

Stay on your Feet

A Summary of Falls among Seniors in the
North Bay Parry Sound District Health Unit Region

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1.0 Introduction

1.1 What is Stay On Your Feet (SOYF)?

Stay On Your Feet (SOYF) is a multi-strategy falls prevention initiative that was developed in Australia. SOYF addresses nine evidence-based falls risk factors and utilizes strategies consistent with the Ottawa Charter for Health Promotion. The aim of SOYF is to reduce the expected rate of falls and falls-related injuries among seniors.

Implementation of the SOYF program across the Adjusted Nipissing District and Parry Sound District began in 2009.

1.2 Purpose

A previous report was generated in 2014 using data from 2007, 2009, 2011 and 2012. This report builds on the previous report with more recent data from 2013 and investigates the falls-related emergency visit, falls-related hospitalization rates, and falls-related death rates among the *senior population* (adults aged 65 years or older) in four different geographical areas: Adjusted Nipissing District (only includes municipalities served by the North Bay Parry Sound District Health Unit; excludes South Algonquin, Temagami and Bear Island), Parry Sound District, Ontario, and the North East Local Health Integrated Network (NELHIN) from 2004 to 2013.

A 10-year trend time period was selected to represent an accurate depiction of the fall-related rates in the Adjusted Nipissing District and Parry Sound District. Data from Nipissing and Parry Sound, where “Stay On Your Feet” (SOYF) was implemented, are compared to Ontario and the NELHIN to determine the effectiveness of the program within the surrounding regions and the province.

1.3 Data Sources

The data used in this report has been extracted from the Ministry of Health and Long-Term Care (MOHLTC) IntelliHEALTH Ontario database. Specifically, the National Ambulatory Care Reporting System (NACRS), and the Vital Statistics database were used for emergency visits, hospitalizations, and deaths. The NACRS data are originally collected by the Canadian Institute for Health Information (CIHI). Vital Statistics are originally collected by the Ontario Office of the Registrar General, then provided through the MOHLTC through Statistics Canada. In addition, population estimates, which are also extracted from IntelliHEALTH Ontario, are originally distributed by Statistics Canada.

1.4 ICD-10 Codes

In accordance with the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10), fall-related injuries are coded using W00-W19 inclusive. More than one external cause may be reported for each visit, which imposes the risk of case over-counting.

1.5 Data Analysis & Interpretation

Incidence rates, both crude and age/sex specific, were used to investigate gender and age differences, difference over time, and difference between geographic regions. A trend analysis was also conducted to determine if the rates were significant over a 10-year period. Data from 2004 to 2013 are used in this report for emergency department and hospitalization rates, however data from 2002 to 2011 is used for mortality rates (due to data not currently being available for 2012 and 2013). Place of falls-related injuries and occurrences were also compared between the Adjusted Nipissing and Parry Sound Districts.

1.6 Limitations

Changes in rates should not be considered as a result of the intervention only. There are several potential external factors that affect the falls and fall-related attendances at healthcare organizations. The findings do not indicate a causal relationship between the intervention and changes in rates.

It is important to also consider that fall-related emergency department (ED) visits and/or fall-related hospitalizations are not a direct representation of falls for the population under investigation. The elderly population may also have concurrent morbidities and falls may be a secondary effect of an initial problem. However, during extraction of the data from IntelliHEALTH Ontario and in the ICD-10 code data analysis, patients are counted as a case of falls regardless of other diagnoses.

Furthermore, not all falls are recorded at hospital or ED visits. The database used in this report only includes those episodes of falls for which medical assistance was sought through hospitals. This is particularly important for the NBPSDHU since the accessibility of hospitals may also be difficult. Falls that do not result in a visit to the hospital are not included in this report.

Finally, administrative errors can also influence the accuracy of counts related to falls. Errors in coding the ICD data, administrative error in collecting and recording the data, and over counting of cases when more than one external cause per visit is used are a few examples of potential administrative errors.

2.0 Fall-Related Emergency Department Visits and Hospitalizations

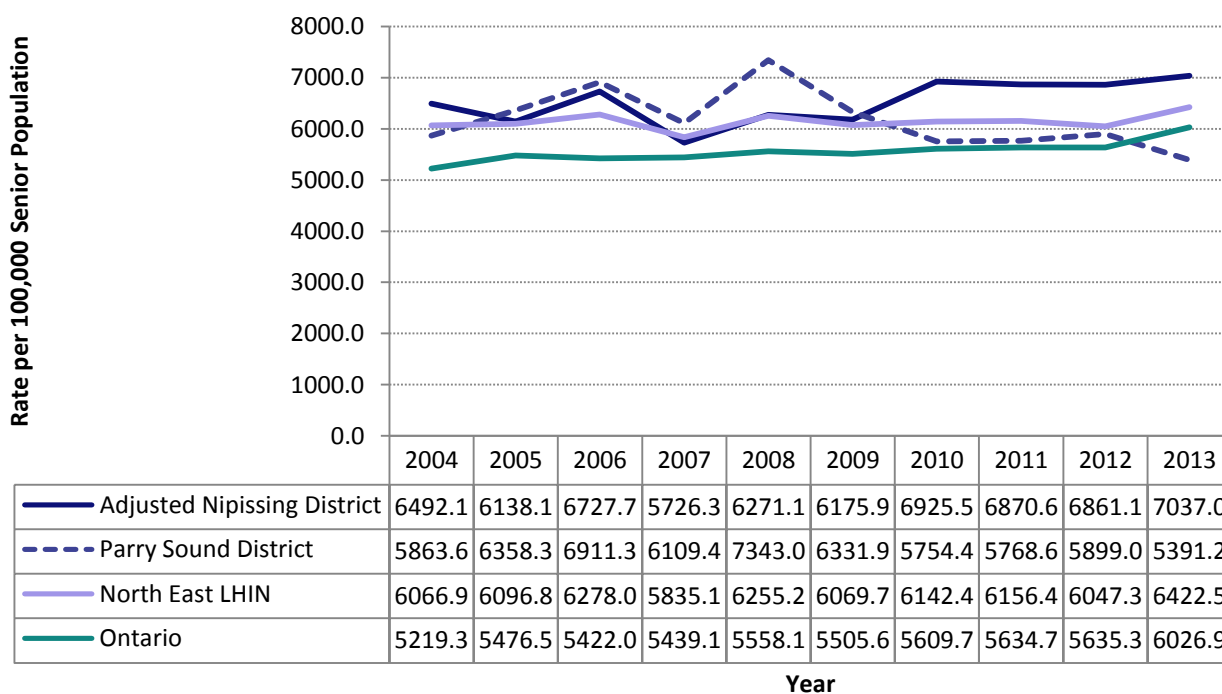
2.1 Incidence of Fall-Related Emergency Department Visits

In 2013, there were 1,040 and 552 fall-related ED visits among seniors in the Adjusted Nipissing and Parry Sound Districts, respectively. For the Adjusted Nipissing District, this represents a 2.6% increase in the rate compared to 2012, while for the Parry Sound District, the rate decreased by 8.6% (see Figure 1).

Over the 10-year time period of 2004 to 2013, the annual incidence rate of fall-related ED visits in the Adjusted Nipissing District has consistently been significantly higher than the Ontario rate (except for the 2007 rate which was similar to the Ontario rate). In the Parry Sound District, incidence rates were significantly higher than Ontario rates between 2004 and 2009; however, Parry Sound rates decreased in 2010. In 2013, the rate for the Parry Sound District was significantly lower than the Ontario rate.

There were no statistically significant trends in the Adjusted Nipissing District, Parry Sound District, or NE LHIN region over the 10 year period from 2004 to 2013.

Figure 1. Incidence of Fall-Related ED Visits among Seniors per 100,000 Senior Population, by Health Region, 2004-2013



1) ED Visits: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/03]. 2) Population estimates: Population Estimates [2004-2012], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: [2014/11/03].

2.2 Incidence of Fall-Related Hospitalizations

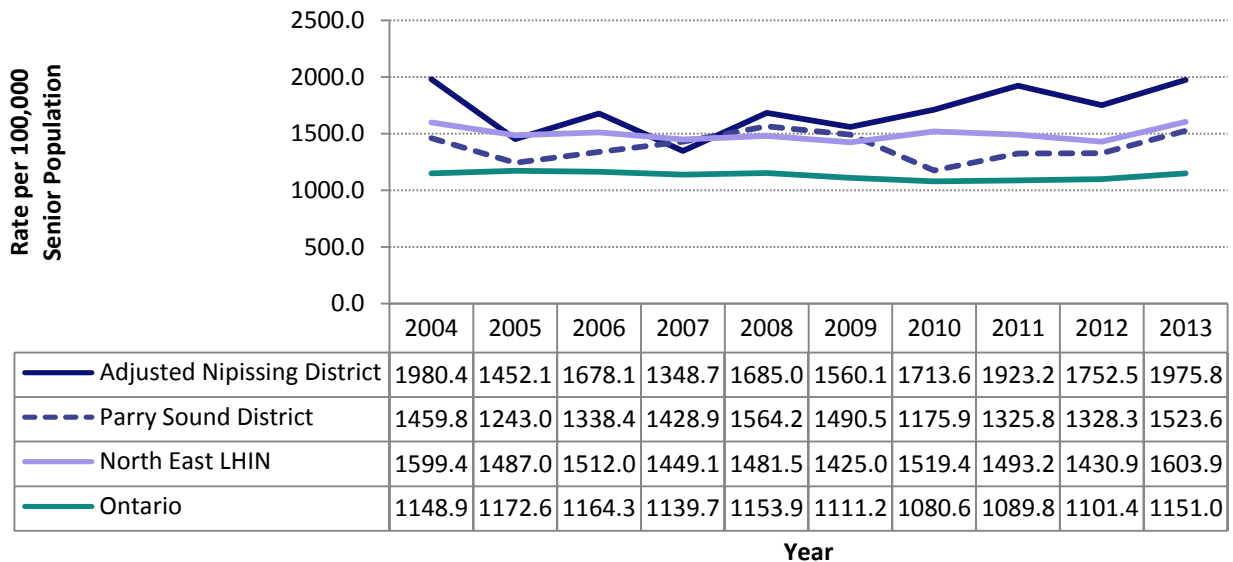
Hospitalizations were counted as distinct events (i.e., if a patient had more than one external cause diagnosis for a fall, only one record is counted). Only unscheduled hospitalizations are included (i.e., the client was admitted as an inpatient to critical care unit/operating room in reporting facility directly from an ambulatory care visit functional system, the client was admitted as an inpatient to other units in the reporting facility directly from ambulatory care visit functional, or the client was transferred to another acute care facility directly from an ambulatory care visit functional centre).

In 2013, there were 292 and 156 fall-related hospitalizations in the Adjusted Nipissing and Parry Sound Districts, respectively. For the Adjusted Nipissing District, this represents a 12.7% increase in the rate compared to 2012, while for the Parry Sound District, the rate increased by 14.7% (see Figure 2).

Over the 10-year time period of 2004 to 2013, the annual incidence rate of fall-related hospitalizations in the Adjusted Nipissing and Parry Sound Districts have generally been significantly higher than the Ontario rate (with two exceptions: the Parry Sound rate was similar to the Ontario rate in both 2005 and 2006). Hospitalization rates in the Adjusted Nipissing and Parry Sound Districts appear to have been increasing since 2009 and 2010, respectively.

There were no statistically significant trends in the Adjusted Nipissing District, Parry Sound District, NE LHIN region, or Ontario over the 10 year period from 2004 to 2013.

Figure 2. Incidence of Fall-Related Hospitalizations among Seniors per 100,000 Senior Population, by Health Region, 2004-2013



1) Day surgeries: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/03] 2) Population estimates: Population Estimates [2004-2012], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: 2014/11/03].

2.3 Fall-Related Mortality Rates

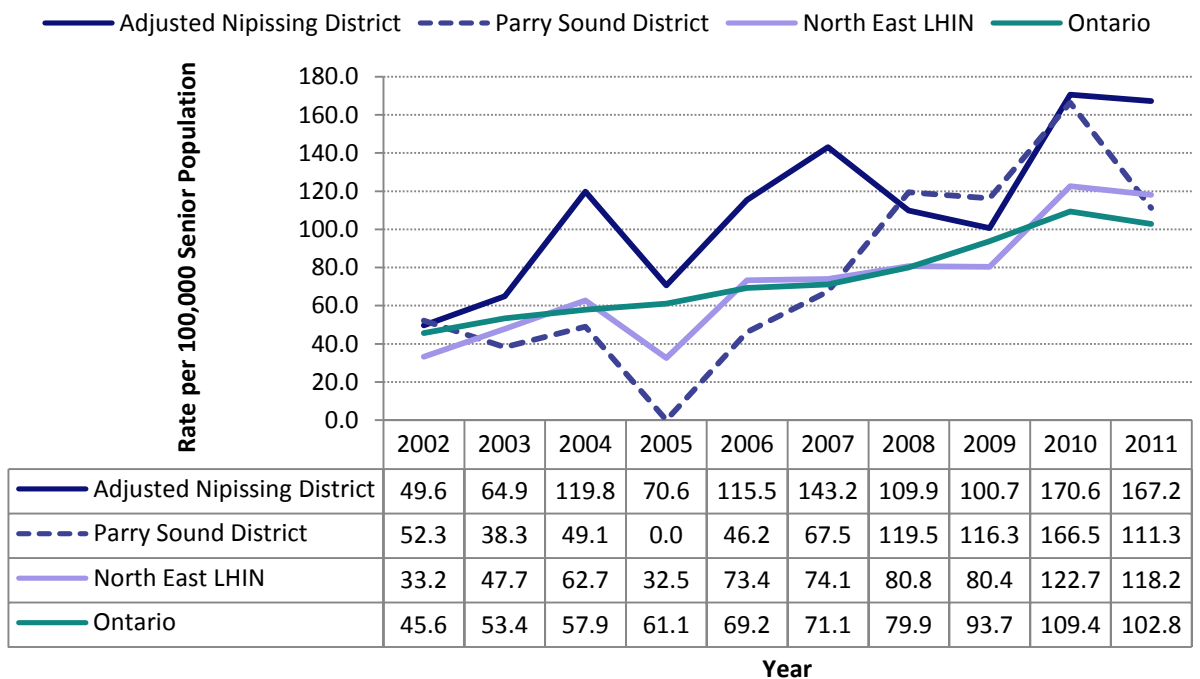
Mortality data until 2011 was available upon production of this report .

In 2011, there were 24 and 11 fall-related deaths in the Adjusted Nipissing and Parry Sound Districts, respectively. For the Adjusted Nipissing District, this represents a 2.0% decrease in the rate compared to the 2010 rate, while for the Parry Sound District, the rate decreased by 33.2% (see Figure 3).

Over the 10-year time period of 2002 to 2011, the mortality rates for the Adjusted Nipissing and Parry Sound Districts have generally been statistically similar to the Ontario rate, with exception of the 2004 and 2007 Adjusted Nipissing rates (higher than Ontario), and the 2005 Parry Sound rate (lower than Ontario).

The fall-related death rate has increased significantly across all health regions during the 10 year period from 2004 to 2013.

Figure 3. Fall-Related Mortality Rates among Seniors per 100,000 Senior Population, by Health Region, 2002-2011



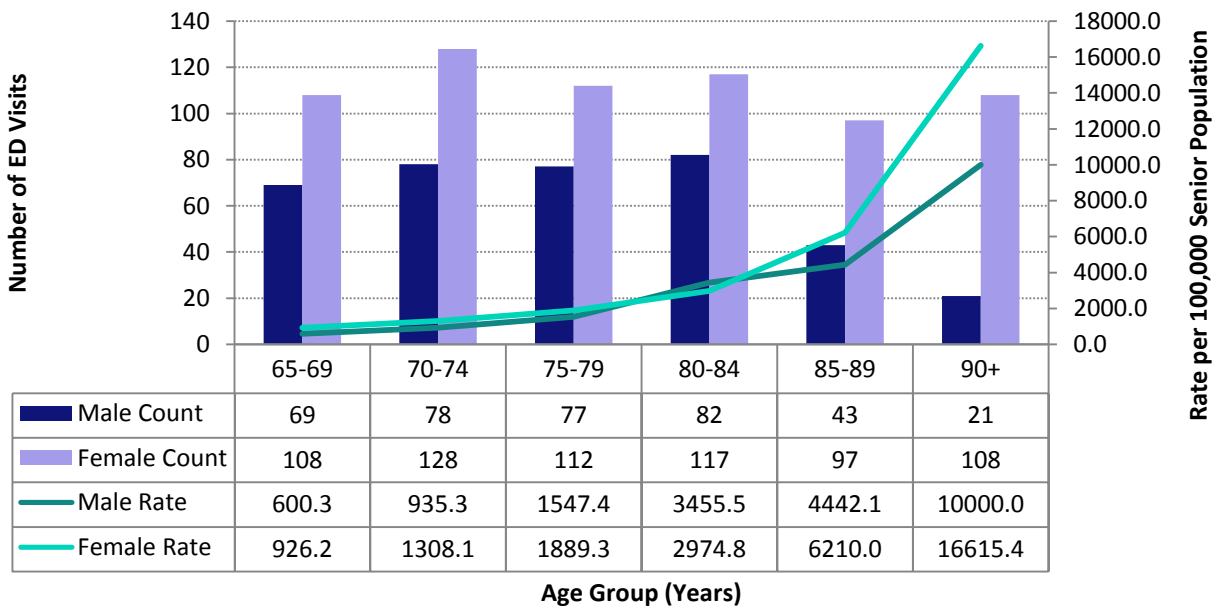
3.0 Age and Sex Distribution

3.1 Fall-Related Emergency Visits

In 2013, females accounted for 64.4% (670) of fall-related ED visits in the Adjusted Nipissing District population. Overall, the incidence rate of fall-related ED visits increased with age (see Figure 4). The rate of fall-related emergency visits among females aged 65 to 69 years was significantly higher than the rate for males 65 to 69 years.

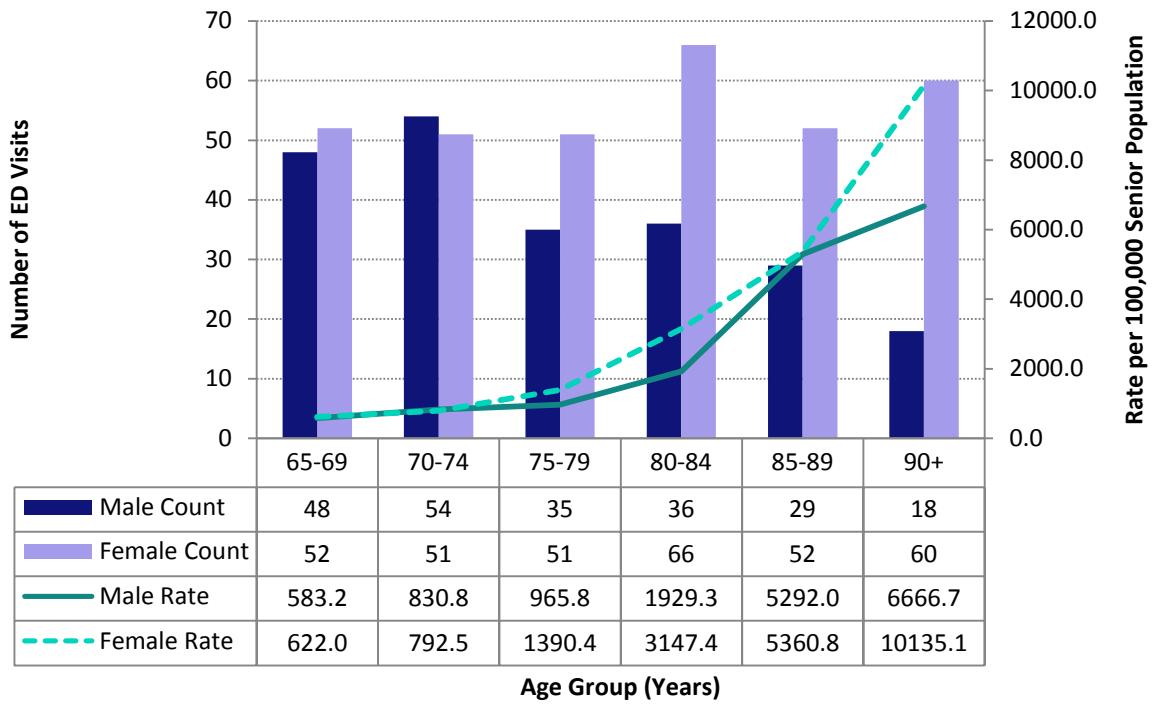
Females accounted for 60.6% (366) of fall-related ED visits in Parry Sound in 2013. Overall, fall-related ED visits increased with age, with a significant increase from the 80 to 84 age group in both men and women (see Figure 5).

Figure 4. Incidence of Fall-Related Emergency Visits, by Age & Sex, Adjusted Nipissing District, 2013



1) ED Visits: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/21]. 2) Population estimates: Population Estimates [2004-2012], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: [2014/11/21].

Figure 5. Incidence of Fall-Related Emergency Visits, by Age & Sex, Parry Sound District, 2013



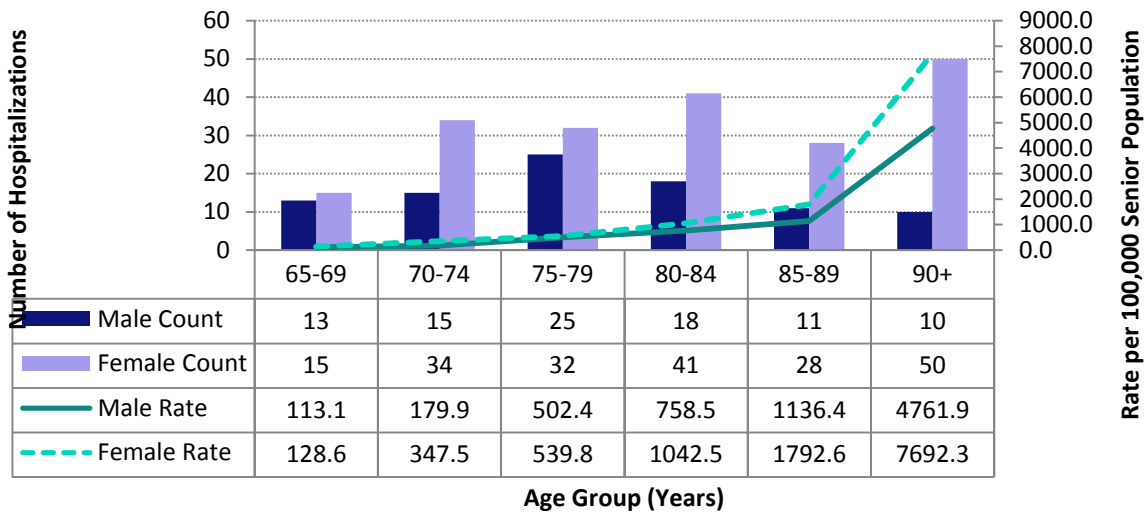
1) ED Visits: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/21]. 2) Population estimates: Population Estimates [2004-2012], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: [2014/11/21].

3.2 Fall-Related Hospitalizations

In 2013, females accounted for 68.5% of fall-related hospitalizations in the Adjusted Nipissing District compared to males (31.5%). In both males and females, fall-related hospitalization rates increased with age (see Figure 6). The rates for females were significantly higher than the rates for males across all age groups except for those aged 65 to 69 years.

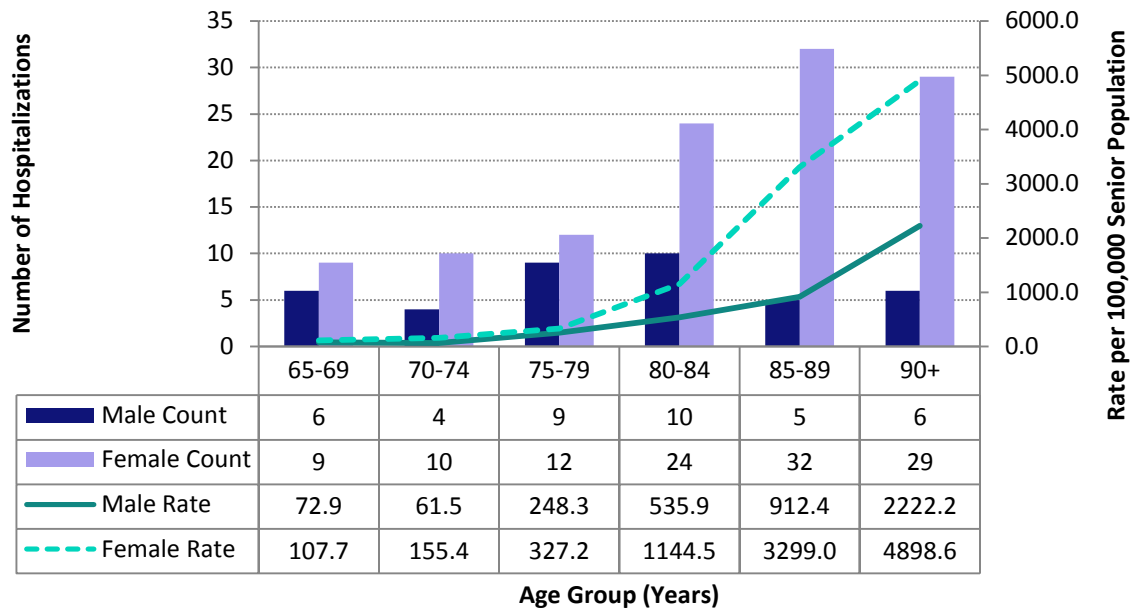
Females accounted for 74.4% (116) of fall-related hospitalizations in the Parry Sound District compared to males (25.6%; 40), in 2013. Fall-related hospitalization rates in both males and females increased with age and rates for fall-related hospitalizations were consistently higher in females compared to males across all age groups (see Figure 7). The rates for females were significantly higher than the rates for males across all age groups except for those aged 65 to 69 years, and 70 to 74 years.

Figure 6. Incidence of Fall-Related Hospitalizations, by Age & Sex, Adjusted Nipissing District, 2013



1) Day surgeries: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/03]. 2) Population estimates: Population Estimates [2004-2012], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: 2014/11/21].

Figure 7. Incidence of Fall-Related Hospitalizations, by Age & Sex, Parry Sound District, 2013



1) Day surgeries: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/03]. 2) Population estimates: Population Estimates [2004-2012], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: 2014/11/21].

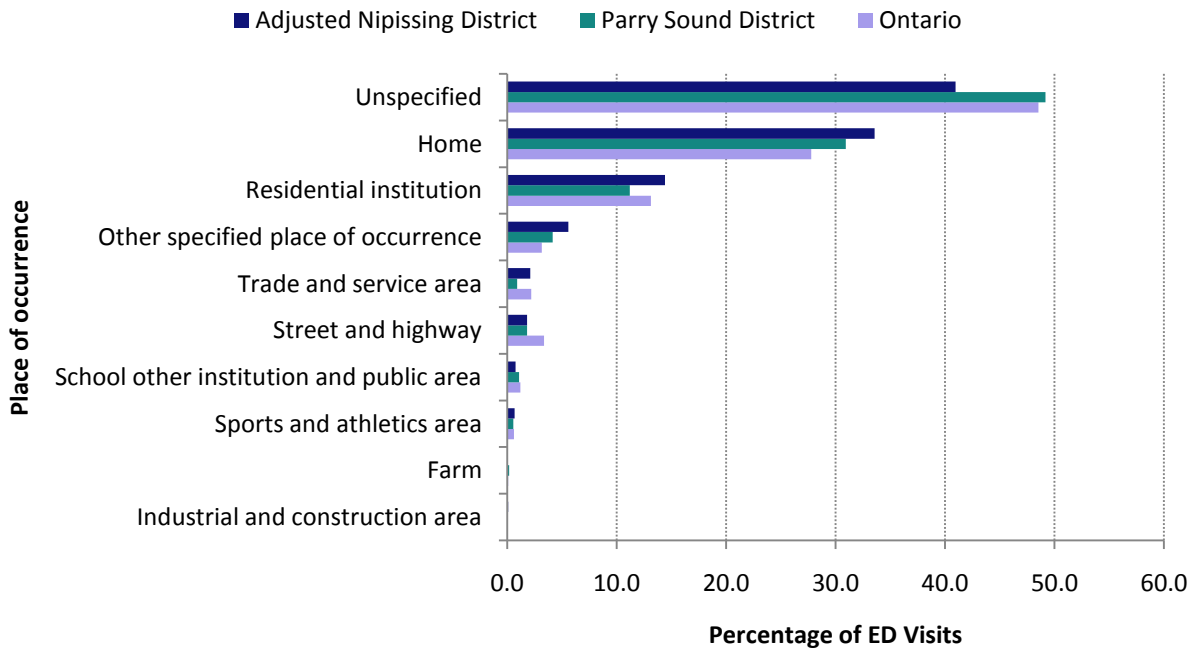
4.0 Place of Occurrence

4.1 Fall-Related ED Visits

In the Adjusted Nipissing District, one third (33.6%) of the fall-related ED visits reported home as the place of occurrence and 14.4% reported *residential institution* as the place of occurrence. For well over a third (41.0%) of ED visits, the place of occurrence for the fall was not reported (see Figure 8).

Similarly in the Parry Sound District, most (30.9%) ED visits for fall-related injuries reported the home as the place of occurrence, and 11.2% reported a residential institution as a place of occurrence. Almost half (49.2%) did not report a place of occurrence for the fall.

Figure 8. Percentage of Fall-Related ED Visits among Seniors, by Place of Occurrence & Health Region, 2013



ED Visits: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/21]

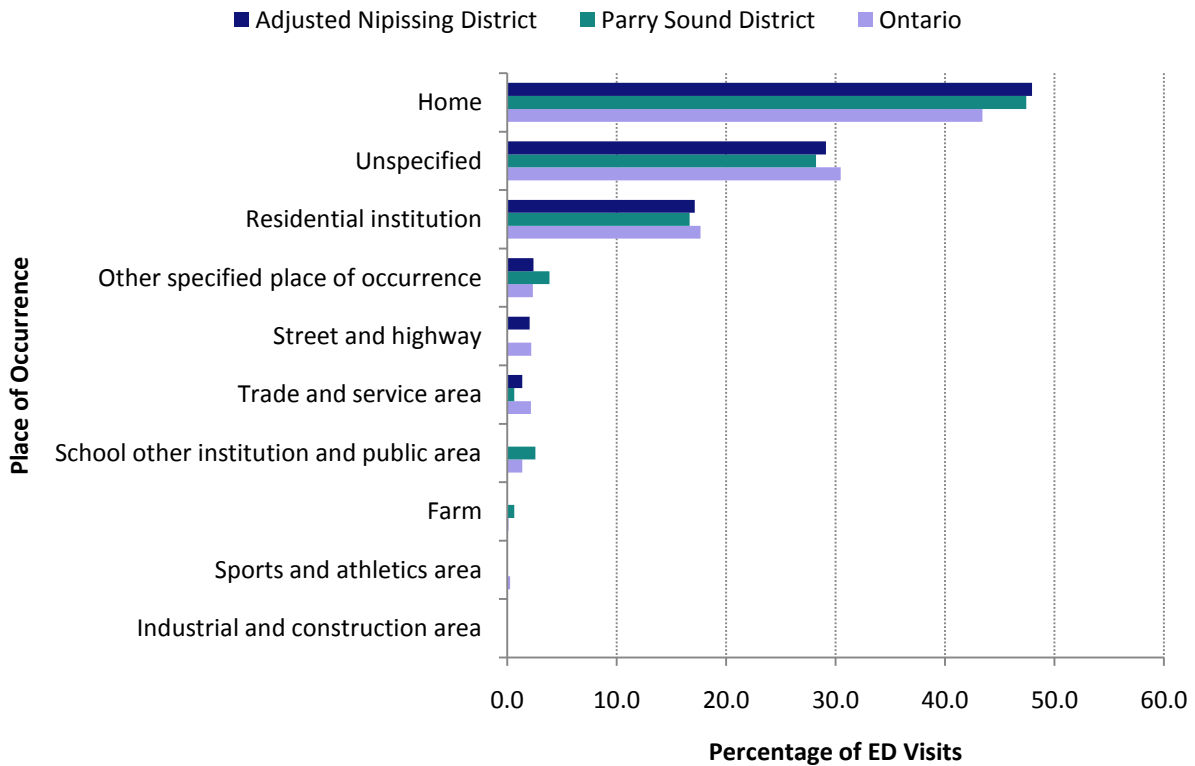
4.2 Fall-Related Hospitalizations

In the Adjusted Nipissing District, the home (47.4%) was the most commonly reported place where fall-related injuries resulting in hospitalization occurred, followed by residential institutions (17.1%) (see Figure 9). Almost a third (29.1%) did not specify a place of occurrence for the fall.

Among clients in the Parry Sound District, 47.4% of hospitalizations resulting from fall-related injuries were reported to have occurred at home, and 16.7% in a residential institution. A significant percentage of hospitalizations (28.2%) did not specify the place of occurrence for the fall.

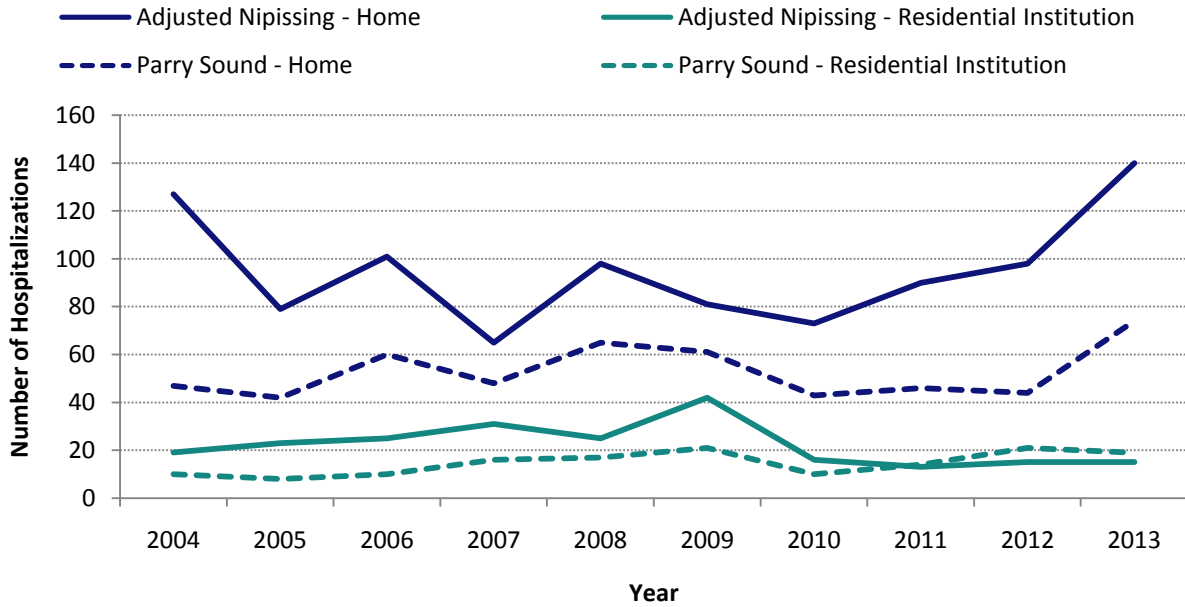
Between 2004 and 2013, the number of fall-related hospitalizations that occurred in the home rose to their highest levels within the Adjusted Nipissing & Parry Sound Districts. Fall-related hospitalizations that occurred among residents of a residential institution were characterized as a fall that occurred in a residential institution, and the patient was transferred directly from a nursing home, chronic care facility, or home for the aged. The number of fall-related hospitalizations that occurred among residents of residential facilities and in a residential institution appears to have remained fairly stable between 2004 and 2013 in both districts.

Figure 9. Percentage of Fall-Related Hospitalizations among Seniors, by Place of Occurrence & Health Region, 2013



Day surgeries: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/21].

Figure 10. Number of Fall-Related Hospitalizations among Seniors, by Place of Occurrence, Institution Transferred from, & Health Region, 2013



Day surgeries: Ambulatory Emergency External Cause [2004-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [2014/11/21].