900. The CCHS is the data source for many of the Health Indicators generated by Statistics Canada and the Canadian Institute for Health Information
Census	Statistics Canada	Conducted every five years, the census is the major source of data describing the characteristics of Canada's population and dwellings. The Census of Population also provides demographic, social and economic characteristics not only for Canada but also for each province and territory, and for smaller geographic units such as cities or districts within cities. The census is the main source for denominators used in calculating health indicators
Health Planning System (HELPS)	Ontario MOHLTC	The Health Planning System is an initiative of the Public Health Branch of the MOHLTC. It consists of a series of health-related and vital statistics data files available to health units in Ontario. HELPS is one of our main only source for abortion and infant mortality data
Immunization Reporting Information System (IRIS)	Ottawa Public Health	IRIS is a database used to collect and maintain immunization data for all students and children attending schools and licensed day cares in Ontario
Infant Care Survey	Ottawa Public Health	The Infant Care Survey surveyed 800 mothers of 3 and 6-month-old infants to determine health status, factors influencing health and the utilization of health care services by parents of infants. The survey also identified trends of methods parents used to care for their infants
Integrated Public Health Information System (i-PHIS)	Ontario MOHLTC	The integrated Public Health Information System is a web-based client health record and reporting system for local and provincial communicable disease surveillance

Database	Source	Description
Niday Perinatal Database, Perinatal Partnership of Eastern and Southeastern Ontario (PPESO)	Perinatal Partnership of Eastern and Southeastern Ontario	The Niday Perinatal Database is an on-line database (built on the Ontario CritiCall system) that collects information pertaining to every hospital and home birth in Eastern and Southeastern Ontario. Information collected include maternal characteristics such as age, smoking, postal codes; labour and delivery characteristics such as type of labour, mode of delivery, surgical interventions; and newborn characteristics and outcomes such as gender, weight, resuscitation, Apgar score, stillbirths etc. All hospitals providing obstetrical services enter their data independently as the births occur. PPESO maintains the database and provides user support and data verification on an on going basis
Parenting Survey	Ottawa Public Health	<p>In 2003, Ottawa Public Health commissioned The Flett Consulting Group Inc. and Social Data Research Ltd. to conduct a parenting survey on 1205 households with parents of children under the age of six years. The survey measured parenting behaviours, family functioning, use of support and services, school readiness, preventive behaviours, food security and childcare</p> <p>In 2005, Ottawa Public Health commissioned York University's Institute for Social Research to conduct a survey of 570 households with children under the age of 12 years using questions from RRFSS. Topics included: childhood injury: beliefs, perceptions and mechanisms; family violence awareness; and parenting behaviours</p>
Provincial Health Planning Database (PHPDB)	Ontario Ministry of Health and Long-term Care (MOHLTC)	The PHPDB is an information resource maintained by the Knowledge Management and Reporting Branch of the Ontario MOHLTC. 'Data Warehouse' technology is used to store, manage and provide access to health-related information that has been consolidated from a range of sources. PHPDB is one of the primary sources of morbidity and mortality data in Ontario such as, hospitalization data (emergency room visits, hospital discharges, day surgeries etc), vital statistics (births and deaths)
Rapid Risk Factor Surveillance System (RRFSS)	Ottawa Public Health, conducted by the Institute for Social Research, York University	The RRFSS is an ongoing random-digit-dialled telephone survey of adults aged 18 years and over, conducted by the Institute of Social Research at York University, on behalf of various public health units (23 to date) in Ontario. The first wave of data collection for Ottawa began in April 2001. Households are randomly selected from all households in the City of Ottawa and a sample of 100 residents are surveyed each month regarding health risk behaviours, knowledge, attitudes and awareness about health related topics of importance to public health such as smoking, immunization, sun safety etc. To ensure adequate representation of the French population in Ottawa, about 15% of the monthly sample is obtained from Census Tracts that are predominantly inhabited by Francophones

Database	Source	Description
School Smoking Profile (SSP) & School Health Action Planning and Evaluation System (SHAPES)	Ottawa Public Health in collaboration with the University of Waterloo, Centre for Behavioural Research and Evaluation	<p>The School Smoking Profile survey was a collaborative effort between Ottawa Public Health and the University of Waterloo, Centre for Behavioural Research & Evaluation. In 2003, students of 27 secondary schools in Ottawa were surveyed on tobacco use and smoking behaviours</p> <p>The SHAPES survey was previously referred to as the SSP and was expanded to include questions on tobacco use and physical activity. In the fall of 2005, students of 19 secondary schools in Ottawa were surveyed</p>
SEERstat, Cancer Care Ontario	Cancer Care Ontario	<p>Data from the Ontario Cancer Registry are disseminated through SEERStat, statistical software for the analysis of cancer data. The software can be used to view record level data as well as to generate frequencies and rates of cancer incidence and mortality and survival statistics</p>

D. Data Issues

Data included in this report reflect the most up to date and accurate health information for Ottawa. However, limitations to the data exist and should be considered when interpreting the information.

Survey data: Gathering accurate information on chronic health conditions and lifestyle risk behaviours can be expensive and challenging. The simplest method to measure these indicators involves surveys (such as CCHS or RRFSS) where people are asked to report or recall health conditions, lifestyle behaviours and habits, knowledge, attitudes and awareness about health-related topics. Self-reported and proxy-reported data may be subject to errors in recall and over or under-reporting due to social desirability (APHEO). For example, self-reported data about current or previous chronic conditions may be over or under-estimated – this is in part due to the nature that people may have difficulty recalling the condition or it has gone undiagnosed. Self-reported food intake is typically underestimated whereas self-reported physical activity levels tend to overestimate the intensity, duration, and frequency of exercise due to poor recall and social desirability.

Hospitalizations: Hospitalization data are collected by the Canadian Institute for Health Information (CIHI) and obtained from the Ontario Ministry of Health and Long-Term Care (MOHLTC). Caution should be exercised when interpreting hospitalization data as an indicator of incidence as only the most serious cases are hospitalized or visit the emergency room. Individual case counts are not reflected as a person may visit the hospital more than once in a year for the same cause. Physician referrals, admission, screening and treatment practices may change over time, which affect the ability to examine trends. Data for the years 1996 to 2001 were coded based on the International Classification of Diseases, 9th Revision (ICD-9) and data from 2002 to 2004 were coded based on the International Classification of Diseases, 10th Revision (ICD-10). The introduction of a new classification standard in 2002 impacted trends for many causes of hospitalization. Where applicable, this change is indicated in all graphs in the report.

Mortality: Mortality data for this report were collected by the Ontario Office of the Registrar General and distributed by the Ontario MOHLTC. Out-of-province deaths to Ontario residents have not been included. This may particularly affect Ottawa, as it is an area bordering Quebec. Data for the years 1986 to 1999 were coded based on ICD-9 codes and data from 2000 to 2002 were coded based on ICD-10 codes. The introduction of a new classification standard in 2000 impacted trends for many causes of mortality. Where applicable, this change is indicated in all graphs in the report.

Births: Ontario birth data for this report were obtained from the Ontario Live Birth Database (1986 to 2002) and may have limitations as out-of-province births to Ontario mothers are excluded for consistency over time. Registration fees initiated in 1996 may have reduced the number of infants registered, thus not all live births are recorded in the live birth database. Birth data from the Niday Perinatal Database were used for reporting the Ottawa birth rates; however, the data were not available for comparison at the provincial level.

Communicable diseases: Prior to 2005, communicable disease data were collected by the Reportable Disease Information System (RDIS). After August 2005, a new system, the integrated Public Health Information System (iPHIS), was implemented in Ottawa and across the province of Ontario. As only 2004 data were presented in this report, the counts are considered accurate and reliable as of the report release date. However, there may be some changes in these data in future reports due to on-going data quality checks.

The number of cases may be underreported. This can occur for the following reasons: some cases will not be symptomatic, not all symptomatic cases will visit a physician if the case is not severe, and not all cases who visit a physician will submit a sample for laboratory testing. The suspected rate of underreporting will depend on the disease. The proportion of underreported cases will be higher for diseases that can be self-limiting or for which laboratory samples are not always collected such as mild influenza and some enteric diseases. More severe diseases such as invasive group A streptococcus and meningococcal disease are less likely to be underreported.

Cases are counted in this report by episode date, which corresponds to the earliest date of symptom onset date, clinical diagnosis date, specimen collection date, laboratory test date, or date reported to public health.

Cases are confirmed following the case definitions provided by the MOHLTC and usually include a positive laboratory confirmation. Following these standard case definitions allows for provincial comparisons but not necessarily comparisons with the rest of Canada if there are differences in the case definition for a disease.

Comparison of rates: For hospitalization and mortality data, age-standardized rates are presented as they have the advantage of providing a summary number that allows different populations to be compared; however, they do not represent the true picture of disease / hospitalization / death in the community. Crude rates should be used to assess the true picture of disease / hospitalization / death in the community (Appendix D).

E. Data Tables

Table E.1 Summary of Crude Incidence Rates of Selected Cancers, City of Ottawa 2002

Crude Incidence Rate (cases per 100,000)			
Cancer	Ottawa Total	Males	Females
Breast	---	---	123.4
Prostate	---	99.8	---
Lung	54.1	60.3	48.0
Colorectal	54.2	57.8	50.6
Ovarian	---	---	18.3
Non-Hodgkins Lymphoma	16.9	17.4	16.4
Melanoma	13.9	13.9	14.0
Bladder	11.6	16.1	7.2
Kidney	9.5	11.4	7.7
Pancreas	9.1	9.4	8.7
Leukemia	8.9	9.4	8.4
Oral Cavity and Pharynx	8.1	9.9	6.3
Stomach	6.1	7.9	4.3
Brain	5.5	7.0	4.1
Uterine	---	---	4.6
Cervical	---	---	4.6
Esophageal	4.2	6.0	2.4

Source: Cancer Incidence 2002, Cancer Care Ontario

Table E.2: Summary of Crude Mortality Rates of Selected Cancers, City of Ottawa 2002

Crude Mortality Rates (per 100,000)			
Cancer	Ottawa Total	Males	Females
Lung	46.0	53.4	38.8
Breast	---	---	32.6
Colorectal	19.3	20.9	17.8
Prostate	---	19.1	---
Ovarian	---	---	10.2
Pancreas	8.4	7.9	8.9
Non-Hodgkins Lymphoma	6.9	7.9	5.8
Leukemia	5.9	5.7	6.0
Brain	4.2	4.7	3.6
Esophageal	4.2	5.5	2.9
Bladder	3.9	5.5	2.4
Stomach	3.8	4.2	3.4
Kidney	3.6	4.0	3.1

Crude Mortality Rates (per 100,000)			
Cancer	Ottawa Total	Males	Females
Oral Cavity and Pharynx	3.1	4.2	1.9
Melanoma	3.1	4.0	2.2
Uterine	---	---	2.4
Cervical	---	---	1.0

Source: Cancer Mortality 2002, Cancer Care Ontario

Table E.3: Summary of Crude Hospitalization Rates of Selected Chronic Conditions, City of Ottawa 2004

Crude Hospitalization Rate (cases per 100,000 population)			
	Ottawa Total	Males	Females
All circulatory diseases	805.0	969.6	646.3
IHD	361.3	504.7	223.0
COPD	161.6	141.4	181.1
Stroke	114.8	104.2	124.9
Diabetes	56.8	61.2	52.6
Asthma	34.5	32.9	36.0

Source: Hospital In-patient Data 2004, Provincial Health Planning Database (PHPDB) Extracted December 29, 2005, Health Planning Branch, Ontario, MOHLTC

Table E.4: Summary of Crude Mortality Rates of Selected Chronic Conditions, City of Ottawa 2002

Crude Mortality Rate (cases per 100,000 population)			
	Ottawa Total	Males	Females
All circulatory	205.4	192.4	218.0
IHD	116.9	115.2	118.6
Stroke	39.4	30.8	47.7
COPD	21.9	19.9	23.9
Diabetes	19.2	20.4	18.1

Source: Ontario Mortality Data 2002, Provincial Health Planning Database (PHPDB) Extracted February 2, 2006, Health Planning Branch, Ontario, MOHLTC

