



HEALTH STATUS

















HEALTH STATUS

This chapter on health status provides data about Haldimand County and Norfolk County's health status considered by mortality, unintentional injuries and obesity. Data on mortality and unintentional injuries is provided using agestandardized rates for Haldimand and Norfolk counties combined compared to Ontario, for the total population and by sex. Leading categories of mortality for the total population and by sex are also provided. In addition to reporting on overall unintentional injuries, three categories of unintentional injuries (motor vehicle traffic crashes (MVTC), falls and other off-road vehicles) are examined in greater detail. Obesity, defined by Body Mass Index (BMI), and derived from height and weight data using the Canadian Community Health Survey, is reported as a percentage of the population and not age-standardized rates. For a definition of age-standardized rates, please see the Methodology Chapter, page 7.

KEY FINDINGS

- Haldimand and Norfolk counties combined had a higher rate of age-standardized mortality for all causes than Ontario for all years reported (Figure 23). In 2003, 2004 and 2005 the age-standardized rate of mortality in Haldimand and Norfolk counties combined was 697.5, 641.5 per 100,000 and 640.0 per 100,000 respectively compared to Ontario's rates of 576.6, 552.0 and 549.3 per 100,000.
- Between 2003 and 2005 almost four out of 10 (2003 35.3%; 2004 38.8%; 2005 39.7%) residents in Haldimand and Norfolk counties combined died from circulatory diseases (for example stroke, high blood pressure and ischemic heart disease) (Figure 24).
- During the same timeframe almost three out of 10 (2003 28.7%; 2004 29.6%; 2005 28.6%) residents in Haldimand and Norfolk counties combined died from neoplasms (for example, cancers) (Figure 24).
- When considered by age-standardized rates, residents in Haldimand and Norfolk counties combined visited hospital emergency departments for unintentional injuries (2004), were discharged from hospital (2003-2009), and experienced mortality (2000-2002), at higher average rates than Ontario residents (Figure 23 Figure 41).
- Residents of Haldimand and Norfolk counties combined had higher age-standardized rates of MVTC-related injuries and mortality compared to Ontario considered by emergency department visits (2004 10.5 vs 6.4 per 1,000), hospital separations (average between 2003-2009 96.3. vs 44.7 per 100,000) (Figure 34) and mortality (average between 2000-2002 8.1 vs 5.1 per 100,000) (Figure 37).
- For the years reported and considered by age standardized rates, residents in Haldimand and Norfolk counties visited emergency departments (2004), were hospitalized (2000-2004) or died (2001-2002) because of falls-related unintentional injuries at a higher rate than other types of unintentional injuries (Figure 38).
- Considered by age standardized rates, falls-related injuries and mortality were higher among residents of Haldimand and Norfolk counties combined compared to Ontario for emergency department visits (41.0 vs 28.3 per 1,000), hospital separations (328.5 vs 284.1 per 100,000) (Figure 38) and mortality (6.9 vs 5.5 per 100,000) (Figure 41).
- Emergency department visits and hospitalization separations as a result of other off-road motor vehicles were relatively uncommon in Haldimand and Norfolk counties between 2000 and 2004, but considered by age-standardized rates, the residents of Haldimand and Norfolk counties combined experienced these injuries at a higher rate than Ontario residents. Rates of hospital separations for other off-road motor vehicles were on average almost three times higher in Haldimand and Norfolk counties combined than in Ontario (Figure 42).

¹According to the Haldimand-Norfolk Unintentional Injuries Report (2006), other off-road vehicles refers to vehicles like snowmobiles, all-terrain vehicles (ATVs), tractors, golf-carts, and mini-bikes.

- The age-standardized rate for hospitalizations as a result of other off-road motor vehicles among males in Haldimand and Norfolk counties combined was almost double in 2000, and grew to more than three times as high in 2004 (Figure 43). The differences between Haldimand and Norfolk counties combined rates and Ontario rates were statistically significant when considered by both the entire population from 2000-2004 and among males only from 2001-2004.
- The percentage of residents in Haldimand and Norfolk counties combined who were considered overweight or obese increased by 10.6% from 53.4% in 2005 to 64.0% in 2008. During the same period, the percent age of Ontario residents who were overweight or obese increased just 1.1%, from 48.6% in 2005 to 49.7% in 2008 (Figure 42).

FOR MORE INFORMATION

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HEALTH STATUS, MORTALITY

A landmark report on the health of rural Canadians by the Canada Institute for Health Information noted that general mortality rates were higher in rural communities than urban communities due to chronic disease conditions, unintentional injuries, incidences of suicide, rates of obesity, lack of physical activity and poorer nutrition (Canada Institute for Health Information, 2006). This situation is reflected in Haldimand County and Norfolk County where residents experience a higher mortality rate than Ontario residents (Figure 23) when considered by age-standardized rates for the years 2003-2005. The leading causes of death between 2003 and 2005, illustrated in Figure 24, were chronic diseases including circulatory diseases (for example stroke, high blood pressure and ischemic heart disease), neoplasms (for example, cancers) and respiratory diseases (for example, chronic obstructive pulmonary disease and asthma). The proportion of individuals who died in Haldimand and Norfolk counties combined by leading cause of death remained relatively stable over the period. Figure 25 illustrates mortality rate in Haldimand and Norfolk counties combined by leading rate of deaths among males for deaths from external causes, including unintentional injuries.

In future, it will be important to consider the rate of incidence of mortality and leading causes of death in communities similar to Haldimand County and Norfolk County to understand these rates within the context of other rural communities' experiences. Data specific to each county will also provide a more sensitive analysis of mortality rates, and thus enable more directive and focused action to address the issue.

It is important to note that data presented here was for a fairly narrow timeframe (2003-2005). Data over a longer, consistent timeframe was required in order to better understand trends over time. Additionally, data on morbidity – causes for illness in Haldimand and Norfolk counties – is an important consideration that has not been examined here. Morbidity refers to the illness, disease and disability experienced by a population. Examining this data will be an important component of an updated community health profile.

ANALYSIS

 Considered by all causes of mortality, the age-standardized rate of death per 100,000 in Haldimand and Norfolk counties combined was much higher than Ontario as illustrated in Figure 23. Between 2003 and 2005, the age-standardized rate for Haldimand and Norfolk counties combined was 697.5, 641.5 and 640.0 deaths per 100,000. In Ontario during the same time period, the age-standardized mortality rate was 576.6, 552.0, and 549.3 deaths per 100,000. Figure 23: All Cause Mortality, Haldimand and Norfolk Counties Combined and Ontario, 2003-2005



Data Sources: (1) IntelliHealth Vital Stats Death. Data Notes: Death Information on deaths occurring in ON from the Ont. Registrar General and Statistics Canada – from C1986–C2005 – includes non–ON residents who died in ON. Data extracted Jan 12, 2011. (2) Population Estimates County Municip, (Stats Can) IntelliHealth, MOHLTC. Report Name: Population Estimates PHU Municipality v3; Description: Population estimates and annual growth rates, by PHU, age (down to single year), sex, year, Monday, September 13, 2010 10:45:45 o'clock AM EDT. Data extracted January 26, 2011.

- The leading cause of death among residents of Haldimand and Norfolk counties combined remained relatively stable between 2003 and 2005 (Figure 24).
- Figure 24shows that deaths from circulatory diseases (for example, stroke, high blood pressure, and ischemic heart disease) were the leading cause of death for residents of Haldimand and Norfolk counties combined between 2003 and 2005, rising from 35.3% in 2003 to 39.7% -- or four out of every 10 deaths in 2005.
- Deaths from neoplasms (for example, cancers) claimed the lives of about three out of 10 Haldimand and Norfolk counties combined residents throughout the period (2003 - 28.7%; 2004 – 29.6%; 2005 – 28.6%) (Figure 24).
- Diseases of the respiratory system (for example, chronic obstructive pulmonary disease, asthma) accounted for less than one of every 10 deaths in Haldimand and Norfolk counties combined and decreased slightly between 2003 and 2005 (2003 8.0%; 2004 7.3%; 2005 6.9%) (Figure 24).
- The fourth most common cause of death among residents of Haldimand and Norfolk counties combined was diseases of the nervous system (for example, multiple sclerosis and Alzheimer's Disease) accounting for about 6% of all deaths in the combined counties between 2003 and 2005 (2003 5.5%; 2004 5.8%; 2005 5.8%) (Figure 24).





Data Source: IntelliHealth Vital Stats: Death. Death information on deaths occurring in Ontario from the Ontario Registrar General and Statistics Canada – from C1986 – C2005 – includes non-Ontario residents who died in Ontario. Data extracted Thursday January 6, 2011.

• As illustrated in Figure 25, there was little difference in leading causes of mortality by sex except for external causes. Considered by sex, 7.0% of male deaths and 3.7% of female deaths were attributed to external causes (including injuries).

Figure 25: Leading Category of Death by Sex, Haldimand and Norfolk Counties Combined, 2005



Data Source: IntelliHealth Vital Stats: Death. Death information on deaths occurring in Ontario from the Ontario Registrar General and Statistics Canada – from C1986 – C2005 – includes non-Ontario residents who died in Ontario. Data extracted Thursday January 6, 2011.

HEALTH STATUS, UNINTENTIONAL INJURIES

A higher rate of unintentional injuries in rural areas is considered to be one reason that rural Canadians have higher mortality rates than urban Canadians. (Canada Institute for Health Information, 2006). According to the Commission on the Future of Health Care in Canada (2002), the mortality rate for unintentional injury was higher in predominantly rural areas than predominantly urban areas (Haldimand-Norfolk Health Unit, 2006).

Data from several perspectives are used to understand the age-standardized rate of unintentional injuries in Haldimand and Norfolk counties combined compared to Ontario:

- emergency department visits for 2004;
- hospital separations (discharge from hospital) as a whole and by sex for 2003-2009;
- mortality rates for as a whole and by sex for 2000-2004.

In subsequent sections, rates of unintentional injuries by cause of injury are also explored. A definition of agestandardized rates is included in Methodology Chapter, page 33.

When considered by age-standardized rates, residents in Haldimand and Norfolk counties combined had a higher rate of visiting hospital emergency departments for unintentional injuries more frequently than Ontario residents in 2004. Considered by type of injury, injuries which had the highest rate of emergency department visits by residents in Haldimand and Norfolk counties combined were injuries resulting from falls (41.0 per 1,000), motor vehicle traffic crashes (MVTC) (10.5 per 1,000) and sports injuries (4.9 per 1,000).

As illustrated in Figure 26 age-standardized hospital separation rates for unintentional injuries for Haldimand and Norfolk counties combined compared to Ontario for 2003-2009. When considered by all residents and by sex, Haldimand and Norfolk counties combined residents were hospitalized for unintentional injuries at a higher rate than Ontario residents. Indeed, the average age-standardized rate for hospitalization separations as a result of unintentional injuries in Haldimand and Norfolk counties combined was 669.2 per 100,000 and in Ontario was 447.4 per 100,000 (2003-2009).

Age-standardized rates for deaths that resulted from unintentional injuries (mortality rates) were also higher in Haldimand County and Norfolk County (27.3 per 100,000) than Ontario (21.9 per 100,000) for the years 2000-2002). Both females and males in Haldimand and Norfolk counties combined had higher rates of mortality for unintentional injuries during this time, but the rates were not statistically significant (Figure 30 and Figure 31).

It is important to note that data presented here was for a fairly narrow timeframe (especially for emergency department visits and mortality), and timeframes were inconsistent between the various types of data presented. Data over a longer, consistent timeframe is required in order to better understand trends over time.

There are several groups and organizations working on injury prevention in Haldimand County and Norfolk County. The Ontario Provincial Police, Local Health Integration Networks (LHINs), Hamilton Niagara Brant Haldimand Norfolk Community Care Access Centre, Brain Injury Services, Haldimand Abilities Centre, Norfolk County Recreation and Pathways for People are all seeking to make progress in this important area.

ANALYSIS

- The age-specific rate for unintentional injury emergency department visits was higher in Haldimand County and Norfolk counties combined (157.1 per 1,000) compared to Ontario (98.4 per 1,000) in 2004 (Haldimand-Norfolk Health Unit, 2006).
- A higher rate of females (125.2 per 1,000) and males (189.1 per 1,000) in Haldimand and Norfolk counties

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combined visited hospital emergency departments as a result of injuries in 2004 than Ontario females (80.5 per 1,000) and males (116.7 per 1,000) (Haldimand-Norfolk Health Unit, 2006).

- When visits to emergency departments for unintentional injury in 2004 were considered by cause of injury using age-standardized rates, falls had the highest rate of emergency department visits (41.0 per 1,000) in Haldimand and Norfolk counties combined followed by MVTC (10.5 per 1,000) and sports injuries (4.9 per 1,000). In these cases, age-standardized rates for cause of injury in Haldimand and Norfolk counties combined was higher than Ontario and especially higher for falls (Haldimand and Norfolk 41.0 per 1,000) vs Ontario 28.3 per 1,000) (Haldimand-Norfolk Health Unit, 2006).
- Residents of Haldimand and Norfolk counties combined experienced a higher rate of hospitalizations for un intentional injuries than Ontario residents between 2003 and 2009. Illustrated in Figure 26, the age-standardized rate for unintentional hospitalizations for injuries in Haldimand and Norfolk counties combined fluctuated throughout the period but remained higher than the Ontario rate.
- As shown in Figure 26, the average age-standardized rate of hospitalization for unintentional injuries in Haldimand and Norfolk counties combined was 669.2 per 100,000 and in Ontario was 447.4 per 100,000 (2005-2009).



Figure 26: Hospitalization Separations, Unintentional Injuries, Haldimand and Norfolk Counties Combined and Ontario, 2003-2009



Data Sources: (1) IntelliHealth Inpatient Diagnosis & External Cause. Data Notes: ICD-10-CA: V01-X59, Y85-Y86. #Dschg (D)() (hospital separations) and) and DAD key was used. Includes Ontario residents with and without health card number. Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted February 2, 2011. For 2000-2004, in some cases patient met both criteria. Therefore, the numbers may be slightly inflated. By showing the description for the ICD-10 Codes in the report, some patients had more than one condition and were included twice in the dataset. A different methodological approach was used in extracting data from 2005 onward. In conjunction with the Haldimand-Norfolk Health Unit Health Status Report (2003), a standardized population, other than the 1991 was used. For trend analysis, the same standardized population was used for 2005 onward. Since a different methodological approach was used for 2005 onward, make comparisons with caution. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted January 11, 2011. Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries.

- Data for 2003-2004 is not comparable to the 2005-2009 based on the way that the data was coded (see Data Notes).
- As shown in Figure 27, the age-standardized rates fluctuated. When considered by sex, a higher rate of females in Haldimand and Norfolk

counties combined were discharged from hospital for unintentional injuries than in Ontario. Between 2003 and 2009, the agestandardized rate among females fluctuated but ultimately increased from 603.1 per 100,000 in 2003 to 645.0 per 100,000 in 2009. The average age-standardized rate of hospitalization for unintentional injuries among females in Haldimand and Norfolk counties combined was 622.1 per 100,000 compared to Ontario's rate of 440.9 per 100,000 (2003-2009).



Figure 27: Hospitalization Separations, Unintentional Injuries by Females, Haldimand and Norfolk Counties Combined and Ontario, 2003-2009



Data Sources: (1) IntelliHealth Inpatient Diagnosis & External Cause. Data Notes: ICD-10-CA: V01-X59, Y85-Y86. #Dschg (D)((hospital separations) and) and DAD key was used. Includes Ontario residents with and without health card number. Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted February 2, 2011. For 2000-2004, in some cases patient met both criteria. Therefore, the numbers may be slightly inflated. By showing the description for the ICD-10 Codes in the report, some patients had more than one condition and were included twice in the dataset. A different methodological approach was used in extracting data from 2005 onward. In conjunction with the Haldimand-Norfolk Health Unit Health Status Report (2003), a standardized population, other than the 1991 was used. For trend analysis, the same standardized population was used for 2005 onward. Since a different methodological approach was used for 2005 onward, make comparisons with caution. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted January 11, 2011. Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries. Sex-specific age-standardized rates were used.

- Data for 2003-2004 is not comparable to the 2005-2009 based on the way that the data was coded (see Data Notes)
- Among males, illustrated in Figure 28, the age standardized rates also fluctuated. Haldimand County and Norfolk County males were discharged from hospital for unintentional injuries at an age standardized rate of 750.9 per 100,000 to 736.6 per 100,000 between 2003 and 2009 – an average of 720.1 per 100,000 over the time period.
- Ontario saw a decrease in the rate of hospitalization for unintentional injuries among males from 496.4473.2 per 100,000 in 2003 to 419.2 per 100,000 in 2009. Ontario's average over the time period was 458.5 per 100,000.

Figure 28: Hospitalization Separations, Unintentional Injuries by Males, Haldimand and Norfolk Counties Combined and Ontario, 2003-2009



Data Sources: (1) IntelliHealth Inpatient Diagnosis & External Cause. Data Notes: ICD-10-CA: V01-X59, Y85-Y86. #Dschg (D)() (hospital separations) and DAD key was used. Includes Ontario residents with and without health card number. Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted February 2, 2011. For 2000-2004, in some cases patient met both criteria. Therefore, the numbers may be slightly inflated. By showing the description for the ICD-10 Codes in the report, some patients had more than one condition and were included twice in the dataset. A different methodological approach was used in extracting data from 2005 onward. In conjunction with the Haldimand-Norfolk Health Unit Health Status Report (2003), a standardized population, other than the 1991 was used. For trend analysis, the same standardized population was used for 2005 onward. Since a different methodological approach was used for 2005 onward, make comparisons with caution. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted January 11, 2011. Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries. Sex-specific age-standardized rates were used.

• The age-standardized mortality rate for death from unintentional injury was higher in Haldimand County and Norfolk County than in Ontario for each successive year between 2000 and 2002 (Figure 29). The average age-standardized rate per 100,000 increased from 25.5 in 2000 to 26.6 in 2001 and 29.9 in 2002 in Haldimand and Norfolk counties, while in Ontario the rate fluctuated from 22.0 per 100,000 in 2000 to 21.4 in 2001 and 22.3 in 2002.



Figure 29: Mortality, Unintentional Injuries, Haldimand and Norfolk Counties Combined and Ontario, 2000-2002



Data Sources: (1) IntelliHealth Vital Statistics (2000-2002) Data Notes: ICD-10-CA: V01-X59, Y85-Y86. Includes Ontario residents with and without health card number. Data from 2000 to 2002 was taken from the Haldimand and Norfolk Unintentional Injury Report. Data was extracted March 13, 2006. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2002 was extracted March 13, 2006. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2002 was extracted March 13, 2006. Data Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries.

As shown in Figure 30., when considered by age-standardized rates, the unintentional injury mortality rate among females in Haldimand and Norfolk counties combined was the same to Ontario's in 2000 (18.2 per 100,000), or similar in 2001 (16.7 per 100,000 and 17.3 per 100,000, respectively) before rising in 2002 (25.1 per 100,000 and 18.4 per 100,000, respectively). More investigation is required to understand if this rate continued to increase.



Figure 30: Mortality, Unintentional Injuries by Females, Haldimand and Norfolk Counties Combined and Ontario, 2000-2002



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006) and Vital Statistics, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents.

- For every year between 2000 and 2003, Figure 31 illustrates that the age-standardized mortality rate for un intentional injuries remained relatively stable among males in Haldimand and Norfolk counties combined (2000 32.5 per 100,000; 2001 35.8 per 100,000; 2002 34.7 per 100,000). This trend was reflected in Ontario (2000 25.9 per 100,000; 2001 25.6 per 100,000; 2002 26.3 per 100,000).
- While the age-standardized mortality rate for unintentional injuries for males in Haldimand and Norfolk counties combined was higher than Ontario males throughout the period, the differences were not statistically significant (Haldimand-Norfolk Health Unit, 2006).

Figure 31: Mortality, Unintentional Injuries by Males, Haldimand and Norfolk Counties Combined and Ontario, 2000-2002



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006) and Vital Statistics, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents. Sex-specific age-standardized rates were used.



HEALTH STATUS, UNINTENTIONAL INJURIES - MOTOR VEHICLE TRAFFIC CRASHES

Motor Vehicle Traffic Crashes (MVTC) are a serious cause of unintentional injury in Haldimand and Norfolk counties combined. In general, Transport Canada reported (2004) that the number of fatal collisions in Canada is higher in rural areas than urban areas (Haldimand-Norfolk Health Unit, 2006). The 2006 Haldimand-Norfolk Unintentional Injury Report suggests that rural roads may not be well designed and rural drivers may be less compliant with road safety behaviours, advocating for more research into the issue (Haldimand-Norfolk Health Unit, 2006).

For the purposes of this community profile, MVTC-related unintentional injuries and mortality were measured by MVTC-related emergency department visits (2004 only), hospital discharges (separations) (2000-2004) and mortality (2000-2002) using age-standardized data and compared to Ontario. A definition of age-standardized rate is provided in the Methodology Chapter, page 7.

Residents of Haldimand and Norfolk counties combined had higher rates of MVTC-related emergency department visits than Ontario residents (10.5 vs 6.4 per 1,000) in 2004. Between 2003-2009, the average age-standardized rate for hospitalization separations for (MVTC) in Haldimand and Norfolk counties combined (96.3 per 100,000 of the population) was consistently higher than that in Ontario (44.7 per 100,000 of the population) (Figure 32). Illustrated in Figure 33 and Figure 34, the average age-standardized rates for MTVC-related hospitalizations was also higher in Haldimand and Norfolk counties combined than in Ontario among females (73.5 vs 31.9 per 100,000) and males (122.6 vs 52.1 per 100,000) (2005-2009).

In Figure 35, MVTC-related mortality was considered using age-standardized rates per 100,000 for Haldimand and Norfolk counties combined and Ontario for the years 2000-2002. Using this measure, the average rate for Haldimand and Norfolk counties combined (8.1 per 100,000) was higher than Ontario's rate (5.1 per 100,000). This difference was not statistically significant.

The higher rate of incidence in Haldimand County and Norfolk County compared to Ontario for MVTC-related hospital separations considered by age-standardized rates could in part be due to several factors, including unsafe vehicles, poor driving and unsafe roads (Haldimand-Norfolk Health Unit, 2006).

Tests for statistical significance were not available for hospitalization separations. These tests are required before drawing any definitive conclusions about MVTC-injury rates compared to Ontario.

ANALYSIS

- In 2004 considered by age-standardized rates per 1,000 population, residents in Haldimand and Norfolk counties combined had a higher rate of emergency department visits for MVTC-related injuries (10.5 per 1,000) compared to Ontario residents (6.4 per 1,000) (Haldimand-Norfolk Health Unit, 2006).
- In 2004 and using the same measure, males (11.7 per 1,000) had a higher rate of emergency department visits for MVTC-related injuries than females (9.2 per 1,000) in Haldimand and Norfolk counties combined. These rates were higher when compared to their Ontario counterparts (males, 6.5 per 1,000; fe males, 6.2 per 1,000) for the same time period (Haldimand-Norfolk Health Unit, 2006).
- For Figures 32, 33, and 34 data for 2003-2004 is not comparable to the 2005-2009 based on the way that the data was coded (see Data Notes)

- Illustrated in Figure 32, Haldimand County and Norfolk County residents experience a higher number of hospitalizations for MVTC-related injuries than residents in Ontario. From 2005-2009, the age-standardized rate for hospitalizations for MVTC-related injuries fluctuated between a low of 76.7 per 100,000 in 2008 and a high of 118.3 per 100,000 in 2006, resting at 90.2 per 100,000 in 2009. The average age-standardized rate of hospitalization for MVTC-related injuries in Haldimand and Norfolk counties combined between 2005 and 2009 was 98.0 per 100,000.
- As shown in Figure 34, the average age-standardized rate for unintentional hospitalizations for MVTC-related injuries between 2003 and 2009 in Haldimand and Norfolk Counties combined was more than double (98.0 per 100,000) that of Ontario (41.9 per 100,000). Unlike Haldimand and Norfolk, Ontario saw an overall decrease in the rate of hospitalization for MVTC-related injuries throughout the period.



Figure 32: Hospitalization Separations, Unintentional Injuries, Motor Vehicle Traffic Crashes, Haldimand and Norfolk Counties Combined and Ontario, 2003-2009



Data Sources: (1) IntelliHealth, Inpatient Diagnosis & External Cause. Data Notes: ICD-10-CA: V02-V04, V09.0, V09.2, V12-V14, V19-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2. #Dschg (D)() (hospital separations) and) and DAD key was used. Includes Ontario residents with and without health card number. Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted February 2, 2011. From 2000 to 2004 in conjunction with the Haldimand-Norfolk Health Unit Health Status Report (2003), a standardized population, other than the 1991 was used. The 1991 standardized population was used for years 2005 onward. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted January 11, 2011.Data Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries.

Considered by sex, Figure 33 shows that females in Haldimand County and Norfolk County were discharged from hospital for MVTC-related injuries at a higher rate than Ontario females. From 2003-2009 the age standardized rate for MVTC-related injuries among females fluctuated between a low of 51.2 per 100,000 in 2004 and a high of 99.0 per 100,000 in 2006. The average age-standardized rate of hospitalization for MVTC-related injuries among females combined was 73.5 per 100,000 compared to Ontario's rate of 31.9 per 100,000 for the years 2005-2009.



Figure 33: Hospitalization Separations, Unintentional Injuries, Motor Vehicle Traffic Crashes by Females, Haldimand and Norfolk Counties Combined and Ontario, 2003-2009



Data Sources: (1) IntelliHealth, Inpatient Diagnosis & External Cause. Data Notes: ICD-10-CA: V02-V04, V09.0, V09.2, V12-V14, V19-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2. #Dschg (D)() (hospital separations) and) and DAD key was used. Includes Ontario residents with and without health card number. Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted February 2, 2011. From 2000 to 2004 in conjunction with the Haldimand-Norfolk Health Unit Health Status Report (2003), a standardized population, other than the 1991 was used. The 1991 standardized population was used for years 2005 onward. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted January 11, 2011.Data Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries .Sex-specific age-standardized rates were used.

- As illustrated in Figure 34, among males the pattern also fluctuated. Haldimand and Norfolk counties combined males were discharged from hospital for MVTC-related injuries at an age standardized rate of 125.3 per 100,000 in 2003, that increased in 2004 to 127.4 per 100,000 before dropping slightly in 2005 (124.5 per 100,000), and increased again in 2006 and 2007 (138.5 per 100,000 and 142.3 per 100,000 respectively) before dropping in 2008 (97.2 per 100,000) and then rising slightly in 2009 (110.4 per 100,000).
- Ontario saw an overall decrease in the rate of hospitalization for MVTC-related injuries among males from 64.9 per 100,000 in 2003 to 44.3 per 100,000 in 2009. Ontario's average over the time period 2005-2009 was 52.1 per 100,000.
- Both the average annual and cumulative average (122.6 per 100,000 population) rate of hospital separations for age standardized MVTC-related injuries among males in Haldimand and Norfolk counties combined was higher than that for Ontario (52.1 per 100,000 population) for the same time period(2005-2009).

Figure 34: Hospitalization Separations, Unintentional Injuries, Motor Vehicle Traffic Crashes by Males, Haldimand and Norfolk Counties Combined and Ontario, 2003-2009



Data Sources: (1) IntelliHealth, Inpatient Diagnosis & External Cause. Data Notes: ICD-10-CA: V02-V04, V09.0, V09.2, V12-V14, V19-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2. #Dschg (D)() (hospital separations) and) and DAD key was used. Includes Ontario residents with and without health card number. Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted February 2, 2011. From 2000 to 2004 in conjunction with the Haldimand-Norfolk Health Unit Health Status Report (2003), a standardized population, other than the 1991 was used. The 1991 standardized population was used for years 2005 onward. (2) IntelliHealth, Population Estimates. Data Notes: Data from 2000-2004 was extracted March 13, 2006. Data for 2005-2009 was extracted January 11, 2011.Data Limitations: It is interesting to note that there is no validated standardized query for unintentional injuries. Sex-specific age-standardized rates were used.

- Figure 35 illustrates that was very little change in the age standardized MVTC mortality rates in both Haldimand and Norfolk counties combined and Ontario. The mortality rate in Haldimand and Norfolk counties combined was 7.5 per 100,000 in 2000, and rose slightly to 8.3 per 100,000 in 2002.
- In Ontario, the rate decreased very slightly from 5.1 per 100,000 in 2000 and 2001 to 5.0 per 100,000 in 2002.
- There was no statistical significance between the age standardized mortality rates in Haldimand County and Norfolk County combined and Ontario.

Figure 35: Mortality, Unintentional Injuries, Motor Vehicle Traffic Crashes, Haldimand and Norfolk Counties Combined and Ontario, 2000-2002



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006) and Vital Statistics, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province.

• The age standardized mortality rates for Haldimand-Norfolk by sex were suppressed due to data constraints (Haldimand-Norfolk Health Unit, 2006).



HEALTH STATUS, UNINTENTIONAL INJURIES - FALLS

As noted in the Haldimand-Norfolk Health Unit's Unintentional Injury Report (2006), the Chief Medical Officer Report, Injury: Predictable and Preventable (1996), two-thirds of hospitalizations for unintentional injuries in Ontario were the result of falls. According to the same report, more than seven out of 10 days spent in hospital as a result of injuries, were because of falls (Haldimand-Norfolk Health Unit, 2006). The Haldimand-Norfolk Unintentional Injuries Report 2006 noted that among Canadians aged 65 and over, 3.4% died as a result of their injuries and three-quarters (75%) of in-hospital deaths were due to injuries from a fall. In Haldimand and Norfolk counties combined, 12 residents died as a result of falls in 2001 and 8 in 2002 (Haldimand-Norfolk Health Unit, 2006).

Unintentional injures for falls are considered here using data for emergency department visits (2004 only), hospital discharges (2000-2004) and mortality (2001-2002) using age-standardized data. Comparisons to rates in Ontario are provided. A definition of age-standardized rate is provided in the Methodology Chapter, page 7.

Considered by visits to emergency departments, hospital separations and mortality, the rate of falls among residents of Haldimand and Norfolk counties had the highest rate of occurrence of all types of unintentional injuries, and was higher than that experienced by Ontario residents. In 2004 the age-standardized rate of falls-related injury emergency department visits for the total population was 41.0 per 1,000 population among residents of Haldimand and Norfolk counties combined, compared to 28.3 per 1,000 population for Ontario residents. Figure 36 shows that between 2000 and 2004, the average rate of hospital separations for falls among residents of Haldimand and Norfolk counties combined was 328.5 per 100,000 population compared to 284.1 per 100,000 population among Ontario residents. Considered by mortality and illustrated in Figure 39, a slightly higher average age-standardized rate from 2001-2002 of residents of Haldimand and Norfolk counties combined died (6.9 per 100,000) as a result of falls compared to Ontario residents (5.5 per 100,000).

Despite narrow timeframes and older data, this data clearly presents a case for action on falls-related injuries in Haldimand and Norfolk counties. Data over a longer timeframe that is consistent across the three measures (emergency department visits, hospital separations and mortality) will help provide a clearer picture of the situation in Haldimand County and Norfolk County. This will help to inform existing initiatives led by municipal recreation programs, Haldimand-Norfolk Community Senior Support Services, the Hamilton Niagara Brant Haldimand Norfolk Community Care Access Centre and Hamilton Niagara Haldimand Brant LHIN.

ANALYSIS:

- Residents of Haldimand and Norfolk counties combined in 2004 visited emergency departments for falls-related injuries at a higher age-standardized rate for the total population (41.0 per 1,000) than did Ontario residents (28.3 per 1,000) (Haldimand-Norfolk Health Unit, 2006).
- In both Haldimand and Norfolk counties combined (43.3 per 1,000) and Ontario, (28.7 per 1,000) females visited emergency departments for falls-related injuries at a higher rate than did males in Haldimand and Norfolk counties combined (38.6 per 1,000) and Ontario (27.9 per 1,000) in 2004 (Haldimand-Norfolk Health Unit, 2006).
- For Figures 36, 37, and 38 data for 2000-2002 is not comparable to the 2003-2004 based on the way that the data was coded (see Data Notes)
- As illustrated in Figure 36, age-standardized rates for falls-related injuries requiring hospitalization between 2000 and 2004 were consistently higher in Haldimand and Norfolk counties combined than Ontario. The average age-standardized rate for falls-related injuries in Haldimand and Norfolk counties combined was higher than that in Ontario (328.5 vs 284.1 per 100,000 population).

Figure 36: Hospitalization Separations, Unintentional Injuries, Falls, Haldimand and Norfolk Counties Combined and Ontario, 2000-2004



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 13, 2006) and Inpatient Hospitalizations, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006).Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents. ICD-9 Codes vs ICD-10 Codes: As of April 1 2002, external cause of injury coding for hospitalizations was converted from ICD-9 to ICD-10. Comparisons of trends for specific causes from 2002 onward must be interpreted with caution. This is illustrated by a dotted line.

• Consistent with the overall population, Figure 37 illustrates that females in Haldimand and Norfolk counties combined were hospitalized for falls-related injuries at a higher age-standardized rate each year between 2000 and 2004 than Ontario females. The average age-standardized rate for falls-related injuries among females in Haldimand and Norfolk counties combined was higher (370.3 vs 337.2 per 100,000).



Figure 37: Hospitalization Separations, Unintentional Injuries, Falls by Females, Haldimand and Norfolk Counties Combined and Ontario, 2000-2004



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 13, 2006) and Inpatient Hospitalizations, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents. ICD-9 Codes vs ICD-10 Codes: As of April 1 2002, external cause of injury coding for hospitalizations was converted from ICD-9 to ICD-10. Comparisons of trends for specific causes from 2002 onward must be interpreted with caution. This is illustrated by a dotted line. Sex-specific age-standardized rates were used.

• Consistent with overall population and female population in Haldimand and Norfolk combined, more males in Haldimand and Norfolk counties combined were hospitalized for falls-related injuries each year between 2000 and 2004 (Figure 38). The average age-standardized rate for falls-related injuries among males in Haldimand and Norfolk counties combined was higher than that in Ontario (288.6 vs 233.2 per 100,000 population).



Figure 38: Hospitalization Separations, Unintentional Injuries, Falls by Males, Haldimand and Norfolk Counties Combined and Ontario, 2000-2004



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 13, 2006) and Inpatient Hospitalizations, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents. ICD-9 Codes vs ICD-10 Codes: As of April 1 2002, external cause of injury coding for hospitalizations was converted from ICD-9 to ICD-10. Comparisons of trends for specific causes from 2002 onward must be interpreted with caution. This is illustrated by a dotted line. Sex-specific age-standardized rates were used.

• Age standardized rates for falls-related mortality in Haldimand and Norfolk counties combined and Ontario were only available for 2001 and 2002 and are presented in Figure 41. In these years, the age standardized mortality rate for falls in 2001 was 8.3 and 5.5 per 100,000 in Haldimand and Norfolk counties combined and 5.3 and 5.6 per 100,000 in Ontario

Figure 39: Mortality, Unintentional Injuries, Falls, Haldimand and Norfolk Counties Combined and Ontario, 2001-2002



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006) and Vital Statistics, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents.

HEALTH STATUS, UNINTENTIONAL INJURIES – OTHER OFF-ROAD MOTOR VEHICLES

"Other off-road vehicles" includes vehicles like snowmobiles, all-terrain vehicles (ATVs), tractors, golf-carts, and mini-bikes. Tractors and all-terrain vehicles are frequently used in rural areas both for occupational and recreational purposes (Haldimand-Norfolk Health Unit, 2006). The Canadian Institute for Health Information (CIHI) reported a 50% increase in hospitalizations due to ATV use between 1996 and 2001 and more than a third (36%) of these involved children (Canadian Paediatric Society, 2004).

Off-road motor vehicle-related unintentional injuries were relatively uncommon in Haldimand County and Norfolk County; however evidence indicates that Haldimand and Norfolk residents experience injuries from off-road vehicles more frequently than those in other parts of Ontario. Unintentional injuries as a result of other off-road motor vehicles were reported for emergency department visits (2004) and hospital separations only (2000-2004) using age-standardized data. Comparisons to rates in Ontario are provided. A definition of age-standardized rate is provided in the Methodology Chapter, page 7.

Considered by both emergency department visits and hospital separations, injuries as a result of other off-road motor vehicles were higher among residents of Haldimand and Norfolk counties combined compared to Ontario residents. Rates for hospital separations for off-road motor vehicles presented in Figure 40 were on average almost three times higher in Haldimand and Norfolk counties combined (12.4 per 100,000) than in Ontario (4.5 per 100,000) for 2000-2004. The age-standardized rate among males in Haldimand and Norfolk counties combined was almost double in 2000, and grew to more than three times as high in 2004 compared to Ontario (Figure 41). The differences between Haldimand and Norfolk counties combined rates and Ontario rates were statistically significant when considered by both the entire population from 2000-2004 and among males only from 2001-2004.

ANALYSIS

- For Figures 40 and 41 data for 2000-2002 is not comparable to the 2003-2004 based on the way that the data was coded (see Data Notes)
- According to the Haldimand-Norfolk Health Unit's Unintentional Injury Report 2006 and using age-standardized rates, slightly more Haldimand and Norfolk counties combined residents (1.1 per 1,000 population) visited the emergency department as a result of unintentional injuries caused by other off-road motor vehicles compared to Ontario residents (0.4 per 1,000 population) (Haldimand-Norfolk Health Unit, 2006).
- As illustrated in 0, between 2000 and 2004 the average age-standardized rate of other off-road motor vehicle injury-related hospitalizations among residents of Haldimand and Norfolk counties combined was very high compared to Ontario (12.4 vs 4.5 per 100,000). The differences between the annual age-standardized rates for other off-road motor vehicle injury-related hospitalizations over the five-year period were statistically significant (Haldimand-Norfolk Health Unit, 2006).

²According to the Haldimand-Norfolk Unintentional Injuries Report (2006), other off-road vehicles refers to vehicles like snowmobiles, all-terrain vehicles (ATVs), tractors, golf-carts, and mini-bikes.

Figure 40: Hospitalization Separations, Unintentional Injuries, Other Off-Road Motor Vehicles, Haldimand and Norfolk Counties Combined and Ontario, 2000-2004



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 13, 2006) and Inpatient Hospitalizations, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents. ICD-9 Codes vs ICD-10 Codes: As of April 1 2002, external cause of injury coding for hospitalizations was converted from ICD-9 to ICD-10. Comparisons of trends for specific causes from 2002 onward must be interpreted with caution. This is illustrated by a dotted line. Sex-specific age-standardized rates were used.

- Figure 41 shows that a higher age-standardized rate of males in Haldimand and Norfolk counties combined than those in Ontario were hospitalized for unintentional injuries as a result of other off-road motor vehicles. The differences between these rates were statistically significant between 2001 and 2004.
- Between 2000 and 2004 the average age-standardized rate of other off-road motor vehicle injury-related hospitalizations for males in Haldimand and Norfolk counties combined was higher compared to Ontario (22.3 vs 7.7 per 100,000).

Figure 41: Hospitalization Separation Rates, Unintentional Injuries, Other Off-Road Motor Vehicles by Males, Haldimand and Norfolk Counties Combined and Ontario, 2000-2004



Data Source: Ontario and Haldimand-Norfolk Population Estimates, Provincial Health Planning Database (PHPDB), (Extracted March 13, 2006) and Inpatient Hospitalizations, Provincial Health Planning Database (PHPDB), (Extracted March 14, 2006). Data Notes: Includes patient ID Source Code "H" and "D" and excludes out of province Ontario residents. ICD-9 Codes vs ICD-10 Codes: As of April 1 2002, external cause of injury coding for hospitalizations was converted from ICD-9 to ICD-10. Comparisons of trends for specific causes from 2002 onward must be interpreted with caution. This is illustrated by a dotted line. Sex-specific age-standardized rates were used. Sex-specific age-standardized rates were used.



HEALTH STATUS, OBESITY

Obesity has been identified as a growing concern across Ontario, Canada and the world. The World Health Organization estimates that a billion people worldwide are overweight and 300 million are obese. (World Health Organization, 2009) In 2004, the then Chief Medical Officer of Health for Ontario noted, "... in 2003, almost one out of every two adults in Ontario was overweight or obese. Between 1981 and 1996, the number of obese children in Canada between the ages of seven and 13 tripled (Chief Medical Officer of Health, 2004)."

In 2008, more than six out of 10 (64.0%) Haldimand County and Norfolk County residents were overweight or obese compared to five out of 10 (49.7%) Ontario residents (Figure 42). This rate is alarming. Being overweight or obese is an important risk factor for chronic diseases (Public Health Agency of Canada, 2010) including circulatory diseases and neoplasms (cancers), the leading causes of death in Haldimand and Norfolk counties combined.

Data for overweight and obesity was determined by reported Body Mass Index in the Canadian Community Health Survey (CCHS). Because this is a derived variable, and due to the small population of Haldimand County and Norfolk County, the population samples for Haldimand and Norfolk counties combined were likely relatively small. Confidence intervals were calculated and are shown to help understand the degree of certainty represented by the data for the 12-19 year-old population.

The data shows the beginning of an alarming upward trend that should be monitored closely. Rates for healthy eating, physical activity and sedentary behaviour should also be considered in conjunction with data for overweight and obesity to determine the health of the community. Moreover, considering this data by age, sex and urban area will provide greater detail to inform planning and understand the impact of actions taken to address this serious health issue. Other data gathering mechanisms, appropriate to the community size, are required to better understand the scope of the problem, and the context of the issue in the counties of Haldimand and Norfolk.

There are several organizations and networks working to address obesity in Haldimand County and Norfolk County. Some organizations are geared to child and youth development (Healthy Babies, Healthy Children, Haldimand-Norfolk Resource Education And Counselling and Help (REACH), school boards, Girl Guides, Child Nutrition Network of Haldimand-Norfolk). Other organizations are geared to general populations including Haldimand Health and Wellness, municipal Parks and Recreation Departments and the Haldimand-Norfolk Health Unit. Still other organizations are geared to those with existing health concerns (Haldimand-Norfolk Diabetes and Stroke Prevention Program), or special populations (Brain Injury Services, Haldimand Abilities Centre, Centre for Addiction and Mental Health, Hamilton Niagara Brant Haldimand Norfolk Community Care Access Centre, Haldimand-Norfolk Senior Support Services).

ANALYSIS

A greater proportion of residents in Haldimand and Norfolk counties combined were overweight or obese compared to Ontario residents between 2005 and 2008. In Figure 42, obesity rates are considered for the years 2005, 2007 and 2008 in Ontario and Haldimand and Norfolk counties combined. The percentage of residents in Haldimand and Norfolk counties combined who reported they were overweight or obese increased by 10.6% from 53.4% in 2005 to 64.0% in 2008. During the same period, the percentage of Ontario residents who were overweight or obese increased just 1.1%, from 48.6% in 2005 to 49.7% in 2008.

³Confidence intervals (CI) are a statistical confidence calculation that shows with 95% confidence the lower and upper range in which the true rate falls. It is calculated using the total number of individuals in the population compared to the total number of individuals reporting the type of behaviour in question.

Figure 42: Overweight or Obese, 18 Years and Older, Haldimand and Norfolk Counties Combined and Ontario, 2005, 2007, 2008



Data Source: Canadian Community Health Survey 2005, 2007 and 2008. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC. Data Notes: Annual estimates were used because these estimates present the most up-to-date population health characteristics and are updated yearly. Derived Variable. * High sampling variability, interpret with caution. ** High sampling variability data is not releasable. Percentages are rounded up. Not stated includes don't know, refuse, and not stated. Non-Applicable was excluded. Note: On average there is about a 2% difference between the estimated produced between the Ontario Share File and the Master File used by Statistics Canada. The Ontario Share File has fewer respondents than the Master File. In Order to be included in the Share File, Ontario residents must consent to sharing their information. Body mass index (BMI) is calculated by dividing the respondent's body weight (in kilograms) by their height (in metres) squared. According to the World Health Organization (WHO) and Health Canada guidelines, the index for body weight classification is: less than 18.50 (underweight); 18.50 to 24.99 (normal weight); 25.00 to 29.99 (overweight); 30.00 to 34.99 (obese, class I); 35.00 to 39.99 (obese, class II); 40.00 or greater (obese, class III).

• Among youth aged 12 to 17 in 2007, almost three-quarters (74.3% Cl \pm 20.5) were neither obese nor over weight. This was slightly higher than Ontario youth where seven out of 10 (71.7%, Cl \pm 3.1) were neither obese nor overweight (Haldimand-Norfolk Health Unit, 2009). The data for Haldimand and Norfolk counties combined has a very wide confidence interval range and overlaps with Ontario rates. This data is highly variable and should be interpreted with caution.

