

## Mortality At A Glance

Last Updated: June 2017

### Highlights

- On average, there were 3,500 deaths per year among Durham Region residents between 2008 and 2012.
- Ischemic heart disease or heart attacks were the leading cause of death in Durham Region and Ontario males and females for 2010 to 2012. Lung cancer was the second leading cause of death among males, and dementia and Alzheimer's disease was the third. These three causes accounted for 28% of deaths in Durham Region males. Among females dementia and Alzheimer's disease was the second leading cause of death and lung cancer was the third. The top three causes accounted for 30% of deaths in Durham Region females.
- The crude mortality rate in Durham Region gradually increased between 1993 and 2012, likely as a result of an aging population; however, age-standardized mortality rates, which control for different age structures in populations, decreased between 1993 and 2012 for both males and females.
- Life expectancy increased between 1993 and 2012 for both Durham Region and Ontario and was consistently higher among females than males, although the gap is getting smaller. In 2012, life expectancy for Durham Region males was 80.9 years and 84.5 years for females.
- The percentage of deaths that were potentially avoidable (preventable plus treatable) declined slightly between 2000 and 2012 among both males and females. More deaths were potentially avoidable in males (32%) than females (22%).
- The age-standardized rate of all infectious and parasitic diseases increased between 2000 and 2012.
- The cancer mortality rate for all cancers combined declined slightly between 2000 and 2012 among both males and females. Similarly, mortality rates for colorectal cancer among both males and females, lung cancer among males, prostate cancer among males, and breast cancer among females also declined.
- The diabetes mortality rate was consistently higher among males than females. Rates declined between 2000 and 2012.
- The cardiovascular disease mortality rate was consistently higher among males than females and declined between 2000 and 2012. Similarly, mortality rates for ischemic heart disease (or heart attacks) and cerebrovascular disease (including stroke) also declined.
- For 2008 to 2012 combined, ischemic heart disease mortality was significantly lower in both Durham Region males and females compared to Ontario and mortality for cerebrovascular disease was significantly lower in Durham Region females compared to Ontario.
- The respiratory disease mortality rate was consistently higher among males than females and declined slightly between 2000 and 2012. Similarly, mortality rates for chronic obstructive pulmonary disease (COPD) and pneumonia/influenza also declined between 2000 and 2012.
- The unintentional injuries mortality rate was consistently higher among males than females.

- Death rates from falls were consistently higher in Durham Region than Ontario for both males and females, and for all ages and adults 65 years and older. Rates increased between 2000 and 2012 in both Durham Region and Ontario.

## Introduction

This report includes mortality indicators relevant to public health programming, as outlined in the Ontario Public Health Standards (OPHS). The Ontario Ministry of Health and Long-Term Care published the new OPHS in 2008 under the authority of section 7 of the *Health Protection and Promotion Act*. This report includes charts and tables for the following indicators for Durham Region:

- Top 20 causes of death
- Top 3 causes of death by age group
- Crude mortality rates for all causes
- Age-standardized mortality rates for all causes
- Life expectancy at birth
- Age-specific mortality rates for all causes
- Potentially avoidable mortality
- Age-standardized mortality rates for the following selected causes:
  - All infectious and parasitic diseases
  - Cancers (all cancers, colorectal, lung, prostate and breast)
  - Diabetes
  - Cardiovascular disease (all cardiovascular disease, including by municipality, ischemic heart disease, and cerebrovascular disease)
  - Respiratory disease (all respiratory disease, chronic obstructive pulmonary disease, and pneumonia and influenza)
  - Digestive system diseases
  - Injury (unintentional injuries, unintentional falls, unintentional falls among ages 65+, motor vehicle traffic collisions and suicide)
- Age-standardized mortality ratios for selected causes
- Number of deaths for selected causes

For more detailed topic-specific reports that include mortality data please go to the [Health Statistics in Durham Region webpage](http://durham.ca/healthstats) found at durham.ca/healthstats. Public Health Ontario's [Snapshots](#) also include mortality data for Ontario and all public health units, in particular Chronic Disease, Injury and Substance Misuse, and Mortality Snapshots.

For more information or if you require this information in an accessible format, please contact Durham Health Connection Line at 905-666-6241 or 1-800-841-2729.

## Data sources

The Office of the Registrar General (ORG), Service Ontario collects mortality data from death certificates completed by physicians. The cause of death reported is the cause that starts the sequence of events leading to death. There may be some uncertainty in classifying when there are multiple causes of death. Social or legal conditions surrounding the death and the level of medical investigation, e.g., AIDS, suicide, can also influence how the true cause of death is determined. From 1986 to 1999 the ORG coded causes of death using the Ninth Revision of the International Classification of Diseases (ICD-9). From 2000 onward the ORG coded causes of death using the Tenth Revision of the International Classification of Diseases (ICD-10). This report presents counts and rates for specific causes of death from 2000 onward to avoid comparison across the two different coding systems.

For all indicators, we analyzed data by the residence of the deceased, not where the death occurred. Since the ORG does not collect records for Ontario residents who died outside of the province, this report does not include out-of-province deaths. Otherwise, due to legal reporting requirements, we consider the registration of deaths to be virtually complete.

In this report we did not present age-standardized mortality rates when the total number of counts included in the rate was less than 20, a general practice recommended by the Association of Public Health Epidemiologists in Ontario. In addition, we did not present counts of deaths, age-specific mortality rates, and crude mortality rates when counts were between 1 and 4. We presented these rates and counts as dashes in tables and gaps in the graphs. For some indicators, the count of total deaths displayed was more than the sum of male and female deaths because the death certificate did not include sex or classified sex as "other".

## Definitions

### Age-standardized mortality ratio (SMR)

The ratio of the number of deaths observed in the population of interest to the number of deaths that we would expect if the population had the same age-specific mortality rates as a standard population.

### Crude mortality rate

The total number of deaths per 100,000 population. This rate depicts the "true" picture of disease in a community although the age structure of the population can greatly influenced it.

### Age-standardized mortality rate

The total number of deaths per 100,000 population that would occur if the population had the same age distribution as the 1991 Canadian population. This age-adjusted rate allows us to compare populations with different age structures.

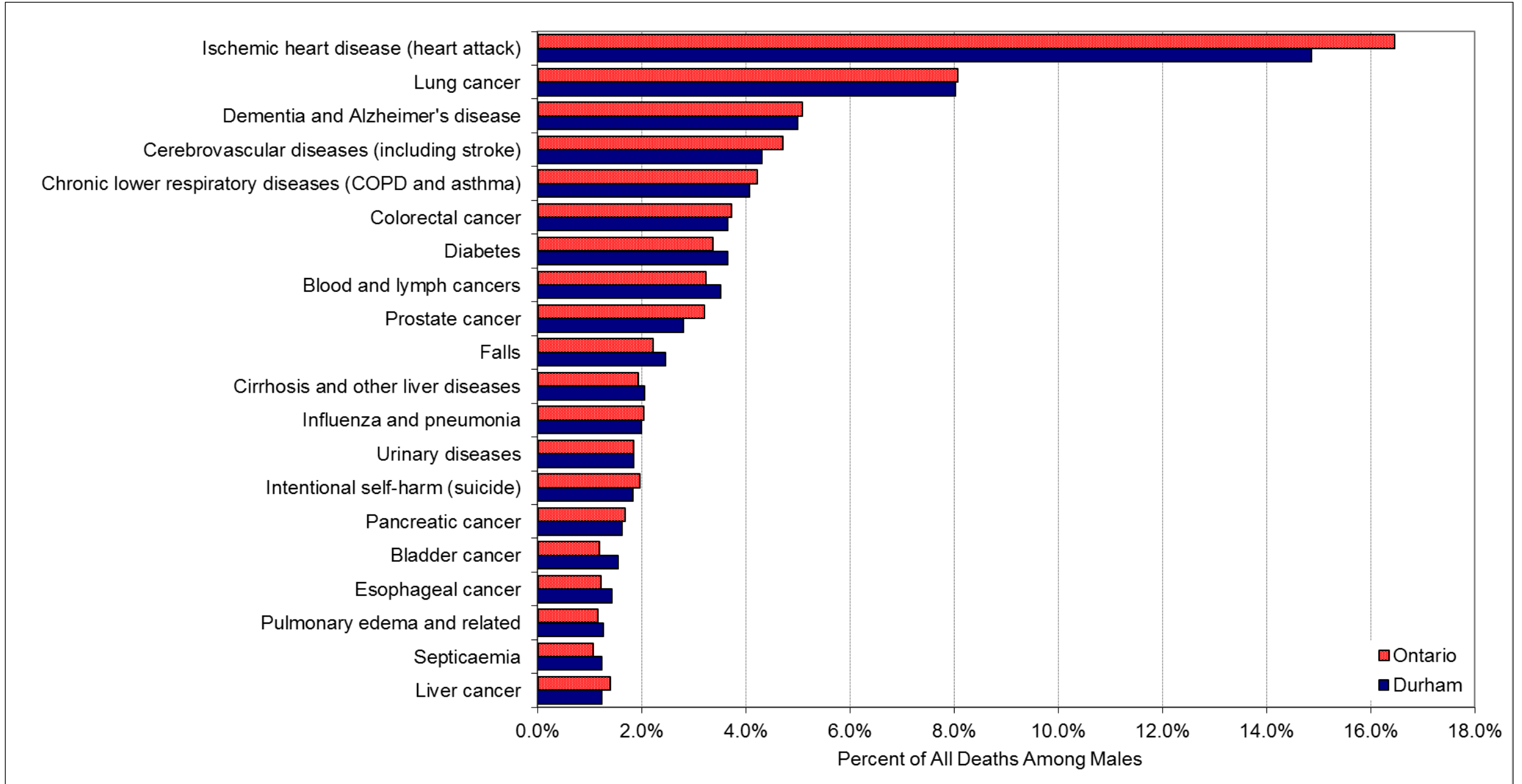
### Age-specific mortality rate

The total number of deaths in a specified age group per 100,000 population in that age group. The numerator and denominator refer to the same age group.

## **Leading causes of death**

We categorized the leading causes of death for this report based on the Association of Public Health Epidemiologist's modification (1) of Becker's "A method for deriving leading causes of death" (2). This list provides leading individual causes within broad groupings such as "all cancers", "all heart diseases" or "all accidents" which enable more targeted public health responses. The leading causes will differ somewhat from those included in Statistics Canada publications which use broader categories.

Figure 1: Top 20 causes of death, Durham Region and Ontario males, 2010 to 2012 combined



Source: Deaths 2010 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

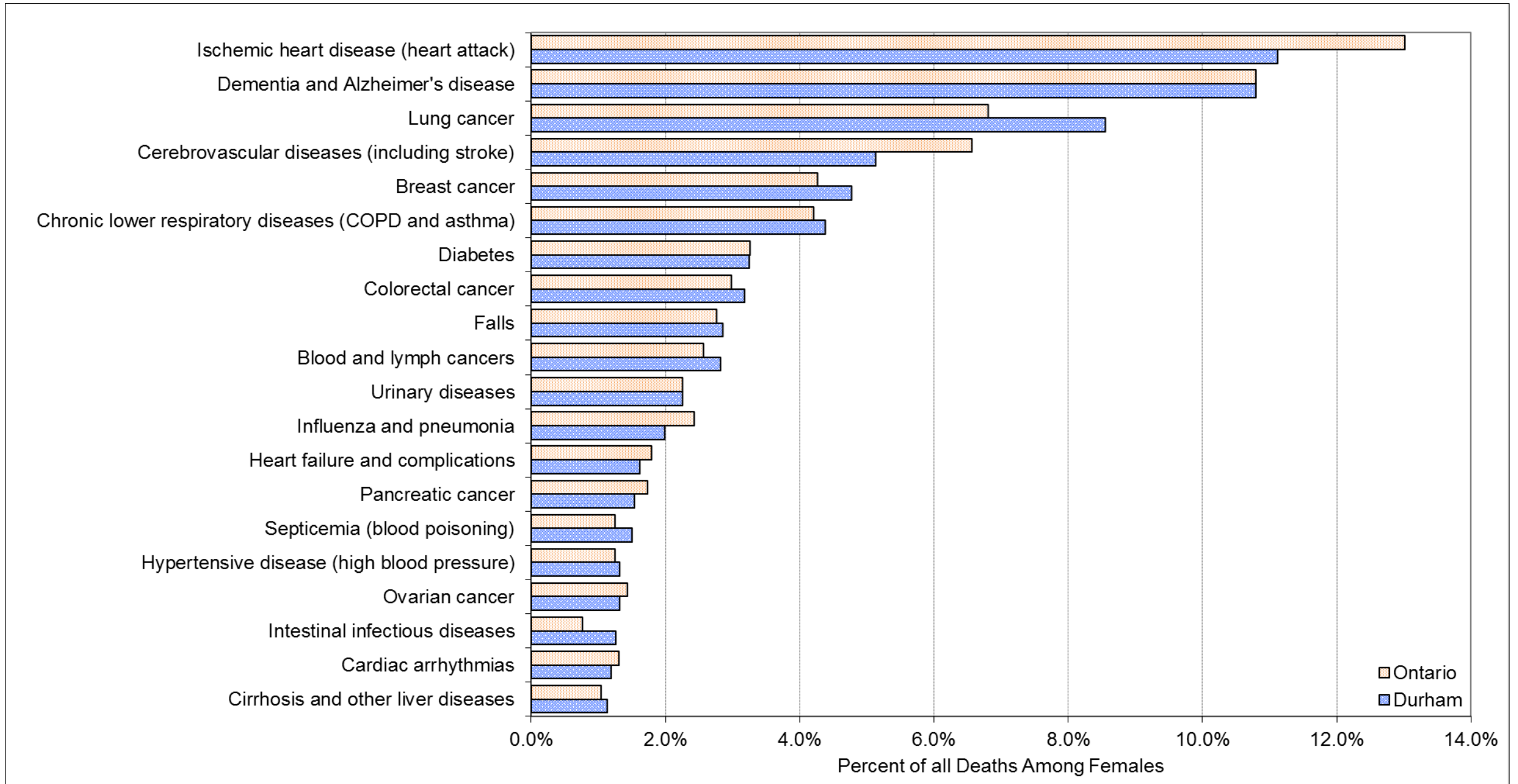
**Table 1: Top 20 causes of death, Durham Region and Ontario males, 2010 to 2012 combined**

<b>Cause of Death</b>	<b>Durham Count</b>	<b>Durham Percent</b>	<b>Durham Rank</b>	<b>Ontario Count</b>	<b>Ontario Percent</b>	<b>Ontario Rank</b>
Ischemic heart disease (heart attack)	797	14.9%	1	22,177	16.4%	1
Lung cancer	430	8.0%	2	10,881	8.1%	2
Dementia and Alzheimer's disease	268	5.0%	3	6,840	5.1%	3
Cerebrovascular diseases (including stroke)	231	4.3%	4	6,347	4.7%	4
Chronic lower respiratory diseases (COPD and asthma)	218	4.1%	5	5,671	4.2%	5
Colorectal cancer	197	3.7%	6	5,062	3.8%	6
Diabetes	196	3.7%	7	4,538	3.4%	7
Blood and lymph cancers	189	3.5%	8	4,344	3.2%	8
Prostate cancer	150	2.8%	9	4,314	3.2%	9
Falls	132	2.5%	10	2,976	2.2%	10
Cirrhosis and other liver diseases	110	2.1%	11	2,606	1.9%	13
Influenza and pneumonia	107	2.0%	12	2,748	2.0%	11
Urinary diseases	99	1.8%	13	2,470	1.8%	14
Intentional self-harm (suicide)	98	1.8%	14	2,640	2.0%	12
Pancreatic cancer	87	1.6%	15	2,256	1.7%	15
Bladder cancer	83	1.5%	16	1,634	1.2%	18
Esophageal cancer	77	1.4%	17	1,427	1.1%	23
Pulmonary edema and related	68	1.3%	18	1,588	1.2%	19
Liver cancer	66	1.2%	19	1,871	1.4%	16
Septicaemia	66	1.2%	19	1,547	1.1%	20

Source: Deaths 2010 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Ischemic heart disease (or heart attacks) was the leading cause of death in both Durham Region and Ontario males for 2010 to 2012; however, they accounted for a larger proportion of all deaths in Ontario (16%) compared to Durham Region (15%). Lung cancer was the second leading cause of death among males in both Durham Region and Ontario and dementia and Alzheimer's disease was the third. These top three causes accounted for almost a third (28%) of all male deaths.

Figure 2: Top 20 causes of death, Durham Region and Ontario females, 2010 to 2012 combined



Source: Deaths 2010-2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

**Table 2: Top 20 causes of death, Durham Region and Ontario females, 2010 to 2012 combined**

<b>Cause of Death</b>	<b>Durham Count</b>	<b>Durham Percent</b>	<b>Durham Rank</b>	<b>Ontario Count</b>	<b>Ontario Percent</b>	<b>Ontario Rank</b>
Ischemic heart disease (heart attack)	591	11.1%	1	17,482	13.0%	1
Dementia and Alzheimer's disease	574	10.8%	2	14,490	10.8%	2
Lung cancer	455	8.5%	3	9,145	6.8%	3
Cerebrovascular diseases (including stroke)	273	5.1%	4	8,822	6.6%	4
Breast cancer	254	4.8%	5	5,726	4.3%	5
Chronic lower respiratory diseases (COPD and asthma)	233	4.4%	6	5,657	4.2%	6
Diabetes	173	3.3%	7	4,374	3.3%	7
Colorectal cancer	169	3.2%	8	4,004	3.0%	8
Falls	152	2.9%	9	3,705	2.8%	9
Blood and lymph cancers	150	2.8%	10	3,447	2.6%	10
Urinary diseases	120	2.3%	11	3,024	2.2%	12
Influenza and pneumonia	106	2.0%	12	3,253	2.4%	11
Heart failure and complications	86	1.6%	13	2,400	1.8%	13
Pancreatic cancer	82	1.5%	14	2,335	1.7%	14
Septicemia (blood poisoning)	80	1.5%	15	1,680	1.2%	17
Ovarian cancer	70	1.3%	16	1,920	1.4%	15
Hypertensive disease (high blood pressure)	70	1.3%	16	1,676	1.2%	18
Intestinal infectious diseases	67	1.3%	18	1,032	0.8%	25
Cardiac arrhythmias	63	1.2%	19	1,757	1.3%	16
Cirrhosis and other liver diseases	60	1.1%	20	1,390	1.0%	19

Source: Deaths 2010 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Ischemic heart disease (or heart attacks) was the leading cause of death in both Durham Region and Ontario females for 2010 to 2012; however, they accounted for a larger proportion of all deaths in Ontario (13%) compared to Durham Region (11%). Dementia and Alzheimer's disease was the second leading cause of death among females in both Durham Region and Ontario and lung cancer was the third. These top three causes accounted for almost a third (30%) of all female deaths. Lung cancer accounted for a larger proportion of deaths among females in Durham Region (9%) than in Ontario (7%).



**Table 3: Top 3 causes of death (percentage of age and sex group in brackets), by age group and sex, Durham Region and Ontario, 2009 to 2012 combined**

<b>Age Group</b>	<b>Durham Males</b>	<b>Durham Females</b>	<b>Ontario Males</b>	<b>Ontario Females</b>
<1 year	1. Perinatal conditions (58%) 2. Congenital malformations, deformations, chromosomal abnormalities (26%)	1. Perinatal conditions (62%) 2. Congenital malformations, deformations, chromosomal abnormalities (23%)	1. Perinatal conditions (59%) 2. Congenital malformations, deformations, chromosomal abnormalities (23%)	1. Perinatal conditions (61%) 2. Congenital malformations, deformations, chromosomal abnormalities (23%)
1 to 19 years	Durham males and females combined 1. Transport accidents (motor vehicle, pedestrian and pedal cycle) (17%) 2. Intentional self-harm (suicide) (8%) 3. Brain & other nervous system cancer (8%)	Due to small numbers, we combined Durham female deaths in this age group with males to create more stable estimates.	1. Transport accidents (motor vehicle, pedestrian and pedal cycle) (19%) 2. Intentional self-harm (suicide) (15%) 3. Congenital malformations, deformations, chromosomal abnormalities (6%)	1. Transport accidents (motor vehicle, pedestrian and pedal cycle) (15%) 2. Intentional self-harm (suicide) (11%) 3. Congenital malformations, deformations, chromosomal abnormalities (8%)
20 to 44 years	1. Intentional self-harm (suicide) (17%) 2. Accidental poisoning (drugs and alcohol) (10%) 3. Transport accidents (motor vehicle, pedestrian and pedal cycle) (8%)	1. Breast cancer (11%) 2. Accidental poisoning (drugs and alcohol) (10%) 3. Intentional self-harm (suicide) (8%)	1. Intentional self-harm (suicide) (18%) 2. Accidental poisoning (drugs and alcohol) (12%) 3. Transport accidents (motor vehicle, pedestrian and pedal cycle) (9%)	1. Intentional self-harm (suicide) (11%) 2. Breast cancer (10%) 3. Accidental poisoning (drugs and alcohol) (8%)
45 to 64 years	1. Ischemic heart disease (heart attack) (17%) 2. Lung cancer (9%) 3. Cirrhosis and other liver diseases (5%) 3. Colorectal cancer (5%)	1. Lung cancer (15%) 2. Breast cancer 10%) 3. Ischemic heart disease (heart attack) (7%)	1. Ischemic heart disease (heart attack) (18%) 2. Lung cancer (10%) 3. Cirrhosis and other liver diseases (5%)	1. Lung cancer (13%) 2. Breast cancer (11%) 3. Ischemic heart disease (heart attack) (8%)
65 to 74 years	1. Ischemic heart disease (heart attack) (16%) 2. Lung cancer (14%) 3. Blood and lymph cancers (6%)	1. Lung cancer (16%) 2. Ischemic heart disease (heart attack) (8%) 3. Breast cancer (8%)	1. Ischemic heart disease (heart attack) (18%) 2. Lung cancer (13%) 3. Colorectal cancer (5%)	1. Lung cancer (15%) 2. Ischemic heart disease (heart attack) (11%) 3. Breast cancer (6%)
75 years and older	1. Ischemic heart disease (heart attack) (16%) 2. Dementia and Alzheimer's disease (9%) 3. Lung cancer (7%)	1. Dementia and Alzheimer's disease (15%) 2. Ischemic heart disease (heart attack) (13%) 3. Cerebrovascular diseases (including stroke) (6%)	1. Ischemic heart disease (heart attack) (17%) 2. Dementia and Alzheimer's disease (8%) 3. Lung cancer (6%)	1. Ischemic heart disease (heart attack) (16%) 2. Dementia and Alzheimer's disease (15%) 3. Cerebrovascular diseases (including stroke) (8%)

Source: Deaths 2009 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

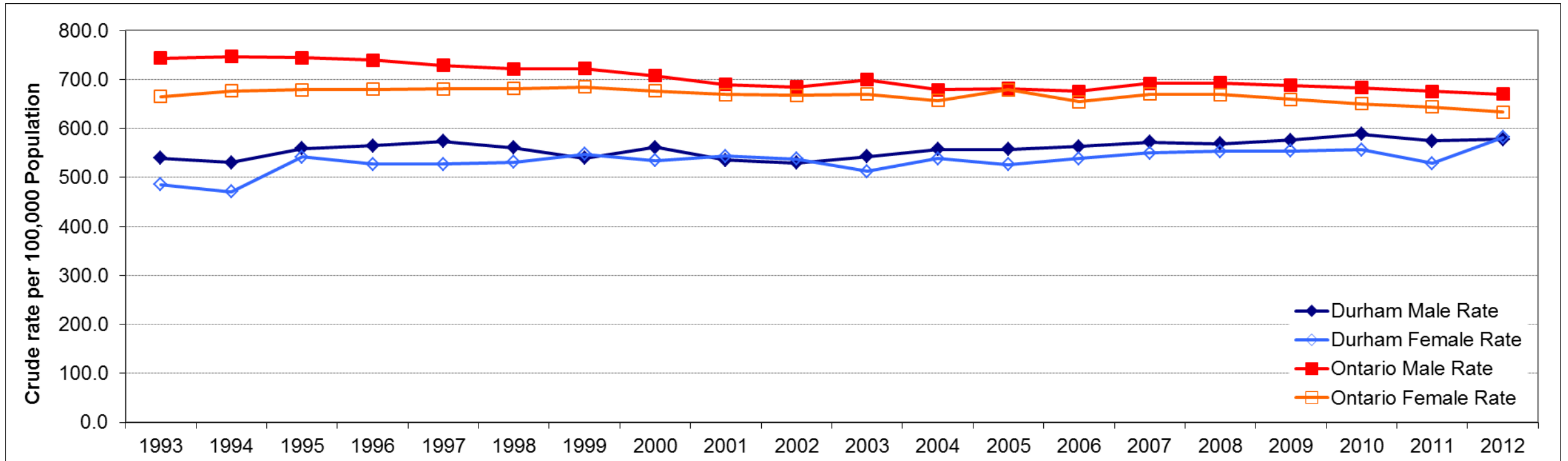
For 2009 to 2012 combined there were differences in leading causes of death by age group in both Durham Region and Ontario. For infants less than one year, the top two leading causes of death, perinatal conditions, and congenital malformations, deformations and chromosomal abnormalities, accounted for over 80% of all deaths in both males and females in Durham Region and Ontario. For children between 1 and 19 years of age, transport accidents were the leading cause of death in both Durham Region and Ontario and suicide was the second. Suicide was the leading cause of death for Durham Region males, and Ontario males and females, between 20 and 44 years of age and the third leading cause for Durham Region females. Breast cancer was the leading cause of death for Durham Region females in this age group. Ischemic heart disease became the leading cause of death for Durham Region and Ontario males 45 to 74 years of age while lung cancer was the leading cause among females in this age group. For those 75 years of age and older ischemic heart disease remained the leading cause of death for Durham Region males and Ontario males and females, and the second leading cause for Durham Region females. In this age group dementia and Alzheimer's disease became a more common cause of death, second for Durham Region males and Ontario males and females, and the leading cause for Durham Region females.

### **All-cause mortality**

To best understand mortality trends in a population, it is important to determine crude rates, age-specific rates and age-standardized rates (SRATES) and/or ratios (SMRs). The crude mortality rate depicts the "true" picture of death in a community; however the age structure of the population greatly influences this rate with an older population likely to have a higher crude mortality rate than a younger population. Age-standardized mortality rates allow us to compare rates between different time periods and different geographical areas because they account for the differences in the age structure of the populations; however, they present an "artificial" picture of the death and disease pattern in a community. Age-specific mortality rates can best describe the "true" death pattern within particular age groups of a community, and allow for comparison of age groups across populations that have different age structures.

Mortality reflects the upper limit of the disease severity continuum. All-cause mortality provides a picture of the overall death rates in the community regardless of the cause of death.

**Figure 3: All cause crude mortality rate, Durham Region and Ontario, 1993 to 2012**

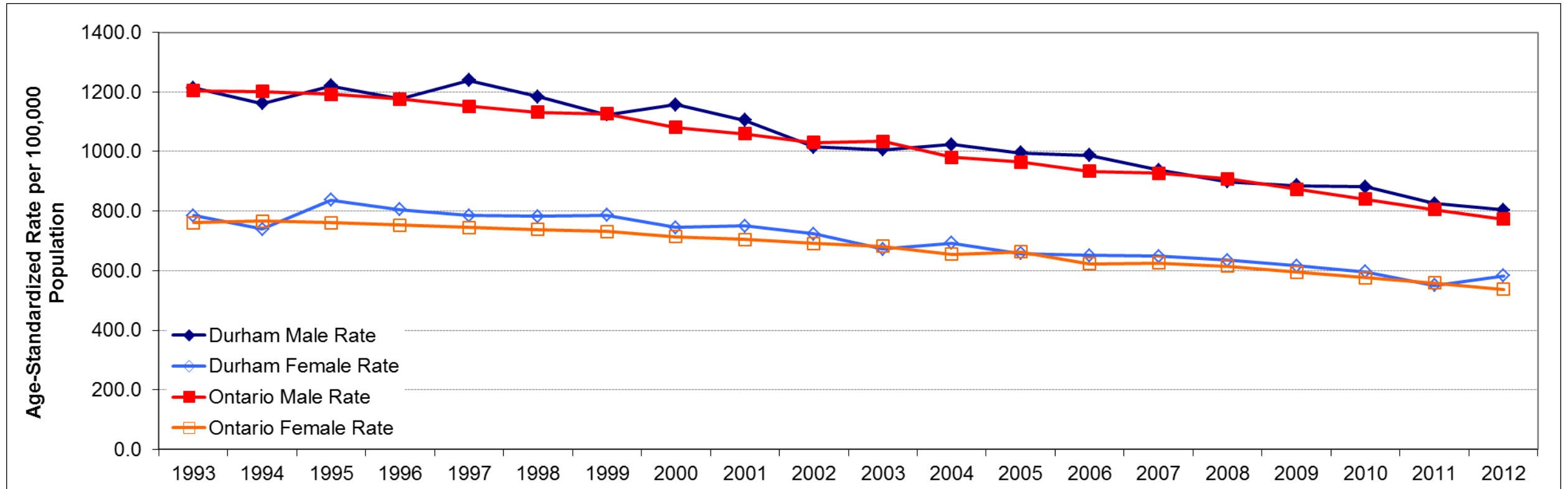


Rates and Counts	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	539.1	530.1	558.7	564.7	573.4	560.6	539.4	561.3	535.7	530.0	543.1	557.4	557.8	563.3	572.0	569.0	576.1	588.2	574.5	577.4
Durham Female Rate	485.8	470.9	541.9	527.3	527.3	531.5	547.3	534.4	543.4	538.2	512.9	538.8	526.3	538.5	550.4	553.0	554.3	556.7	529.1	581.7
Ontario Male Rate	743.9	746.8	744.2	739.4	729.3	721.3	722.5	708.0	689.8	685.1	699.9	679.1	681.5	676.0	692.1	692.6	688.2	683.1	675.4	669.8
Ontario Female Rate	665.6	676.7	679.1	680.3	680.6	681.7	685.0	676.8	669.2	667.9	669.8	657.0	679.1	654.7	670.4	669.2	659.2	650.4	644.3	633.1
Durham Male Deaths	1,196	1,200	1,291	1,325	1,378	1,378	1,352	1,440	1,402	1,414	1,482	1,553	1,585	1,629	1,678	1,690	1,730	1,790	1,768	1,804
Durham Female Deaths	1,084	1,076	1,264	1,253	1,283	1,323	1,391	1,391	1,445	1,460	1,424	1,530	1,524	1,589	1,654	1,690	1,717	1,752	1,688	1,883
Durham Total Deaths	2,280	2,276	2,555	2,578	2,661	2,701	2,743	2,831	2,847	2,874	2,906	3,083	3,109	3,218	3,332	3,380	3,447	3,542	3,456	3,687

Source: Deaths and Ontario Population Estimates 1993 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

The crude mortality rate was higher among Ontario males and females than Durham Region males and females with males consistently higher than females in both Ontario and Durham Region, although this gap is getting smaller. The crude mortality rate in Durham Region gradually increased between 1993 and 2012, likely as a result of an aging population.

**Figure 4: All cause age-standardized mortality rates, Durham Region and Ontario, 1993 to 2012**

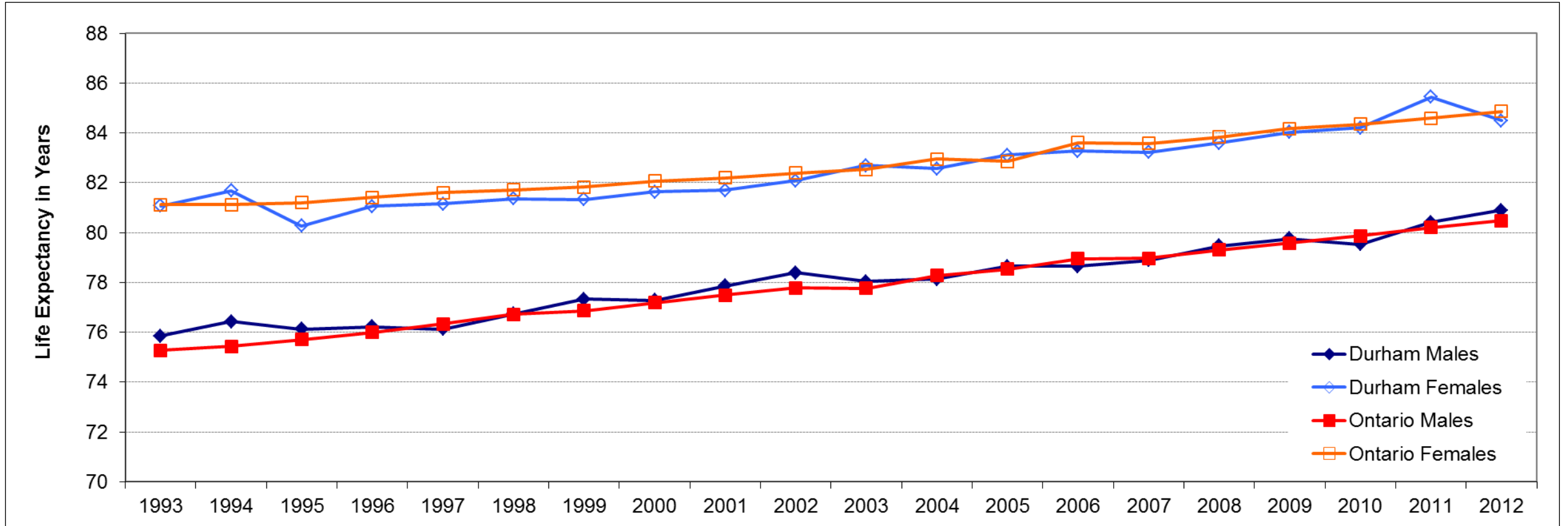


Rates and Counts	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	1213.7	1161.6	1219.6	1175.6	1238.7	1184.3	1123.3	1157.3	1105.2	1015.0	1006.3	1023.3	995.3	987.8	937.8	898.8	886.0	881.8	825.8	803.3
Durham Female Rate	785.3	739.3	836.8	804.5	785.3	782.4	785.9	744.9	749.6	723.2	673.0	692.8	657.3	651.6	649.0	635.2	616.8	596.8	550.8	583.0
Ontario Male Rate	1204.6	1201.4	1191.4	1176.4	1151.7	1131.1	1126.2	1081.1	1059.2	1029.6	1033.3	980.8	964.8	933.9	926.7	908.6	873.9	840.1	805.4	773.1
Ontario Female Rate	761.4	766.3	760.7	752.4	744.6	737.5	731.8	713.8	704.1	691.8	682.2	655.2	662.6	623.3	625.7	614.7	595.4	576.0	559.4	537.8
Durham Male Deaths	1,196	1,200	1,291	1,325	1,378	1,378	1,352	1,440	1,402	1,414	1,482	1,553	1,585	1,629	1,678	1,690	1,730	1,790	1,768	1,804
Durham Female Deaths	1,084	1,076	1,264	1,253	1,283	1,323	1,391	1,391	1,445	1,460	1,424	1,530	1,524	1,589	1,654	1,690	1,717	1,752	1,688	1,883
Durham Total Deaths	2,280	2,276	2,555	2,578	2,661	2,701	2,743	2,831	2,847	2,874	2,906	3,083	3,109	3,218	3,332	3,380	3,447	3,542	3,456	3,687

Source: Deaths and Ontario Population Estimates 1993 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Age-standardized mortality rates were similar in Durham Region and Ontario for both males and females with the male rates remaining higher than the female rates although this gap is getting smaller. All rates showed a decreasing trend between 1993 and 2012.

Figure 5: Life expectancy at birth, Durham Region and Ontario, 1993 to 2012

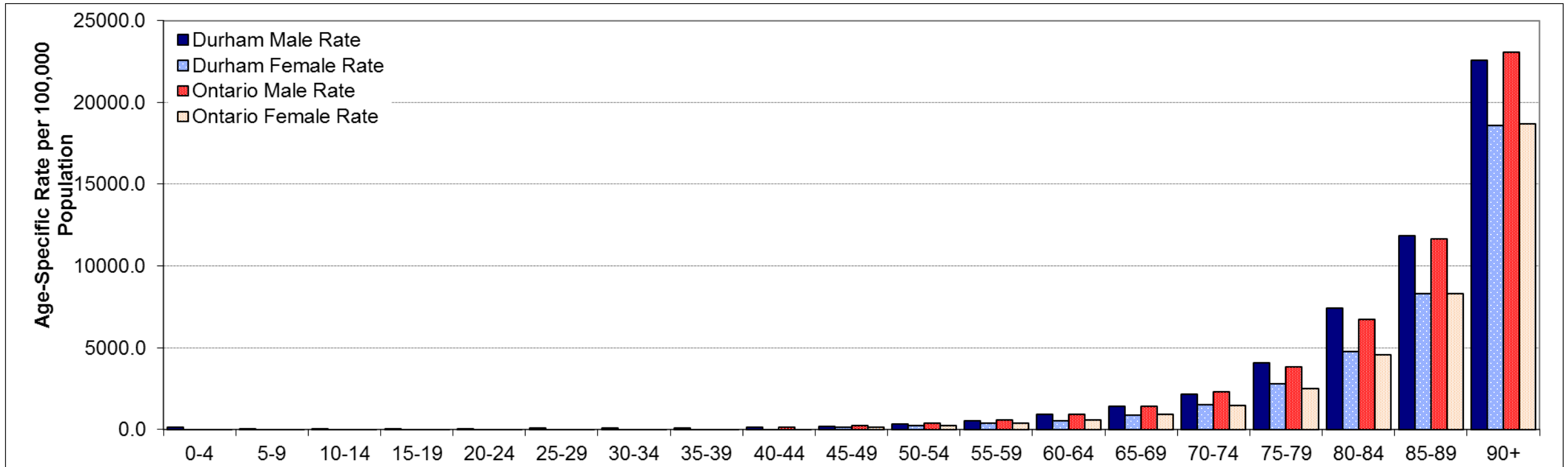


Rates and Counts	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Males	75.9	76.4	76.1	76.2	76.1	76.7	77.3	77.3	77.9	78.4	78.0	78.1	78.6	78.6	78.9	79.5	79.8	79.5	80.4	80.9
Durham Females	81.1	81.7	80.3	81.1	81.2	81.4	81.3	81.6	81.7	82.1	82.7	82.6	83.1	83.3	83.2	83.6	84.0	84.2	85.4	84.5
Ontario Males	75.3	75.4	75.7	76.0	76.3	76.7	76.9	77.2	77.5	77.8	77.8	78.3	78.5	78.9	79.0	79.3	79.6	79.9	80.2	80.5
Ontario Females	81.1	81.1	81.2	81.4	81.6	81.7	81.8	82.1	82.2	82.4	82.5	83.0	82.9	83.6	83.6	83.8	84.2	84.3	84.6	84.9

Source: Deaths and Ontario Population Estimates 1993 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Life expectancy is the average number of years that an individual would live if subjected to the mortality experience for the specified population and time period. Life expectancy increased between 1993 and 2012 for both Durham Region and Ontario and was consistently higher among females than males although this gap is getting smaller.

**Figure 6: All cause age-specific mortality rate, Durham Region and Ontario, 2008 to 2012**



<b>Rates and Counts</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40-44</b>	<b>45-49</b>	<b>50-54</b>	<b>55-59</b>	<b>60-64</b>	<b>65-69</b>	<b>70-74</b>	<b>75-79</b>	<b>80-84</b>	<b>85-89</b>	<b>90+</b>
Durham Male Rate	118.1	10.5	8.3	37.3	51.2	62.3	76.1	90.9	114.2	194.1	335.1	546.4	918.8	1406.7	2170.7	4065.9	7428.8	11866.6	22576.0
Durham Female Rate	89.0	6.6	12.5	19.4	21.4	31.1	37.9	46.3	77.6	129.5	228.8	403.1	554.8	895.7	1537.4	2785.1	4775.5	8292.0	18618.1
Ontario Male Rate	120.5	8.3	11.3	40.0	61.6	62.7	72.0	90.1	141.4	223.2	380.5	597.3	916.5	1446.4	2303.6	3851.5	6733.2	11640.1	23064.2
Ontario Female Rate	99.4	6.8	9.0	19.5	23.0	28.6	38.0	56.6	90.8	150.1	239.8	375.5	564.2	912.1	1471.2	2513.4	4561.3	8313.2	18695.8
Durham Male Deaths	105	10	9	46	55	57	71	94	134	271	412	526	707	760	832	1,242	1,479	1,185	787
Durham Female Deaths	76	6	13	23	22	29	38	51	96	183	281	397	449	520	693	1,067	1,453	1,622	1,711
Durham Total Deaths	181	16	22	69	77	86	109	145	230	454	693	923	1,156	1,280	1,525	2,309	2,932	2,807	2,498

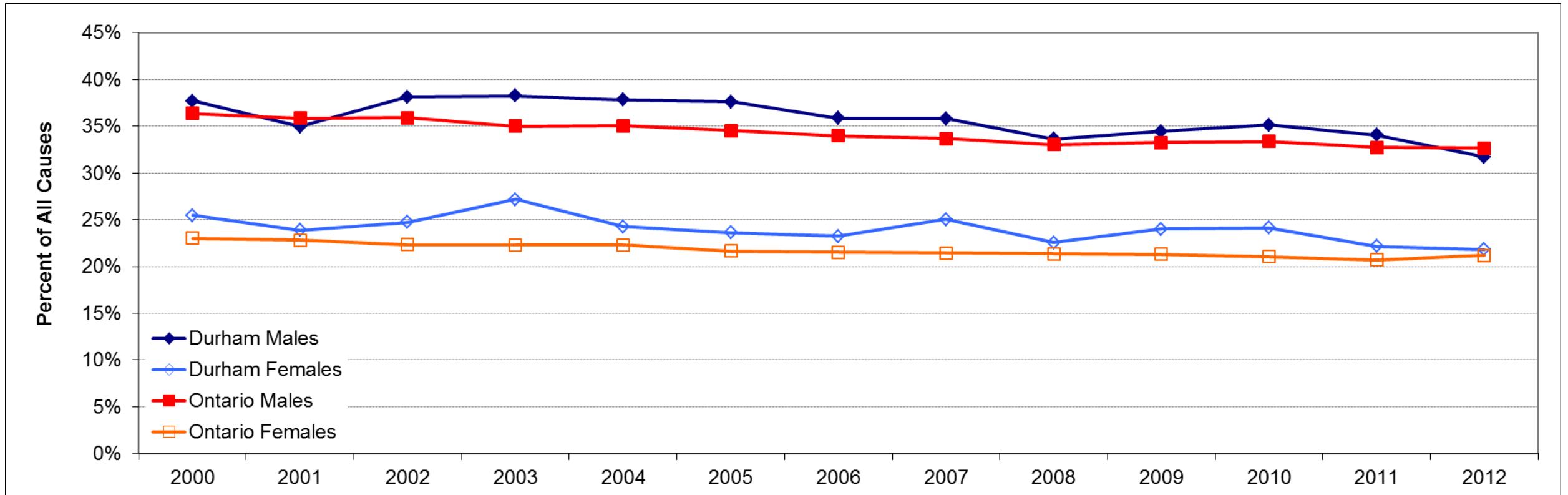
Source: Deaths and Ontario Population Estimates 2008 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Age-specific mortality rates were similar between Durham Region and Ontario and consistently higher among males than females. Mortality increased steadily with age with the exception of children less than five. This age group had disproportionately higher mortality and had mortality rates similar to the 40-44 year age group.

## Potentially avoidable mortality

Some deaths can be avoidable by either preventing a disease from developing or by preventing or delaying death once a disease or condition has developed (3). We calculate potentially avoidable mortality by adding up all of the deaths due to potentially preventable or treatable causes in persons under the age of 75. Mortality from potentially preventable causes includes deaths from conditions linked to modifiable risk factors, such smoking or excessive alcohol consumption (e.g., lung cancer, liver cirrhosis), and deaths linked to effective public health interventions (e.g., vaccinations, traffic safety legislation). Mortality from potentially treatable causes refers to deaths from conditions where it is expected that death can be avoided or delayed by measures such as screening, early detection, and appropriate treatment (e.g., breast cancer, appendicitis). We selected potentially avoidable deaths for this report using the ICD-10 codes outlined in the [Potentially Avoidable Mortality ICD Code List](#) associated with the Core Indicators Project of the Association of Public Health Epidemiologists in Ontario.

**Figure 7: Percent of all deaths that are potentially avoidable, Durham Region and Ontario, ages 0 to 75 years, 2000 to 2012**



<b>Rates and Counts</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Durham Male Percent	37.7%	35.0%	38.1%	38.3%	37.8%	37.6%	35.9%	35.8%	33.6%	34.5%	35.1%	34.0%	31.7%
Durham Female Percent	25.4%	23.9%	24.7%	27.2%	24.2%	23.6%	23.2%	25.0%	22.5%	24.0%	24.1%	22.2%	21.8%
Ontario Male Percent	36.4%	35.9%	35.9%	35.0%	35.0%	34.5%	34.0%	33.7%	33.0%	33.2%	33.4%	32.7%	32.6%
Ontario Female Percent	23.0%	22.8%	22.3%	22.3%	22.3%	21.6%	21.5%	21.4%	21.3%	21.3%	21.0%	20.7%	21.2%
Durham Male Deaths	543	490	539	567	587	596	584	601	568	596	629	602	572
Durham Female Deaths	354	345	361	387	371	360	369	414	381	412	423	374	411
Durham Total Deaths	897	835	900	954	958	956	953	1,015	949	1,008	1,052	976	983

Source: Deaths 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

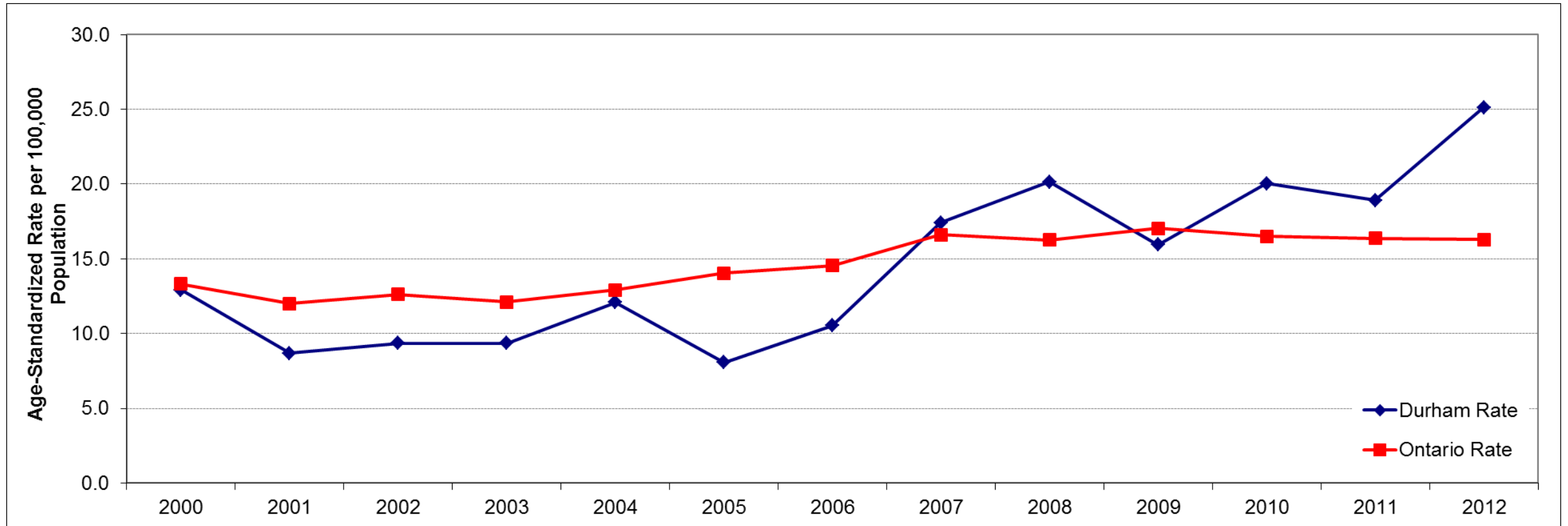
In Durham Region and Ontario, the percentage of all deaths that were potentially avoidable declined slightly between 2000 and 2012 among both males and females. More deaths were potentially avoidable among males than females. Durham Region was similar to Ontario.



## Infectious and parasitic diseases

Pathogenic microorganisms, such as bacteria, viruses, parasites or fungi, cause infectious diseases. The diseases can spread, directly or indirectly, from one person to another. We selected all infectious and parasitic disease deaths for this report using ICD-10 codes A00 to B99. See the [Infectious Diseases At A Glance](#) report for more details on infectious disease incidence in Durham Region at [www.durham.ca/healthstats](http://www.durham.ca/healthstats).

**Figure 8: All infectious and parasitic diseases age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012**



<b>Rates and Counts</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Durham Rate	12.9	8.7	9.3	9.4	12.1	8.1	10.5	17.4	20.2	15.9	20.0	18.9	25.1
Ontario Rate	13.3	12.0	12.6	12.1	12.9	14.0	14.5	16.6	16.3	17.1	16.5	16.4	16.3
Durham Male Deaths	25	17	20	22	27	20	23	38	41	43	56	46	56
Durham Female Deaths	20	16	15	13	20	16	22	36	49	32	42	51	80
Durham Total Deaths	45	33	35	35	47	36	45	74	90	75	98	97	136

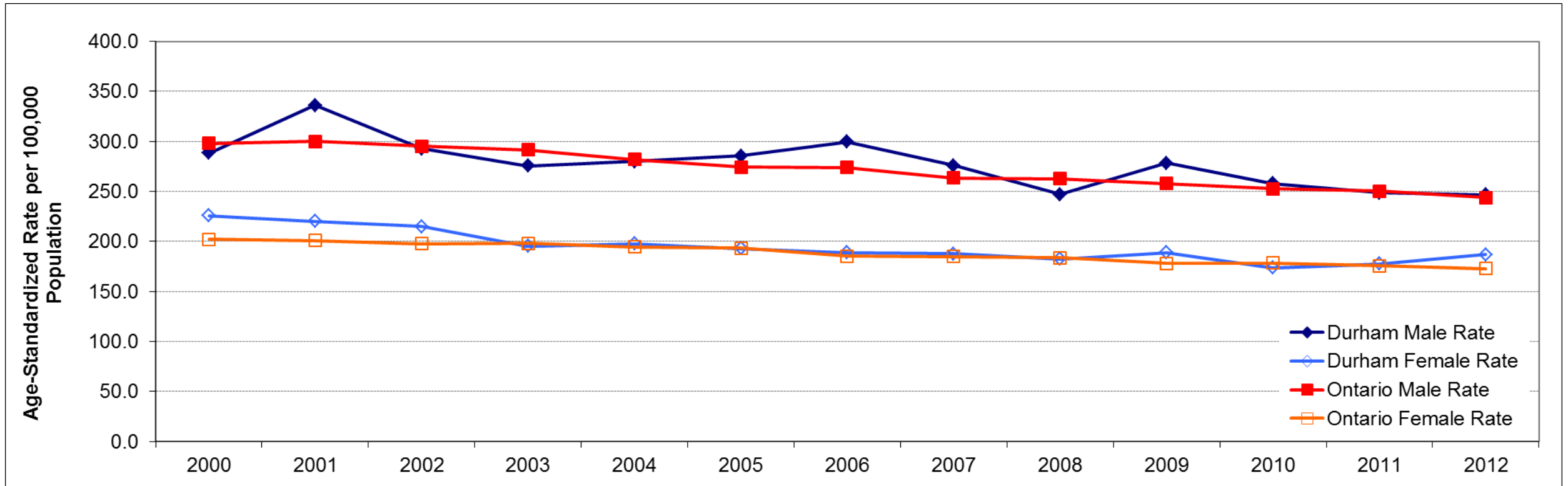
Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Due to small numbers, we combined male and female deaths for this report to create more stable rates. The age-standardized rate of all infectious and parasitic diseases increased in both Durham Region and Ontario between 2000 and 2012. Although Durham Region rates fluctuated due to small numbers, they were higher than Ontario rates in four of the past five years.

## Cancer

Although we think of cancer as one disease, it is actually many different diseases. Even within a specific type, such as lung cancer or leukemia, there are several different types of diseases. All cancers exhibit uncontrolled growth and spread of abnormal cells. Each type of cancer has different causes, risk factors, preventive factors and characteristics. We selected all cancer deaths for this report using ICD-10 codes C00 to C97 which includes all deaths from malignant cancers. See the [Cancer At A Glance](#) report for more details on cancer incidence in Durham Region at [www.durham.ca/healthstats](http://www.durham.ca/healthstats).

Figure 9: All cancers age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

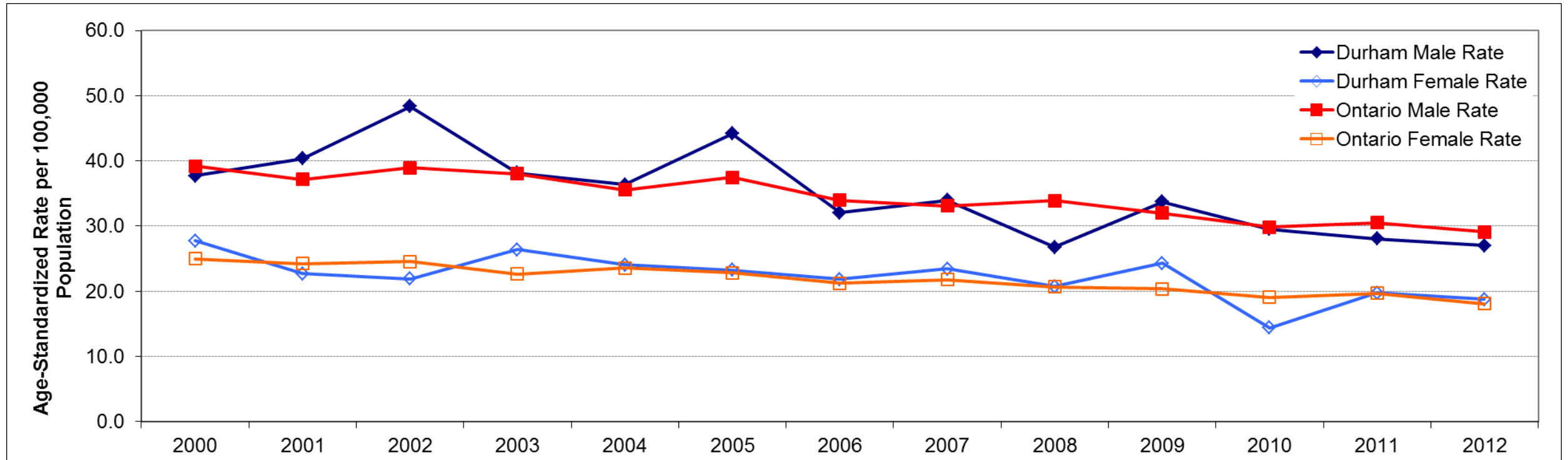


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	288.4	336.0	292.6	275.4	280.1	285.4	299.6	275.9	247.1	278.2	258.0	248.6	246.5
Durham Female Rate	225.6	220.3	214.8	195.2	197.5	192.9	189.0	187.6	182.6	188.7	173.6	177.8	186.8
Ontario Male Rate	298.0	300.0	295.1	291.5	282.1	274.4	274.0	263.3	262.6	257.8	252.6	250.0	243.8
Ontario Female Rate	202.1	200.9	197.7	198.0	194.6	193.3	185.1	184.8	183.7	178.2	178.4	175.5	172.8
Durham Male Deaths	402	469	438	442	481	492	537	524	501	570	563	567	593
Durham Female Deaths	428	433	447	427	457	461	484	496	491	542	514	538	605
Durham Total Deaths	830	902	885	869	938	953	1,021	1,020	992	1,112	1,077	1,105	1,198

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

In Durham Region and Ontario the cancer mortality rate for all cancers combined declined slightly between 2000 and 2012 among both males and females. The rate was consistently higher among males than females in both Durham Region and Ontario.

**Figure 10: Colorectal cancer age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012**

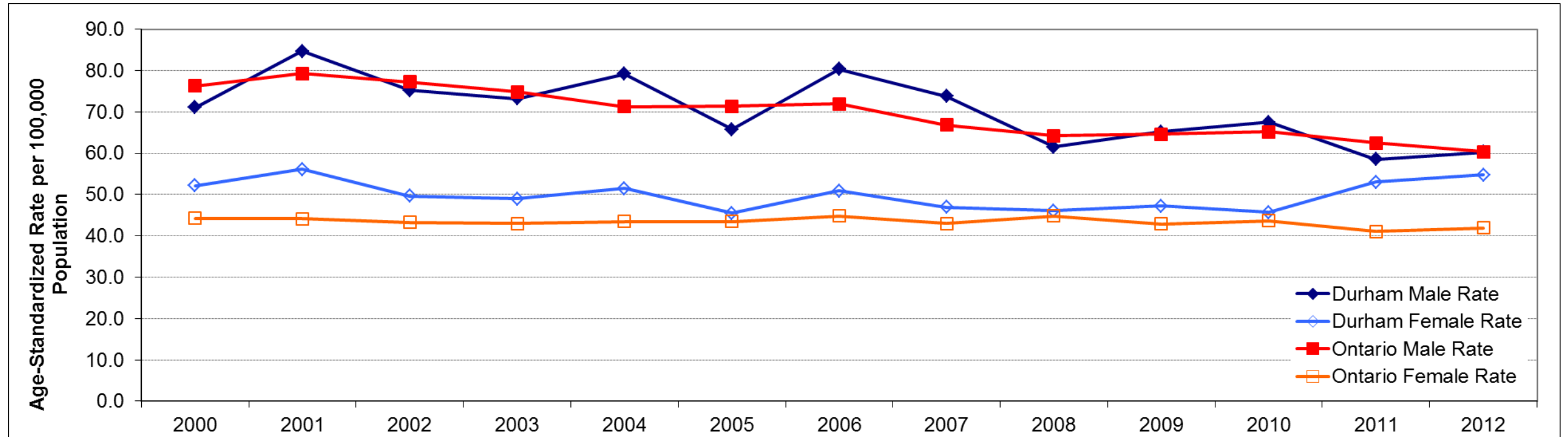


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	37.7	40.4	48.4	38.1	36.4	44.2	32.0	34.0	26.8	33.7	29.5	28.1	27.0
Durham Female Rate	27.8	22.7	21.9	26.4	24.0	23.2	21.8	23.5	20.7	24.3	14.4	19.7	18.7
Ontario Male Rate	39.2	37.2	38.9	38.0	35.6	37.4	33.9	33.1	33.9	32.0	29.8	30.5	29.1
Ontario Female Rate	25.0	24.3	24.5	22.6	23.6	22.8	21.2	21.8	20.7	20.3	19.1	19.7	18.1
Durham Male Deaths	55	59	66	57	63	74	61	62	54	70	65	65	66
Durham Female Deaths	52	44	44	56	52	53	60	58	52	72	46	61	60
Durham Total Deaths	107	103	110	113	115	127	121	120	106	142	111	126	126

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected colorectal cancer deaths for this report using ICD-10 codes C18 to C20 and C26.0. As with all cancers combined, the colorectal cancer mortality rate declined slightly between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males.

Figure 11: Lung cancer age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

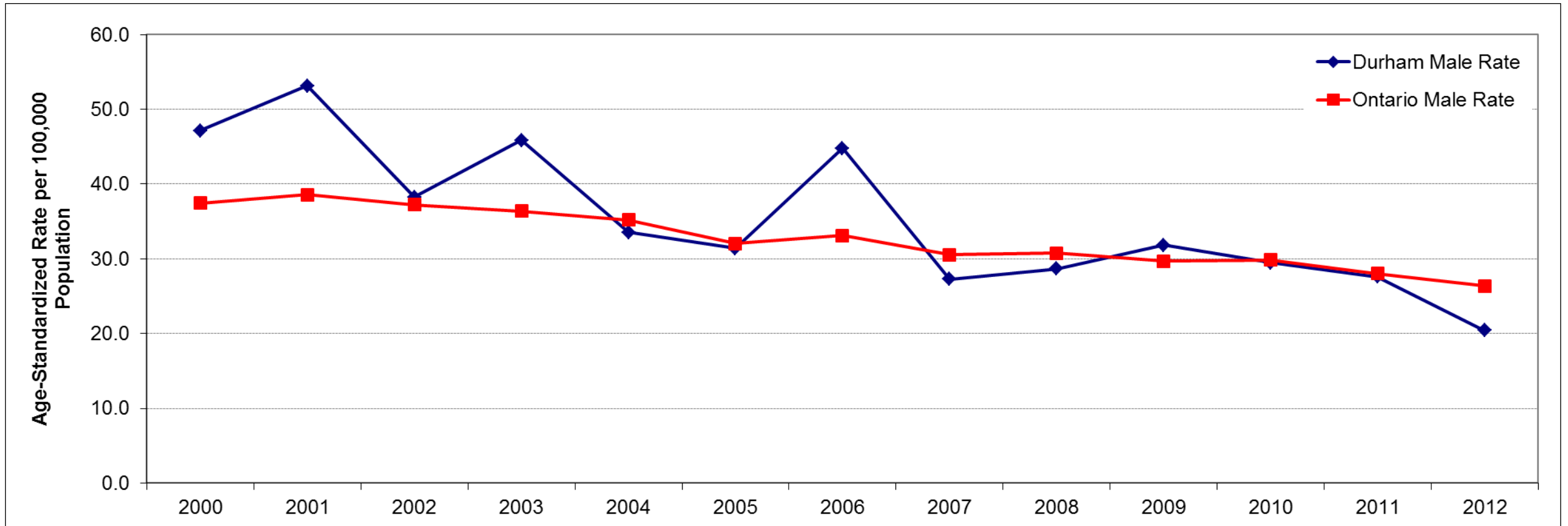


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	71.0	84.6	75.2	73.2	79.2	65.8	80.3	73.8	61.5	65.2	67.5	58.5	60.3
Durham Female Rate	52.2	56.1	49.7	48.9	51.4	45.5	50.9	47.0	46.1	47.2	45.6	53.0	54.8
Ontario Male Rate	76.2	79.2	77.2	74.8	71.2	71.3	71.9	66.8	64.2	64.6	65.1	62.5	60.4
Ontario Female Rate	44.2	44.2	43.2	43.0	43.5	43.4	44.8	43.0	44.8	42.9	43.7	41.0	41.9
Durham Male Deaths	104	125	119	124	141	121	146	138	126	143	148	138	145
Durham Female Deaths	100	110	101	107	116	107	123	120	122	129	130	156	169
Durham Total Deaths	204	235	220	231	257	228	269	258	248	272	278	294	314

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected lung cancer deaths for this report using ICD-10 code C34. While lung cancer mortality rates declined between 2000 and 2012 in Durham Region and Ontario males, the rates remained relatively stable among females. The rate was consistently higher among males than females in both Durham Region and Ontario although the gap is getting smaller over time. While rates were similar among males in Durham Region and Ontario, lung cancer mortality was higher among Durham Region females than Ontario females.

Figure 12: Prostate cancer age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

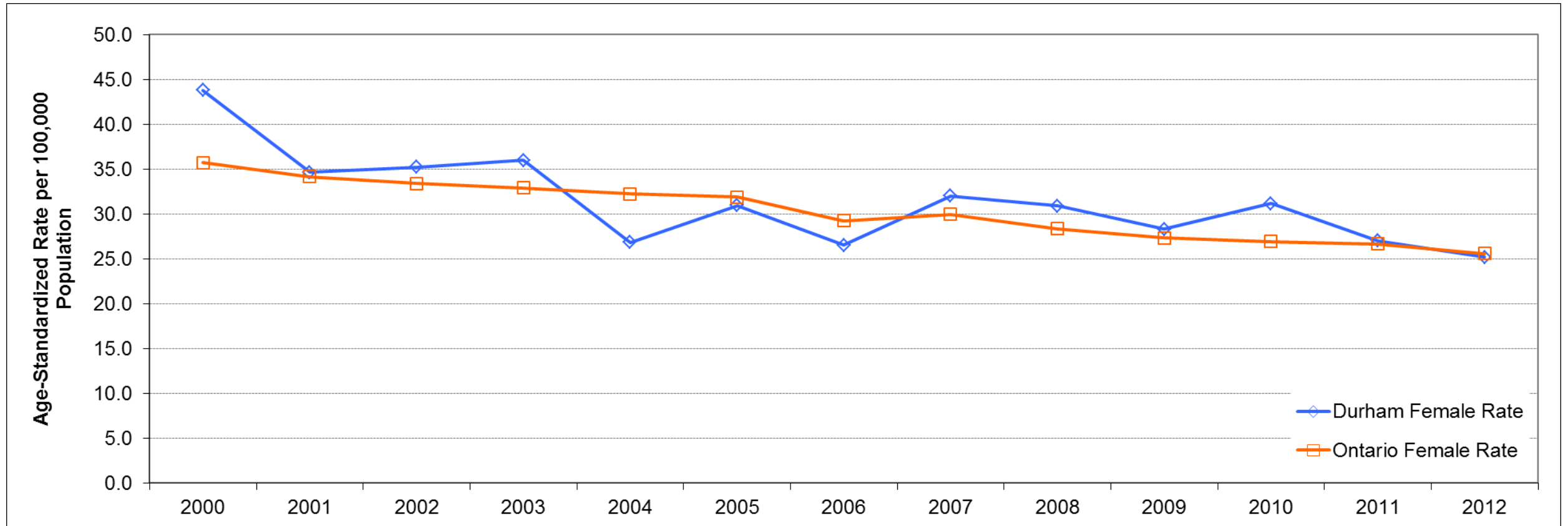


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	47.1	53.1	38.2	45.8	33.5	31.4	44.8	27.3	28.7	31.8	29.4	27.6	20.4
Ontario Male Rate	37.5	38.6	37.3	36.4	35.2	32.0	33.1	30.6	30.7	29.7	29.8	28.0	26.4
Durham Male Deaths	51	55	40	56	46	39	65	45	46	49	54	52	44

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected prostate cancer deaths for this report using ICD-10 code C61. The prostate cancer mortality rate declined between 2000 and 2012 in both Durham Region and Ontario. Rates in Durham Region were similar to Ontario.

Figure 13: Breast cancer age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012



Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Female Rate	43.8	34.7	35.2	36.0	26.8	31.0	26.5	32.0	30.9	28.3	31.2	27.0	25.2
Ontario Female Rate	35.7	34.1	33.4	32.9	32.2	31.9	29.2	29.9	28.3	27.3	26.9	26.7	25.6
Durham Female Deaths	85	70	74	80	62	75	66	85	85	81	93	81	80

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

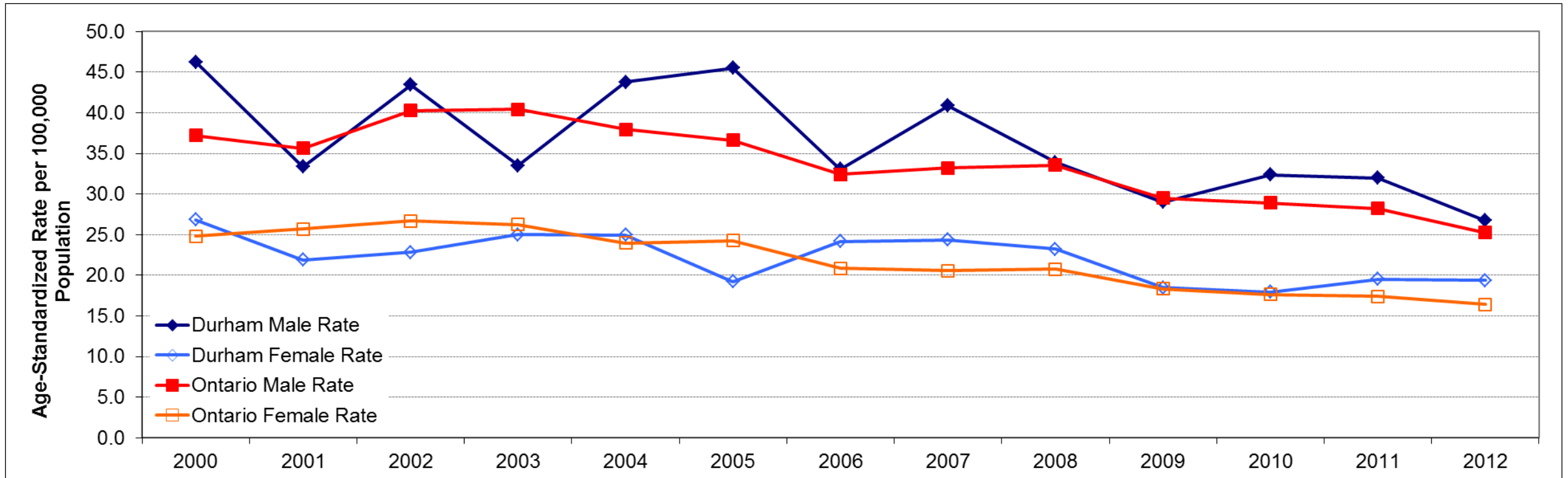
We selected breast cancer deaths using ICD-10 code C50. The female breast cancer mortality rate declined between 2000 and 2012 in both Durham Region and Ontario. The rate in Durham Region was similar to Ontario.



## Diabetes

This report combines Type 1 and Type 2 diabetes. Type 1 diabetes is an autoimmune disorder that results in the body's failure to produce insulin and the diagnosis is most common in young people. Type 2 diabetes results from the loss of the body's ability to produce sufficient insulin. We may underestimate mortality rates due to diabetes because physicians may specify other diseases as the underlying cause of death rather than diabetes on the death certificate (4). See [Facts on Diabetes](#) report for more details on diabetes in Durham Region.

Figure 14: Diabetes age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012



Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	46.3	33.3	43.4	33.5	43.8	45.5	33.1	40.8	33.9	29.0	32.3	32.0	26.7
Durham Female Rate	26.8	21.9	22.8	25.0	24.9	19.2	24.2	24.3	23.2	18.5	17.9	19.5	19.3
Ontario Male Rate	37.2	35.7	40.3	40.4	38.0	36.6	32.4	33.2	33.6	29.5	28.9	28.2	25.2
Ontario Female Rate	24.8	25.7	26.7	26.3	23.9	24.3	20.8	20.6	20.7	18.3	17.7	17.4	16.4
Durham Male Deaths	58	48	57	49	69	77	55	69	63	55	65	69	62
Durham Female Deaths	51	41	45	53	54	44	58	62	62	51	52	60	61
Durham Total Deaths	109	89	102	102	123	121	113	131	125	106	117	129	123

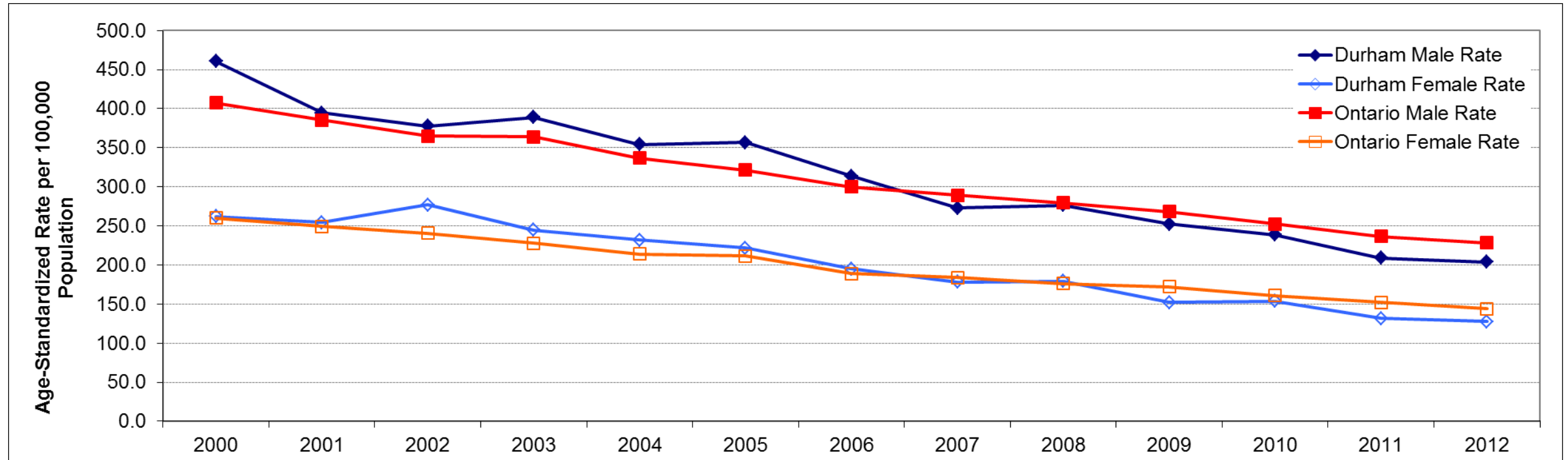
Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected diabetes deaths for this report using ICD-10 codes E10 to E14. The diabetes mortality rate declined between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males than females and the rates in Durham Region were similar to Ontario.

## **Cardiovascular disease**

Cardiovascular disease, also known as heart disease, is a disease of the heart and blood vessels. Cardiovascular disease includes heart attacks, stroke, heart failure, abnormal heart rhythms and heart valve problems. We selected cardiovascular disease deaths for this report using ICD-10 codes I00 to I99.

**Figure 15: Cardiovascular disease age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012**

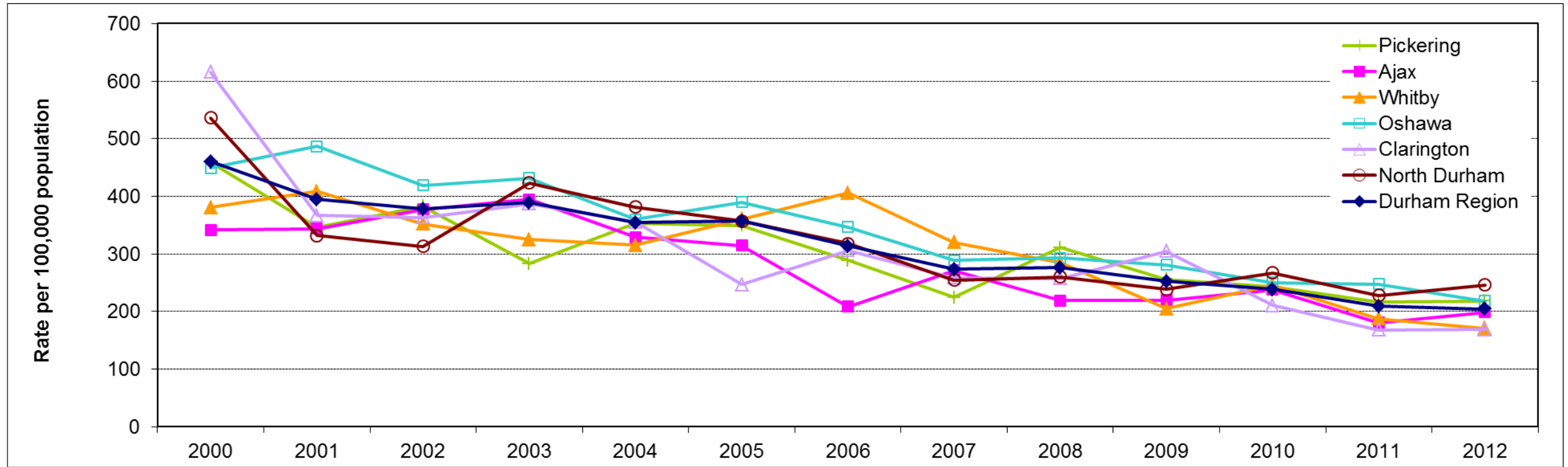


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	460.5	394.7	377.6	389.1	354.0	356.9	313.7	273.0	276.1	252.5	238.7	209.1	203.9
Durham Female Rate	261.9	254.5	276.9	244.8	231.9	221.8	195.2	178.1	179.0	152.0	153.6	131.6	127.7
Ontario Male Rate	407.3	385.2	365.0	364.0	336.7	321.5	300.2	289.0	279.6	268.1	252.1	236.3	228.4
Ontario Female Rate	260.1	249.5	240.8	227.9	214.2	211.4	188.8	184.0	176.2	172.3	160.6	152.0	143.9
Durham Male Deaths	514	424	471	510	477	505	471	457	486	479	459	432	441
Durham Female Deaths	474	478	544	503	500	504	469	446	470	421	451	407	419
Durham Total Deaths	988	902	1,015	1,013	977	1,009	940	903	956	900	910	839	860

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected cardiovascular disease deaths for this report using ICD-10 codes I00 to I99. The cardiovascular disease mortality rate declined between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males than females and rates in Durham Region were lower than rates in Ontario in the past 5 years.

Figure 16: Cardiovascular disease age-standardized mortality rates, Durham Region males by municipality, 2000 to 2012

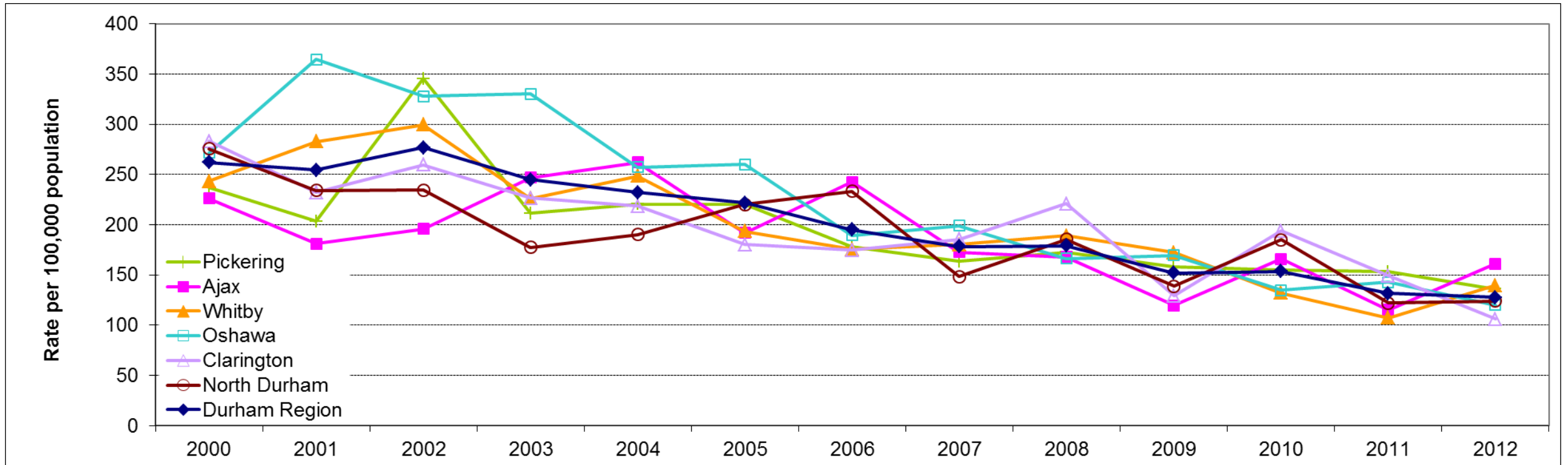


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Pickering Males	459.7	346.1	382.7	283.0	352.7	349.2	288.6	224.8	310.7	256.0	242.3	216.2	218.5
Ajax Males	341.3	343.5	376.9	394.6	329.2	314.5	208.6	271.2	218.9	219.9	237.6	180.7	198.8
Whitby Males	380.5	408.3	351.8	325.2	314.9	360.7	406.1	320.2	285.5	204.7	245.4	187.5	171.0
Oshawa Males	449.2	486.7	419.1	431.7	359.6	390.0	346.5	288.8	293.1	280.8	250.0	247.3	217.9
Clarington Males	615.8	366.6	363.4	386.7	355.5	246.7	305.7	258.8	257.1	304.9	210.9	167.8	169.0
North Durham Males	536.2	332.1	312.9	423.2	381.1	357.3	318.0	254.2	260.1	238.5	267.1	227.8	246.4
Durham Region Males	460.5	394.7	377.6	389.1	354.0	356.9	313.7	273.0	276.1	252.5	238.7	209.1	203.9

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected cardiovascular disease deaths for this report using ICD-10 codes I00 to I99. Cardiovascular disease death rates were similar across Durham Region municipalities and declined in all municipalities between 2000 and 2012.

Figure 17: Cardiovascular disease age-standardized mortality rates, Durham Region females by municipality, 2000 to 2012

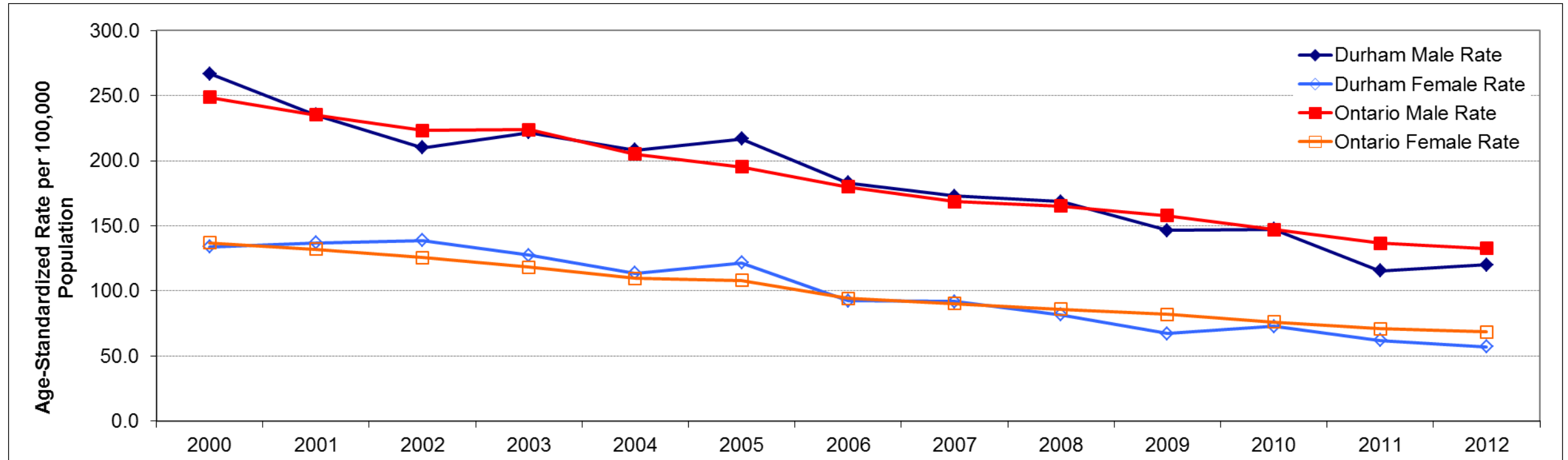


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Pickering Females	237.3	203.4	345.3	211.2	220.4	220.5	178.0	163.4	172.5	157.7	155.2	153.2	136.1
Ajax Females	226.2	181.0	195.6	247.0	261.9	191.7	242.6	172.7	167.7	119.5	165.8	115.2	161.2
Whitby Females	243.1	282.7	299.6	226.2	248.4	193.3	175.4	180.3	188.8	172.1	132.2	107.1	139.4
Oshawa Females	271.7	364.5	327.6	330.1	257.2	259.9	189.5	199.0	166.2	169.6	134.6	142.9	119.9
Clarington Females	283.3	232.0	259.5	226.6	218.4	180.3	174.7	185.5	220.9	129.3	193.8	149.2	106.1
North Durham Females	275.7	233.9	234.4	177.5	190.2	220.0	233.3	148.5	185.5	138.6	185.1	122.2	124.1
Durham Region Females	261.9	254.5	276.9	244.8	231.9	221.8	195.2	178.1	179.0	152.0	153.6	131.6	127.7

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Cardiovascular disease deaths were selected using ICD-10 codes I00 to I99. Cardiovascular disease death rates were higher in Oshawa females compared to females in other Durham Region municipalities and compared to Durham Region as a whole from 2000 to 2005 but rates have been similar in all municipalities since 2006. Rates among females declined in all municipalities between 2000 and 2012.

Figure 18: Ischemic heart disease age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

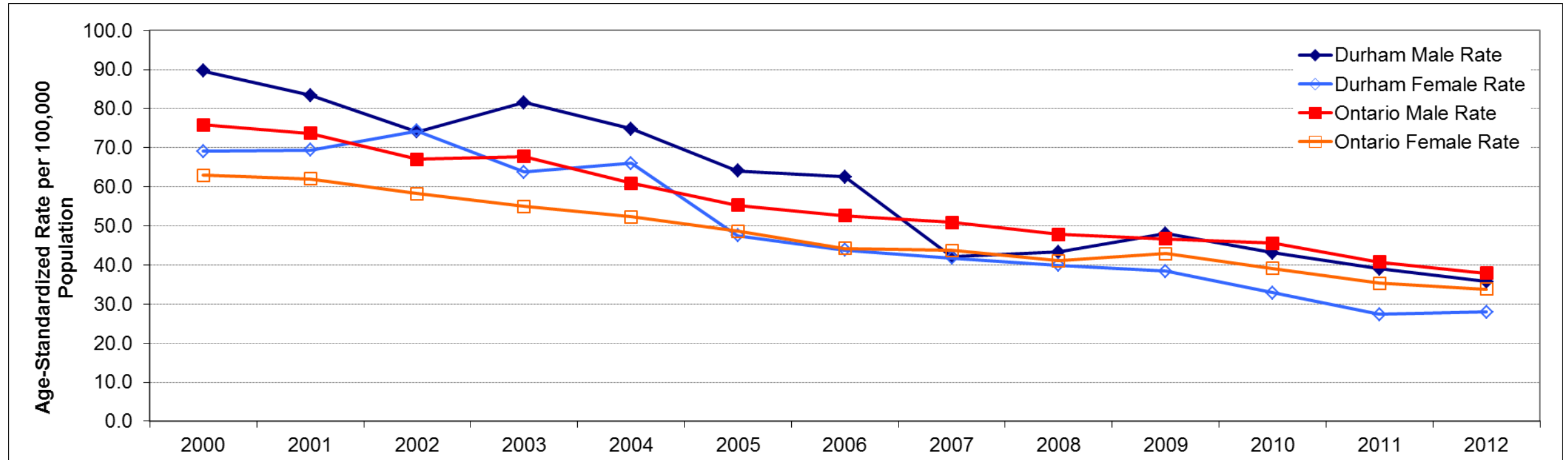


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	266.8	235.2	210.0	221.6	208.3	216.6	182.9	173.0	168.6	146.4	147.4	115.4	120.0
Durham Female Rate	134.0	136.9	138.8	127.6	113.8	121.5	92.5	91.9	81.8	67.4	72.9	62.0	57.1
Ontario Male Rate	248.8	235.3	223.3	223.7	205.0	195.2	179.8	168.7	165.3	158.0	147.2	136.6	132.8
Ontario Female Rate	137.0	132.2	125.5	118.2	109.6	108.1	94.4	90.4	86.1	82.2	76.2	71.1	68.4
Durham Male Deaths	313	258	277	299	288	314	283	290	306	287	288	242	267
Durham Female Deaths	244	255	274	261	246	276	222	230	214	187	212	192	187
Durham Total Deaths	557	513	551	560	534	590	505	520	520	474	500	434	454

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected ischemic heart disease (IHD) or heart attack deaths for this report using ICD-10 codes I20 to I25. The IHD mortality rate declined between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males than females and Durham Region rates were lower than Ontario in the past 5 years.

Figure 19: Cerebrovascular disease age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012



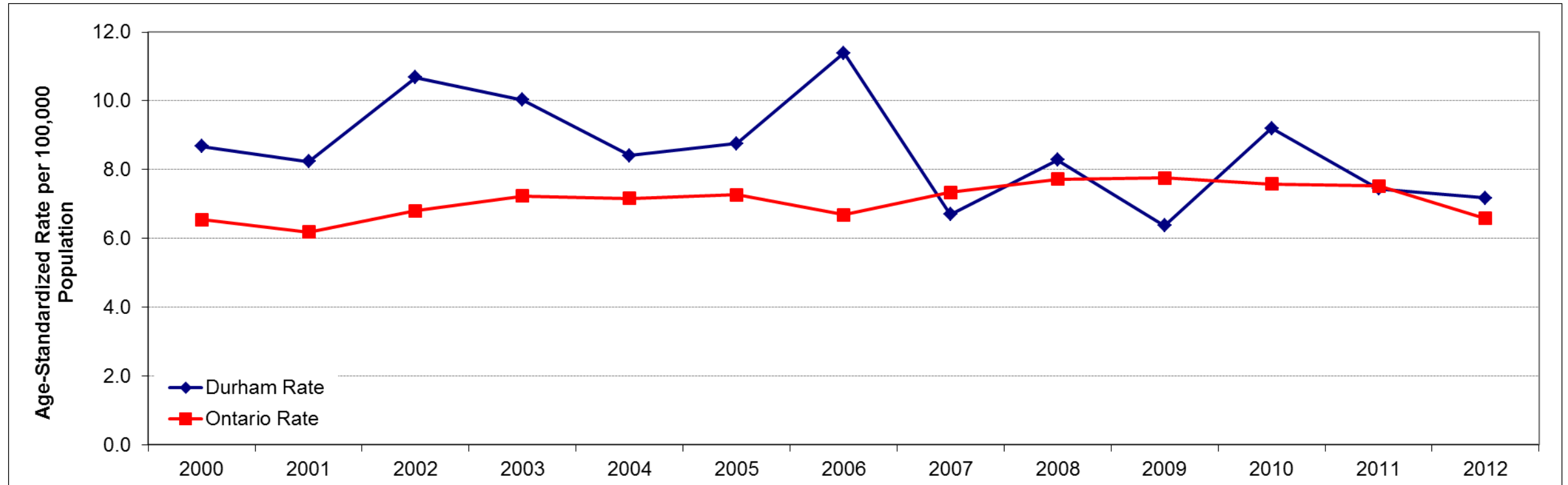
Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	89.7	83.4	74.1	81.6	74.8	64.1	62.5	42.1	43.3	48.0	43.1	39.1	35.7
Durham Female Rate	69.1	69.4	74.3	63.8	66.0	47.5	43.8	41.7	39.9	38.4	32.9	27.3	28.0
Ontario Male Rate	75.8	73.7	67.1	67.7	60.9	55.3	52.6	50.8	47.8	46.7	45.5	40.8	37.9
Ontario Female Rate	63.0	62.0	58.2	55.0	52.3	48.6	44.2	43.7	41.0	42.9	39.1	35.4	33.8
Durham Male Deaths	90	88	88	93	86	85	87	68	71	83	79	79	73
Durham Female Deaths	124	130	145	132	141	108	107	105	105	107	98	84	91
Durham Total Deaths	214	218	233	225	227	193	194	173	176	190	177	163	164

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected cerebrovascular disease (including stroke) deaths for this report using ICD-10 codes I60 to I69. The cerebrovascular disease mortality rate declined between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males than females although rates among Durham Region females were lower than rates in Ontario females in the past 5 years whereas rates among males were similar.



Figure 20: High blood pressure age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012



Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Rate	8.7	8.2	10.7	10.0	8.4	8.8	11.4	6.7	8.3	6.4	9.2	7.4	7.2
Ontario Rate	6.6	6.2	6.8	7.2	7.2	7.3	6.7	7.3	7.7	7.8	7.6	7.5	6.6
Durham Male Deaths	6	8	14	18	12	9	14	11	15	12	15	17	18
Durham Female Deaths	18	17	18	15	18	20	29	16	21	16	28	21	21
Durham Total Deaths	24	25	32	33	30	29	43	27	36	28	43	38	39

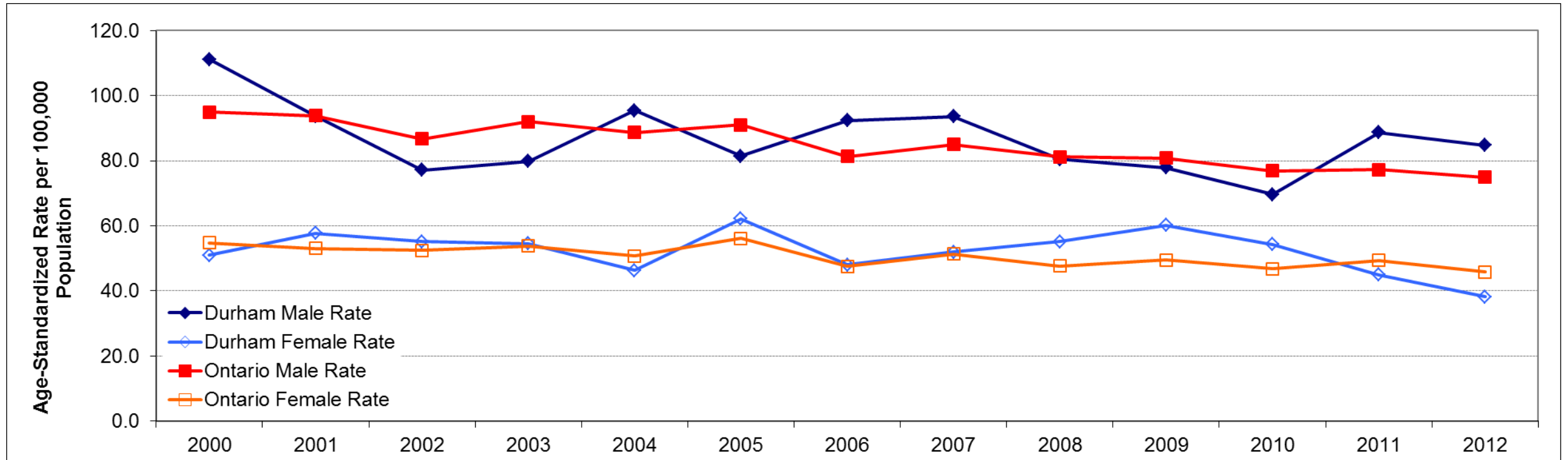
Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected hypertensive disease or high blood pressure deaths for this report using ICD-10 codes I10 to I15. We combined male and female deaths due to small numbers to create more stable rates. The mortality rate increased slightly between 2000 and 2012 in Durham Region and Ontario. Rates in Durham Region were similar to Ontario in recent years.

## **Respiratory disease**

Respiratory disease refers to conditions of the lungs that affect breathing and includes conditions of the upper respiratory tract, trachea, bronchi, bronchioles, alveoli, pleura and pleural cavity such as asthma, chronic obstructive pulmonary disease (COPD), pneumonia and influenza. We selected respiratory disease deaths for this report using ICD-10 codes J00 to J99.

Figure 21: Respiratory disease age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

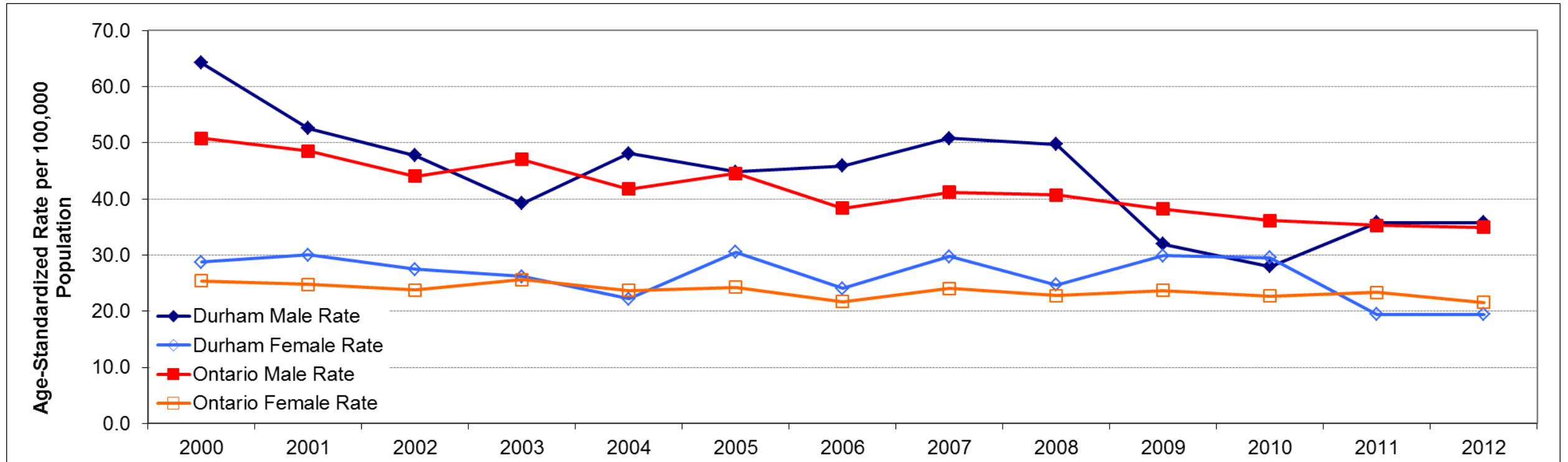


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	111.2	93.7	77.1	79.8	95.5	81.4	92.4	93.6	80.4	77.8	69.6	88.7	84.7
Durham Female Rate	51.0	57.8	55.2	54.6	46.3	62.2	48.0	52.0	55.1	60.2	54.3	45.0	38.2
Ontario Male Rate	94.9	93.9	86.8	92.0	88.7	91.0	81.2	85.0	81.2	80.8	76.9	77.3	74.9
Ontario Female Rate	54.8	53.1	52.4	53.8	50.7	56.1	47.6	51.4	47.7	49.6	46.8	49.4	45.8
Durham Male Deaths	120	101	91	98	115	119	138	150	131	139	124	167	172
Durham Female Deaths	93	107	108	114	103	143	116	131	145	167	159	138	124
Durham Total Deaths	213	208	199	212	218	262	254	281	276	306	283	305	296

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected respiratory disease deaths for this report using ICD-10 codes J00 to J99. The mortality rate declined slightly between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males than females and rates in Durham Region were similar to Ontario.

Figure 22: Chronic obstructive pulmonary disease (COPD) age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

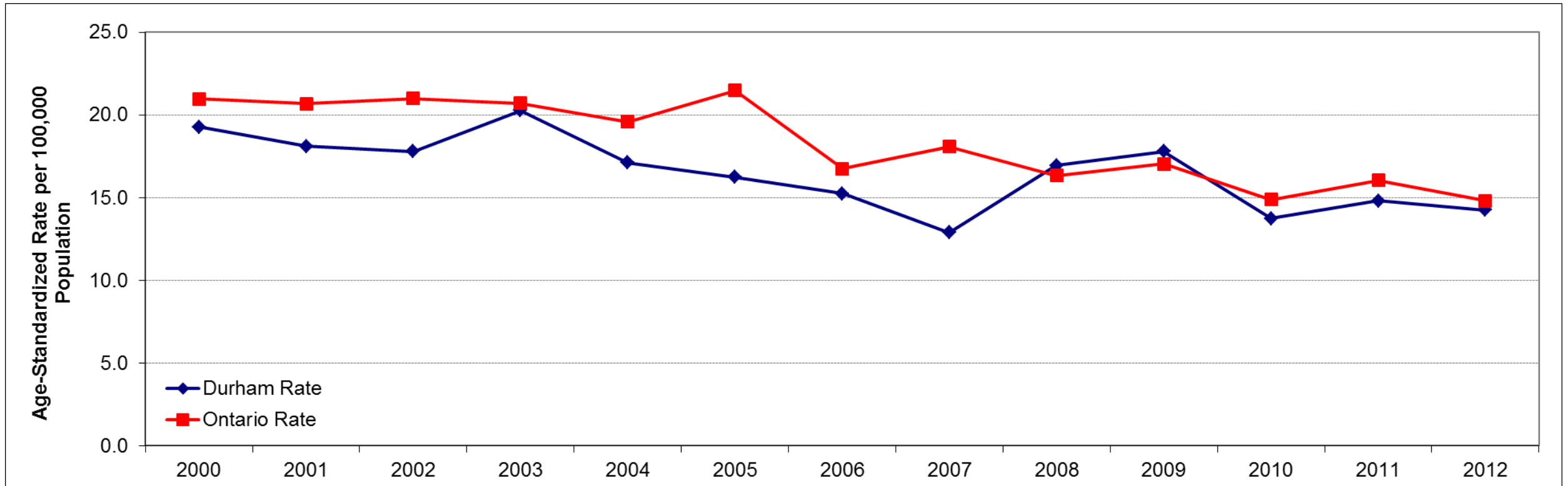


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	64.2	52.6	47.7	39.2	48.1	44.8	45.9	50.8	49.7	32.0	28.0	35.8	35.8
Durham Female Rate	28.8	30.0	27.4	26.2	22.2	30.6	24.1	29.7	24.7	29.9	29.5	19.4	19.4
Ontario Male Rate	50.8	48.5	44.1	47.0	41.8	44.6	38.4	41.2	40.7	38.2	36.1	35.3	34.9
Ontario Female Rate	25.4	24.8	23.8	25.6	23.7	24.3	21.7	24.1	22.8	23.7	22.7	23.4	21.6
Durham Male Deaths	70	60	52	48	58	67	72	81	81	59	49	82	76
Durham Female Deaths	53	56	54	55	49	71	59	75	66	83	86	72	62
Durham Total Deaths	123	116	106	103	107	138	131	156	147	142	135	154	138

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected chronic obstructive pulmonary disease (COPD) deaths for this report using ICD-10 codes J40 to J44. This grouping includes diseases such as chronic bronchitis and emphysema but excludes asthma. The COPD mortality rate declined between 2000 and 2012 among both males and females in Durham Region and Ontario with a larger decline among males. Rates were higher among males than females although the gap is closing. Rates in Durham Region were similar to Ontario in the past two years.

Figure 23: Pneumonia and influenza age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012



Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Rate	19.3	18.1	17.8	20.3	17.1	16.2	15.2	12.9	16.9	17.8	13.7	14.8	14.3
Ontario Rate	21.0	20.7	21.0	20.7	19.6	21.5	16.7	18.1	16.3	17.0	14.9	16.0	14.8
Durham Male Deaths	26	18	20	27	27	23	25	25	25	42	27	39	39
Durham Female Deaths	25	31	35	36	26	35	31	26	44	40	37	32	36
Durham Total Deaths	51	49	55	63	53	58	56	51	69	82	64	71	75

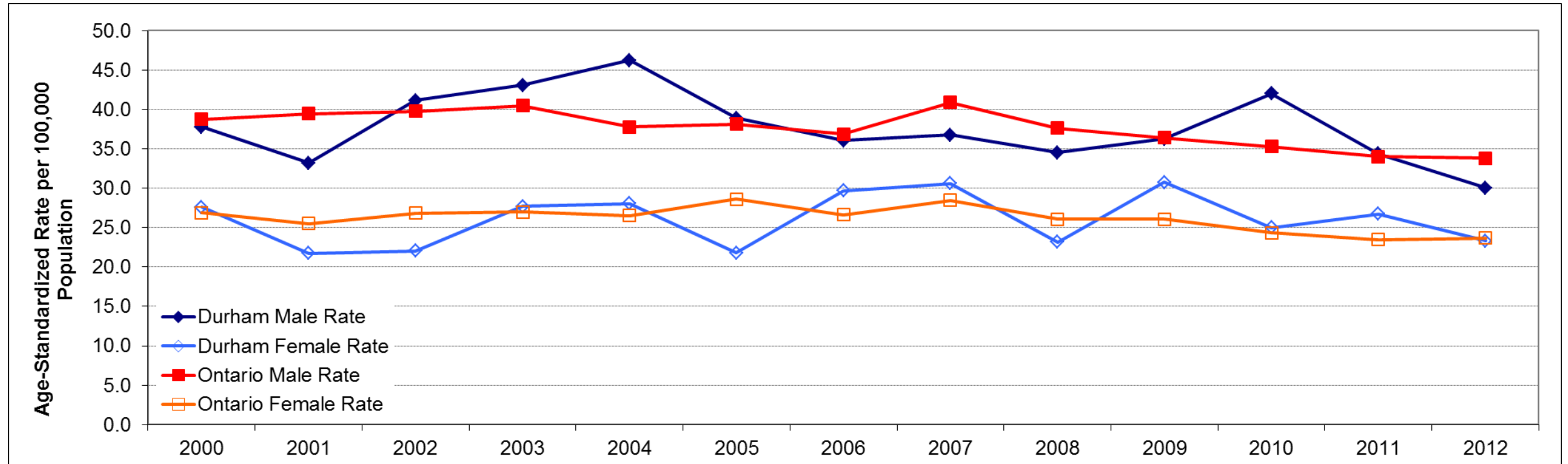
Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected pneumonia and influenza deaths for this report using ICD-10 codes J10 to J18. Pneumonia often complicates influenza, especially in the elderly (5). Because of this strong link between the two, we have grouped them together for this report as is common in data reporting. We combined male and female deaths due to small numbers to create more stable rates. The pneumonia and influenza mortality rate declined between 2000 and 2012 in Durham Region and Ontario. Rates in Durham Region were similar to Ontario in recent years.

## **Digestive system diseases**

The digestive system is a series of organs that convert food into nutrients and moves unused waste material out of the body. Diseases of the digestive system can affect any part of the digestive or gastrointestinal tract including the mouth, esophagus, stomach, small intestine, large intestine, rectum and anus. Such diseases can include cirrhosis of the liver, pancreatitis, diverticulitis, and Crohn's disease but do not include cancers of the digestive system. Digestive system disease deaths are selected using ICD-10 codes K00 to K93.

**Figure 24: Digestive system diseases age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012**



Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	37.8	33.2	41.1	43.1	46.3	38.9	36.1	36.8	34.5	36.3	42.0	34.4	30.1
Durham Female Rate	27.6	21.7	22.1	27.7	28.0	21.8	29.7	30.6	23.2	30.8	25.0	26.8	23.3
Ontario Male Rate	38.8	39.4	39.8	40.5	37.8	38.2	36.9	40.9	37.6	36.4	35.3	34.0	33.8
Ontario Female Rate	26.9	25.5	26.9	27.0	26.5	28.6	26.6	28.5	26.1	26.1	24.3	23.5	23.7
Durham Male Deaths	51	46	60	63	71	64	61	67	69	76	97	77	69
Durham Female Deaths	52	43	46	57	63	50	72	79	62	87	74	82	75
Durham Total Deaths	103	89	106	120	134	114	133	146	131	163	171	159	144

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

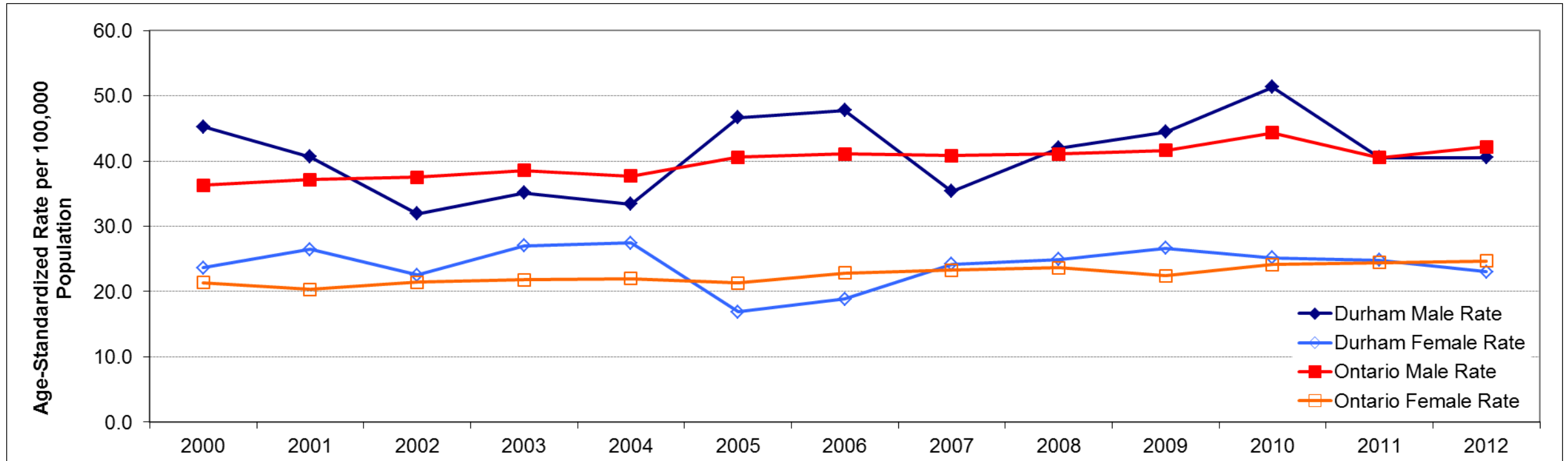
We selected digestive system disease deaths for this report using ICD-10 codes K00 to K93. The digestive system mortality rate remained relatively stable between 2000 and 2012 among both males and females in Durham Region and Ontario. The rate was consistently higher among males than females and rates in Durham Region were similar to Ontario.

## Injury

We grouped causes of injury deaths for this report based on the external cause of the injury rather than the resulting injury or diagnosis (e.g., head injury or fracture). Injury related causes of death include but are not limited to motor vehicle accidents, suicides, falls, poisonings and burns. We categorize injuries as unintentional (i.e., accidental) and intentional (i.e., deliberate) (1). See the [Injuries At A Glance](#) reports for information on hospitalization and emergency department visits rates for injuries in Durham Region at [www.durham.ca/healthstats](http://www.durham.ca/healthstats).



**Figure 25: Unintentional injury age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012**

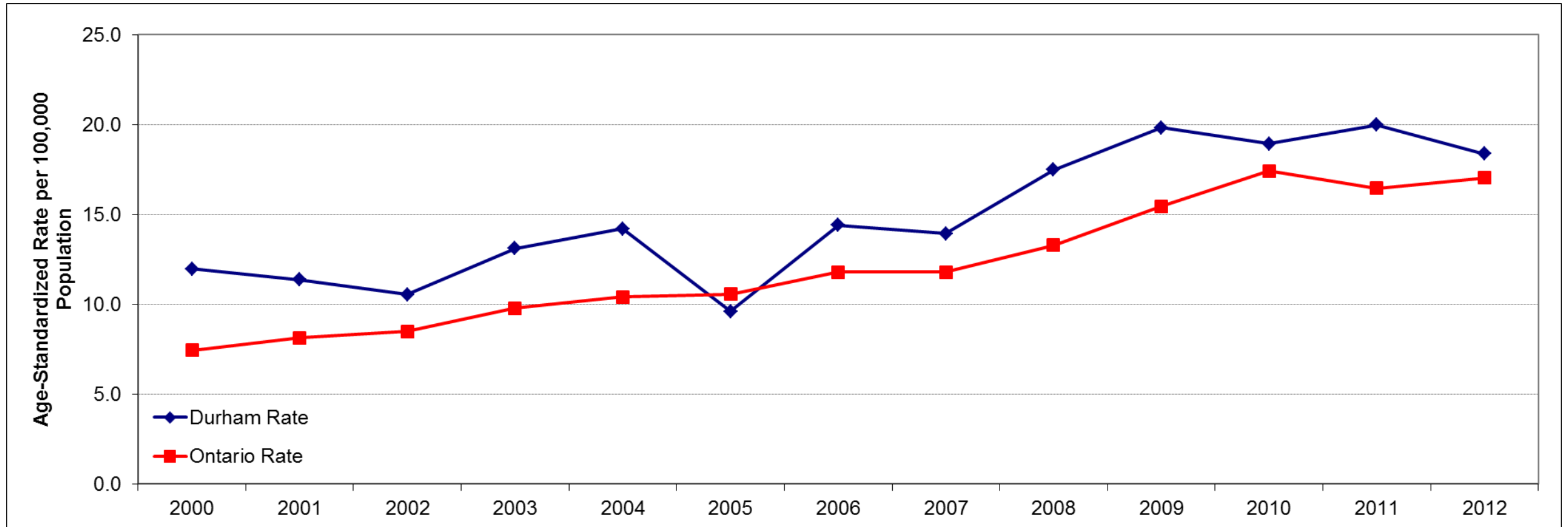


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Male Rate	45.2	40.6	31.9	35.1	33.4	46.6	47.8	35.4	42.0	44.5	51.3	40.5	40.5
Durham Female Rate	23.7	26.4	22.5	27.0	27.4	16.9	18.9	24.2	24.9	26.7	25.2	24.8	23.0
Ontario Male Rate	36.3	37.1	37.5	38.6	37.7	40.6	41.1	40.8	41.1	41.7	44.3	40.6	42.2
Ontario Female Rate	21.4	20.3	21.4	21.8	22.0	21.3	22.8	23.3	23.7	22.4	24.1	24.5	24.7
Durham Male Deaths	69	57	60	67	56	85	95	80	80	91	114	89	95
Durham Female Deaths	45	54	48	57	60	41	49	63	68	77	77	78	76
Durham Total Deaths	114	111	108	124	116	126	144	143	148	168	191	167	171

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected unintentional injury deaths for this report using ICD-10 codes V01 to X59 and Y85 to Y86. The unintentional mortality rate increased between 2000 and 2012 among both males and females in Ontario but remained relatively stable in Durham Region. Rates were consistently higher among males than females and rates in Durham Region were similar to Ontario.

Figure 26: Unintentional falls age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012

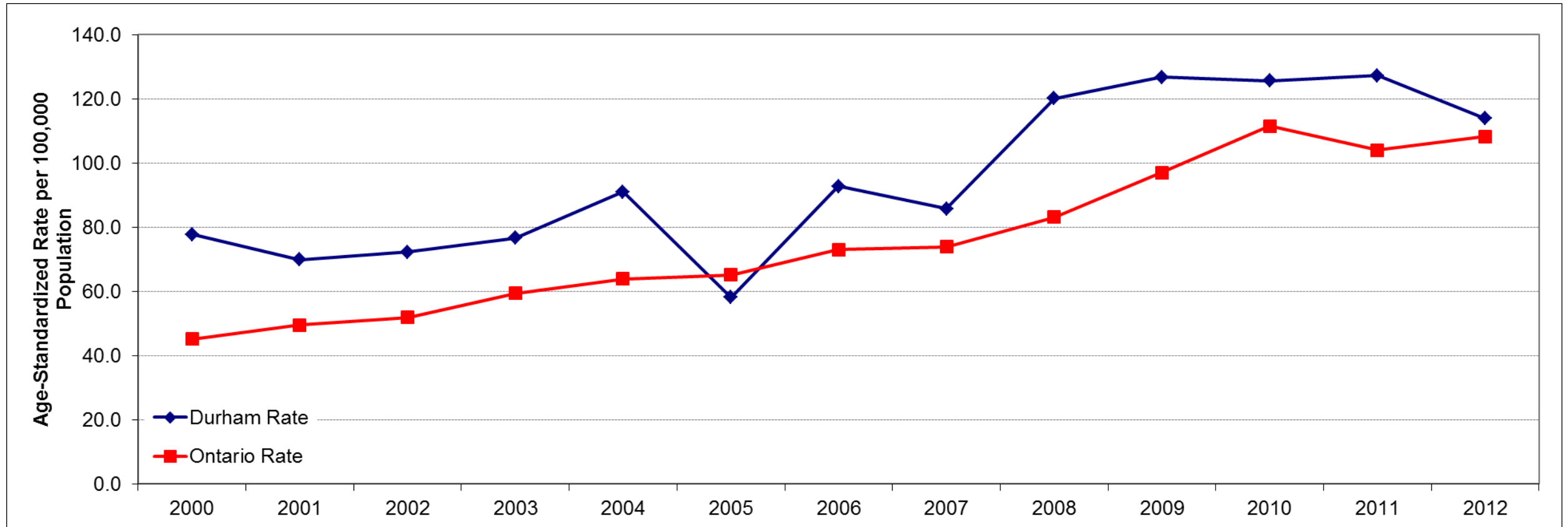


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Rate	12.0	11.4	10.5	13.1	14.2	9.6	14.4	13.9	17.5	19.8	18.9	20.0	18.4
Ontario Rate	7.4	8.1	8.5	9.8	10.4	10.6	11.8	11.8	13.3	15.5	17.4	16.4	17.0
Durham Male Deaths	12	16	13	18	15	18	31	22	33	46	45	46	41
Durham Female Deaths	20	18	21	26	33	18	26	34	39	43	43	53	56
Durham Total Deaths	32	34	34	44	48	36	57	56	72	89	88	99	97

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected unintentional fall deaths for this report using ICD-10 codes W00 to W19. Due to small numbers, we combined male and female deaths to create more stable rates. The mortality rate increased between 2000 and 2012 in Durham Region and Ontario. Rates in Durham Region were higher than Ontario rates in most years.

**Figure 27: Unintentional falls mortality rates, Durham Region and Ontario, Ages 65+, 2000 to 2012**

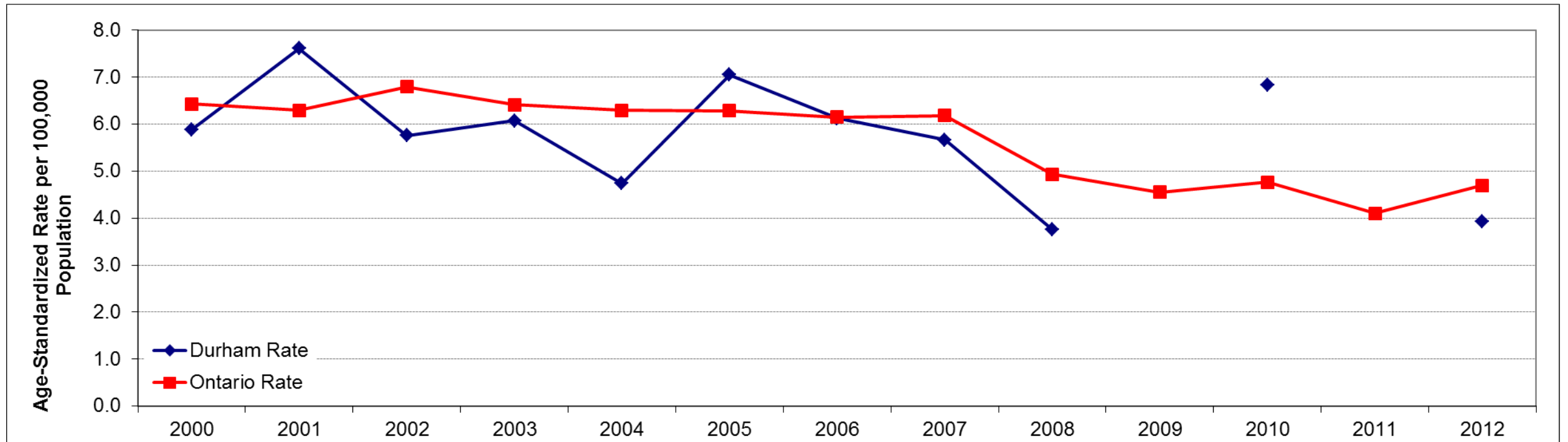


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Rate	77.7	69.9	72.2	76.6	91.0	58.1	92.8	85.7	120.1	126.7	125.6	127.2	113.8
Ontario Rate	45.2	49.5	51.9	59.4	63.9	65.2	73.0	73.9	83.1	97.0	111.5	103.9	108.2
Durham Male Deaths	11	14	12	12	13	13	26	17	33	38	41	39	35
Durham Female Deaths	18	15	21	23	30	17	25	31	38	42	42	50	50
Durham Total Deaths	29	29	33	35	43	30	51	48	71	80	83	89	85

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected unintentional fall deaths for this report using ICD-10 codes W00 to W19. Due to small numbers, we combined male and female deaths to create more stable rates. The mortality rate among adults 65 years and older increased between 2000 and 2012 in Durham Region and Ontario. Rates among Durham Region older adults were higher than Ontario rates.

**Figure 28: Motor vehicle traffic collisions age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012**

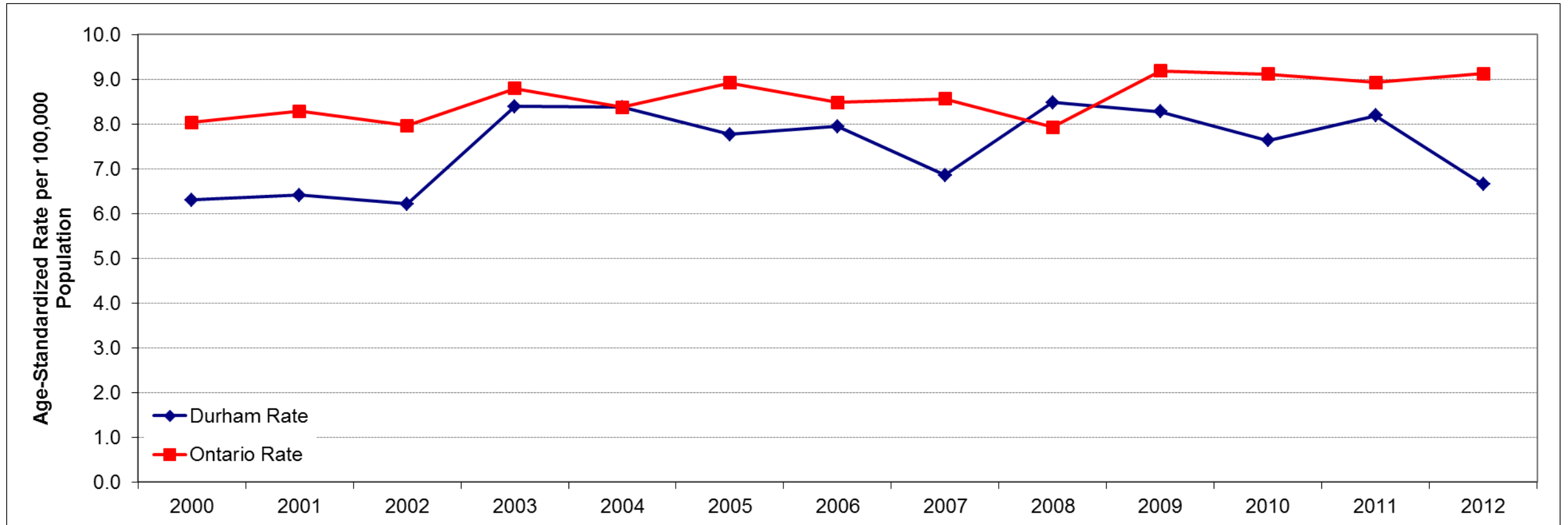


Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Rate	5.9	7.6	5.8	6.1	4.7	7.1	6.1	5.7	3.8	--	6.8	--	3.9
Ontario Rate	6.4	6.3	6.8	6.4	6.3	6.3	6.1	6.2	4.9	4.6	4.8	4.1	4.7
Durham Male Deaths	19	17	20	21	16	27	23	24	10	--	27	12	16
Durham Female Deaths	8	18	7	6	10	7	11	9	11	--	14	6	7
Durham Total Deaths	27	35	27	27	26	34	34	33	21	14	41	18	23

Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected motor vehicle traffic collision (MVT) deaths for this report using ICD-10 codes V02 to V04 (.1 and .9), V09.2, V12 to V14 (.3 to .9), V19 (.4 to .6), V20 to V28 (.3 to .9), V30 to V79 (.3 to .9), V80 (.3 to .5), V81.1, V82.1, V83 to V86 (.0 to .3), V87 (.0 to .8), and V89.2. Due to small numbers, we combined male and female deaths to create more stable rates. We did not present age-standardized mortality rates when the total number of deaths included in the rate was less than 20. In addition, we did not present counts of deaths, age-specific mortality rates, and crude mortality rates when counts were between 1 and 4. We presented these rates and counts as dashes in table and gaps in the graph. The MVT mortality rate decreased between 2000 and 2012 in Ontario. The rates for Durham Region followed a similar trend but showed some fluctuation due to small numbers. Rates in Durham Region were similar to Ontario.

Figure 29: Suicide age-standardized mortality rates, Durham Region and Ontario, 2000 to 2012



Rates and Counts	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Durham Rate	6.3	6.4	6.2	8.4	8.4	7.8	7.9	6.9	8.5	8.3	7.6	8.2	6.7
Ontario Rate	8.0	8.3	8.0	8.8	8.4	8.9	8.5	8.6	7.9	9.2	9.1	8.9	9.1
Durham Male Deaths	26	24	27	36	38	31	35	32	39	42	32	36	30
Durham Female Deaths	7	7	5	9	8	14	11	7	11	8	13	14	12
Durham Total Deaths	33	31	32	45	46	45	46	39	50	50	45	50	42

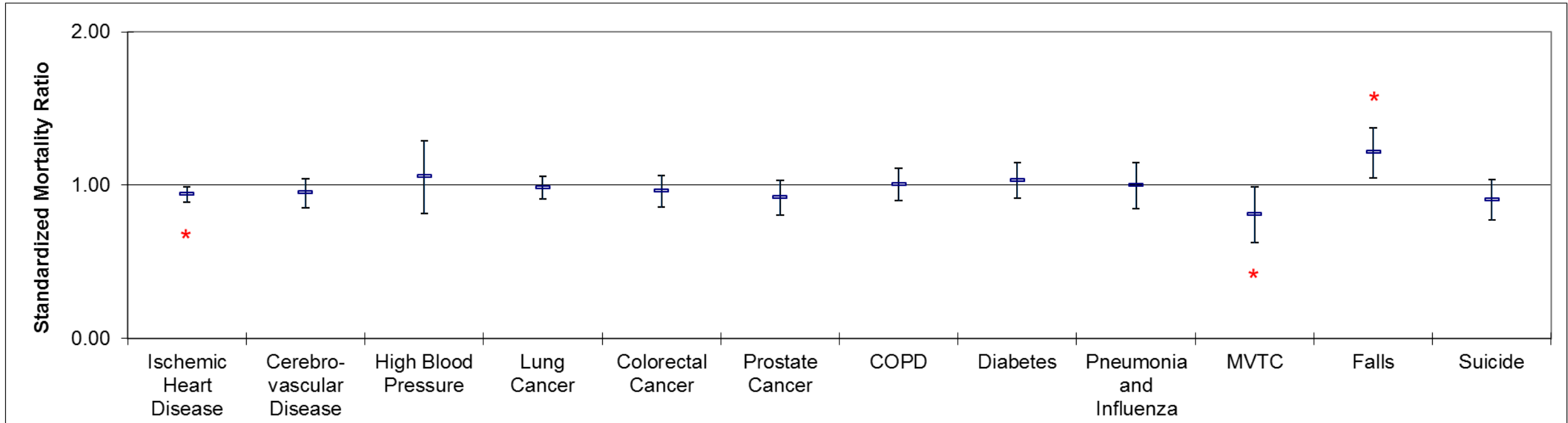
Source: Deaths and Ontario Population Estimates 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

We selected suicide deaths for this report using ICD-10 codes X60 to X84 and Y87.0. Due to small numbers, we combined male and female deaths to create more stable rates. The suicide rate increased between 2000 and 2012 in Durham Region and Ontario. Rates in Durham Region were lower than Ontario in most years.

## Age-standardized mortality ratios

An Age-Standardized Mortality Ratio (SMR) is the ratio of the number of deaths observed in the population of interest to the number of deaths that we would expect if the population had the same age-specific mortality rates as a standard population. For this report we used Ontario as the standard population. Since statistical estimates may be unstable when the number of events is small, we used confidence intervals (CIs) to determine whether an SMR was statistically different from 1.00. We showed the CIs as upright bars in the graphs. If the bar crosses 1.00 this means that Durham Region mortality is no different from Ontario. An SMR and CI greater than 1.00 indicates that mortality is higher in Durham Region than Ontario, whereas an SMR and CI less than 1.00 indicates that mortality is lower in Durham Region. We show these significant differences on graphs with an asterisk (\*).

**Figure 30: Age-standardized mortality ratios for selected causes, Durham Region males, 2008 to 2012 combined**



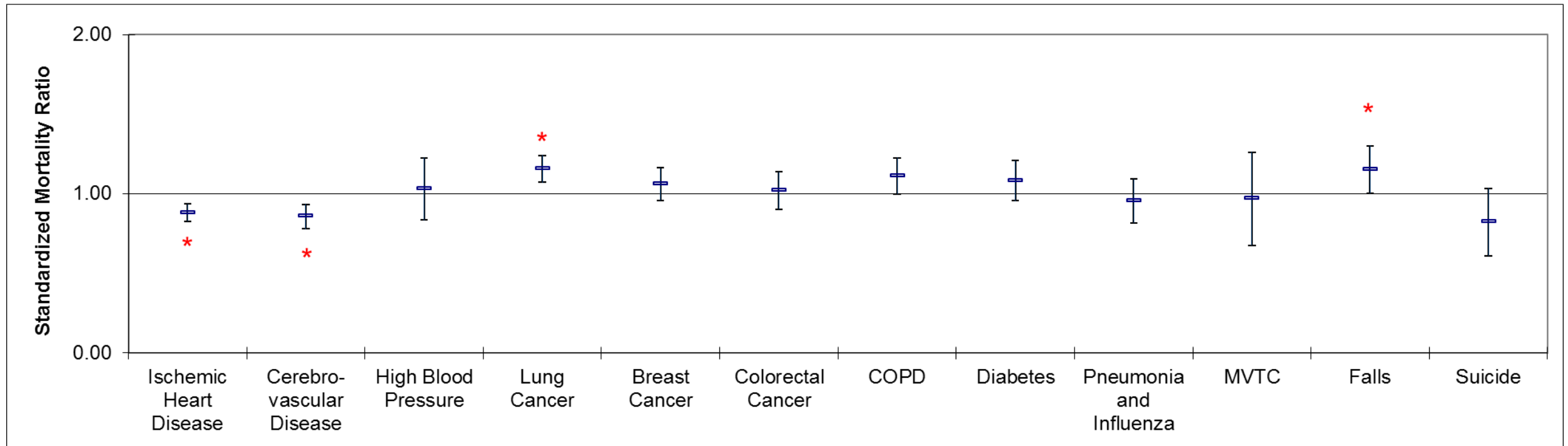
Standardized Mortality Ratio and Confidence Intervals	Ischemic Heart Disease	Cerebrovascular Disease	High Blood Pressure	Lung Cancer	Colorectal Cancer	Prostate Cancer	COPD	Diabetes	Pneumonia and Influenza	MVTC	Falls	Suicide
SMR	0.94	0.95	1.05	0.98	0.96	0.92	1.00	1.03	1.00	0.81	1.21	0.90
Lower Confidence Interval	0.89	0.85	0.82	0.91	0.85	0.80	0.90	0.92	0.85	0.63	1.05	0.77
Upper Confidence Interval	0.99	1.04	1.29	1.06	1.07	1.03	1.11	1.14	1.15	0.99	1.37	1.04

Source: Deaths and Ontario Population Estimates 2008 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO

\*Indicates Durham Region rate is significantly different from Ontario; COPD = Chronic Obstructive Pulmonary Disease; MVTC = Motor Vehicle Traffic Collision

The mortality rates for ischemic heart disease or heart attack and motor vehicle traffic collisions were significantly lower in Durham Region males than Ontario males. The mortality rate for falls was significantly higher in Durham Region males than Ontario males. Mortality rates were similar in Durham Region males and Ontario males for cerebrovascular disease (including stroke), high blood pressure, lung cancer, colorectal cancer, prostate cancer, COPD, diabetes, pneumonia and influenza and suicide.

Figure 31: Age-standardized mortality ratios for selected causes, Durham Region females, 2008 to 2012 combined



Standardized Mortality Ratio and Confidence Intervals	Ischemic Heart Disease	Cerebrovascular Disease	High Blood Pressure	Lung Cancer	Breast Cancer	Colorectal Cancer	COPD	Diabetes	Pneumonia and Influenza	MVTC	Falls	Suicide
SMR	0.88	0.86	1.03	1.16	1.06	1.02	1.11	1.08	0.96	0.97	1.15	0.82
Lower Confidence Interval	0.83	0.78	0.84	1.07	0.96	0.90	1.00	0.96	0.82	0.68	1.01	0.61
Upper Confidence Interval	0.94	0.93	1.23	1.24	1.16	1.14	1.23	1.21	1.09	1.26	1.30	1.03

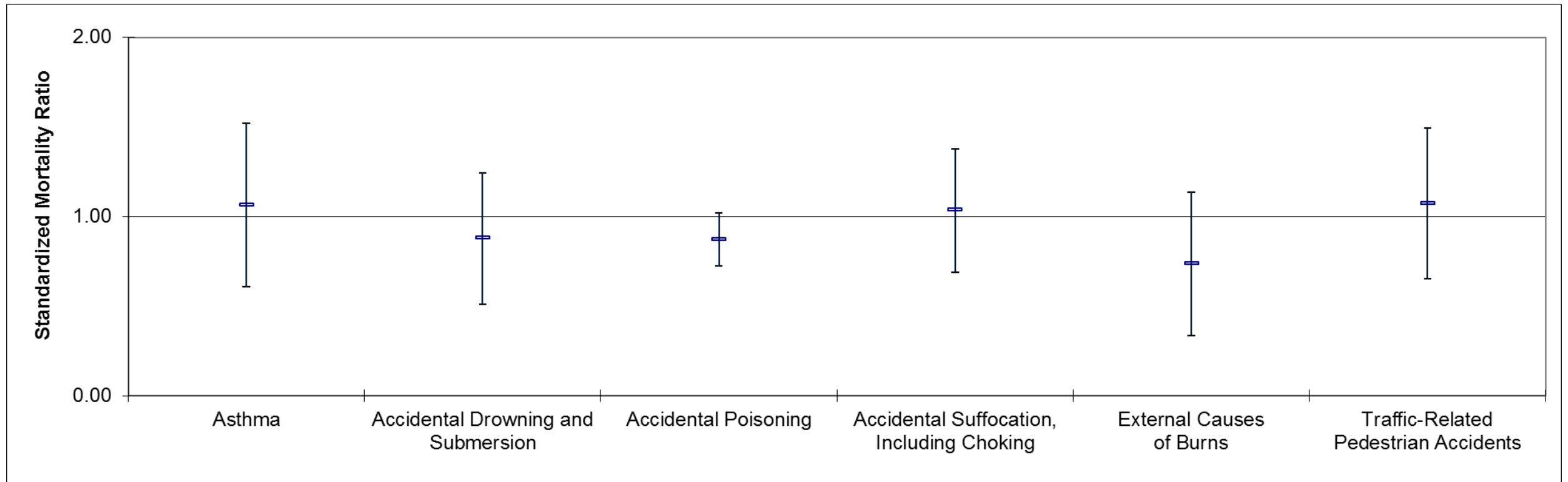
Source: Deaths and Ontario Population Estimates 2008 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO

\*Indicates Durham Region rate is significantly different from Ontario; COPD = Chronic Obstructive Pulmonary Disease; MVTC = Motor Vehicle Traffic Collision.

The mortality rates for ischemic heart disease or heart attack and cerebrovascular disease (including stroke) were significantly lower in Durham Region females than Ontario females. The mortality rates for lung cancer and falls were significantly higher in Durham Region females than Ontario females. Mortality rates were similar in Durham Region and Ontario females for high blood pressure, breast cancer, colorectal cancer, COPD, diabetes, pneumonia and influenza, motor vehicle traffic collisions and suicide.



Figure 32: Age-standardized mortality ratios for selected causes, Durham Region both sexes, 2008 to 2012 combined



Standardized Mortality Ratio and Confidence Intervals	Asthma	Accidental Drowning and Submersion	Accidental Poisoning	Accidental Suffocation, Including Choking	External Causes of Burns	Traffic-Related Pedestrian Accidents
SMR	1.35	1.11	1.15	1.28	0.87	1.36
Lower Confidence Interval	0.77	0.64	0.95	0.85	0.40	0.83
Upper Confidence Interval	1.93	1.57	1.34	1.70	1.35	1.89

Source: Deaths and Ontario Population Estimates 2008 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO

The mortality rates were similar for both sexes combined in Durham Region and Ontario for asthma; accidental drowning and submersion; accidental poisoning; accidental suffocation, including choking; external causes of burns; and traffic-related pedestrian accidents.

**Table 4: Number of deaths for selected causes among Durham Region residents, both sexes (except where noted)**

<b>Selected Cause</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Average 2008-2012</b>
All infectious and parasitic diseases	45	33	35	35	47	36	45	74	90	75	98	97	136	99.2
AIDS/HIV	5	--	--	--	--	--	--	--	--	--	--	--	--	2.4
Tuberculosis	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2
All cancers	830	902	885	869	938	953	1,021	1,020	992	1,112	1,077	1,105	1,198	1,096.8
Breast cancer (females only)	85	70	74	80	62	75	66	85	85	81	93	81	80	86.3
Cervical cancer (females only)	6	7	7	5	5	10	11	13	5	7	11	7	7	7.4
Colorectal cancer	107	103	110	113	115	127	121	120	106	142	111	126	126	122.2
Lung cancer	204	235	220	231	257	228	269	258	248	272	278	294	314	281.2
Prostate cancer (males only)	51	55	40	56	46	39	65	45	46	49	54	52	44	49.0
Diabetes	109	89	102	102	123	121	113	131	125	106	117	129	123	120.0
Cardiovascular disease (heart disease)	988	902	1,015	1,013	977	1,009	940	903	956	900	910	839	860	893.0
Cerebrovascular disease (including stroke)	214	218	233	225	227	193	194	173	176	190	177	163	164	174.0
High blood pressure	24	25	32	33	30	29	43	27	36	28	43	38	39	36.8
Ischemic heart disease (heart attack)	557	513	551	560	534	590	505	520	520	474	500	434	454	476.4
Respiratory disease	213	208	199	212	218	262	254	281	276	306	283	305	296	293.2
COPD	123	116	106	103	107	138	131	156	147	142	135	154	138	143.2
Asthma	5	--	--	--	6	--	--	--	--	--	9	5	--	4.2
Pneumonia and influenza	51	49	55	63	53	58	56	51	69	82	64	71	75	72.2
Digestive system diseases	103	89	106	120	134	114	133	146	131	163	171	159	144	153.6
Unintentional injury	114	111	108	124	116	126	144	143	148	168	191	167	171	169.0
Accidental drowning and submersion	5	--	6	--	--	--	--	--	--	5	--	6	--	4.4
Accidental poisoning	9	8	11	14	10	15	25	21	23	37	29	21	24	26.8
Accidental suffocation, including choking	7	5	--	8	--	5	--	9	--	7	8	--	12	7.0
External causes of burns	--	--	--	5	--	--	6	--	--	--	6	--	--	3.3
Motor-driven snow and other off-road vehicle accidents	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0
Motor vehicle traffic crashes	27	35	27	27	26	34	34	33	21	14	41	18	23	23.4
Motorcycle and scooter transport injuries	--	--	--	--	--	6	5	--	--	--	--	--	--	1.5

<b>Selected Cause</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Average 2008-2012</b>
Pedal cycle accidents	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6
Recreational boating accidents	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0
Traffic-related pedestrian accidents	--	--	--	--	--	--	--	--	5	--	9	--	6	5.0
Unintentional falls	32	34	34	44	48	36	57	56	72	89	88	99	97	89.0
Assault	--	--	--	--	8	5	--	12	11	8	6	--	--	7.3
Suicide	33	31	32	45	46	45	46	39	50	50	45	50	42	47.4
All causes	2,831	2,847	2,874	2,906	3,083	3,109	3,218	3,332	3,380	3,447	3,542	3,456	3,687	3,502.4

Source: Deaths 2000 to 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

-- indicates number not included because counts less than 5.

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