



Statistical Report on Health

Part II

Mortality Status

(1996~2004)

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List of Abbreviations

ASMR	Age-Specific Mortality Rate
ASPYLLR	Age-Standardized Potential Years of Life Lost Rates
CCO	Cancer Care Ontario
CDR	Crude Death Rate
CEHIP	Central East Health Information Partnership
COPD	Chronic Obstructive Pulmonary Disease
CNS	Central Nervous System
EOHU	Eastern Ontario Health Unit
ICD9	The International Classification of Diseases (9 th Edition)
ICD10	The International Classification of Diseases (10 th Edition)
IHD	Ischemic Heart Disease
IMR	Infant Mortality Rate
NCHS	National Centre for Health Statistics
PHBDB	Provincial Health Planning Database
PYLL	Potential Years of Life Lost
SEER	Surveillance, Epidemiology and End Results Program
SRATE	Age-Standardized Mortality Rate
UC-PR	United Counties of Prescott and Russell
UC-SDG	United Counties of Stormont, Dundas and Glengarry

Introduction

The Mortality Status Report is the second part in a series titled the “Eastern Ontario Health Status Report”, a multi-part publication produced by the Eastern Ontario Health Unit (EOHU). Each of the different parts of the Health Status Report address different aspects of the population health status across the health unit’s catchment area, which encompasses the United Counties of Stormont, Dundas and Glengarry (UC-SDG), the United Counties of Prescott and Russell (UC-PR), the City of Cornwall and the Town of Hawkesbury.

The current edition is an update of a previous release of the health status report and presents an overview of mortality in the EOHU region for the period of 1996-2004. For information representing previous years please consult the earlier version of the Health Status Report titled “the EOHU Statistical Report on Health (2000) Part 2, Mortality Status, February 2000, Fourth edition ^[1] which is available on the Eastern Ontario Health Unit website under Archived Reports.

The current release of the health status report presents a set of mortality indicators, including the infant mortality rate (IMR), the age-specific mortality rate (ASMR), the age-standardized mortality rate (SRATE) and life expectancy. There is also additional reporting on a number of the leading causes of mortality affecting the target population of the Eastern Ontario Health Unit during the selected time period.

Data Sources

This publication relied primarily on two main sources of mortality data for the region: the Provincial Health Planning Database (PHPDB) and SEER*Stat 6.5, the Canadian version of the Surveillance, Epidemiology and End Results (SEER) program.

Provincial Health Planning Data Base (PHPDB)

The Provincial Health Planning Database (PHPDB) is a data repository maintained by the Knowledge Management and Reporting Branch of the Ontario Ministry of Health and Long-Term Care and is a valuable resource for all health units across Ontario. The current report used the PHPDB for the retrieval of mortality data, and population estimates.

During the time-period covered by this publication, reporting of mortality data underwent a major change with the introduction of a new international classification of disease system in 2000. This means that data describing mortality for the period of 1996-1999, used the International Classification of Diseases, 9th Revision (ICD9), and for the year 2000 and beyond, the International Classification of Diseases, 10th Revision (ICD10) was used. This shift from one system to the other has led to a number of improvements as well as few complications. The new expanded classification system provides more clarity around causes of mortality and other contributing conditions; yet, it also presents us with a few complex challenges in comparing the causes of mortality between the ICD9 and the ICD10. To overcome this difficulty, this report used

the U.S. public-use ICD-9/ICD-10 comparability file (The National Centre for Health Statistics (NCHS) List of 113 Selected Causes of Death)^[2] to approximate the causes of death between the two systems and to increase comparability over the time-periods. The reader should be aware of the change in classification systems, especially when comparing results between the years 1999 and 2000.

Seer*Stat 6.2.5

The Canadian version of the “Surveillance, Epidemiology, and End Results” (SEER) Program is a Cancer Care Ontario product, which is based on a comprehensive population-based cancer reporting system produced by the Surveillance Research Program of the National Cancer Institute and Information Management Services, Inc. in the United States. The latest version available for this report is Seer*Stat 6.2.5, which included mortality data from 1986 to 2004.

Mortality Indicators

These are measurable outcomes that are valuable in assessing the overall health status of the community. They quantify the burden of disease and allow for comparison with other jurisdictions, these measures also help us identify prevailing conditions or events that contribute to mortality and morbidity in the community. Overall temporal changes in mortality indicators may reflect improvements in a community’s standard of living, medical advancements in the diagnosis and treatment of disease, or changes in the environment or socioeconomic conditions. Throughout this report there are a number of standardized mortality indicators, which allow for tracking of trends over time, and for comparison with other regions.

Crude Death Rate (CDR)

The Crude Death Rate (CDR) is defined as the number of people dying during any given year divided by the mid-year population. Conventionally, this rate is expressed per 1,000 people. The formula is calculated as:

$$\text{CDR} = 1000 \left(\frac{\text{Number of Deaths}}{\text{Mid-Year Population}} \right) = K \frac{D}{P}$$

Age-Specific Mortality Rate (ASMR)

The Age-Specific Mortality Rate (ASMR) refers to the total number of deaths in a given age group. It is usually presented by per 1,000 or 100,000 population of the same age group. For the purposes of this report, the ASMRs were calculated per 100,000 population due to the small number of deaths in some of the age groups. It is calculated using the following formula:

$$\text{ASMR} = 1000 \left(\frac{\text{Number of deaths in a specific age group}}{\text{Mid-Year population of the same age group}} \right) = K \frac{D_x}{P_x}$$

Age-Standardized Mortality Rate (SRATE)

The Age-Standardized Mortality Rate provides a summary of the number of deaths that would occur if the population had the same age distribution as the Canadian population in a previous year (per 100,000). This rate represents an “artificial” picture of the death /disease pattern in a community that is very useful for spatial and longitudinal comparisons. This indicator is very useful when comparing two or more populations that differ with respect to some basic characteristics (such as: age, sex, race, socioeconomic status, etc.) that might independently influence the risk of death. For the purposes of this report, the direct method of age-standardization was employed using the 1991 Canadian population as a reference population. The formula for the calculation is:

$$\text{SRATE} = 100,000 \left(\frac{\text{Sum of (age-specific death Rate x 1991 Cdn pop in age grp)}}{\text{Sum of 1991 Cdn population}} \right)$$

Infant Mortality Rate (IMR)

The Infant Mortality Rate (IMR) is a long-established measure that reflects the level of mortality in a population. This measure is also an important indicator of population’s health status, the status of the health care system, the effectiveness of preventive care, and the attention paid to maternal and child health. It is calculated as the number of infant deaths during the first year of life per 1,000 live births:

$$\text{IMR} = 1000 \left(\frac{\text{Number of deaths in First year of life}}{\text{Live births in same year}} \right)$$

There are other measures of calculating infant mortality:

Stillbirth: When foetal death occurs after the 28th week of pregnancy or when the foetus is born without any sign of life.

Early Neonatal Death: When the death of infant occurs in the first week after birth.

Early Neonatal Mortality Rate=Number of deaths in the first week / Live birth * 1,000

$$\text{ENMR} = 1000 \left(\frac{\text{Number of deaths in First week of life}}{\text{Live births in same year}} \right)$$

Perinatal Mortality: A rate of infant mortality that includes both stillbirths and early neonatal deaths.

Perinatal Mortality rate= (Stillbirth + early neonatal death) / (live birth + stillbirth) * 1,000

$$\text{PMR} = 1000 \left(\frac{\text{(Stillbirths + Early Neonatal death)}}{\text{Live births in same year}} \right)$$

Neonatal Mortality: The death of a newborn before the age of four weeks (<28 days)

Neonatal Mortality Rate =the number of deaths <28 days old / live birth * 1,000

$$\text{NMR} = 1000 \left(\frac{\text{Number of deaths <28 days old}}{\text{Live births in same year}} \right)$$

Postnatal Mortality: The death of a newborn between 28-365 days old.

Postnatal Mortality Rate = the number of deaths 28-365 days old / live birth * 1,000

$$\text{PostNMR} = 1000 \left(\frac{\text{Number of deaths 28-365 days old}}{\text{Live births in same year}} \right)$$

Leading Causes of Mortality

The leading causes of mortality in a population tend to vary between different age groups. Based on the population size in the EOHU catchment area, the list of leading causes of death in many of the age groups are not consistent from year to year due to the small number of deaths in some of the age groups. To avoid any erroneous trends due to small numbers, the leading causes of mortality in this report were combined for the time period 1996 to 2004.

Life Expectancy

Life expectancy is a statistical measure of the average length of survival of a living person. In other words, it is defined as the average number of years an individual of a given age is expected to live based on current mortality trends. This measure can also be expressed as life expectancy from birth, and is the average numbers of years a newborn can be expected to live. From a population health perspective, a measure of life expectancy at birth puts a greater value on deaths during infancy than deaths later in life. As infants at birth have an increased number of years life to live, death during infancy has a more significant impact on the population than a death later in life.

Potential Years of Life Lost (PYLL)

Another measure of population health status is the Potential Years of Life Lost (PYLL), which is a measure of premature deaths that occur before the age of 75. For example, a person who dies at age 40 has lost 35 potential years of life ($75-40=35$ PYLL). The use of 75 years as a standard means that PYLL is generally an underestimate for both males and females as life expectancies today have exceeded this standard. In this report, PYLL has also been age-adjusted to the 1991 Canadian population and is presented as Age-Standardized Potential Years of Life Lost Rates (ASPYLLR) per 1,000 population.

In summary, this report presents the overall mortality data for the EOHU catchment area, including the two united counties (UC-SDG and UC-PR) and the city of Cornwall. Furthermore, this report attempts to draw a comparison with overall mortality status in the province of Ontario. Throughout the report, emphasis was put on presenting the data for “all ages combined”, for “infants” (aged <1 year), and for seniors aged 65 years and older, with other age groups addressed as necessary.

An Overview of Mortality

We start with an overview of mortality for the year 2004, which is the most recent mortality data currently available to the Eastern Ontario Health Unit. In this section, we present the age-specific mortality rates (ASMR), including the infant mortality rate (IMR), and the age-standardized mortality rate (SRATE) for both the EOHU catchment area and Ontario.

Overall Mortality in 2004

As seen in Table 1, the infant mortality rate in the EOHU catchment area in 2004 was lower than the rest of Ontario (3.6 and 5.6 per 1,000 live births respectively), while the age-specific mortality rates (ASMR) for many of the other age groups were higher than the province. In addition, the age-standardized mortality rate (SRATE) in the EOHU catchment area for all ages combined was higher than Ontario (639.0 vs. 580.1 per 100,000 population).

Table 1: ASMR & SRATE (per 100,000), EOHU & Ontario, 2004

Age	EOHU			Ontario		
	Male	Female	Both	Male	Female	Both
00 (IMR*)	6.3	1.0	3.6	5.9	5.3	5.6
01-04	52.3	26.6	39.6	25.0	22.3	23.7
05-09	16.4	16.4	16.4	12.7	7.2	10.0
10-14	26.6	0.0	13.7	15.0	8.7	11.7
15-19	66.7	28.3	48.1	58.0	19.7	38.0
20-24	81.8	17.3	50.4	76.4	31.7	54.4
25-29	122.3	20.4	71.3	83.2	36.0	60.1
30-34	66.8	50.2	58.5	110.7	53.7	82.4
35-39	191.1	108.0	149.3	157.1	85.2	120.8
40-44	278.2	113.4	196.6	286.7	156.8	219.4
45-49	331.7	208.7	271.3	348.1	236.8	293.7
50-54	373.5	426.4	399.6	457.4	318.9	389.6
55-59	797.4	417.2	609.8	664.1	406.8	533.9
60-64	1421.0	814.5	1118.2	1085.3	678.1	876.9
65-69	2147.5	1166.3	1651.9	1734.6	1061.7	1384.2
70-74	2805.8	1839.8	2296.8	2806.2	1744.6	2242.3
75-79	5416.8	3209.6	4150.9	4576.6	2943.0	3652.6
80-84	9138.7	6328.6	7400.9	7703.3	5189.6	6161.3
85-89	16360.9	10327.6	12244.9	12893.7	9429.6	10587.3
90+	22847.7	18082.5	19360.6	22818.5	19546.1	20397.8
SRATE** (All Age)	812.2	505.7	639.0	713.6	476.0	580.1

IMR*: Infant mortality rate=deaths in age 0 / live birth *1,000

SRATE** All Age: Age Standardized Mortality Rate (SRATE): Deaths per 100,000 Population standardized by 1991 Canadian population

Life Expectancy

Using a life table template^[3], the life expectancies for both the EOHU catchment area and the province of Ontario were calculated based on mortality information from the year 2004 (Figure 1). As expected, the life expectancy for females is higher than that for males. The life expectancies for various age groups in the EOHU catchment area were slightly lower than that for Ontario. Babies (<1 year) born in the EOHU region in the year 2004 had a life expectancy of 75.8 years for males and 81.5 years for females compared to 77.3 and 82.1 respectively in Ontario. On the other hand, the life expectancy for seniors 65 to 69 years old in the EOHU catchment area was 16.6 years for males and 20.0 years for females compared to Ontario where life expectancy was slightly higher at 17.7 years for males and 20.8 years for females.

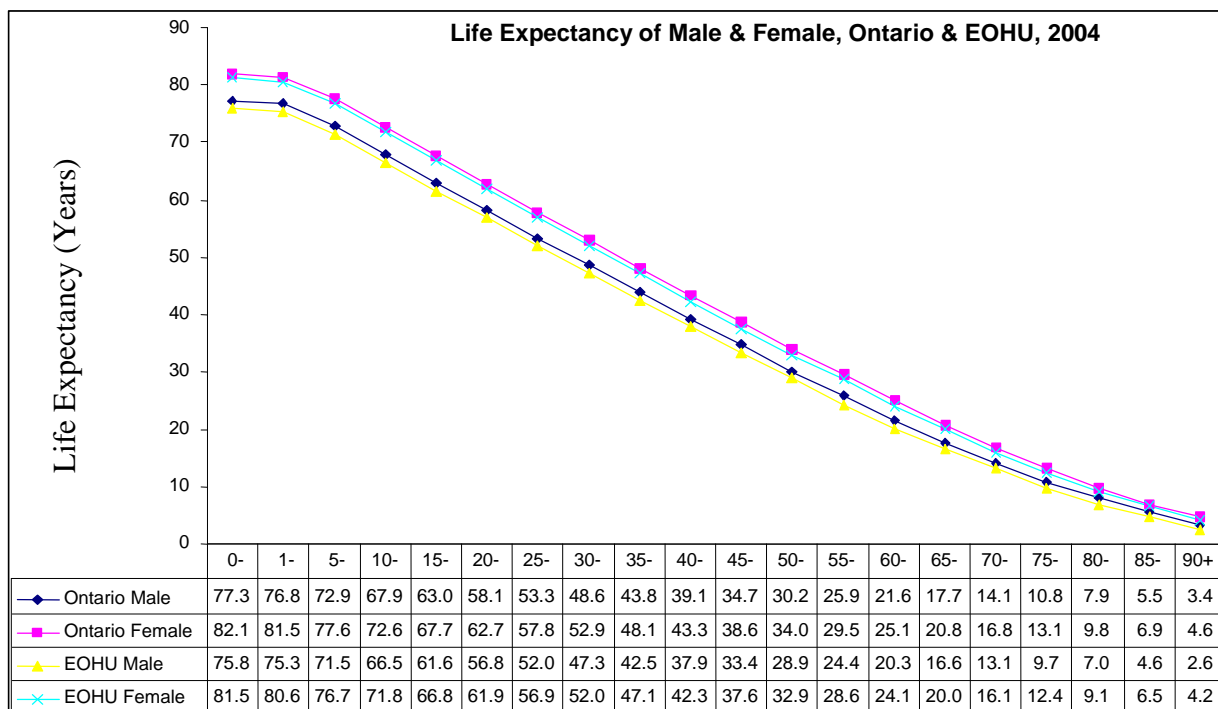


Figure 1. Life Expectancy for Male & Female, EOHU & Ontario, 2004

Infant Mortality

During the reference period for this report (1996 to 2004), the infant mortality rate (IMR) in the EOHU catchment area was similar to that for Ontario, about 5.0 deaths per 1,000 live births annually. It is worth noting that due to the small number of infant deaths annually in the EOHU region; the IMR for the region did fluctuate from one year to the next. To adjust for this fluctuation, we used 3-year averages for IMR (Figure 2). In the EOHU catchment area, the IMR declined from 5.72 deaths per 1,000 live births in 1997 to an average of 4.86 deaths per 1,000 births in 2003 and 2004. In Ontario, for the same time period, the IMR declined from 5.58 to 5.31 deaths per 1,000 live births.

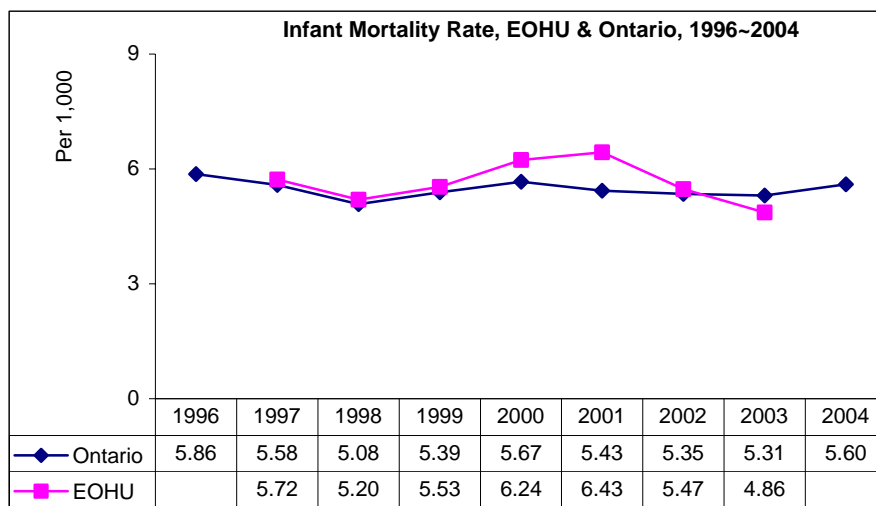


Figure 2. Infant Mortality (<1 year) Rate (per 1,000 live births), EOHU & Ontario, 1996~2004

Perinatal Mortality

Perinatal deaths include both stillbirths and deaths during the first week after birth (early neonatal). Between 1996 and 2004, the perinatal mortality rate in Ontario was stable at 9-10 deaths per 1,000 live births and stillbirths; while the rate for the EOHU catchment area exhibited an increase from an average of 7.07 deaths per 1,000 in 1996-1997 to 10.10 deaths per 1,000 in 2003-2004. The fluctuations in rates in the EOHU region could be explained in part by the small numbers of events in this region (Figure 3).

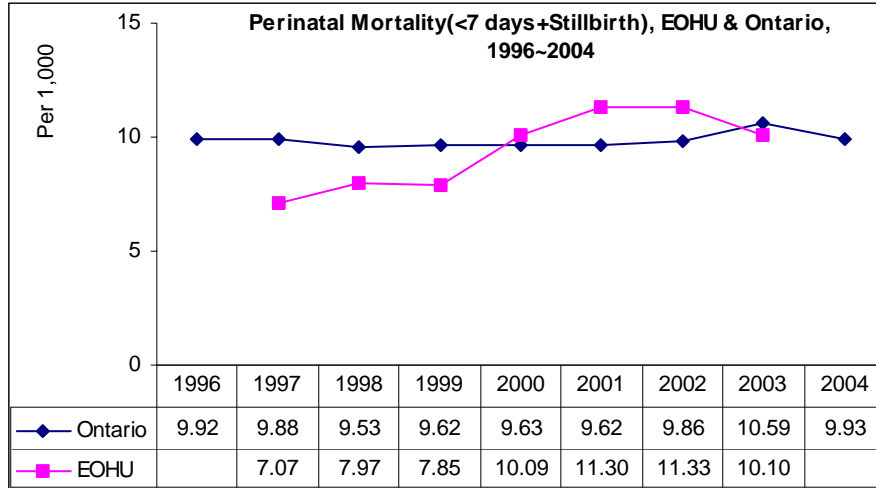


Figure 3 Perinatal Mortality Rates (per 1,000 live births + Stillbirth), EOHU & Ontario, 1996~2004

It is worth noting that two thirds of all perinatal mortality is due to stillbirths rather than early neonatal mortality; this is true for both the EOHU region and for Ontario. The three-year average rate of stillbirths for the EOHU region exhibited an upward trend until 2002 when rates began to decrease (Figure 4). The early neonatal mortality in this region followed a similar upward trend over the same time period (Figure 5).

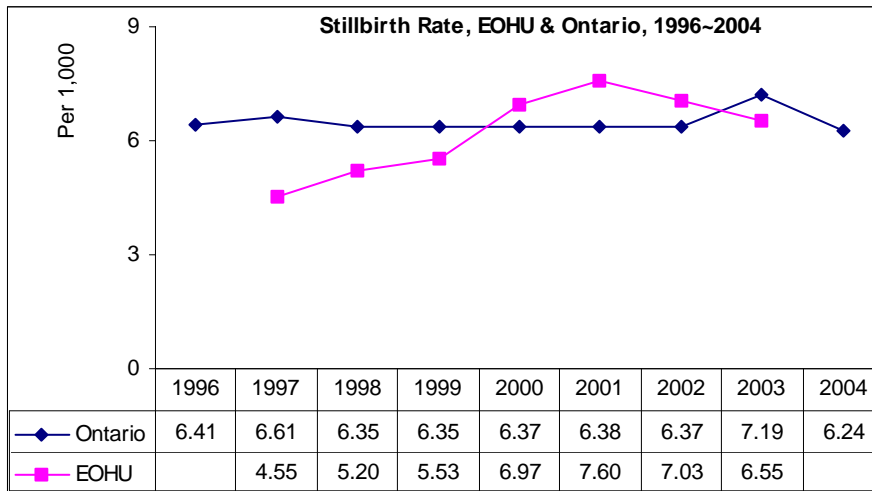


Figure 4. Stillbirth Rates (per 1,000 live births + Stillbirth), EOHU & Ontario, 1996~2004

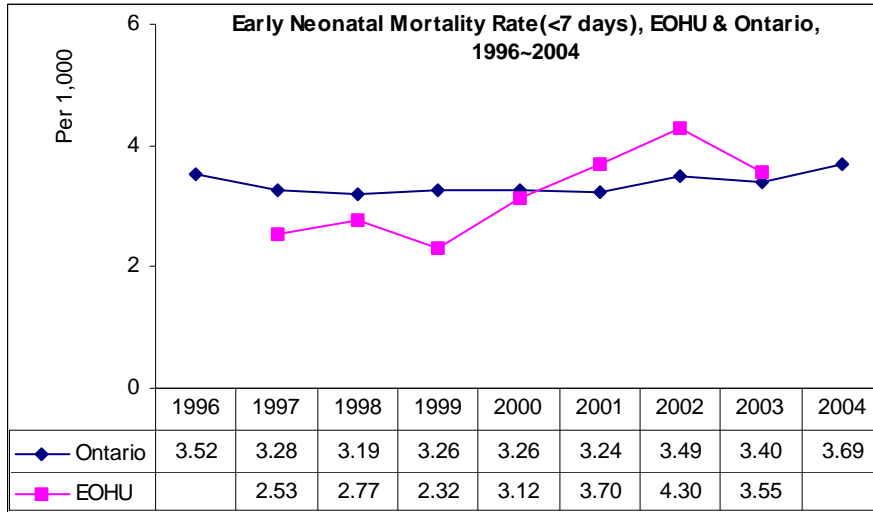


Figure 5. Early Neonatal Mortality Rates (per 1,000 live births), EOHU & Ontario, 1996~2004

Neonatal and Post-Neonatal Mortality

During the reference period for the report (1996-2004), the neonatal mortality rates (death within the first 28 days after birth) in Ontario were stable around 4.0 deaths per 1,000 live births. The rates for the EOHU catchment area followed a similar pattern with some fluctuations from year to year (Figure 6).

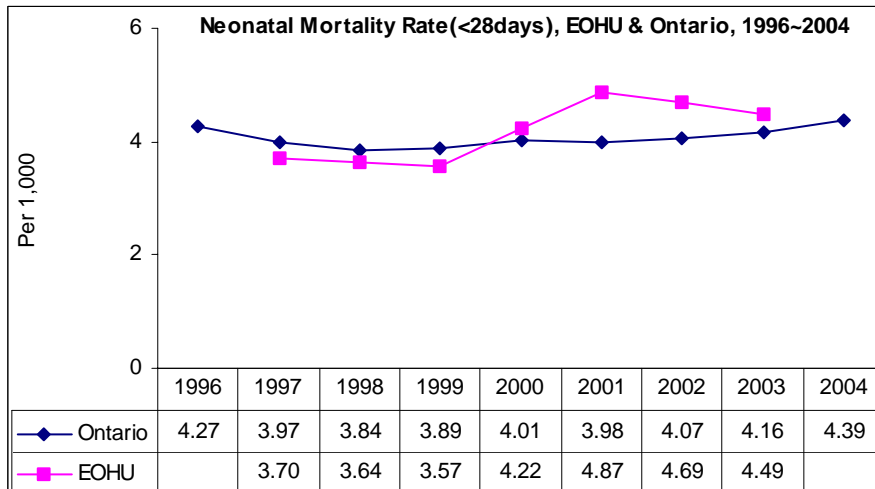


Figure 6. Neonatal Mortality Rates (Per 1,000 Live birth), EOHU & Ontario, 1996~2004

The post-neonatal mortality rate (death after 28 days but within the first year) was higher in the EOHU region than in Ontario from 1996 to 2000, thereafter, the rate in the EOHU region declined at a faster pace than Ontario and dropped below the provincial average (Figure 7).

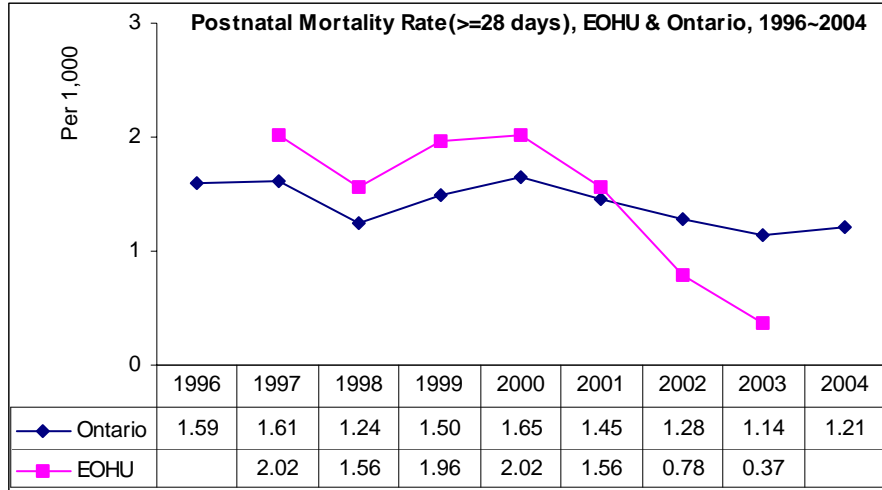


Figure 7. Post-neonatal Mortality Rates (per 1,000 live births), EOHU & Ontario, 1996~2004

Overall Mortality (1996-2004)

Table 2 presents the age-specific mortality rates from all causes by age group and at four levels of geography for the period of 1996-2004. This table shows that the age-specific mortality rates (ASMR), including the infant mortality rates (IMR), as well as the age-standardized mortality rates (SRATE) for the EOHU catchment area (both male and female) were higher than the provincial average. Within the EOHU region, the city of Cornwall had higher infant mortality rates and higher SRATE for both males and females than the rest of the region. The ASMR for people aged 20 to 64 years old, were higher in the united counties of Stormont Dundas & Glengarry than for the united counties of Prescott & Russell, while the ASMR for seniors aged 65 years and older were lower. The SRATE for both males and females of all ages were lower in UC-SDG than that in UC-PR.

Table 2. ASMR (per 100,000) EOHU & Ontario, 2001-2004

		Male					Female				
		Cornwall	UC-SDG	UC-PR	EOHU	Ontario	Cornwall	UC-SDG	UC-PR	EOHU	Ontario
ASMR	0 Year (IMR)*	6.6	8.4	3.2	6.1	5.8	4.5	3.7	3.9	3.8	5.1
	1-9 Years	10.5	16.7	32.8	23.6	17.7		8.5	16.5	12.0	13.5
	10-19 Years	23.1	35.4	51.1	42.1	37.3	23.2	30.8	12.6	23.1	17.0
	20-44 Years	167.4	134.9	116.8	126.9	138.4	99.4	87.7	72.2	80.8	76.6
	45-64 Years	853.1	679.8	624.5	656.9	609.0	563.9	461.5	413.5	442.0	392.0
	65-74 Years	3,027.0	2,676.4	2,985.4	2,784.6	2,332.4	1,676.3	1,505.8	1,863.2	1,628.0	1,455.7
	75-84 Years	7,417.4	6,711.7	7,047.9	6,816.1	6,036.4	4,356.8	4,170.3	5,186.2	4,497.7	4,005.9
	85 Years+	19,754.5	17,679.8	19,230.8	18,205.0	16,554.9	13,384.7	12,951.1	15,090.8	13,610.9	13,621.4
	65 Years+	5,905.2	5,277.7	5,694.9	5,417.5	4,799.1	3,513.6	3,280.5	4,025.3	3,519.6	3,276.7
	All Age (SRATE **)	931.1	810.2	840.2	818.6	742.0	557.8	507.6	581.3	529.7	493.7

IMR*: Infant mortality Rate=Deaths in Age 0 / Live birth*1,000

SRATE **: Deaths per 100,000 Population standardized by 1991 Canadian population

Age-Standardized Mortality Rate (SRATE)

Figure 8 presents the age-standardized mortality rates (SRATE 3-year-average rate) for all causes of mortality from 1996 to 2004. While the rates declined over this period in the EOHU catchment area and the province of Ontario, the SRATE for all causes in the EOHU region was consistently higher than the province. The gap widened slightly over time, particularly for males. In the EOHU territory the SRATE ranged from 896.9 to 813.3 deaths per 100,000 males and from 552.5 to 522.1 deaths per 100,000 females. In Ontario, the mortality rates ranged from 866.4 to 713.6 deaths per 100,000 males and from 539.6 to 476.0 deaths per 100,000 females.

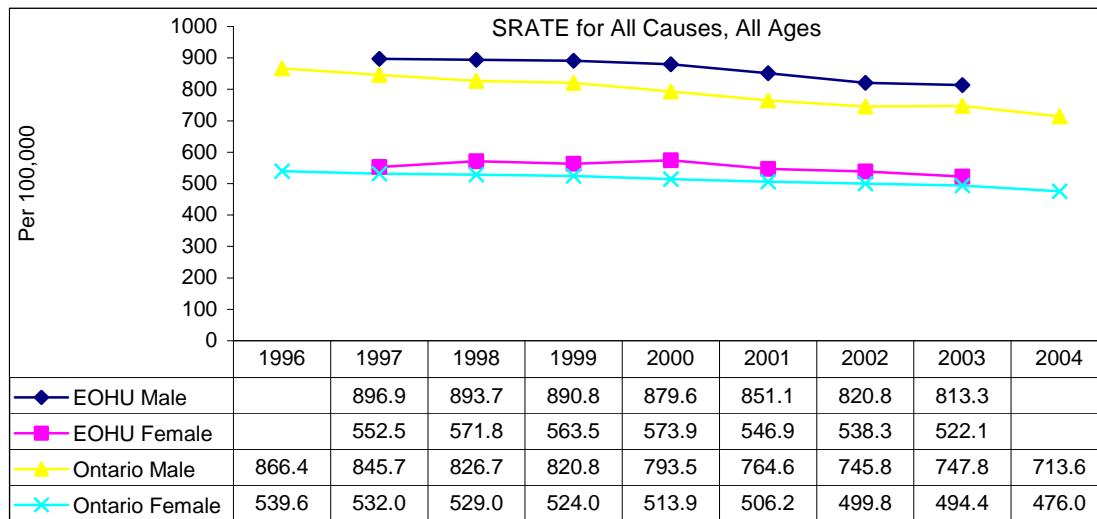


Figure 8. SRATE of All Deaths (per 100,000), All Ages, EOHU & Ontario, 1996-2004

Mortality Among Seniors (65+)

Most deaths in a population occur among seniors (aged 65 years and older), meaning that the all cause age-standardized mortality rates (SRATE) for this group, have very similar patterns to overall mortality. During the report timeframe, the age-standardized mortality rates in seniors (aged 65 and over) for males declined from 6013.2 to 5406.3 deaths per 100,000, and for females from 3807.3 to 3485.0 deaths per 100,000 in the EOHU catchment area. In Ontario, the age-standardized mortality rates for the same age group declined from 5701.2 to 4569.8 deaths per 100,000 males, and from 3619.8 to 3146.1 deaths per 100,000 females. It is worth noting however that the pace of decline was slower in the Eastern Ontario Health Unit than the province, especially for males (Figure 9).

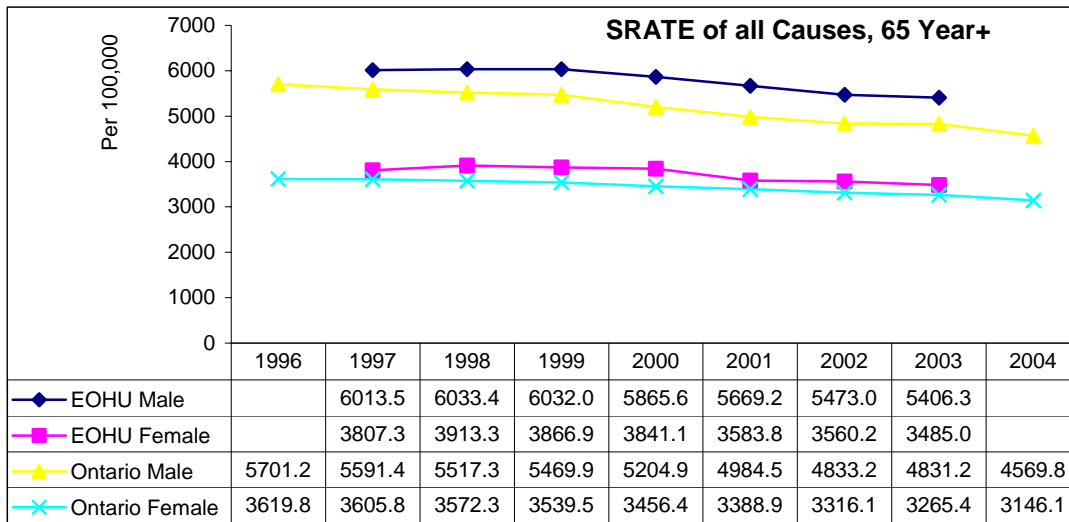


Figure 9. SRATE of All Death (Per 100,000), 65+, EOHU & Ontario, 1996~2004

Leading Causes of Mortality

In this section, we discuss the leading causes of death within the EOHU catchment area and the province of Ontario. As some of the age groups have a very small population size, we expect considerable fluctuation in the rates from one year to the other. To reduce the effect of the small numbers, the mortality data was aggregated for the period 1996 to 2004.

All Age Groups

The five leading causes of mortality in the EOHU catchment area were almost identical to those in Ontario between 1996 and 2004. As seen in Table 3, for males in the EOHU region, the five leading causes of mortality are: Ischemic heart disease (IHD), Lung cancer, Cerebro-vascular diseases, Chronic Obstructive Pulmonary Disease (COPD) and Prostate cancer. These five causes are responsible for 55% of all mortality in the EOHU catchment area and 48% for the province. Among females, Table 4 shows that the five leading causes of mortality are: Ischemic heart disease (IHD), Lung cancer, Cerebro-vascular diseases, Breast cancer and COPD. These five causes were responsible for almost half of all female deaths in the EOHU catchment area and 44% in Ontario.

The single most prominent cause of mortality in the EOHU catchment area was Ischemic heart disease; which was responsible for about a quarter of all male mortality, and also close to a quarter of all female mortality. In the city of Cornwall, the proportion was even higher while for Ontario the proportions of IHD were around one fifth or less of all deaths for both males and females.

Table 3. Leading Causes of Mortality for All Ages, Males, 1996-2004

	Leading Causes of Mortality Males, All Ages, 1996-2004	Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Ischemic Heart Disease	270	27.14	551	25.74	269	22.23	820	24.47	34,171	20.48
2	Lung Cancer	114	11.46	219	10.23	121	10.00	340	10.15	13,711	8.22
3	Acute Myocardial Infarction	85	8.54	202	9.43	123	10.17	325	9.70	15,622	9.36
4	Cerebro-vascular Disease	52	5.23	126	5.89	64	5.29	190	5.67	9,769	5.85
5	COPD	66	6.63	110	5.14	63	5.21	173	5.16	6,931	4.15
6	Prostate Cancer	36	3.62	86	4.02	33	2.73	119	3.55	5,517	3.31
7	Colorectal Cancer	32	3.22	71	3.32	47	3.88	118	3.52	5,508	3.30
8	Diabetes mellitus	30	3.02	61	2.85	56	4.63	117	3.49	6,344	3.80
9	Suicide	18	1.81	39	1.82	40	3.31	79	2.36	3,001	1.80
10	Other Heart Disease	13	1.31	42	1.96	28	2.31	70	2.09	4,178	2.50
11	Renal failure	17	1.71	38	1.77	23	1.90	61	1.82	2,405	1.44
12	Motor Vehicle Accidents	11	1.11	33	1.54	26	2.15	59	1.76	2,347	1.41
13	Pneumonia	19	1.91	34	1.59	23	1.90	57	1.70	3,212	1.92
14	Pancreatic Cancer	16	1.61	34	1.59	16	1.32	50	1.49	2,371	1.42
15	Non-Hodgkins Lymphoma	14	1.41	31	1.45	18	1.49	49	1.46	2,164	1.30

Table 4. Leading Causes of Mortality for All Ages, Female, 1996-2004

	Leading Causes of Mortality Females, All Ages, 1996~2004	Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Ischemic Heart Disease	271	26.34	494	24.17	240	20.36	734	22.77	29066	17.65
2	Cerebro-vascular diseases	75	7.29	183	8.95	88	7.46	271	8.41	13910	8.44
3	Acute myocardial infarction	74	7.19	164	8.02	78	6.62	242	7.51	12125	7.36
4	Lung Cancer	68	6.61	120	5.87	99	8.40	219	6.79	10051	6.10
5	Breast Cancer	51	4.96	102	4.99	60	5.09	162	5.03	7634	4.63
6	COPD	45	4.37	81	3.96	50	4.24	131	4.06	6411	3.89
7	Colorectal Cancer	38	3.69	84	4.11	35	2.97	119	3.69	4782	2.90
8	Alzheimer's Disease	26	2.53	51	2.50	43	3.65	94	2.92	5183	3.15
9	Diabetes Mellitus	33	3.21	57	2.79	35	2.97	92	2.85	6216	3.77
10	Other Heart Disease	16	1.55	56	2.74	29	2.46	85	2.64	4874	2.96
11	Pneumonia	31	3.01	55	2.69	29	2.46	84	2.61	4122	2.50
12	Heart Failure	12	1.17	40	1.96	24	2.04	64	1.99	3018	1.83
13	Renal Failure	23	2.24	42	2.05	14	1.19	56	1.74	2324	1.41
14	Pancreatic Cancer	15	1.46	34	1.66	21	1.78	55	1.71	2483	1.51
15	Ovarian Cancer	12	1.17	23	1.13	14	1.19	37	1.15	2473	1.50

Infant Mortality

During the first year of life, complications during pregnancy, labour and delivery, congenital malformations as well as disorders relating to gestation length are the most prominent causes of infant mortality. Other disorders such as sudden infant death syndrome and respiratory distress syndrome also contribute to the burden of infant mortality. Between 1996 and 2004, complications during pregnancy, labour and delivery were the leading causes of infant death, accounting for 31.4% of all infant deaths in the EOHU catchment area, and 16.4% of infant deaths in Ontario (Table 5).

Table 5. Leading Causes of Infant Mortality, EOHU & Ontario, 1996-2004

Leading Causes of Infant Mortality (Both Male & Female, 1996-2004)*		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Complications of Pregnancy, Labour and Delivery			7	29.2			11	31.4	469	16.4
2	Congenital Malformations			5	20.8			7	20.0	500	17.5
3	Disorders Relating to Length of Gestation							5	14.3	433	15.1
4	Down's Syndrome									121	4.2
5	Respiratory Distress of Newborn									55	1.9
6	Disorders Originating in Perinatal Period									153	5.3
7	Sudden Death									120	4.2
8	Septicaemia									23	0.8
9	Spina bifida									21	0.7
10	Neoplasms										
	Total	10	100	24	100	11	100	35	100	2860	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Children Aged 1-9

The incidence of mortality among children under the age of 10 was very low in the EOHU catchment area; during the reference period (1996-2004), there were 15 deaths in this age group during the time period. As highlighted in Table 6, the top five leading causes of mortality for this age group were: congenital malformations, neoplasms, unintentional injuries including motor vehicle accidents, and pneumonia in addition to other ill-defined conditions.

Table 6. Leading Causes of Mortality, Ages 1-9, Both Sexes, 1996-2004

Leading Causes of Mortality Ages 1-9, 1996-2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Congenital Malformations									95	11.4
2	Neoplasms									149	17.8
3	Ill-defined Symptoms and Conditions									63	7.5
4	Unintentional Injuries									204	24.4
5	Pneumonia									16	1.9
6	Other Respiratory Diseases									7	0.8
	Total	<5	100	6	100	9	100	15	100	836	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Children Aged 10-19

There were also very few mortality events among the 10 to 19 age group. Between 1996 and 2004 there were 38 deaths in total, 25 among males and 13 among females. Injuries, both intentional and unintentional, played a major role in the overall mortality among this age group. Motor vehicle accidents and suicide were among the top five leading causes of mortality in the EOHU catchment area (Table 7). Motor vehicle accidents were responsible for 56% of all deaths among males in this age group and 38.5% of all deaths among females.

Table 7. Leading Causes of Mortality, Ages 10-19, 1996-2004

Leading Causes of Mortality Aged 10-19, 1996-2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario		
		#	%	#	%	#	%	#	%	#	%	
Male	1	Motor vehicle accidents (D115+D116)			9	75.0	5	38.5	14	56.0	338	30.2
	2	Symptoms & Ill-Defined Conditions							12.0		98	8.8
	3	Suicide							8.0		174	15.6
	4	Neoplasms							8.0		118	10.6
	5	Pneumonia							8.0		6	0.5
		Total	<5	100	12	100	13	100	25	100	1,118	100
Female	1	Motor Vehicle Accidents						5	38.5		144	26.7
	2	Diseases of Pericardium/ Acute Myocarditis										
	3	Neoplasms									72	13.4
	4	Suicide									62	11.5
	5	Symptoms & Ill-Defined Conditions									45	8.3
	6	Other Heart Disease									15	2.8
		Total	<5	100	10	100	<5	100	13	100	539	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Adults Aged 20-44

Among this age group, injury, specifically suicide and motor vehicle accidents, continued to play a significant role in male mortality during the reference period (1996-2004). Injury mortality contributed to more than 40 % of all male mortality in the EOHU catchment area and 26% in the province. Cardiovascular disease, lung cancer, and accidental poisoning were also present in the top five causes of male mortality. In females, on the other hand, breast cancer was the leading cause of mortality. Suicide and motor vehicle accidents were also significant as the 2nd and 3rd leading causes of death. Lung cancer, heart disease, cervical cancer and Cerebro-vascular diseases were also top causes of death in females.

Table 8. Leading Causes of Mortality, Male, Age 20-44, 1996-2004

Leading Causes of Mortality in Age 20-44, Male, EOHU & Ontario, 2001~2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Suicide	14	26.9	26	25.7	16	23.2	42	24.7	1405	15.3
2	Motor Vehicle Accidents	5	9.6	13	12.9	14	20.3	27	15.9	1041	11.3
3	Ischemic Heart Disease			10	9.9	5	7.2	15	8.8	654	7.1
4	Acute Myocardial Infarction			5	5.0			8	4.7	343	3.7
5	Lung Cancer							8	4.7	188	2.0
6	Ill-Defined Symptoms and Conditions							6	3.5	706	7.7
7	Accidental Poisoning			5	5.0			6	3.5	476	5.2
8	Neoplasms							6	3.5	45	0.5
9	All Other Forms of Heart Disease							5	2.9	259	2.8
10	Diabetes Mellitus									173	1.9
	Total	52	100	101	100	69	100	170	100	9204	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Table 9. Leading Causes of Mortality, Female, Age 20-44, 1996-2004

Leading Causes of Mortality Age 20-44, Female, EOHU & Ontario, 2001~2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Breast Cancer	5	16.1	7	10.8			11	10.3	535	10.5
2	Suicide			6	9.2			10	9.3	412	8.1
3	Motor Vehicle Accidents			8	12.3			9	8.4	349	6.9
4	All Other Forms of Heart Disease							6	5.6	150	3.0
5	Cerebro-vascular Diseases							5	4.7	173	3.4
6	Ill-Defined Symptoms and Conditions									282	5.5
7	Accidental Poisoning									155	3.0
8	Lung Cancer	0	0.0							180	3.5
9	Ischemic Heart Disease									139	2.7
10	Cancer in Central Nervous System	0	0.0	0	0.0					108	2.1
	Total	31	100	65	100	42	100	107	100	5084	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Adults Aged 45-64

In adults aged 45 to 64, chronic diseases and cancers replace injury as the leading causes of death, particularly among females. From 1996 to 2003, Ischemic Heart Disease (IHD) was the leading cause of death in males while lung cancer was the second. Colorectal cancer, suicide and liver diseases made up the rest of the top 5 (Table 10). In females, the leading causes of death are reversed, with lung cancer as the leading cause and IHD as the second, followed by breast cancer, Cerebro-vascular diseases and colorectal cancer (Table 11). In both males and females IHD and lung cancer accounted for 20-40% of total mortality.

Table 10. Leading Causes of Mortality, Male, Aged 45-64, 1996-2004

Leading Causes of Mortality Males, Aged 45-64, 1996~2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Ischemic Heart Disease	54	26.60	99	24.21	62	23.40	161	23.89	6,275	19.57
2	Lung Cancer	37	18.23	73	17.85	44	16.60	117	17.36	3,618	11.28
3	Acute Myocardial Infarction	22	10.84	44	10.76	37	13.96	81	12.02	3,203	9.99
4	Colorectal Cancer	8	3.94	21	5.13	13	4.91	34	5.04	1,271	3.96
5	Suicide			7	1.71	16	6.04	23	3.41	998	3.11
6	Cerebro-vascular Diseases			13	3.18	8	3.02	21	3.12	969	3.02
7	Diabetes Mellitus	6	2.96	10	2.44	8	3.02	18	2.67	1,259	3.93
8	All Other Forms of Heart Disease			9	2.20	6	2.26	15	2.23	744	2.32
9	Pancreatic Cancer	6	2.96	9	2.20	6	2.26	15	2.23	697	2.17
10	Non-Hodgkin's Lymphoma			9	2.20	5	1.89	14	2.08	595	1.86
	Total	203	100	409	100	265	100	674	100	32063	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Table 11. Leading Causes of Mortality, Female, Aged 45-64, 1996-2004

Leading Causes of Mortality Females, Aged 45-64, 1996~2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Lung Cancer	21	15.33	42	15.33	38	22.62	80	18.10	2,665	13.01
2	Ischemic Heart Disease	24	17.52	33	12.04	17	10.12	50	11.31	1,646	8.04
3	Breast Cancer	5	3.65	27	9.85	13	7.74	40	9.05	2,534	12.37
4	Colorectal Cancer			17	6.20	9	5.36	26	5.88	894	4.37
5	Acute Myocardial Infarction	5	3.65	10	3.65	9	5.36	19	4.30	816	3.98
6	Ovarian Cancer	6	4.38	11	4.01	5	2.98	16	3.62	794	3.88
7	Cerebro-vascular Diseases	5	3.65	9	3.28	6	3.57	15	3.39	746	3.64
8	Pancreatic Cancer			10	3.65	5	2.98	15	3.39	454	2.22
9	Suicide	5	3.65	8	2.92	7	4.17	15	3.39	370	1.81
10	COPD	5	3.65	10	3.65			12	2.71	441	2.15
	Total	137	100	274	100	168	100	442	100	20478	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Seniors Aged 65 and up

Mortality in the oldest group, seniors aged 65 and older, accounts for about 75-80% of the total population mortality. The rankings of the leading causes of death in this age group are similar to those for mortality for all ages. One cause of death, the IHD, contributed about one quarter of the total mortality in males and females in both the EOHU catchment area and in Ontario. Chronic

diseases, such as Cerebro-vascular diseases, lung cancer, COPD and Pneumonia also contributed to the leading causes of death in both males and females. Prostate cancer in males and breast cancer in females were the most common causes of death respectively. Diabetes mellitus was ranked among the leading causes of death for both males and females in the EOHU catchment area and in the province of Ontario (Table 12 and Table 13).

Table 12. Leading Causes of Mortality, Male, Aged 65+, 1996-2004

Leading Causes of Mortality Males, Aged 65+, EOHU & Ontario, 1996-2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Ischemic Heart Disease	213	29.18	442	27.66	202	23.71	644	26.29	27,240	22.24
2	Acute Myocardial Infarction	62	8.49	153	9.57	83	9.74	236	9.63	12,074	9.86
3	Lung Cancer	75	10.27	142	8.89	73	8.57	215	8.78	9,905	8.09
4	Cerebro-vascular Diseases	48	6.58	113	7.07	55	6.46	168	6.86	8,632	7.05
5	COPD	60	8.22	103	6.45	58	6.81	161	6.57	6,403	5.23
6	Prostate Cancer	34	4.66	81	5.07	28	3.29	109	4.45	5,115	4.18
7	Diabetes Mellitus	23	3.15	50	3.13	46	5.40	96	3.92	4,908	4.01
8	Colorectal Cancer	24	3.29	50	3.13	33	3.87	83	3.39	4,120	3.36
9	Renal Failure	16	2.19	35	2.19	22	2.58	57	2.33	2,158	1.76
10	Pneumonia	18	2.47	31	1.94	20	2.35	51	2.08	2,909	2.38
11	All Other Forms of Heart Disease	8	1.10	29	1.81	21	2.46	50	2.04	3,127	2.55
12	Alzheimer's Disease	11	1.51	29	1.81	12	1.41	41	1.67	2,249	1.84
13	Heart Failure	10	1.37	30	1.88	9	1.06	39	1.59	1,853	1.51
14	Pancreatic Cancer	9	1.23	24	1.50	10	1.17	34	1.39	1,620	1.32
15	Non-Hodgkin's Lymphoma	9	1.23	20	1.25	12	1.41	32	1.31	1,431	1.17
	Total	730	100	1,598	100	852	100	2,450	100	122,461	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Table 13. Leading Causes of Mortality, Female, Aged 65+, 1996-2004

Leading Causes of Mortality Female, Age 65+, EOHU & Ontario, 1996-2004		Cornwall		UC-SDG		UC-PR		EOHU		Ontario	
		#	%	#	%	#	%	#	%	#	%
1	Ischemic Heart Disease	246	28.81	458	27.16	223	23.30	681	25.77	27,281	19.92
2	Cerebro-vascular Diseases	69	8.08	171	10.14	80	8.36	251	9.50	12,977	9.48
3	Acute Myocardial Infarction	68	7.96	152	9.02	69	7.21	221	8.36	11,240	8.21
4	Lung Cancer	47	5.50	76	4.51	59	6.17	135	5.11	7,206	5.26
5	COPD	40	4.68	71	4.21	48	5.02	119	4.50	5,928	4.33
6	Breast Cancer	41	4.80	68	4.03	43	4.49	111	4.20	4,565	3.33
7	Alzheimer's Disease	26	3.04	51	3.02	43	4.49	94	3.56	5,133	3.75
8	Colorectal Cancer	35	4.10	67	3.97	26	2.72	93	3.52	3,766	2.75
9	Diabetes Mellitus	31	3.63	51	3.02	31	3.24	82	3.10	5,476	4.00
10	Pneumonia	29	3.40	51	3.02	28	2.93	79	2.99	3,879	2.83
11	All Other Forms of Heart Disease	10	1.17	45	2.67	26	2.72	71	2.69	4,283	3.13
12	Heart Failure	12	1.41	39	2.31	23	2.40	62	2.35	2,952	2.16
13	Renal Failure	22	2.58	40	2.37	13	1.36	53	2.01	2,157	1.57
14	Pancreatic Cancer	11	1.29	24	1.42	15	1.57	39	1.48	1,983	1.45
15	Falls	11	1.29	16	0.95	7	0.73	23	0.87	1,777	1.30
	Total	854	100	1,686	100	957	100	2,643	100	136,954	100

*Counts of less than 5 cannot be reported and the cells are left blank.

Cancer Mortality

Cancer Care Ontario (CCO) is the leading provincial agency that steers and coordinates Ontario's cancer services and cancer prevention efforts. CCO provides the Ontario cancer surveillance data systematically through Seer*Stat, which was specifically developed for the analysis and reporting of cancer statistics, including cancer incidence, mortality, survival, and prevalence. Using data from Seer*Stat 6.2.4, we are able to draw a picture specifically focused on the mortality from Cancer in the EOHU region between 1996 and 2004 as well as compare local data to the provincial average.

Cancer Mortality All Ages

Throughout the entire time period, from 1996 to 2004, the age-standardized mortality rates for all cancers in the EOHU catchment area were higher than the provincial average in both males and females (240.9 vs. 219.2 in males and 163.2 vs. 149.1 in females). The age-specific mortality rates for cancer in both the EOHU catchment area and the province of Ontario were low for the age groups between 0 and 44 years, thereafter, there was an increase starting at age 45. Cancer deaths were most common among seniors (65 years and up), this age group accounted for around 70% of total cancer deaths (Figure 10).

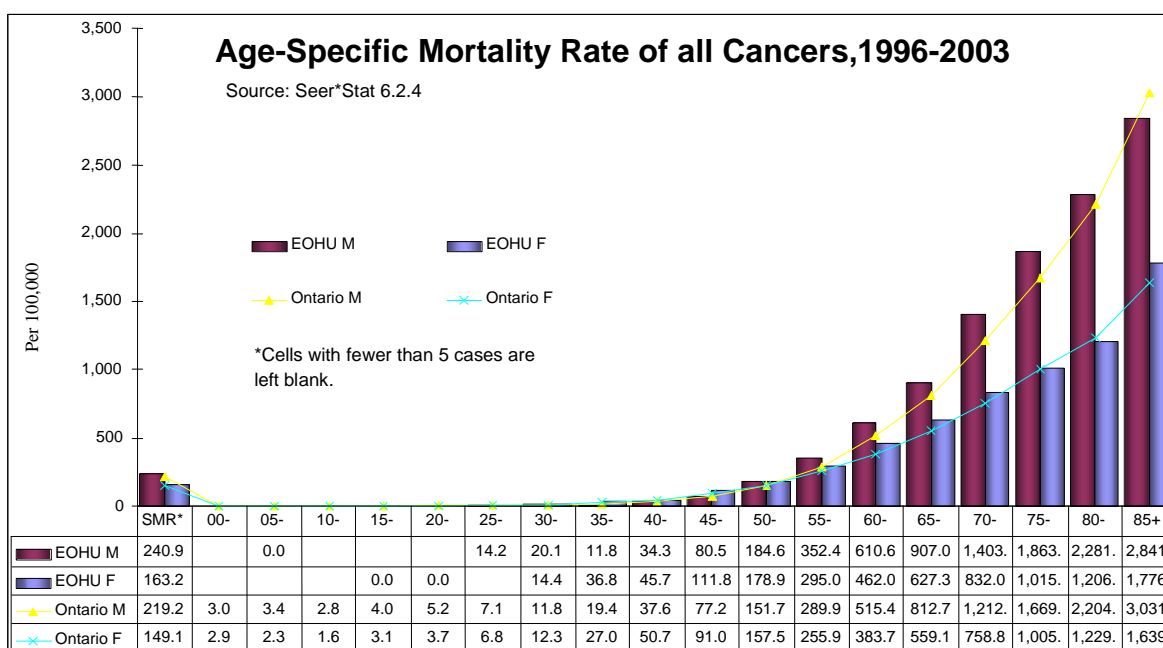


Figure 10. Age-Specific Mortality Rates of Cancer (per 100,000), 1996-2004

Leading Causes of Cancer Mortality

Tables 14 and 15 present the top 10 leading causes of cancer deaths in males and females from 1996 to 2004. These leading causes accounted for more than 70% of all cancer deaths in both sexes. Lung cancer was the top cause of cancer death in both males and females. The second leading cause was prostate cancer in males and breast cancer in females. Colorectal cancer was third in both sexes. These three cancers accounted for approximately half of all cancer deaths in the province of Ontario and even more in the EOHU catchment area. The age-standardized mortality rates of the three leading causes of cancer death were higher in the EOHU catchment area than the rest of the province in both males and females. The other leading causes of cancer deaths from 1996 to 2004 were pancreatic cancer, Non-Hodgkins lymphoma and leukemia for both males and females, as well as ovarian cancer in females.

Table 14. Leading Causes of Cancer Mortality, Males, All Ages, SRATE (per 100,000), 1996-2004

	Leading Causes of Cancer Mortality Males, All Ages, 1996-2004	UC-SDG		UC-PR		EOHU		Ontario	
		#	SRATE	#	SRATE	#	SRATE	#	SRATE
1	Lung Cancer	404	75.4	224	80.6	628	77.0	26,921	60.0
2	Prostate Cancer	165	32.2	70	27.8	235	30.8	10,829	26.2
3	Colorectal Cancer	128	24.3	90	32.6	218	27.2	10,290	23.3
4	Non-Hodgkin's Lymphoma	56	10.7	24	8.7	80	9.9	4,032	9.0
5	Pancreatic Cancer	54	10.2	25	9.2	79	9.8	4,372	9.8
6	Leukemia	47	9.4	19	7.2	66	8.6	3,812	8.7
7	Esophageal Cancer	42	7.9	10	3.6	52	6.4	3,196	7.0
8	Liver Cancer	33	6.2	19	7.1	52	6.5	2,646	5.8
9	Bladder Cancer	30	5.9	19	7.6	49	6.5	3,171	7.5
10	Renal Cancer	28	5.2	16	5.6	44	5.3	2,323	5.2
11	Neoplasm	1,262	240.8	661	241.8	1,923	240.9	96,865	219.2

Table 15. Leading Causes of Cancer Mortality, Females, All Ages, SRATE (per 100,000), 1996-2004

Leading Causes of Cancer Mortality Females, All Ages, 1996-2004		UC-SDG		UC-PR		EOHU		Ontario	
		#	SRATE	#	SRATE	#	SRATE	#	SRATE
1	Lung Cancer	263	41.9	158	46.9	421	43.7	18,486	32.6
2	Breast Cancer	181	27.5	94	26.2	275	26.8	15,050	26.1
3	Colorectal Cancer	127	16.8	61	17.0	188	17.0	8,921	14.7
4	Pancreatic Cancer	61	8.7	35	9.2	96	8.8	4,551	7.6
5	Ovarian Cancer	48	7.3	28	7.8	76	7.5	4,581	8.1
6	Non-Hodgkin's Lymphoma	38	5.6	35	9.6	73	6.9	3,534	6.0
7	Leukemia	27	4.1	18	4.6	45	4.2	2,806	4.8
8	Cancer in CNS	19	3.3	18	5.8	37	4.2	1,903	3.5
9	Renal Cancer	17	2.4	18	5.2	35	3.3	1,363	2.3
10	Uterine Cancer	18	2.4	13	3.5	31	2.8	2,028	3.4
11	Neoplasm	1,070	157.1	619	174.9	1,689	163.2	87,006	149.1

The Changing Face of Cancer Mortality

From 1996 to 2004, in Ontario, the age-standardized mortality rates in males showed a slight decline, while the age-standardized mortality rates in females remained at a consistent level. By region, the age-standardized mortality rates of cancers were higher in the EOHU catchment area than the province for both males and females, with the gap in rates widening over time, especially after 1999.

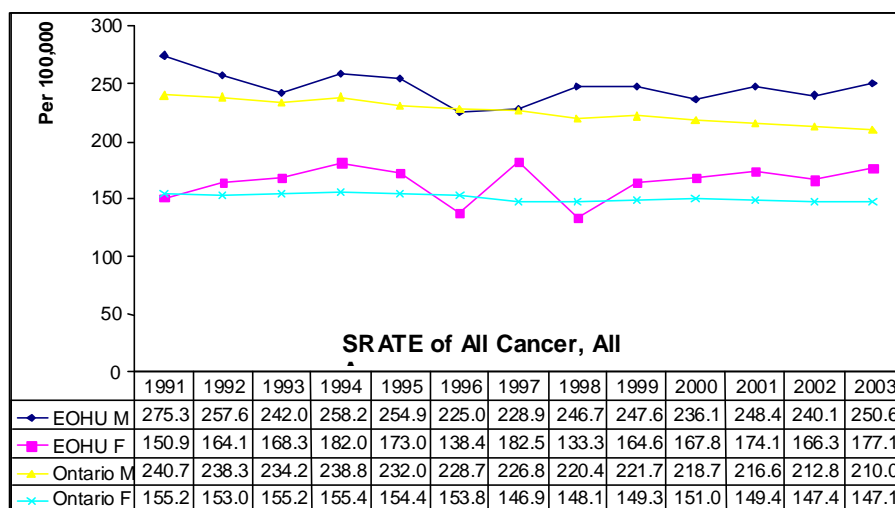


Figure 11. SRATE of Cancer Mortality (per 100,000), All Ages, 1996-2004

Cancer Mortality Ages 65 and Up

As mentioned previously, rates of cancer mortality begin to increase around the age of 45, and the highest rates are concentrated in the oldest age groups. It is not surprising to find that the leading causes of cancer mortality in the senior population (65 years and up) are very similar to those for all age groups. The three leading causes of cancer death were lung cancer, prostate cancer in males and breast cancer in females, as well as colorectal cancer and they accounted for approximately half of the total cancer deaths. The other leading causes of cancer death were pancreatic cancer, Non-Hodgkin's lymphoma and leukemia, as well as ovarian cancer in females and liver cancer in males.

Of the top 10 leading causes of cancer death, the age-standardized mortality rates in males were significantly higher than those in females. About 80 % of male cancer deaths and more than 70% of female cancer deaths occurred in the senior population (aged 65 and up).

Table 16. Leading Causes of Cancer Mortality, SRATE (per 100,000), Males, Aged 65+, 1996-2004

Leading Causes of Cancer Mortality Males, Age 65+, 1996-2004		UC-SDG		UC-PR		EOHU		Ontario	
		#	SRATE	#	SRATE	#	SRATE	#	SRATE
1	Lung Cancer	266	439.8	143	496.0	409	458.9	19,449	393.2
2	Prostate Cancer	156	267.7	62	223.3	218	253.4	10,030	215.0
3	Colorectal Cancer	98	166.2	61	211.7	159	180.7	7,567	156.5
4	Pancreas Cancer	38	64.1	16	57.2	54	61.2	3,027	61.9
5	Non-Hodgkin's Lymphoma	37	62.7	17	59.7	54	61.5	2,595	53.2
6	Leukemia	37	62.7	14	50.7	51	59.0	2,643	55.1
7	Liver Cancer	29	48.1	14	49.2	43	48.4	1,723	34.8
8	Bladder Cancer	25	43.6	14	52.1	39	46.1	2,668	56.8
9	Esophageal Cancer	27	45.3	7	23.7	34	38.1	2,052	41.6
10	Stomach Cancer	25	43.5	8	28.8	33	38.4	2,410	49.8
11	Neoplasm	924	1555.8	446	1565.0	1,370	1558.3	70,130	1447.1

Table 17. Leading Causes of Cancer Mortality, SRATE (per 100,000), Females, Aged 65+, 1996-2004

	Leading Causes of Cancer Mortality Females, Age 65+, 1996-2004	UC-SDG		UC-PR		EOHU		Ontario	
		#	SRATE	#	SRATE	#	SRATE	#	SRATE
1	Lung Cancer	167	212.1	89	233.6	256	218.7	13,081	193.7
2	Breast Cancer	119	139.4	67	160.8	186	146.1	8,973	127.2
3	Colorectal Cancer	103	110.0	41	95.8	144	105.5	7,050	97.1
4	Pancreatic Cancer	47	54.6	26	58.3	73	55.6	3,632	51.0
5	Non-Hodgkin's Lymphoma	29	34.3	27	61.6	56	43.1	2,629	37.4
6	Ovarian Cancer	32	38.3	13	32.2	45	36.3	2,909	42.6
7	Leukemia	18	19.9	17	37.3	35	25.4	2,026	27.8
8	Renal Cancer	14	15.9	15	37.1	29	22.8	1,015	14.3
9	Stomach Cancer	17	17.3	7	16.8	24	17.1	1,562	21.7
10	Uterine Cancer	13	13.1	10	23.8	23	16.6	1,504	21.2
11	Neoplasm	774	896.1	413	996.6	1,187	927.6	61,576	874.1

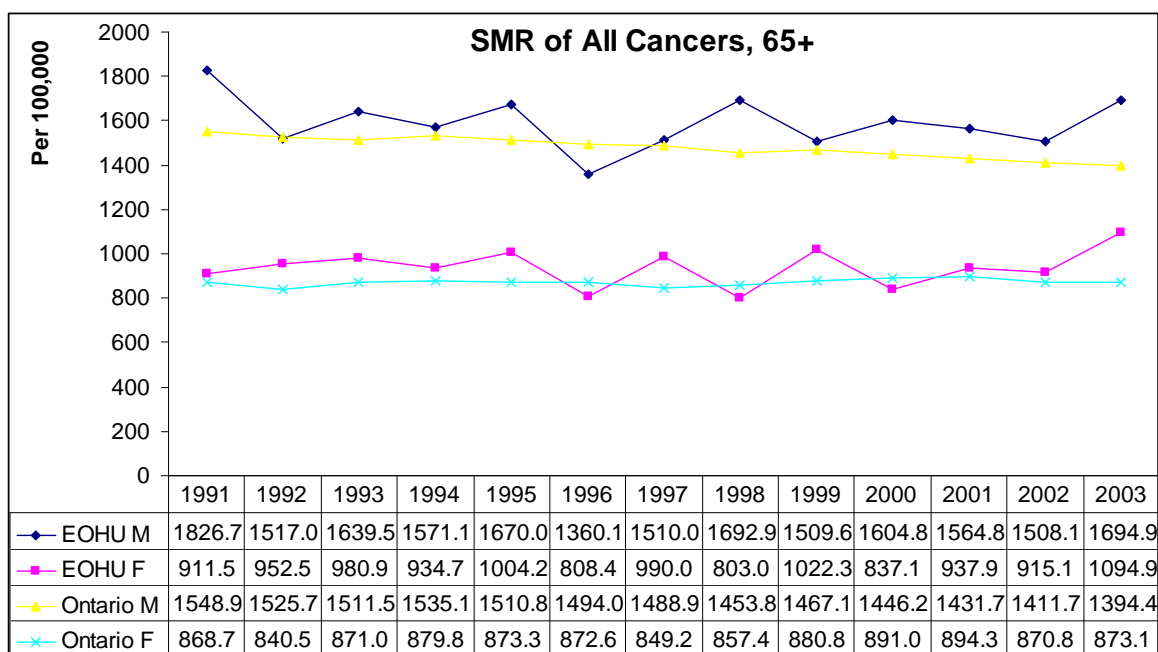


Figure 12. SRATE of Cancer Mortality (per 100,000), Aged 65+, 1991-2003

From 1996 to 2004, the age-standardized mortality rates in Ontario males aged 65 and over declined regularly from 1548.9 to 1394.4 deaths per 100,000, while in females the rates remained stable. In the EOHU catchment area, however, the age-standardized mortality rates in seniors (65 years and up), for both males and females, were similar to the provincial level but with more fluctuation that is likely due to small numbers.

Leading Causes of Death

Causes of Death for All Ages

Tables 18 and 19 present the top 10 leading causes of all mortality and the age-standardized mortality rates (SRATE) for both Ontario and the EOHU catchment area, including the two united counties as well as the city of Cornwall in males and females from 1996 to 2004.

Table 18. Leading Causes of Mortality, SRATE (per 100,000), Males, All Ages, 1996-2004

Leading Causes of Mortality Males, All Ages, 1996~2004		Cornwall	UC-SDG	UC-PR	EOHU	Ontario
1	Ischemic Heart Disease	282.6	227.2	227.2	228.6	171.5
2	Lung Cancer	89.6	76.0	80.0	77.1	60.1
3	Cerebro-vascular Diseases	49.4	47.9	47.7	48.2	49.1
4	COPD	54.6	42.9	56.7	47.5	35.3
5	Prostate Cancer	30.7	32.6	27.8	31.3	26.5
6	Colorectal Cancer	31.5	24.0	32.3	27.2	23.4
7	Pneumonia	31.6	27.0	23.6	26.0	22.9
8	Diabetes Mellitus	24.5	20.6	33.6	25.2	25.5
9	Suicide	25.8	22.1	19.8	21.2	13.0
10	Heart failure	20.6	17.0	14.4	16.3	11.7
	All Causes	993.1	858.8	900.2	875.6	781.4

Table 19. Leading Causes of Mortality, SRATE (per 100,000), Females, All Ages, 1996-2004

Leading Causes of Mortality Females, All Ages, 1996~2004		Cornwall	UC-SDG	UC-PR	EOHU	Ontario
1	Ischemic Heart Disease	140.1	121.6	130.0	125.0	90.8
2	Lung Cancer	48.8	41.6	47.8	44.0	32.6
3	Cerebro-vascular Diseases	45.1	44.0	39.8	42.8	41.2
4	Breast Cancer	29.0	27.7	26.7	27.0	26.1
5	COPD	28.3	22.6	27.3	24.1	18.9
6	Pneumonia	23.1	17.5	17.8	17.6	14.9
7	Colorectal Cancer	17.4	16.6	16.6	16.7	14.7
8	Diabetes Mellitus	15.6	14.0	17.6	15.4	17.2
9	Alzheimer's Disease	9.4	9.6	17.2	12.2	11.0
10	Heart Failure	9.8	11.9	11.5	11.8	8.9
	All Causes	595.6	539.4	597.0	560.2	505.7

In the EOHU catchment area and in Ontario, for both males and females, ischemic heart disease and lung cancer were the first and second leading causes of mortality. In the EOHU region, the age-standardized mortality rate of Ischemic heart disease was 228.6 deaths per 100,000 males and 125.0 deaths per 100,000 females, which is much higher than the rates in Ontario (171.5 per 100,000 males and 90.8 per 100,000 females). The age-standardized mortality rates of lung cancer in the EOHU region were 77.1 deaths per 100,000 males and 44.0 deaths per 100,000 females, compared to Ontario, which had a rate of 60.1 deaths per 100,000 males and 32.6 deaths per 100,000 females.

For most of the ten leading causes of mortality, the age-standardized rates for the EOHU catchment area were higher than the provincial rates. For diabetes mellitus, on the other hand, the age-standardized mortality rates for males and females were slightly lower in the EOHU catchment area compared to Ontario.

In 65 years and up

The age-specific mortality rates for seniors aged 65 to 74 years, 75 to 84 years and 85 years and up, as well as the age-standardized mortality rate for the entire group aged 65 years and up are presented for the EOHU catchment area and Ontario, males and females respectively in Tables 20 to 23. Similar to the results for the leading causes of mortality in all ages, the age-standardized mortality rates in the senior population (65 years and up) were higher in the EOHU catchment area than the rates for Ontario.

Table 20. ASMR & SRATE of Leading Causes of Mortality (per 100,000), Males, Ages 65+, EOHU only, 1996-2004

Leading Causes of Mortality Males, 65+ 1996~2004, EOHU		65-74	75-84	85+	65+*
1	Ischemic Heart Disease	847.0	1985.9	5437.0	1627.4
2	Lung Cancer	409.5	557.9	491.5	460.3
3	COPD	172.0	522.8	1320.8	385.8
4	Cerebro-vascular Diseases	127.1	487.7	1551.2	370.3
5	Prostate Cancer	91.6	417.5	767.9	256.4
6	Pneumonia	52.4	203.5	1259.4	211.2
7	Colorectal Cancer	140.2	217.5	337.9	180.3
8	Diabetes Mellitus	95.4	214.0	522.2	173.9
9	Heart Failure	39.3	119.3	737.2	132.4
10	Renal Failure	33.7	140.3	506.8	112.0
	All Causes	3064.5	7143.6	19152.2	5828.3

* Age-Standardized Mortality Rate based on 1991 Canadian Population 65 years and up

Table 21. ASMR & SRATE of Leading Causes of Mortality (per 100,000), Females, Ages 65+, EOHU only, 1996-2004

Leading Causes of Mortality Females, 65+, 1996~2004, EOHU		65-74	75-84	85+	65+*
1	Ischemic Heart Disease	363.1	1233.9	4443.2	976.5
2	Cerebro-vascular Diseases	86.6	444.8	1665.4	328.6
3	Lung Cancer	219.9	227.2	172.1	217.9
4	COPD	119.9	222.4	467.1	178.6
5	Breast Cancer	104.9	179.4	295.0	146.5
6	Pneumonia	33.3	162.6	891.1	145.3
7	Diabetes Mellitus	51.6	193.7	319.6	118.4
8	Alzheimer's Disease	6.7	145.9	676.0	106.4
9	Colorectal Cancer	61.6	148.3	264.3	104.3
10	Heart failure	16.7	110.0	633.0	98.6
	All Causes	1752.3	4646.4	15032.0	3760.0

* Age-Standardized Mortality Rate based on 1991 Canadian Population 65 years and up

Table 22. ASMR & SRATE of Leading Causes of Mortality (per 100,000), Males, 65+, Ontario only, 1996-2004

Leading Causes of Mortality Males, All Ages, 1996~2004, Ontario		65-74	75-84	85+	65+*
1	Ischemic Heart Disease	588.8	1588.0	4252.2	1243.8
2	Lung Cancer	324.0	487.4	530.7	391.9
3	Cerebro-vascular Diseases	126.1	509.5	1622.4	386.3
4	COPD	110.5	393.9	1068.0	288.5
5	Prostate Cancer	87.7	304.6	743.4	216.4
6	Pneumonia	37.4	198.7	1039.0	184.4
7	Diabetes Mellitus	96.9	241.8	523.4	181.3
8	Colorectal Cancer	107.6	197.0	339.9	156.6
9	Heart Failure	20.8	103.2	553.6	97.8
10	Renal Failure	28.1	108.3	368.4	85.2
	All Causes	2575.4	6583.7	17632.4	5240.5

Table 23. ASMR & SRATE of Leading Causes of Mortality (per 100,000), Females, Aged 65+, Ontario only, 1996-2004

Leading Causes of Mortality Females, All Ages, 1996~2004, Ontario		65-74	75-84	85+	65+
1	Ischemic Heart Disease	247.9	904.2	3443.6	726.0
2	Cerebro-vascular Diseases	89.2	407.7	1695.5	326.6
3	Lung Cancer	176.7	227.8	194.2	193.1
4	COPD	73.6	208.1	451.8	147.3
5	Diabetes Mellitus	62.9	175.0	413.4	127.6
6	Breast Cancer	95.7	149.0	265.9	126.8
7	Pneumonia	22.7	126.5	775.3	119.7
8	Colorectal Cancer	61.7	122.9	250.8	96.8
9	Alzheimer's Disease	14.1	111.7	588.8	94.0
10	Heart Failure	13.9	76.8	497.6	75.1
	All Causes	1533.5	4236.3	14236.7	3461.3

As mentioned previously, causes of death were identified using the ICD 9 before 1999 and using the ICD 10 after 2000. Caution should be used when interpreting results for these transition years, as any changes may be the result of different definitions used and may not indicate an actual change.

Individual Causes of Death

Ischemic Heart Disease

Ischemic Heart Diseases (IHD) consistently remained the leading cause of death for males and females in both Ontario and the EOHU catchment area. The age-standardized mortality rates of IHD in all age groups and specifically for those 65 years and up declined in Ontario and the EOHU catchment area during the time-period of 1996 to 2004.

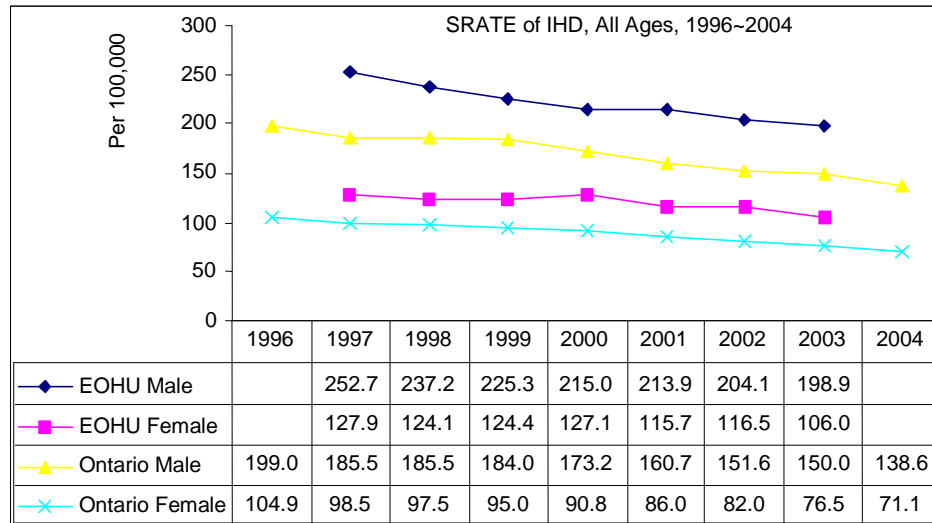


Figure 13. SRATE of IHD (per 100,000), All Ages, EOHU & Ontario, 1996-2004

In Ontario, the age-standardized mortality rate of Ischemic Heart Disease for all age groups dropped from 199.0 to 138.6 deaths per 100,000 males, and from 104.9 down to 71.1 deaths per 100,000 females. In the age group 65 years and up, the age-standardized mortality rate declined from 1426.6 deaths to 972.2 deaths per 100,000 males and from 831.1 to 563.4 deaths per 100,000 females between 1996 and 2004.

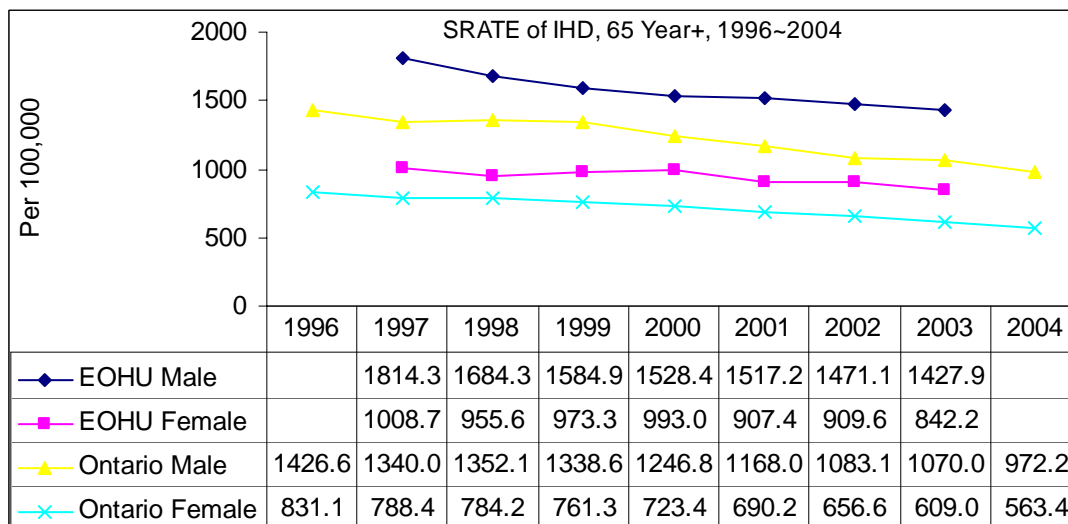


Figure 14. SRATE of IHD (per 100,000), Ages 65+, EOHU & Ontario, 1996-2004

In the EOHU catchment area, for all age groups and for those 65 years and up, the age-standardized mortality rates of IHD were higher than the rest of Ontario. While both the local

and provincial rates showed a decline over time, there was less of a decline in the EOHU catchment area. Taking into account the total population, the age-standardized mortality rate (3 year-average rate) decreased from 252.7 to 198.9 deaths per 100,000 males, and from 127.9 to 106.0 deaths per 100,000 females. In seniors 65 years and older, the age-standardized mortality rate (3 year-average rate) decreased from 1814.3 to 1427.9 deaths per 100,000 males and from 1008.7 to 842.2 deaths per 100,000 females. The gaps in the age-standardized mortality rates of IHD between the EOHU catchment area and the rest of Ontario widened over time (Figure 13 and Figure 14).

Lung Cancer

Lung cancer is a malignant growth on the lung tissue that has many well-documented risk factors. The greatest risk is long-term exposure to inhaled carcinogens and the most common means of this kind of exposure is through tobacco smoke. The risk of developing lung cancer is directly related to the number of cigarettes smoked or the amount of exposure to second-hand smoke ^[1].

In the last decade, the age-standardized mortality rates of lung cancer have been very different for males and females. While in males, the mortality rate between 1996 and 2004 declined slowly but consistently from 65.1 to 54.3 deaths per 100,000 males in Ontario and from 78.1 to 80.1 deaths per 100,000 males in the EOHU catchment area. In females, the age-standardized mortality rates of lung cancer rose from 31.7 to 34.1 deaths per 100,000 females in Ontario and from 39.1 to 41.2 deaths per 100,000 in the EOHU catchment area (Figure 15).

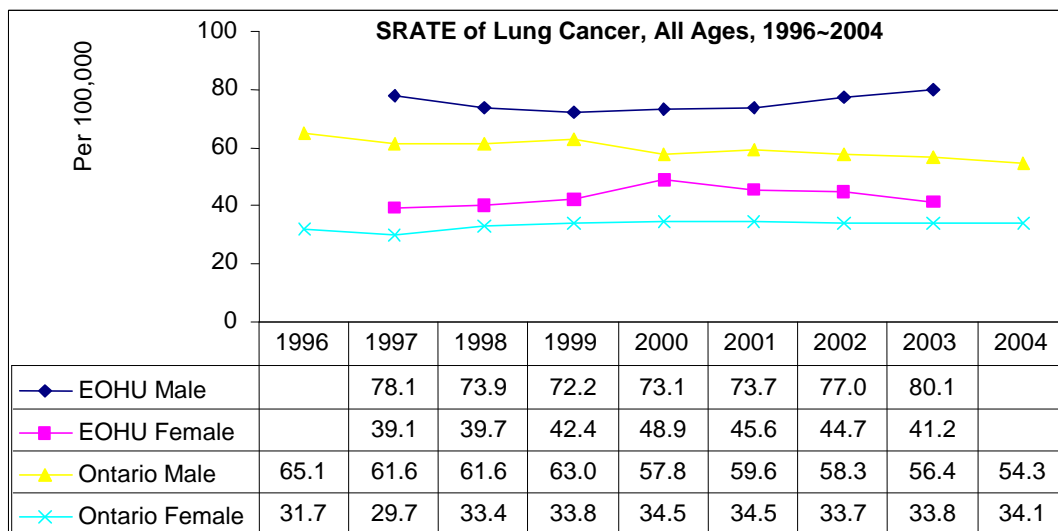


Figure 15. SRATE of Lung Cancer, All Ages, 1996-2004

¹ . The Cornell Illustrated Encyclopedia of Health: The definitive home medical reference. Antonio M. Gotto. P.733

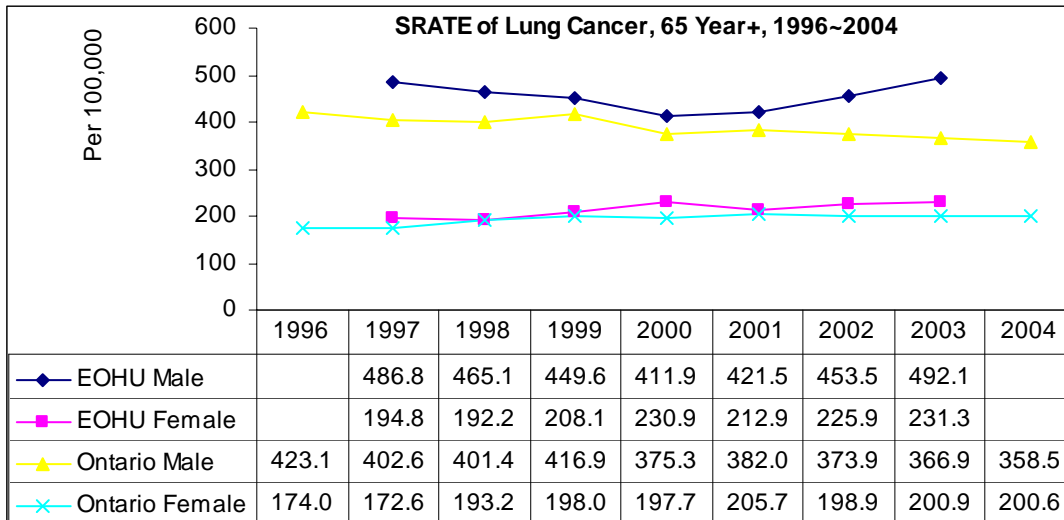


Figure 16. SRATE of Lung Cancer, Ages 65+, 1996-2004

Cerebro-vascular Disease

Cerebro-vascular disease includes all disorders in which an area of the brain is temporarily or permanently affected by bleeding or a lack of blood flow. Some types of Cerebro-vascular disease include stroke, aneurysm and vascular malformations. Cerebro-vascular diseases are the third leading cause of death after Ischemic heart disease and Lung cancer and are the most disabling of all neurological diseases as approximately 50% of all survivors have a residual neurological deficit and require 25% chronic care.

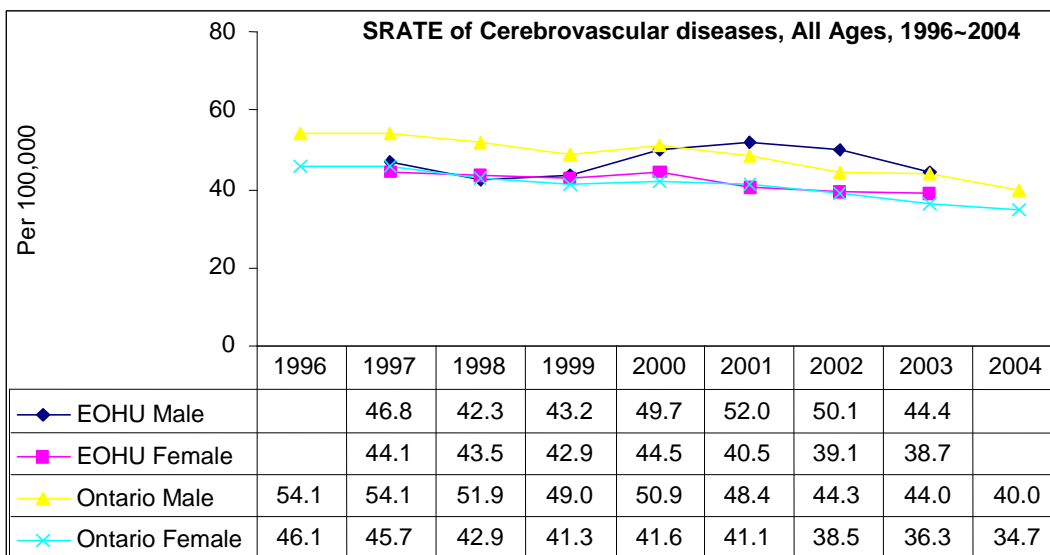


Figure 17. SRATE of Cerebro-vascular Disease (per 100,000), All Ages, EOHU & Ontario, 1996-2004

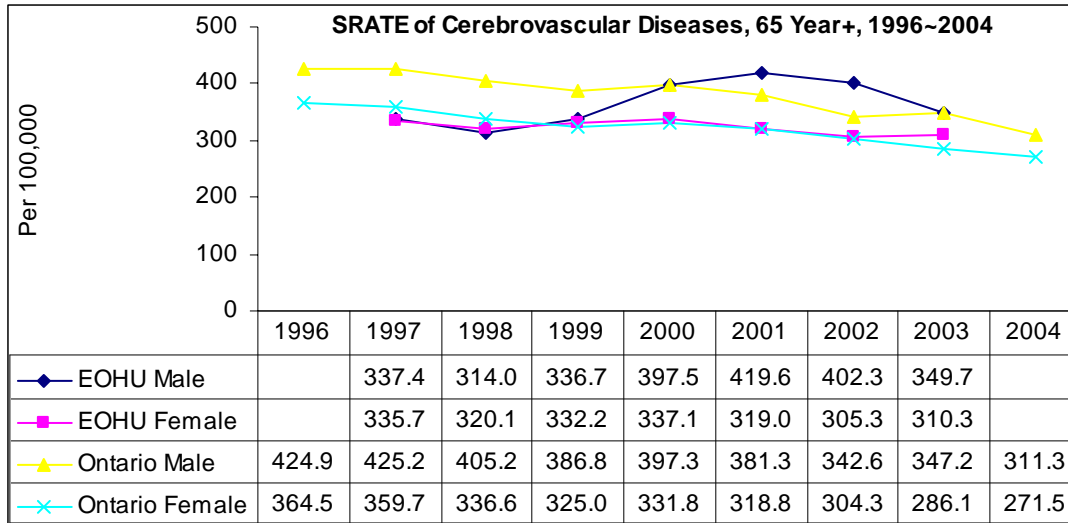


Figure 18. SRATE of Cerebro-vascular Disease (per 100,000), Ages 65+, 1996-2004

Between 1996 and 2004 the age-standardized mortality rates for Cerebro-vascular disease in the province of Ontario were consistently declining. In all age groups, the rates declined gradually from 54.1 to 40.0 deaths per 100,000 males and from 46.1 down to 34.7 deaths per 100,000 females. In seniors aged 65 years and up, the age-standardized mortality rates of Cerebro-vascular diseases were much higher than in the rest of the population. During the same time period, the age-standardized mortality rates of Cerebro-vascular disease in those aged 65 and up decreased from 424.9 to 311.3 deaths per 100,000 males and from 364.5 to 271.5 deaths per 100,000 females. In the EOHU catchment area, the age-standardized mortality rates of Cerebro-vascular disease did not show any decline; the fluctuations in the data were likely due to small numbers (Figure 17 and Figure 18).

Prostate Cancer

Prostate Cancer is the most common type of cancer in men in North America and is the second leading cause of cancer death after lung cancer. Some common risk factors for this type of cancer include a family history of prostate cancer, being over the age of 65 and having African ancestry. Prostate cancer claims the lives about 4,300 Canadian males each year². Since prostate cancer is especially prevalent in older adults, the impact of the disease is expected to increase as the population ages.

² The Canadian Cancer Society (2009). www.cancer.ca

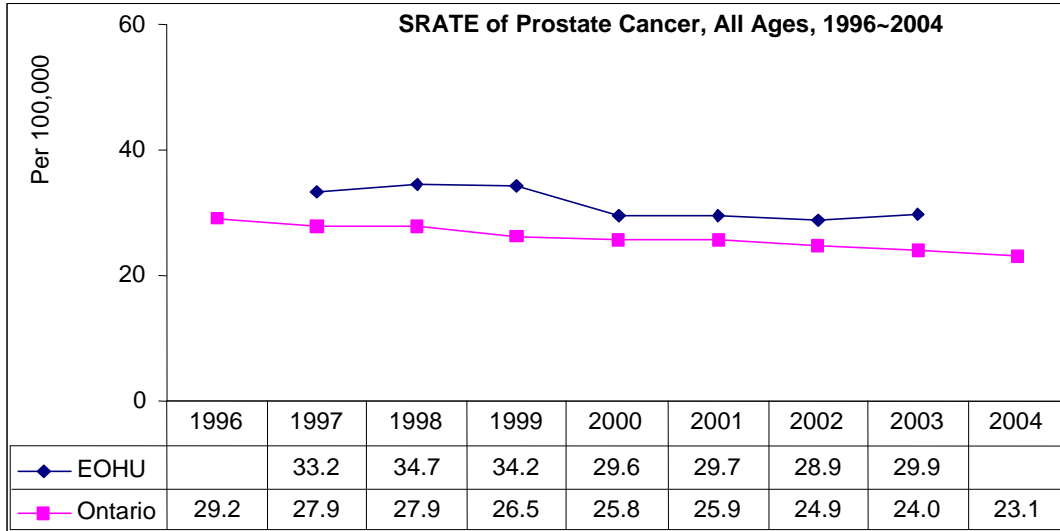


Figure 19. SRATE of Prostate Cancer (per 100,000), All Ages, 1996-2004

Prostate cancer was the second leading cause of cancer deaths in Ontario and the EOHU catchment area, however the age-standardized mortality rates of prostate cancer in both Ontario and the EOHU catchment did decline between 1996 and 2004. For Ontario, the age-standardized mortality rate of prostate cancer in all age groups declined from 29.2 to 23.1 deaths per 100,000 males, while rates in the EOHU catchment area also declined from 33.2 to 29.9 deaths per 100,000 males over time (Figure 19).

In seniors aged 65 years and up, the age-standardized mortality rate of prostate cancer also showed declining rates over time. In Ontario, from 1996 to 2004, rates steadily decreased from 239.9 deaths down to 191.0 deaths per 100,000 males. In the EOHU catchment area, rates also declined from 265.5 deaths down to 243.6 deaths per 100,000 males, although rates were higher than the provincial average (Figure 20).

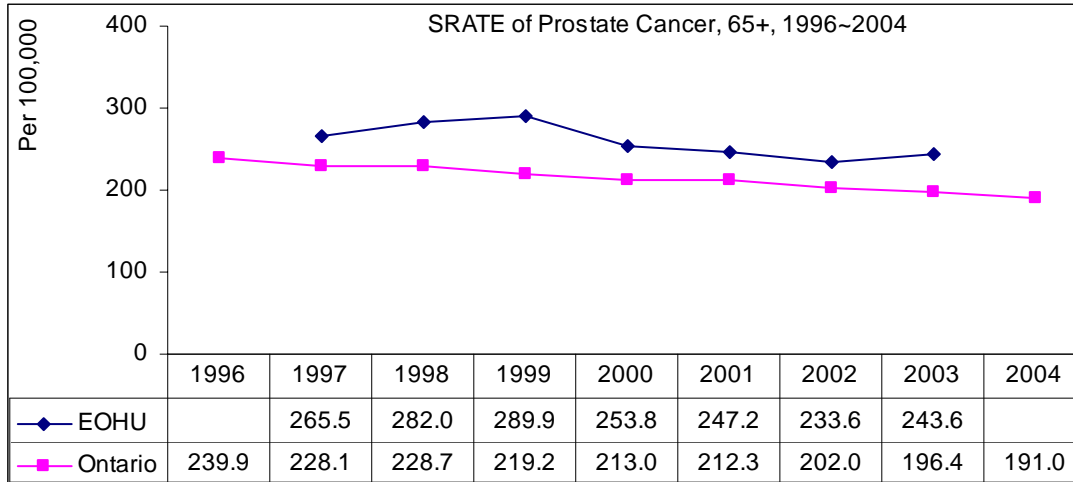


Figure 20. SRATE of Prostate Cancer (per 100,000), Ages 65+, 1996-2004

Female Breast Cancer

Breast cancer is a complex and challenging disease. It continues to be the most common cancer among Canadian women and one in every nine women is expected to develop breast cancer during her lifetime. In 2008, an estimated 22,400 Canadian women will be diagnosed with breast cancer, and 5,300 women will die of it³.

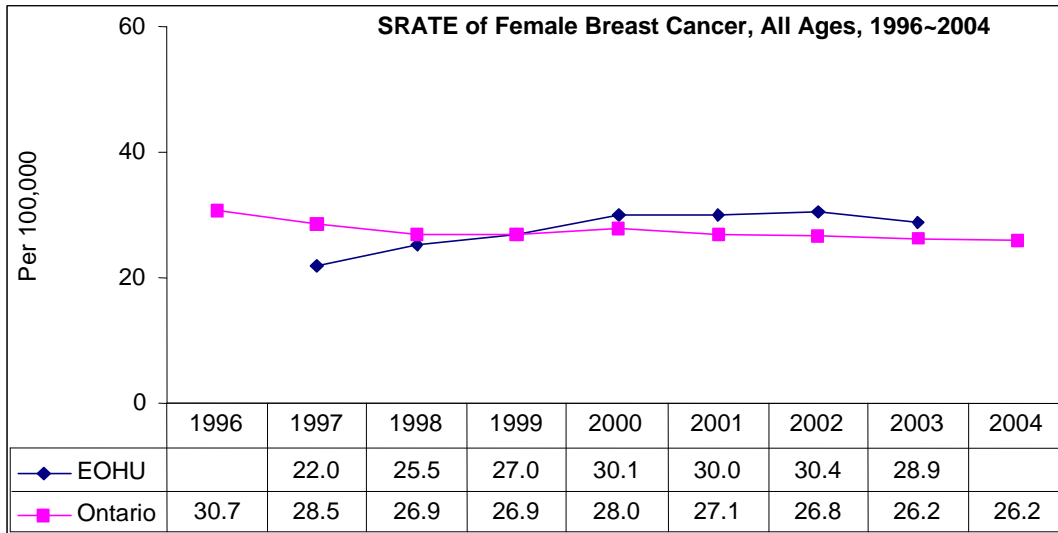


Figure 21. SRATE of Breast Cancer (per 100,000), Females, All Ages, 1996-2004

Breast cancer was the second most fatal cancer in women (after lung cancer) in the province of Ontario although the age-standardized mortality rates have been decreasing between 1996 and 2004. Among women in Ontario in all age groups the rates of breast cancer mortality decreased from 30.7 to 26.2 deaths per 100,000 women (Figure 22). In seniors aged 65 years and up, mortality rates also declined over the time period, dropping from 139.9 down to 119.2 deaths per 100,000 women. In the EOHU catchment area, the age-standardized mortality rate of female breast cancer showed more fluctuation and a smaller decline in rates than the provincial average, this was likely due to the size of population and the small numbers of deaths. Among all age groups, the rates dropped from 22.0 to 28.9 deaths per 100,000 women. In seniors aged 65 years and up, breast cancer rates showed an increase over time from 105.8 to 165.8 deaths per 100,000 women; the highest rate was 177.9 deaths per 100,000 women in 2002.

³ The Canadian Cancer Society (2009). www.cancer.ca

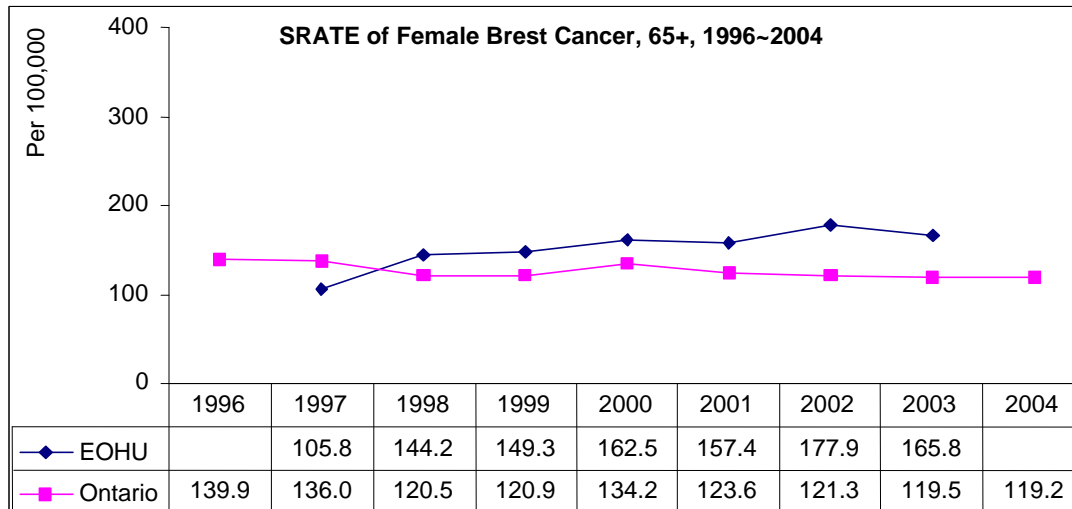


Figure 22. SRATE of Breast Cancer (per 100,000), Females, Ages 65+, 1996-2004

Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is a group of diseases including chronic bronchitis, emphysema and asthma that cause difficulty breathing. COPD is characterized by a reduction of airflow to the lungs and is generally permanent and progressive over time. Cigarette smoking is the most common cause of COPD (about 80% to 90% of all disorders). The inhalation of other kinds of lung irritants, like pollution, dust, or chemicals, over a long period of time may also cause or contribute to COPD⁴.

From 1999 to 2003, the age-standardized mortality rates of COPD for males and females in both Ontario and the EOHU catchment area, showed different trends. In males, the rates declined continuously over the decade while in females the rates showed little change. The age-standardized mortality rates for COPD in all age groups declined from 40.1 down to 28.5 deaths per 100,000 males in Ontario, while the rates in women remained relatively stable over time. In the oldest age group (65 years and up), the rate of COPD decreased from 327.9 to 231.4 deaths per 100,000 males and remained similar in females over time. It is believed that this dynamic change in mortality due to COPD, which is similar to the trend seen for lung cancer, is strongly related to the prevalence of cigarette smoking in the population, as smoking has been decreasing in males but increasing in females.

⁴ Advair Won't Lower COPD Death Risk: Study. MedlinePlus

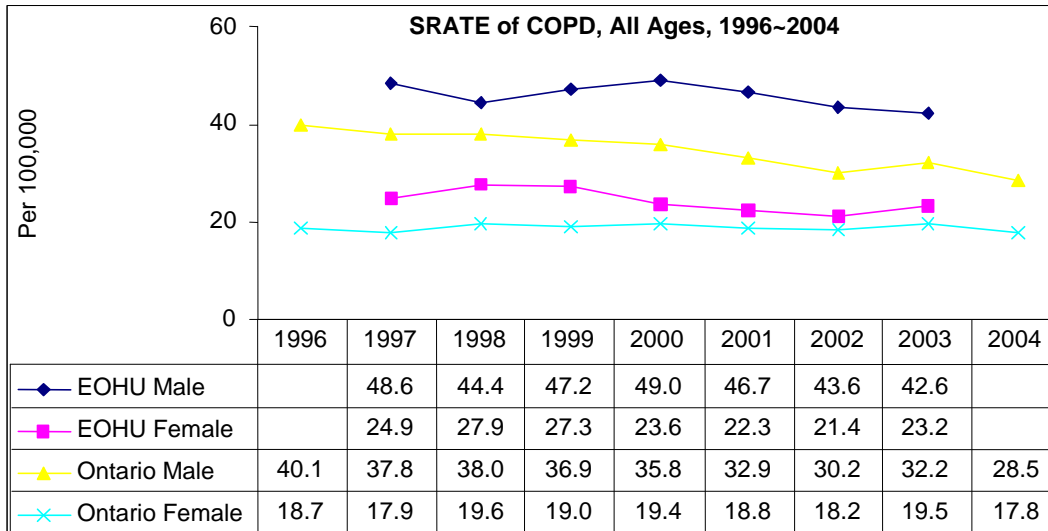


Figure 23. SRATE of COPD (per 100,000), All Ages, 1996-2004

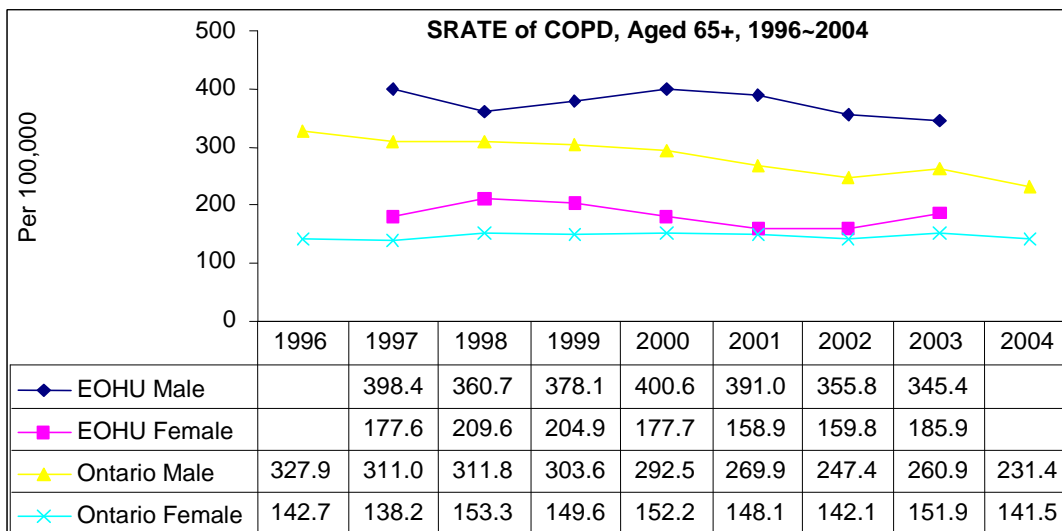


Figure 24. SRATE of COPD (per 100,000), Ages 65+, 1996-2004

Colorectal Cancer

Colorectal cancer, also called colon cancer or bowel cancer, involves cancerous growths on the colon, rectum or appendix. It is the third most common cancer for both men and women in Canada. According to estimates from the Canadian Cancer Society, approximately 20,000 Canadians are diagnosed with colorectal cancer each year and 90% of them are over the age of 50. Meanwhile, around 8,500 Canadians will die of colorectal cancer every year, about 54% will be men and 46%

will be women.⁵

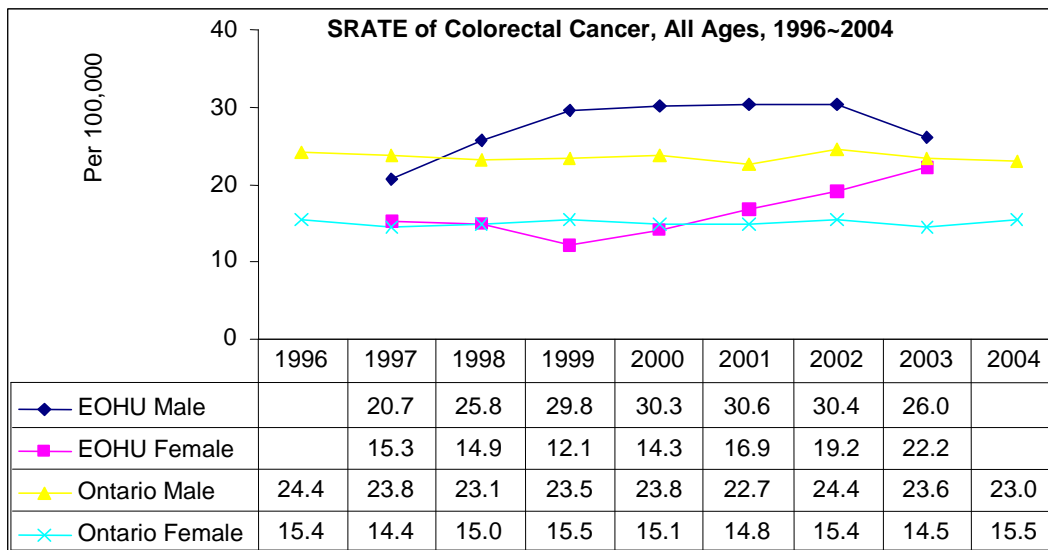


Figure 25. SRATE of Colorectal Cancer (per 100,000), All Ages, 1996-2004

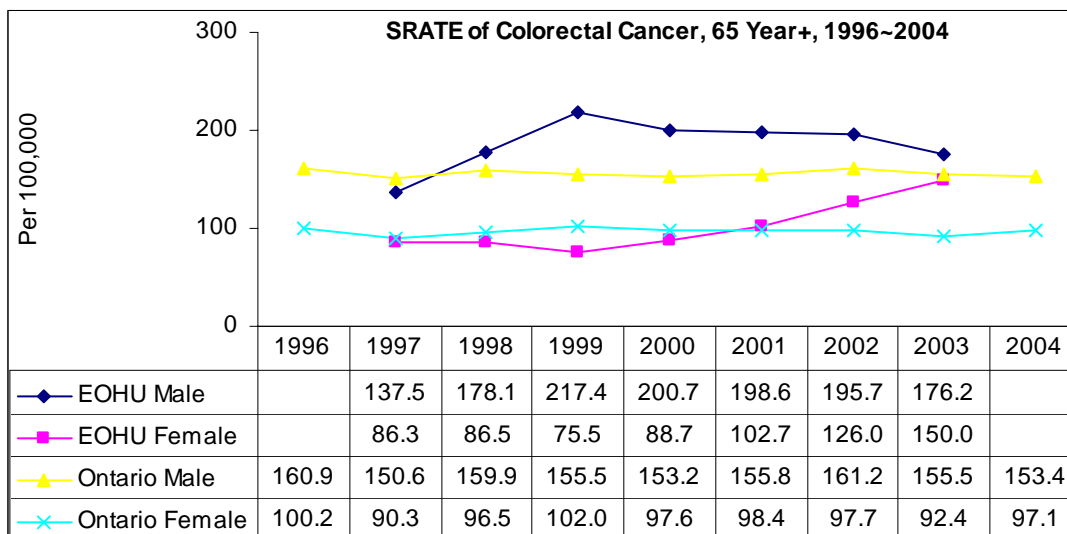


Figure 26. SRATE of Colorectal Cancer (per 100,000), Ages 65+, 1996-2004

The age-standardized mortality rate of colorectal cancer in Ontario declined between 1996 and 2004. In all age groups, the mortality rate declined from 24.4 to 23.0 deaths per 100,000 males, and remained stable between 15.4 to 15.5 deaths per 100,000 females. In seniors aged 65 years and up,

⁵ Canadian Cancer Society (2008). www.cancer.ca

the mortality rate also declined from 160.9 to 153.4 deaths per 100,000 males and from 100.2 to 97.1 deaths per 100,000 females. In the EOHU catchment area, on the other hand, the age-standardized mortality rate of colorectal cancer fluctuated without any visible decline over the whole time period, likely due to the small number of deaths.

Diabetes

Diabetes mellitus is a metabolic disorder in which the body either cannot produce insulin or cannot properly use the insulin it produces. This leads to high levels of glucose in the blood, which can damage organs, blood vessels and nerves. There are three subtypes: type 1 or childhood onset, type 2 or adult onset, and gestational diabetes (an onset during pregnancy). As a metabolic disease, diabetes can lead to serious illness and possible death, but more importantly it can cause serious complications that contribute to a series of fatal diseases such as cardiovascular disease, chronic renal failure, nerve and microvascular damage. Diabetes mellitus can also seriously impact the health status of a community. The onset of type 2 diabetes is related to lifestyle and nutritional imbalance. In the last decade, the prevalence of this disease has risen in most industrial countries. Currently more than two million Canadians have had diabetes at some point and this figure is expected to rise to three million by 2010.⁶

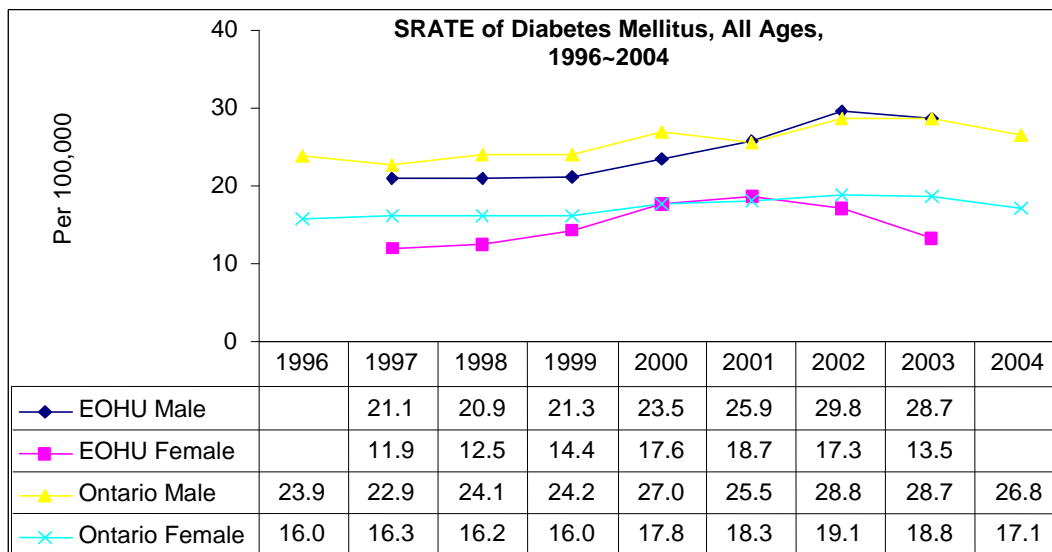


Figure 27. SRATE of Diabetes (per 100,000), All Ages, 1996-2004

The age-standardized mortality rate of diabetes increased consistently in Ontario between 1996 and 2004. In all age groups the mortality rate increased from 16.0 to 26.8 deaths per 100,000 males and from 16.0 to 17.1 deaths per 100,000 females. In people aged 65 years and up the mortality rate due to diabetes also increased significantly over time, from 172.2 to 184.7 deaths per 100,000 males

⁶ The Canadian Diabetes Association (2009). Diabetes Facts. www.diabetics.ca

and from 117.7 to 123.7 deaths per 100,000 females.

The increasing mortality rates were even more dramatic in the EOHU catchment area, especially among males where rates had been lower than the provincial average level before 2001 when they began to rise. The age-standardized mortality rate (3-year average rate) of diabetes in all age groups increased from 21.1 to 28.7 deaths per 100,000 males and from 11.9 to 13.5 deaths per 100,000 females. In people aged 65 years and up, the mortality rate increased from 143.3 to 221.0 deaths per 100,000 males and from 95.9 to 101.5 deaths per 100,000 females.

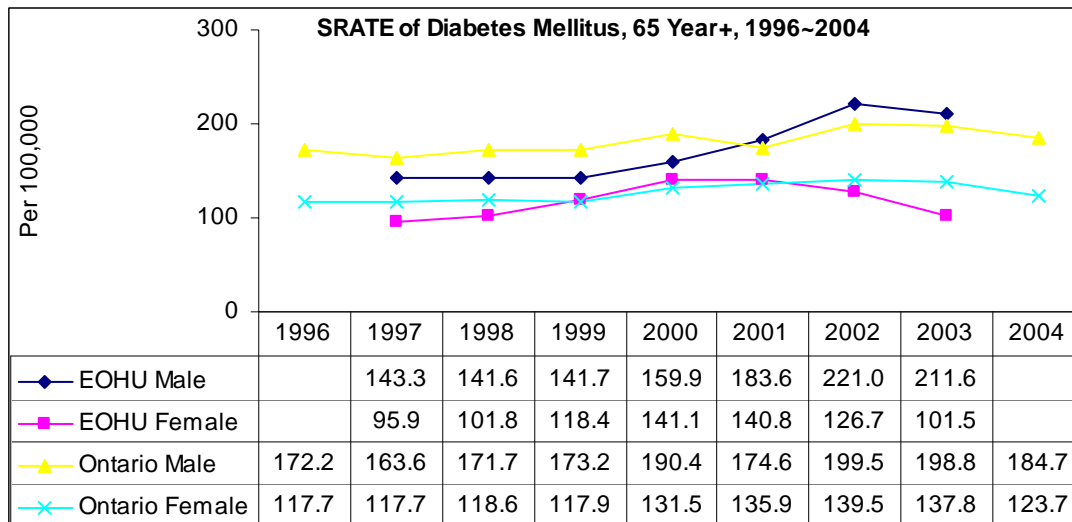


Figure 28. SRATE of Diabetes (per 100,000), Ages 65+, 1996-2004

Motor Vehicle Accidents

Motor Vehicle Accidents are a serious but often neglected public health challenge that require a concerted effort to create effective and sustainable prevention. Motor Vehicle Accidents kill an estimated 1.2 million people worldwide each year, and injure about forty times this number.⁷

⁷ World Health Organization (2004). World Report on Road Traffic Injury Prevention. http://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/index.html

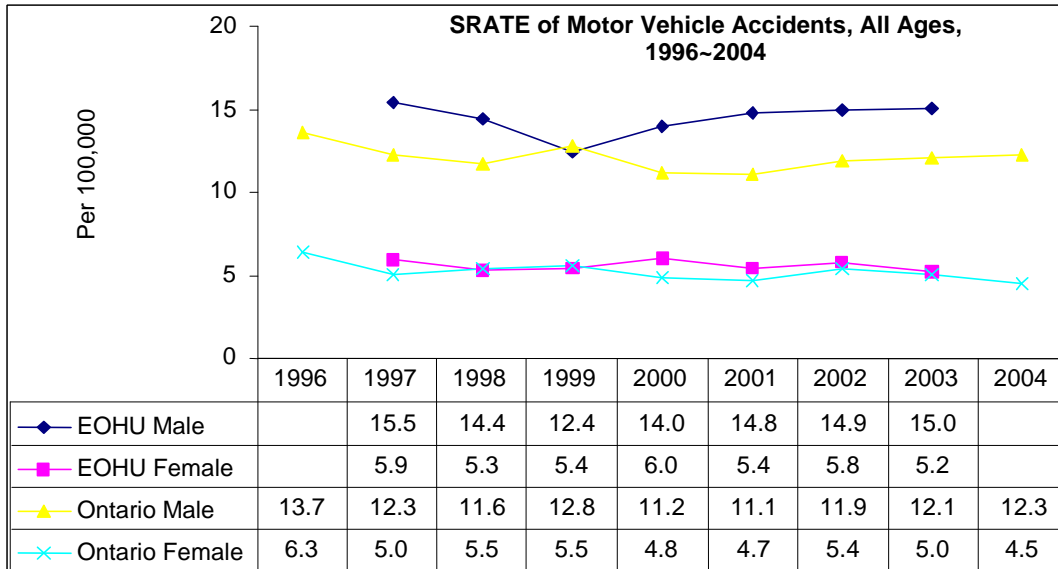


Figure 29. SRATE of Motor Vehicle Accidents (per 100,000), All Ages, 1996-2004

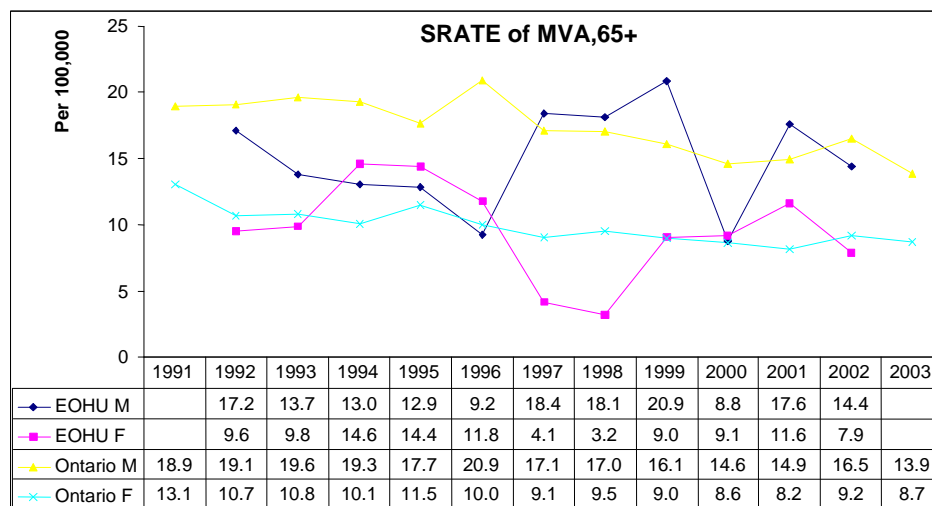


Figure 30. SRATE of Motor Vehicle Accidents (per 100,000), Ages 65+, 1991-2003

From 1996 to 2004, the age-standardized mortality rate due to motor vehicle accidents declined gradually in both Ontario and the EOHU catchment area. In Ontario the mortality rates for all age groups dropped from 13.7 to 12.3 deaths per 100,000 males and from 6.3 to 4.5 deaths per 100,000 females. In seniors (aged 65 years and up), the mortality rate also decreased, from 18.9 to 13.9 deaths per 100,000 males and from 13.1 to 8.7 deaths per 100,000 females. In the same time period, the age-standardized mortality rate (3-year average rate) of motor vehicle accidents was consistently higher in the EOHU catchment area than the rest of the province, especially in males (Figure 30). Considering all age groups, the mortality rate dropped from 15.5 to 15.0 deaths per

100,000 males and from 5.9 to 5.2 deaths per 100,000 females. For seniors (65 and older) on the other hand, the mortality rates fluctuated for both males and females and did not show an obvious tendency to decline.

Accidental Falls

Accidental falls are by far the most common accidents that occur in the home or during leisure activities. For the elderly population, 65 years and up, an accidental fall usually causes a more serious injury or even death than when it occurs in someone younger. In 2003, a total of 972 people died from falls in Ontario, of those, 839 (86.3%) were seniors (65 years and older). From 1996 to 2003, there were 7656 deaths in Ontario due to accidental falls, 88.7% of them were among seniors (65 years and older). In 2003, 7 people died from accidental falls in the EOHU catchment area; all of them were older than 65 years. Between 1996 and 2003, 100 residents of the EOHU catchment area died from an accidental fall, 91 of them were seniors (65 years and older). It is clear that accidental falls play a significant role in mortality status, especially, in the senior population.

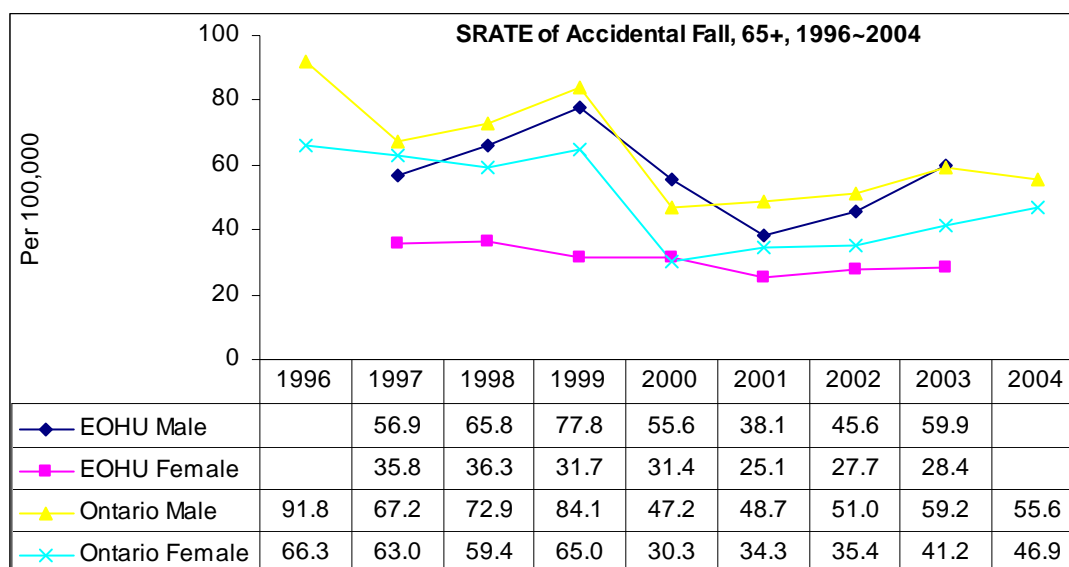


Figure 31. SRATE of Accidental Falls (per 100,000), Ages 65+, 1996-2004

Between 1996 and 2004, the age-standardized mortality rates of accidental falls for seniors aged 65 and older were consistently higher in males than in females. There was also a decline in the mortality rates over time in both Ontario and the EOHU catchment area. In Ontario the mortality rate from accidental falls declined from 91.8 to 55.6 deaths per 100,000 males and from 66.3 to 46.9 deaths per 100,000 females. In the EOHU catchment area, rates increased from 56.9 to 59.9 deaths per 100,000 males and decreased from 35.8 to 28.4 deaths per 100,000 females. The age-standardized mortality rate of accidental falls for seniors (65 years and older) was also lower in the EOHU catchment area compared to the provincial average level, especially, in females. It is worth pointing out that a noticeable drop in mortality rates occurs between 1999 and 2000. As the

change was so sudden and dramatic, it is likely that this difference is due to the changes in classification systems from the ICD9 to the ICD10 (Figure 31).

Suicide

Suicide is a major cause of death, especially among youth and adolescents. Furthermore, suicide rates show an increasing trend among young people in many countries^{11,12,13}. In the last decade, suicide has also been a significant cause of death among 20 to 44 years olds in Ontario and the EOHU catchment area. During the time period of 1996 to 2004, suicide among adults aged 20 to 44 years contributed almost a quarter (23.4%) of all male death among this age group, and 9.8% of females in the same age group. This contrasts with the lower provincial number of 15.2% of all male deaths and 8.1% of all female deaths in Ontario. In all age groups, on the other hand, over the same time period, suicide accounted for 2.4% of all male deaths and 0.7% of female deaths in EOHU catchment area and 1.8% of male deaths and 0.6% of female deaths in Ontario.

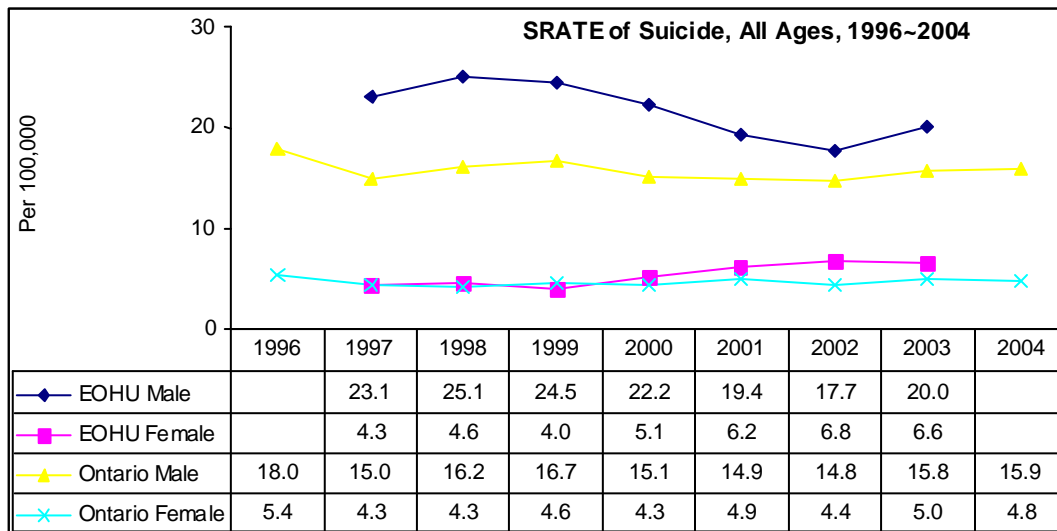


Figure 32. SRATE of Suicide (per 100,000), All Ages, 1996-2004

From 1996 to 2004, in Ontario, the age-standardized mortality rate due to suicide showed a slight decrease over time in males. The rate in females was lower but more consistent over time. This trend is the same when looking at 20 to 44 year olds or all age groups together. In all age groups in Ontario mortality from suicide decreased from 18.0 to 15.9 deaths per 100,000 males and from 5.4 to 4.8 deaths per 100,000 females. In comparison to the provincial rate, the age-standardized mortality from suicide was constantly higher in males from the EOHU catchment area over the time period (Figure 32). Suicide among males from the EOHU region decreased slightly from 23.1 to 20.0 deaths per 100,000 and increased in females from 4.3 to 6.6 deaths per 100,000.

Potential Years of Life Lost (PYLL)

Potential Years of Life Lost (PYLL) is an indicator of premature mortality that represents the loss to society when an individual dies before the age of 75. In this section, PYLL is presented as that age-standardized potential years of life lost rates (ASPYLR) per 1,000 population in order to review the impact of mortality on the community and to simplify comparison between groups. As the PYLL emphasizes the loss of life at an early age, the data is able to provide an insight into the life expectancy of residents in a community. The ASPYLR was standardized using the 1991 Canadian population.

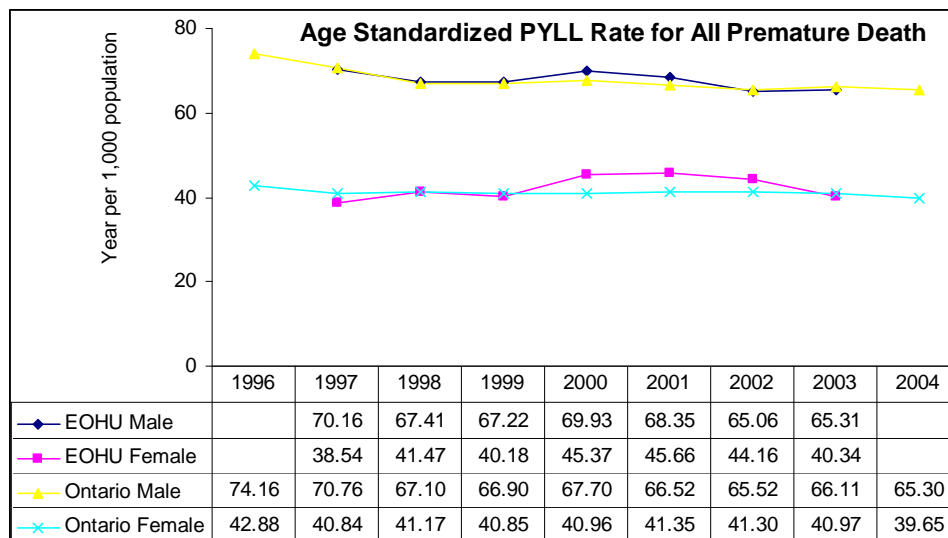


Figure 33. Age-Standardized PYLL Rate (per 1,000), All Ages, 1996-2004

Between 1996 and 2004, the overall ASPYLLR was 67.4 years lost per 1,000 males and 41.8 years lost per 1,000 females in the EOHU catchment area compared 59.0 years lost per 1,000 males and 35.8 years lost per 1,000 females in Ontario. The ASPYLLR showed a decreasing trend over time in both the EOHU catchment area and in Ontario. In the EOHU catchment area, the ASPYLLR decreased from 70.2 to 65.3 years lost per 1,000 male and from 38.5 to 40.3 years lost per 1,000 females. These rates are compared to the greater decreases seen provincially, with ASPYLLR dropping from 74.2 to 65.3 years lost per 1,000 males and 42.9 to 39.7 years lost per 1,000 females in Ontario. The ASPYLLR for all premature deaths in both males and females was consistently higher in the EOHU catchment area than in Ontario between 1996 to 2004.

PYLL and Leading Causes of Death

The PYLL can also be used as a measure of the impact of a specific disease on a community based on the number of deaths and the age at death from that individual disease. The PYLL rises

with the number deaths and is also affected by the age at death.

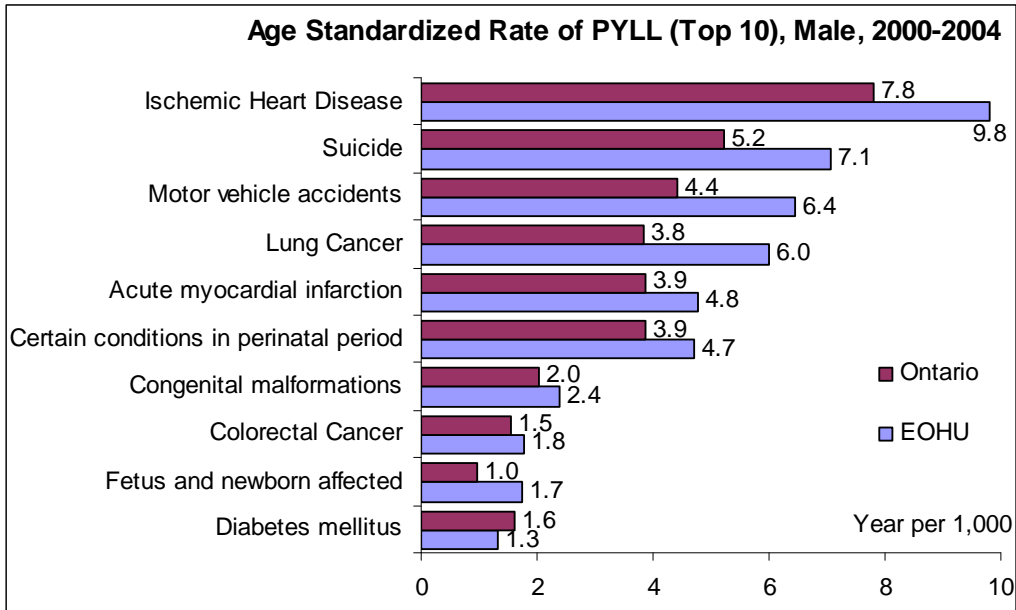


Figure 34. ASPYLLR Leading Causes of Death (per 1,000), Males, 1996-2004

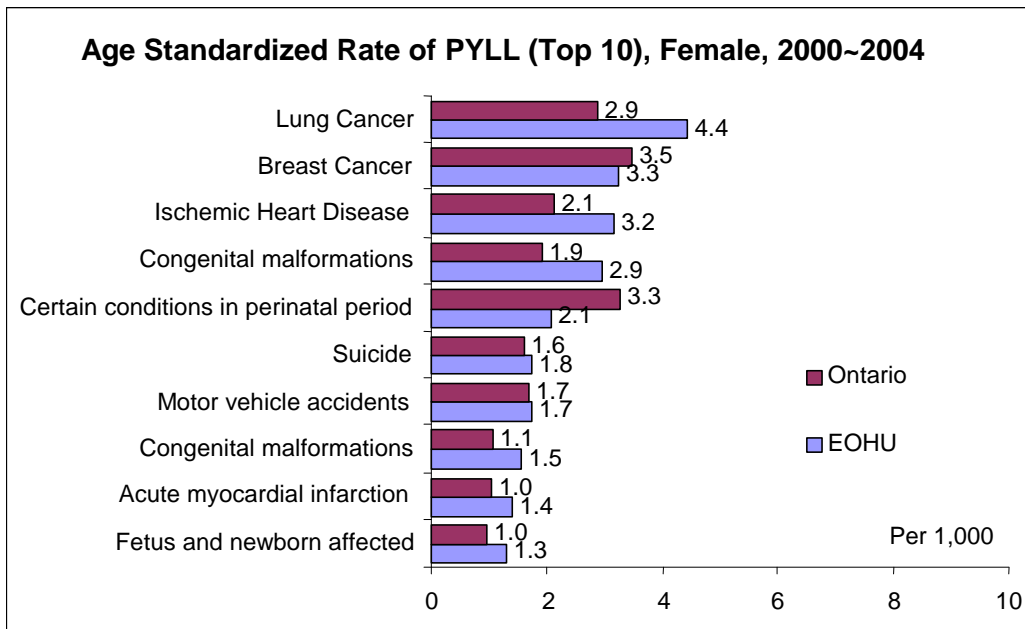


Figure 35. ASPYLLR Leading Causes of Death (per 1,000), Females, 1996-2004

Tables 35 and 36 show the leading causes of premature death in the EOHU catchment area and in

Ontario for both males and females based on the ASPYLLR for individual causes of death between 1996 and 2004. The ranking of the causes of death by ASPYLLR for males in both the EOHU catchment area and in Ontario were similar. However, for the four highest ranking causes of death, Ischemic Heart Disease, Suicide, Lung cancer and motor vehicle accidents, males in the EOHU catchment area had higher rates than the rest of the province. The rankings of the ASPYLLR among females in the EOHU catchment area was also different from provincial rates. The five leading causes of years of life lost based on the ASPYLLR were Lung Cancer, Ischemic Heart Disease, Congenital Malformations and Breast Cancer. All of these rates were considerably higher than Ontario except for breast cancer which had the same rate.

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Eastern Ontario Health Unit. Cornwall. Ontario, Canada
2. The U.S. public-use ICD-9/ICD-10 comparability file: NCHS' List of 113 Selected Causes of Death
ftp://ftp.cdc.gov/pub/health_statistics/NCHS/Datasets/comparability/icd9_icd10/
- ³. The Life Table Template from CEHIP
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