Falls Across the Lifespan in Algoma:

2003-2010

Algoma
PUBLIC HEALTH
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Message from Medical Officer of Health

The Algoma District is a geographical jurisdiction that stretches hundreds of kilometres along the shores of Lake Huron and Lake Superior with a dispersed population.

This is Algoma Public Health's first report on falls across the lifespan focusing on the impact falls have on the health and well-being of Algoma residents. It also highlights trends and existing community programs and services, and includes a comparison of the incidence of falls across age groups in Algoma and Ontario between 2003 and 2010. The information presented in this report will inform Algoma Public Health (APH) and the community regarding the impact and significance of falls.

Algoma Public Health is committed to monitoring trends over time to inform practice to ensure that our falls prevention programs address the changing needs of the community. APH is dedicated to building partnerships, collaborating and engaging community partners, influencing policy, identifying and delivering best practice interventions.

Yours in public health

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Abstract

Algoma Public Health (APH) is committed to supporting healthy communities by providing a continuum of quality health services throughout the Algoma district. APH believes that research is an integral part of providing evidence-based and client centred programs and services to the residents of Algoma.

The information compiled in the *Falls Across the Lifespan in Algoma* report identifies community strengths and needs and will assist with the ongoing development of local falls prevention programs and services. It includes an overview of rates for fall-related emergency room visits and hospitalizations, and presents findings and a data analysis for Falls in the Early Years (Ages 0 to 6), Falls in the School Age Years (Ages 5 to 19), and Falls in the Older Adult (Ages 55 and Over). These age groups are highlighted in the report as they coincide to where the burden of injury from falls is most prevalent as identified in the *Prevention of Injury Guidance Document* (Ministry of Health Promotion [MHP], 2010). Some of the topics included are: reasons for falls, types of support, gender specific information, promising practices, emerging trends, and recommendations.

The information presented in this report will be valuable for groups and organizations that review, plan and implement programs and services for falls prevention in the district of Algoma.

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Executive Summary

Falls Across the Lifespan in Algoma: 2003-2010

This report reflects the current trends of fall-related ER visits and hospitalizations comparing Algoma to Ontario. Promising practices for priority age groups are also highlighted. The information presented in this report will inform Algoma Public Health (APH) and the community regarding the impact and significance of falls. APH is committed to collaborating with community partners and stakeholders to reduce falls.

Key Findings

The following are the key findings from the *Falls Across the Lifespan in Algoma 2003-2010* report:

1. Overall, for fall-related injuries, Algoma residents visited the hospital ER more and were admitted to hospital less than our Ontario counterparts.

ER visits. The average age-standardized rate for fall-related ER visits among Algoma residents at 41.5 per 1,000 per year was significantly higher than that observed among Ontario residents at 27.6 per 1,000 per year.

Hospitalizations. The average age-standardized rate for fall-related hospitalizations among Algoma residents at 3.5 per 1,000 per year was significantly lower than that observed among Ontario residents at 11.2 per 1,000 per year.

We cannot be sure why Algoma residents visited the hospital ER more and were admitted to the hospital less than our provincial counterparts. Factors that may have impacted these rates besides the actual rates of injury could be attributed to availability of both primary care and hospital beds. Hospital culture and resources can also determine how triage occurs at each hospital ER; therefore, caution must be exercised when making direct comparisons about the rates of falls across geographical areas.

2. In Algoma, falls from furniture accounted for 20% of falls for children 0 to 6 years who visit the hospital ER.

Falls from beds were most common, with infants having the highest incidence of these falls. The crib is the safest place for an infant to sleep. Infants who sleep in adult beds are not only at risk of sudden infant death syndrome but also at risk for falls from beds. Public health promotes safe sleep practices as part of clinical practice, parenting interventions and public education campaigns to create awareness of the dangers of allowing infants to sleep in adult beds.

3. In Algoma, for children 0 to 6 years, head injuries and fractures accounted for 88% of hospitalizations for furniture related falls.

Infants and Toddlers. Infants are more likely to land on their heads when they fall because they have a higher head to body ratio compared to adults. Infants and toddlers (to age 2) accounted for 74% of the hospitalizations for head injuries due to falls from furniture. The risk for head injury is thus higher for

children under 2 years of age. Parents and caregivers can prevent falls by providing adequate supervision, and using safety devices that can prevent falls such as safety gates and window stops.

Children aged 3 to 6. As children become more mobile and independent, the risk of fractures becomes more common. Children 3 to 6 years accounted for 83% of hospitalizations for fractures due to falls from furniture. Again, parental supervision is a key component to reducing fall-related injuries.

4. In Algoma, in the age group 5 to 19 years, skateboarding and snowboarding accounted for 1051 fall related ER visits.

For fall-related ER visits for the age 5 to 19 year age group, the 10 to 19 years cohort accounted for 96% of visits involving snowboards (n=613) and 95% of visits involving skateboards (n=395) from 2003-2010. Wearing safety gear consistently and properly is a key factor in reducing fall-related injuries among this risk taking age group.

5. Algoma's rate for ER visits for ages 55 years and older was statistically higher than the provincial rate.

For 2003-2010, Algoma's average annual rate for fall-related ER visits for the age group 55 years and older was statistically higher at 49.3 per 1,000 than the Ontario rate at 40.6 per 1,000.

Again, we cannot be sure why Algoma residents aged 55 and over visited the hospital ER more than their provincial cohort. Some reasons could be related to the determinants of health such as housing, access to health care and nutritious food, low income, geographic distances and weather conditions. Other reasons could include hospital culture and resources. APH supports the work of *Sault Ste. Marie Age Friendly Communities* that is currently working on ensuring that supports and programs are in place to facilitate healthy aging.

6. In Algoma, *"same level slip, trip, & stumble"* was the number one reason for fall-related ER visits for ages 55 years and over.

From 2003-2010, for the 15,424 ER fall-related ER visits for ages 55 years and over *"same level from slip, trip & stumble"* accounted for 26% of these visits. Falls *"on and from stairs and steps"* accounted for 15% of fall-related ER visits for this age group.

Biological and medical factors such as reduced muscle strength, loss of balance and flexibility, certain medications, improper footwear, inadequate nutrition, and chronic illness place individuals at risk of falling. Strategies that help prevent falls include identification of indoor home hazards such as inadequate lighting, poorly fitted or no handrails on stairs, uneven non-uniform stairs, clutter and scatter mats. Despite the number of falls that occur within the home, potential hazards in the community such as poor building design, inadequate maintenance of buildings and sidewalks, and slippery and glare-producing flooring also need to be addressed.

7. In Algoma, 53% of falls resulting in a visit to a hospital ER for ages 55 years and older occurred at home.

Older adults are at higher risk of falls in their homes especially, since the older cohort of this age group tends to spend more time at home indoors. Falls are a result of an interaction of multiple factors. Community agencies and organizations need to address the primary causes of falls in the home environment with a multifaceted approach.

Algoma Public Health supports the *Sault Rising Stars Acting Troupe* in their efforts to educate the community with their peer-to-peer lighthearted vignettes on falls prevention, promoting physical activity, identifying home hazards and safe medication use. Local community partners utilize and distribute the *Independent Living Guide* developed by the local *Slips, Trips & Falls Coalition* for self-identification of potential fall risks in the home.

A Call to Action

Algoma Public Health is committed to monitoring trends over time to inform practice to ensure that our falls prevention programs address the changing needs of the community. APH is dedicated to building partnerships, collaborating and engaging community partners, influencing policy, identifying and delivering best practice interventions.

Individuals, groups, policy makers, political partners and the collective community all have a part to play in the prevention of falls. Some aspects of preventing falls such as behavioural choices are an individual responsibility however many others are best addressed collectively. No one strategy or individual is as effective as a collaborative community approach.

Falls are Predictable and Preventable

Algoma Public Health recognizes that falls occur due to a complex interaction of risk factors encompassing biological and medical, behavioural, environmental and socio-economic conditions. According to SMARTRISK, a leading Canadian organization on injury prevention most injuries are predictable and preventable; however, society believes that these events are "accidents" (2006). Communication campaigns and efforts to change social norms, to view accidents as incidences, events and injuries, have the potential to change attitudes and beliefs to view injuries as predictable and thus, preventable.

Falls Across the Lifespan in Algoma

Introduction

Algoma Public Health (APH) is committed to supporting healthy communities by providing a continuum of quality health services throughout the Algoma district. APH believes that research is an integral part of providing evidence-based and client centred programs and services to the residents of Algoma. The information compiled in the *Falls Across the Lifespan in Algoma* report identifies community strengths and needs and will assist with the ongoing development of local falls prevention programs and services. The information presented in this report will be valuable for groups and organizations that review, plan and implement programs and services for falls prevention in the district of Algoma.

This is the first Falls Across the Lifespan report released by APH, and it provides an overview of the incidence of falls that occur across age groups in Algoma. It also highlights trends and existing community programs and services, and includes a comparison of the incidence of falls across age groups in Algoma and Ontario between 2003 and 2010.

Unintentional falls account for 26% of visits to hospital emergency room (ER) departments among Algoma residents. According to the Ontario Injury Prevention Resource Centre (OIPRC, 2008), unintentional injuries due to falls cost the Ontario health care system billions of dollars each year.

Injuries are sometimes referred to as the "invisible epidemic" or the "neglected disease" and are accepted to be a common occurrence in everyday life. There is a widespread misconception that they are *accidents*, that we have no control over and can do nothing to prevent. In actuality, this is not the case. Injuries, even unintentional injuries, are not *accidents,* injuries are both predictable and preventable (OIPRC, 2013).

Communication campaigns and efforts to change social norms, to view "accidents" as incidences, events and injuries, have the potential to change attitudes and beliefs to view injuries as predictable and thus, preventable.

Algoma Public Health Programs and Services

In May 2010, the Ontario Ministry of Health Promotion (MHP) published a framework entitled *Prevention of Injury Guidance Document* that provides background information to assist public health in meeting the injury prevention standards (MHP, 2010). This *guidance document*, as it will now be referred to, informs current public health practice and provides evidence to support future considerations and recommendations. It has been instrumental in the development of this report.

An overarching principle in the delivery of public health programs and services is that the health of individuals is much more than the availability of health care and hospitals. Social and economic factors, the physical environment, and individual behaviours and conditions interact to significantly influence the health of individuals and communities. These factors are known as the determinants of health and include:

- Income and social status;
- Social support networks;
- Education and literacy;
- Employment/working conditions;
- Social and physical environments;
- Personal health practices and coping skills;
- Healthy child development;
- Biology and genetic endowment;
- Health services;
- Gender;
- Culture; and
- Language (Ontario Public Health Standards (OPHS), 2008a)

APH and partner agencies provide a range of programs and services that aim to improve the health of Algoma residents. Some of these programs are population based, serving the general population, while others serve priority populations. Priority populations are identified by surveillance, epidemiological, or other research studies and are those populations that are at risk and for whom public health interventions may be reasonably considered to have a substantial impact at the population level. Priority populations are a key component of the requirements outlined in the OPHS (2008).

There is a new equity-focused tool, the *Health Equity Impact Assessment (HEIA)*, that is intended for use by organizations and health service providers who have an impact on the health of Ontarians. The primary focus of this tool is to reduce inequities by identifying and mitigating unintended impacts of an initiative prior to implementation (Ministry of Health and Long-Term Care, 2008b). This tool has broad applications for program services outside the health care system whose work may have an impact on health outcomes.

Addressing the determinants of health, working with priority populations and reducing health inequities are fundamental to the work of Ontario's public health units. This report will highlight how APH programs consider the determinants of health when addressing falls prevention.

Algoma Geography

The Algoma district covers 48,811 kilometres on the eastern shore of Lake Superior, the north shore of Lake Huron and the St. Mary's River. The population density of Algoma is 2.4 per square kilometre compared to Ontario's at 14.1 per square kilometre.

Figure 1.1: Map of District of Algoma

According to the 2011 Census, the total population of Algoma is 115, 870 and the population of Ontario is 12,851,821. The population of Algoma declined by 1.4% from 2006 to 2011.

In Algoma, there are 32 distinct geographic areas including:

- two cities - Sault Ste. Marie and Elliot Lake;

- four towns - Blind River, Bruce Mines, Spanish and Thessalon;

- 13 townships: Dubreuilville, Hilton, Hornepayne (served by the Thunder Bay and District Health Unit), Jocelyn, Johnson, Laird, MacDonald, Meredith and Aberdeen Additional, Plummer Additional, Prince, St. Joseph, Tarbutt and Tarbutt Additional, The North Shore and White River;

- two municipalities - Huron Shores and Wawa;

- one village - Hilton Beach;

- eight First Nations reserves - Garden River 14, Goulais Bay 15A, Gros Cap 49, Mississagi River 8, Rankin Location 15D, Sagamok, Serpent River 7, and Thessalon 12; and

- two unorganized areas – Algoma Unorganized, North Part and Algoma, Unorganized South East Part (Statistics Canada, 2011).

Algoma accounts for less than 1% of the population of Ontario. Being a small population in a vast geographical area creates unique challenges for service provision, be it health programs and services, transportation, road maintenance or education.

Algoma's Population

Figure 1.2: Population Pyramid for Algoma 2011 (Percent)
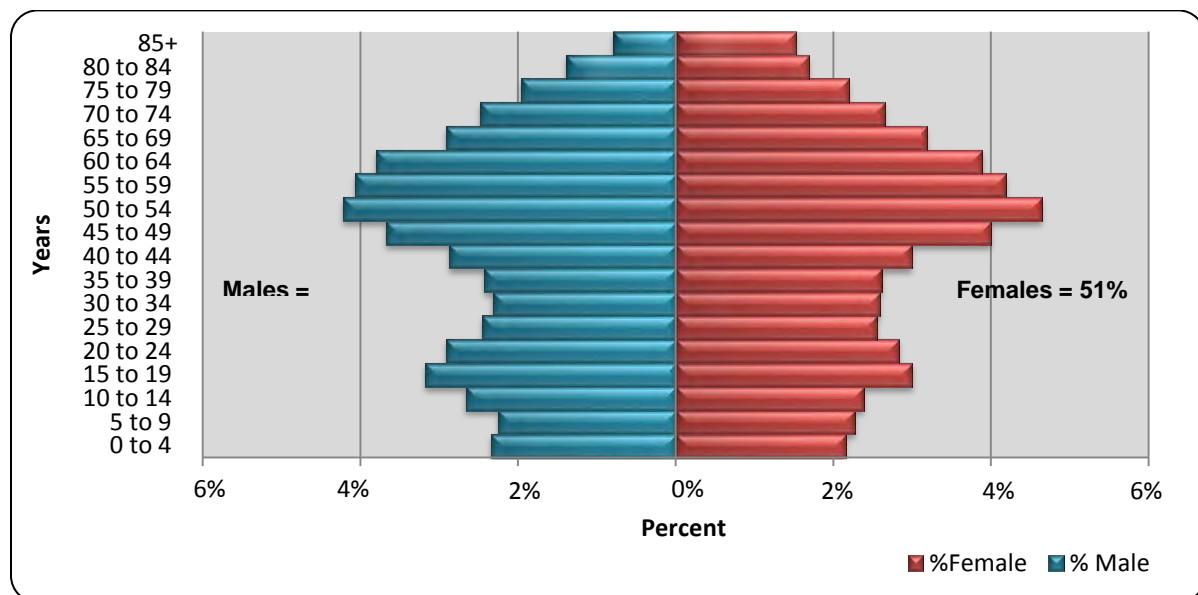
The population of Algoma is generally older than the province-wide population, with a median age of 47.2 years compared to the median age of Ontario at 40.4 years. Algoma has a greater percentage of the population 55 years and over at 37% compared to 27% for Ontario (Statistics Canada, 2011).

With Algoma's aging population, the rate of injury due to falls will continue to be higher than that of Ontario. For a breakdown of the Algoma and Ontario population for 2011 by age group and sex, see Appendix A.

We All Play a Part

Community stakeholders and citizens can work together to raise awareness about the impacts of the determinants of health on individuals and families. Strategies such as building community networks, advocating for change in government policy, and improving access to community support services for priority populations will strengthen community capacity. By communicating with our municipal,

provincial and federal government representatives, we can advocate for policies that prevent unintentional falls and injuries and that protect overall health.

What About Falls in the Adult Population, Ages 20 to 54?

As you may notice, there is not a specific section for the age group 20 to 54 years. This is because the two groups, 20 to 29 years and 30 to 54 years, which make up the age group 20 to 54 years, have the lowest average annual rates at 33.4 per 1,000 and 30.4 per 1,000 respectively of all the age groups in the report.

The Prevention of Injury Guidance Document does not specify the 20 to 54 age group as a priority population for falls as it focuses on ages zero to 14 years and 55 years and older. As cited in the "Falls Across the Lifespan Evidence-Based Practice Synthesis" document, "a multi factorial approach used for older adults will also help reduce falls in adults aged 30 to 54 years. The main causes of falls in this age group are stairs and steps" (OIPRC, 2008).

For the age group 20 to 29, the most common cause of falls is slips, trips and stumbles; however, the leading risk factor is alcohol and recommended interventions focus on low risk drinking guidelines. Interventions that promote physical activity, improving balance and the use of handrails decrease the risk of falls across all age groups as well (OIPRC, 2008).

Falls prevention programs and services provided to the 0 to 14 years and 55 years and older age groups will have an indirect impact on falls prevention awareness in the 20 to 54 age group.

Data Details

Data Sources

The Algoma and Ontario data analyzed in this report came from the sources listed below.

intelliHEALTH ONTARIO. The Ontario Ministry of Health and Long-Term Care's *intelli*HEALTH ONTARIO is a health information database populated by datasets contained within the Provincial Health Planning Database (PHPDB) health database. Report data from this source include:

- For **emergency department visits**, National Ambulatory Care Reporting System (NACRS) maintained by the Canadian Institute of Health Information (CIHI)

- For **hospital discharges**, CIHI's Discharge Abstract Database (DAD)

- For **population data,** Population Estimates based on The Census of Canada, conducted every 5 years by Statistics Canada. The May 2006 version was used at the time of data analysis, the population estimates based on the May 2011 census were unavailable.

Data Coding

We queried the IntelliHEALTH Database using ICD-10CA codes specific to falls, namely the external cause codes specific to accidental falls (W000-W19999) and codes specific to the nature of the injuries, for example head injuries and fractures (S00-T14999). Data extraction occurred between December 2011 and March 2012.

Types of Analysis

Age-specific rates. An age-specific rate for falls for a specific geographic area is the number of fall-related injuries (the count) within a particular age group in that area divided by the total population of that age group in that area over a specified time-period. The time period is usually one year, but years can be aggregated if the count is small. In this report we used the following age groups: 0-4, 5-9, 10-14,15-19, 20-29, 30-54, 55-64, 65-74, 75-84, and 85 and over. Rates are generally multiplied by a larger number to make them easier to understand and eliminate decimal points. In this report, we multiplied the rate by 1,000. Using rates instead of counts allows us to compare the experience of different populations (i.e. Algoma and Ontario).

Age-standardized rates. Age-standardized rates take into account any differences in the age structures of two communities or changes in age structure of a population over time. Age-standardized rates represent the overall injury rate of a community as if it had the same population structure as a reference population (i.e. the population structure of Ontario as a whole). This adjustment corrects for differences in age structures of the population. Thus, only age-adjusted rates, standardized with the same reference population, should be used to compare communities.

Confidence intervals and statistical significance. Confidence intervals at a 95% level were used to determine if the variability between the Algoma rates and the Ontario rates is statistically lower, higher, or no difference. Confidence intervals help to explain observed differences between the groups being compared that may have occurred solely by chance from true differences. Because of the large number of cases of falls reported in Ontario, the data is considered census quality and thus stable, meaning that the confidence intervals are very small. Therefore, for the purposes of comparison in this report, Ontario confidence intervals are not necessary. If the Algoma confidence intervals overlap the Ontario rate, then we can conclude that the difference between the two rates is not statistically significant.

Frequency distributions. Frequency distributions describe the number of times various attributes of a variable are observed in a sample. Some examples of frequency distributions for the data in the priority population sections include ER visits, hospitalizations, cause of injury and place of occurrence. This information is also stratified by age and sex, which will be helpful to service providers as they plan falls prevention strategies.

Data Interpretation Comparing Geographical Areas

Data is analyzed based on a client's place of residence, not on the location of the hospital where they were treated; therefore, all falls included in this report are attributed to residents of Algoma, regardless of the Ontario hospital where treatment was received. The difference between geographic areas needs to be interpreted with caution due to factors related to communities and their hospitals.

Data Limitations

The counts and rates presented in this report do not represent the true burden of injury attributed to falls as only individuals who sought medical attention for their injuries were captured in this data. Individuals who died from a fall and who were not admitted to hospital are not included in this data.

Data from intelliHEALTH is collected at hospitals during ER department visits and/or while clients are in hospital. Occasionally, the data collected about clients is not as complete as it could be. The accuracy and completeness of the data is important to public health as it provides direction for our health promotion programming and injury prevention strategies.

Findings

Figure 1.3: Number of Fall-related ER Visits by Age and Sex in Algoma, 2003-2010 (N=40,416)
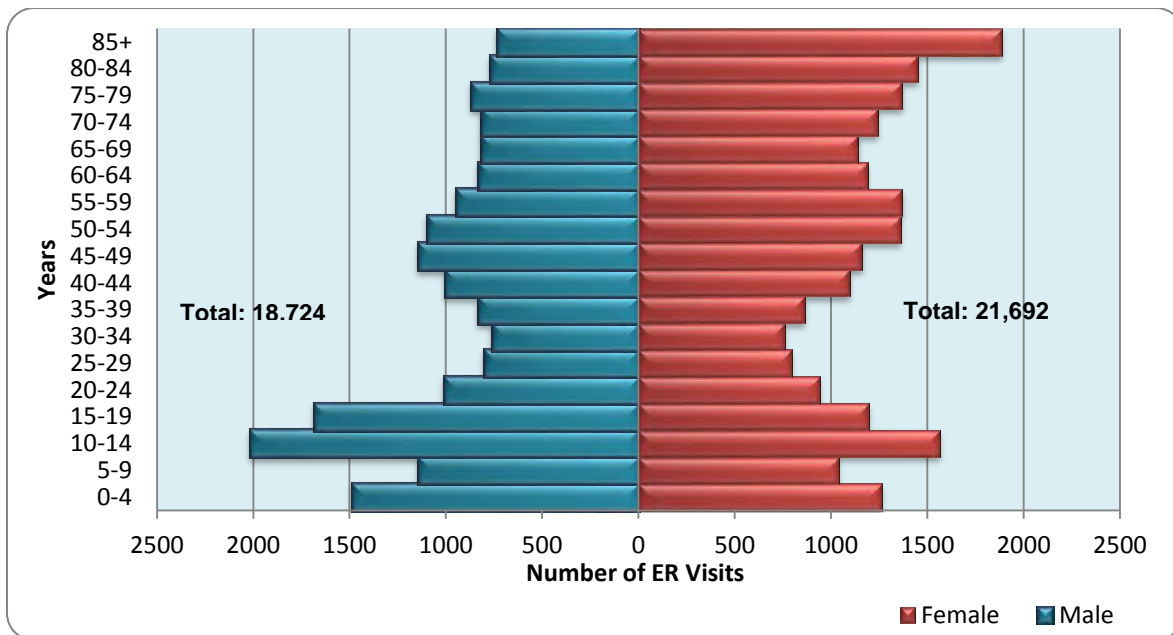
Source: intelliHEALTH Ontario

- From 2003 to 2010 there were 40,416 fall-related ER visits averaging 5,052 visits per year.

- In Algoma, females accounted for slightly more fall-related ER visits (n=21,692) at 54%, and males accounted for 46% (n=18,724) of these visits.

- The top five age groups for fall related ER visits in Algoma were the three youngest age groups (10 to 14 years, 15 to 19 years, and 0 to 4 years, in this order) which accounted for the top three. The oldest age group (85 years and over) ranked fourth and 50 to 54 years ranked fifth.

- The age group that accounted for the most fall-related ER visits is 10 to 14 years with 3,579 visits. The 15 to 19 age group had the second most visits to ER with 2,877 visits.

- The age group with the least number of fall-related ER visits at 1,517 was the 30 to 34 age group (Figure 1.3).

For a complete age group and sex breakdown for fall-related ER visits, see Appendix B.

Figure 1.4: Number of Fall-related Hospitalizations by Age and Sex, Algoma, 2003-2010 (N =4,904)
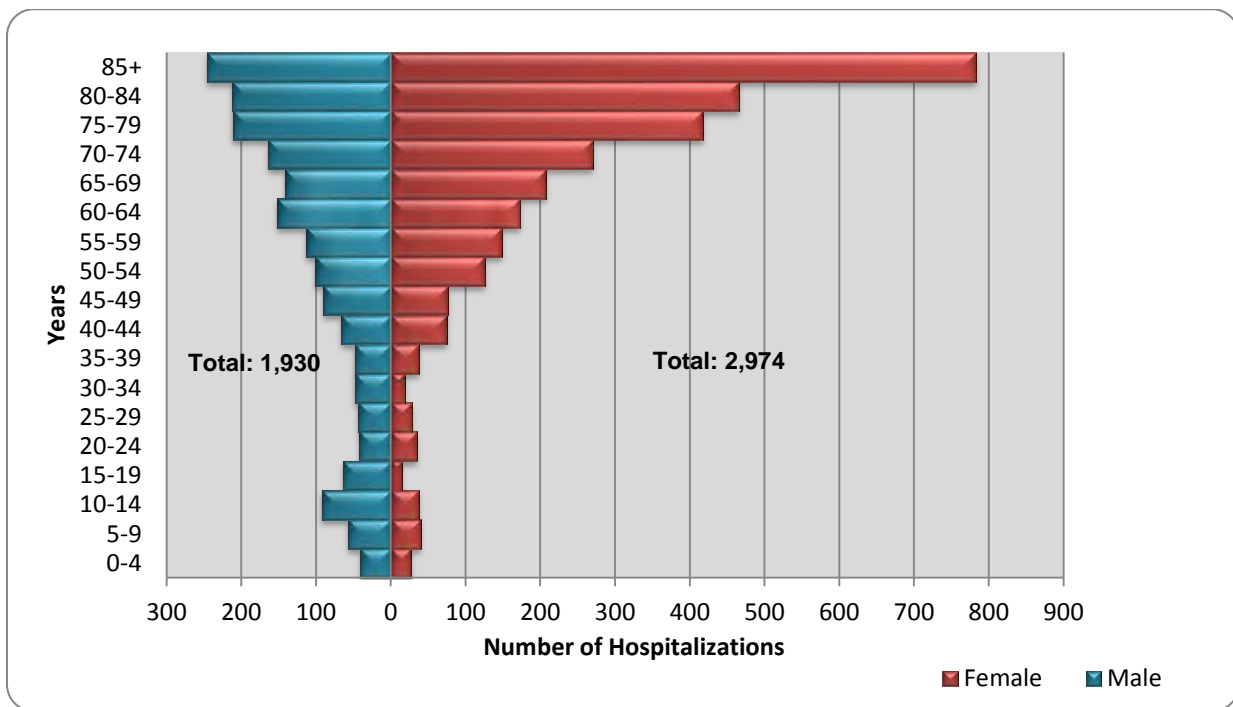
Source: intelliHEALTH Ontario

- The oldest age groups, 85 and over to ages 65 to 69, were most often hospitalized for fall-related injuries in Algoma.

- From 2003 to 2010, there were 4,904 fall-related hospitalizations in Algoma. This averages out to 613 hospitalizations per year.

- In Algoma, females accounted for 61% of all related hospitalizations (n=2,974) and males accounted for 39% (n=1,930).

- The age groups from 60 to 85 years and over accounted for 70% (n=3,441) of all hospitalizations due to fall-related injuries (Figure 1.4).

For a complete age group and sex breakdown for fall-related hospitalizations, see Appendix C.

Age-Standardized Rates

Figure 1.5: Age-standardized Rates, Fall-related ER Department Visits, Algoma and Ontario, 2003-2010

	2003	2004	2005	2006	2007	2008	2009	2010
Algoma	41.5	42.4	42.3	42.5	38.3	41.8	40.8	42.0
Ontario	26.8	27.4	28.3	27.4	27.7	28.3	27.3	27.8
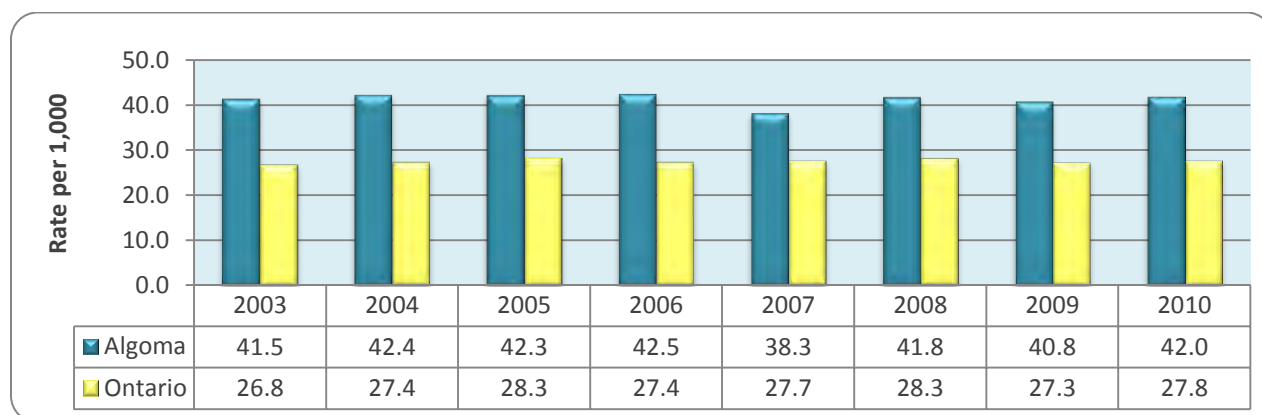
Source: intelliHEALTH Ontario

- The age-standardized rates for fall-related ER visits for Algoma residents were statistically higher than those observed for Ontario residents for all years 2003 to 2010 inclusive (Figure 1.5).

Figure 1.6: Age-standardized Rates, Fall-related Hospitalizations, Algoma and Ontario, 2003-2010
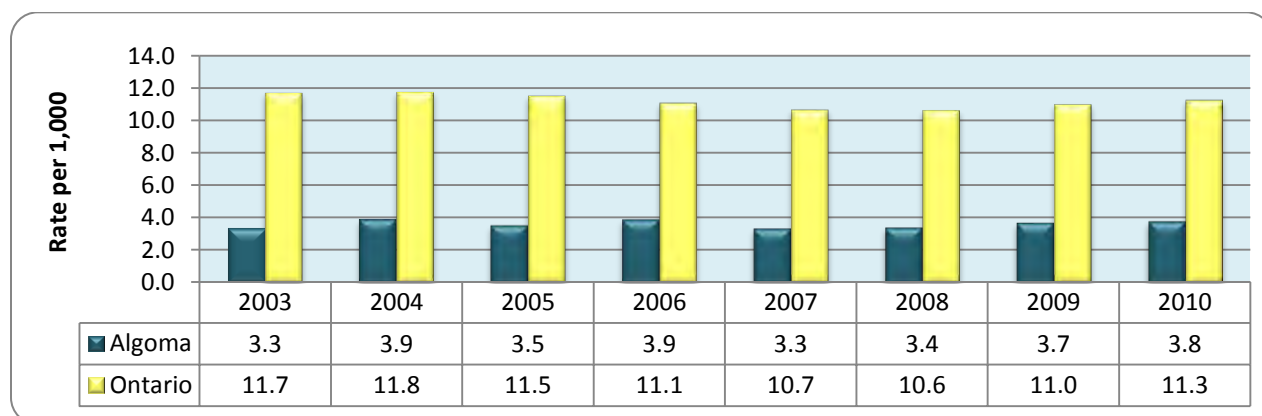
	2003	2004	2005	2006	2007	2008	2009	2010
Algoma	3.3	3.9	3.5	3.9	3.3	3.4	3.7	3.8
Ontario	11.7	11.8	11.5	11.1	10.7	10.6	11.0	11.3

Source: intelliHEALTH Ontario

- The age-standardized rates for fall-related hospitalizations among Algoma residents were statistically lower than that observed for Ontario residents for all years 2003 to 2010 inclusive (Figure 1.6).

Figure 1.7: Average Age-standardized Rates, Fall-related ER Visits and Fall-related Hospitalizations, Algoma and Ontario 2003-2010

Rate per 1,000	ER Visits	Hospitalizations
■ Algoma	41.5	3.5
□ Ontario	27.6	11.2
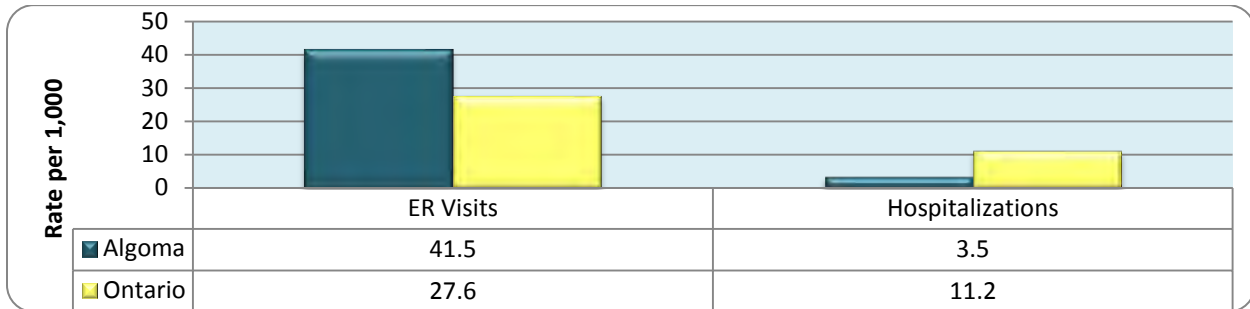
Source: intelliHEALTH Ontario

ER visits. The average age-standardized rate for fall-related ER visits among Algoma residents at 41.5 per 1,000 per year was significantly higher than that observed among Ontario residents at 27.6 per 1,000 per year for the years 2003 to 2010 (Figure 1.7).

Hospitalizations. The average age-standardized rate for fall-related hospitalizations among Algoma residents at 3.5 per 1,000 per year was significantly lower than that observed among Ontario residents at 11.2 per 1,000 per year for the years 2003 to 2010 (Figure 1.7).

Age-Specific Rates

Figure 1.8: Average Annual Rates, Fall-related ER Visits, by Age Group, Algoma and Ontario, 2003-2010
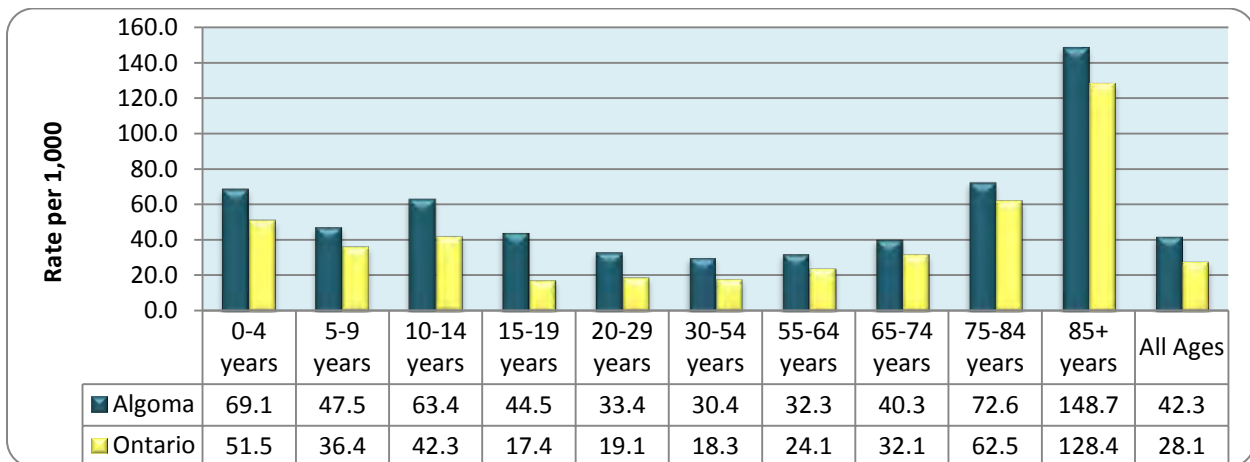
Rate per 1,000	0-4 years	5-9 years	10-14 years	15-19 years	20-29 years	30-54 years	55-64 years	65-74 years	75-84 years	85+ years	All Ages
■ Algoma	69.1	47.5	63.4	44.5	33.4	30.4	32.3	40.3	72.6	148.7	42.3
□ Ontario	51.5	36.4	42.3	17.4	19.1	18.3	24.1	32.1	62.5	128.4	28.1

Source: intelliHEALTH Ontario

▪ The average annual age-specific rates for fall-related ER visits among Algoma residents for all age groups were statistically higher than that observed among Ontario residents during the years 2003 to 2010 inclusive (Figure 1.8).

For age specific rates for each year 2003-2010 by age group, see Appendix D.

Figure 1.9: Average Annual Rates, Fall-related Hospitalizations, Algoma and Ontario, 2003-2010 (N=4,904)
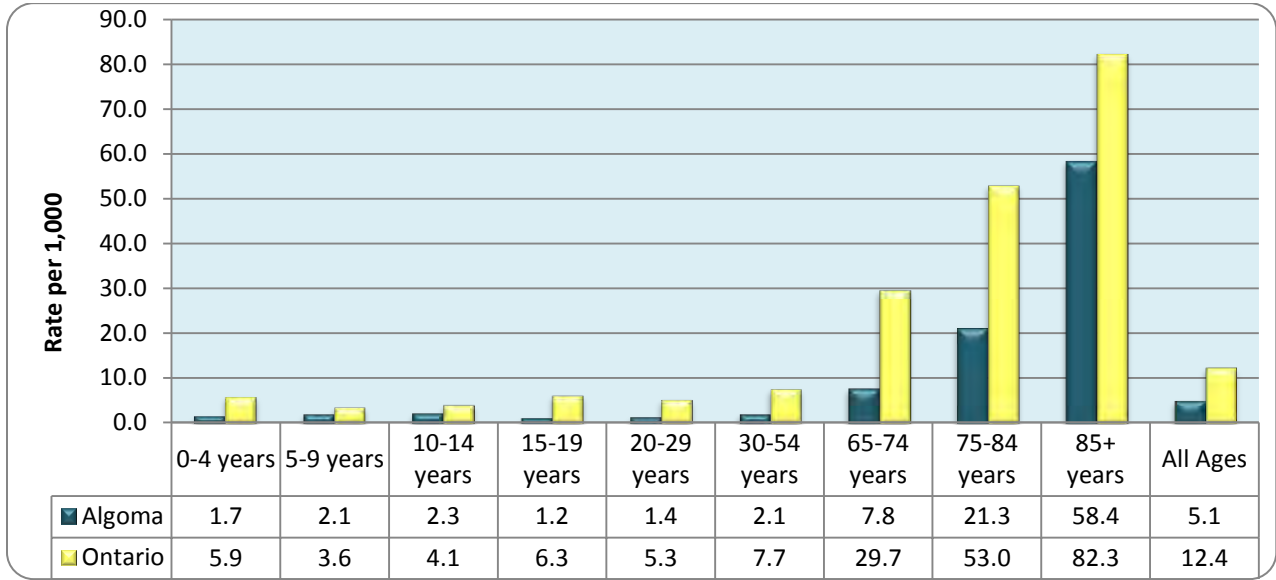
	0-4 years	5-9 years	10-14 years	15-19 years	20-29 years	30-54 years	65-74 years	75-84 years	85+ years	All Ages
Algoma	1.7	2.1	2.3	1.2	1.4	2.1	7.8	21.3	58.4	5.1
Ontario	5.9	3.6	4.1	6.3	5.3	7.7	29.7	53.0	82.3	12.4

Source: intelliHEALTH Ontario

- The average annual age-specific rates for fall-related hospitalizations among Algoma residents for all age groups were statistically lower than that observed among Ontario residents during the years 2003 to 2010 inclusive (Figure 1.9).

For age specific rates for hospitalizations each year 2003-2010 by age group, see Appendix E.

Most Common Reasons for Falls

Figure 1.10: Percentage Most Common Reasons for Fall-related ER Visits, All Ages, Algoma, 2003-2010 (N=40,416)

Reason	Percentage
Same level from slip trip & stumble	21%
Unspecified fall	21%
On and from stairs and steps	14%
Other on same level	13%
On same level involving ice and snow	8%
Involving sports equipment (ice skates, skis, snowboard, skateboard, roller/in-line skates)	6%
Other from one level to another	5%
Involving furniture (bed, chair, other furniture)	5%
All other specified	4%
On and from ladder	2%
Involving playground equipment	1%

Source: intelliHEALTH Ontario

- The most commonly stated known cause of fall-related emergency department visits among Algoma residents was *"same level from slip, trip & stumble"* at 21%.

- *„Unspecified fall"* also accounted for 21% of all falls. This means these visits were not assigned specific ICD-10 codes when individuals presented at the hospital ER (Figure 1.10).

Hospitalizations by Age and Type of Discharge

Figure 1.11: Percentage Fall-related Hospitalizations by Age and Type of Discharge*, Algoma, 2003-2010 (N=4,904)

	0 to 19 years	20 to 29 years	30 to 54 years	55 to 64 years	65 to 74 years	75 to 84 years	85+ years
HOME WITH NO SUPPORT SERVICES	91.1%	86.5%	78.2%	63.3%	46.0%	31.9%	16.5%
HOME WITH SUPPORT SERVICES	1.3%	4.7%	7.8%	14.2%	16.8%	17.1%	16.9%
ACUTE CARE TREATMENT HOSPITAL ONLY	6.5%	6.1%	6.1%	9.9%	16.1%	13.0%	7.8%
TRANSFERRED TO CONTINUING CARE FACILITY	2.7%	0.0%	3.8%	7.0%	11.5%	22.3%	38.7%
TRANSFERRED TO OTHER TYPE OF FACILITY	2.7%	2.0%	1.6%	3.1%	4.6%	8.8%	10.8%
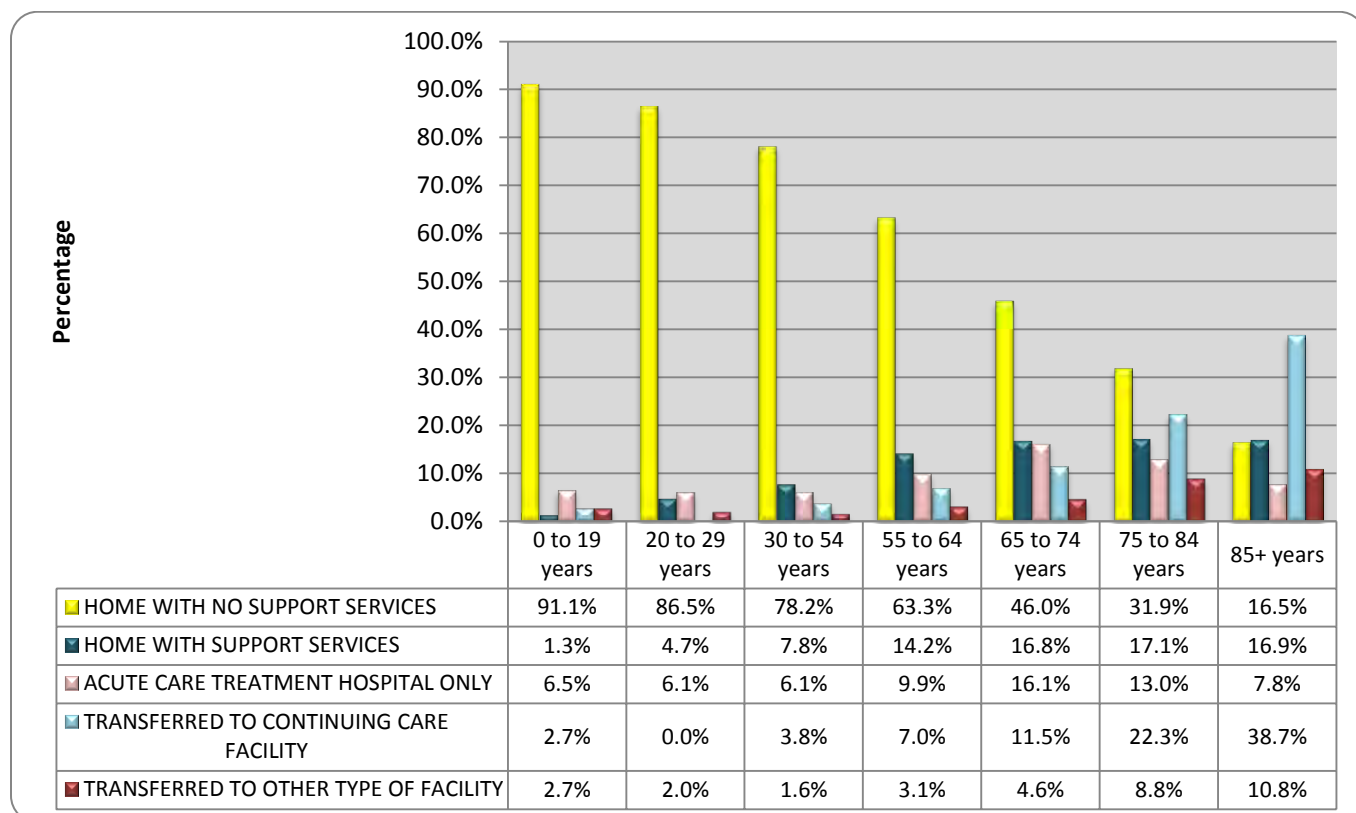
Source: intelliHEALTH Ontario

*Excludes deaths and those that left the hospital against medical advice.

- The discharge type sent *"home with no support services"*, meaning that the physician determined that no at home support services were required at the time the patient was sent home, decreased with age from 91.1% for ages 0 to19 years to 16.5% at 85 years plus.

- The discharge type *"home with support services"* increased with age from 1.3% for ages 0-19 years to 16.9% at 85 years plus.

- The discharge type *"transferred to continuing care facility"* increased with age, as expected, in that as people age, the likelihood of developing complications or illnesses increases and people need to be transferred to an increased level of ongoing care (Figure 1.11).

Fall-related Deaths

Figure 1.12: Percentage Fall-related Hospitalizations Resulting in Death by Age, Algoma, 2003-2010 (N=234)

	0 to 19 years	20 to 29 years	30 to 54 years	55 to 64 years	65 to 74 years	75 to 84 years	85+ years
Deceased	0.4%	0.4%	1.3%	3.8%	15.0%	38.5%	40.6%
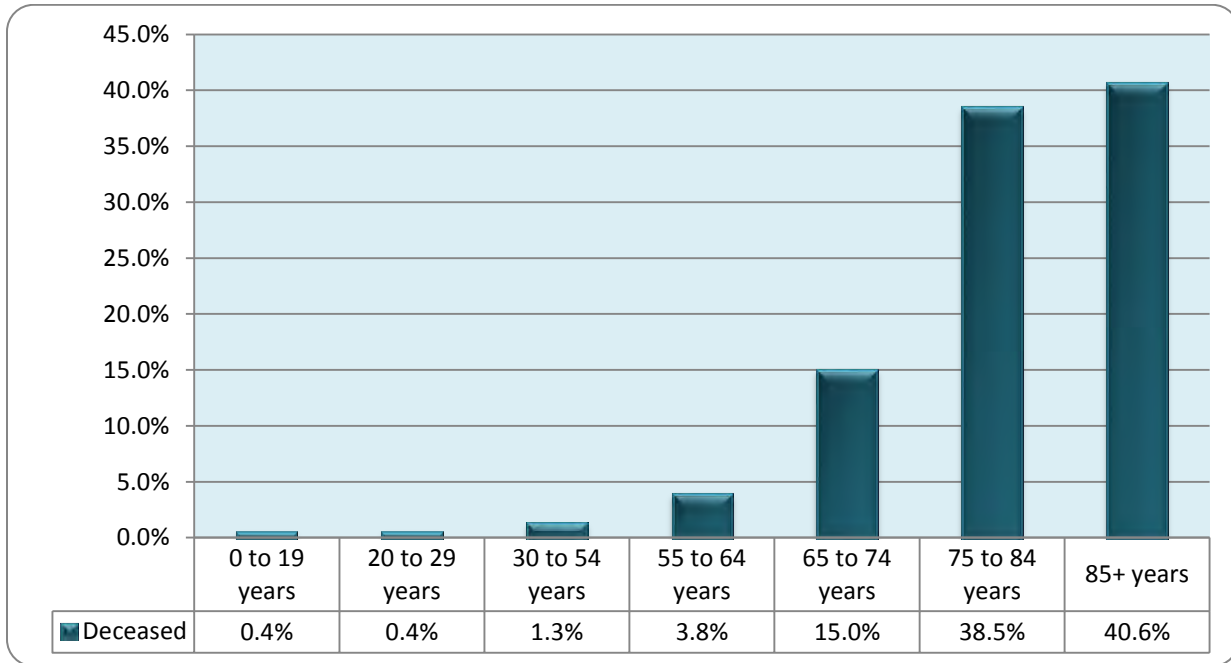
Source: intelliHEALTH Ontario

- In Algoma, from 2003 to 2010, 234 people died in hospital following a fall-related hospitalization. On average, this equates to 29 fall-related hospitalizations resulting in death per year.

- Ninety-four percent (n=220) of fall-related hospitalizations resulting in death were among those individuals aged 65 years and older (Figure 1.12).

A Summary of Key Findings
Algoma Fall-related Injuries from 2003 to 2010 All Age Groups

ER Visits
- The number of ER visits was 40,416 with a yearly average of 5,052 ER visits.

- In Algoma, overall females accounted for slightly more fall-related ER visits (n=21,692) at 54% and males accounted for 46% (n=18,724).

- *"Same level slip, trip, & stumble"* at 21% was the most common reason for ER visits.

- The highest number of ER visits was the 10 to 14 age group with 3,579 visits and second highest was the 15 to 19 age group with 2,877 ER visits.

Hospitalizations
- The number of hospitalizations was 4,904 with a yearly average of 613 hospitalizations.

- Females accounted for more hospitalizations at 61% than males at 39%.

- The discharge type sent *"home with no support services"* decreased with age from 91.1% for ages 0 to19 years to 16.5% at 85 years plus.

- The discharge type *"home with support services"* increased with age from 1.3% for ages 0 to 19 years to 16.9% at 85 years plus.

- The highest number of fall-related hospitalizations was the 85 years and over age group with 1,029 hospitalizations.

- The age group from 60 to 85 years and over accounted for 70% (n=3,441) of all hospitalizations due to fall-related injuries.

Deaths
- The number of fall-related hospitalizations resulting in death was 234 with a yearly average of 29 deaths

Compared to Ontario, Algoma has a higher rate of ER Visits for fall-related injuries.

- With the exception of 85 years plus in 2005 and 2007, 75 to 84 years in 2008, and 5 to 9 years in 2010, the rates that Algoma residents visited the ER for fall-related injuries were statistically higher than Ontario's rates.

Compared to Ontario, Algoma has lower rate of hospital admissions for fall-related injuries.

- With the exception of 5 to 9 years in 2004, 2006, and 2007 and 10 to 14 years in 2006, the rates that Algoma residents were admitted to hospital for fall-related injuries were statistically lower than Ontario's rates.

Falls in the Early Years

0-6

Falls in the Early Years

Introduction

Falls are the leading cause of unintentional injury resulting in ER visits and hospitalizations in both Ontario and Algoma for children in the early years (Ontario Injury Prevention Resource Centre [OIPRC], 2012). Further, for children under the age of five, 68% of children hospitalized due to falls were from beds or chairs (Safe Kids Canada, 2006). Ironically, normal healthy child development is a key risk factor for falls and subsequent injuries in younger children. It is not surprising to find that from birth to age four, children are particularly vulnerable to injuries in the home.

Algoma Public Health (APH) *Parent Child Services* focuses on families of children 0 to 6 years. These services take place in the home, clinic settings, at classes and on the phone line. Public health nurses and family support workers who work directly with families have many opportunities to provide injury prevention resources and support. Injury prevention is interwoven into our daily interactions with families.

Families also benefit from discussions about child development and the importance of supervising children. It is important to work with parents to prevent childhood injuries because "infant injuries are unique in that someone older is always providing direct care, and many infant injuries occur in retrospect, because a responsible authority has failed to anticipate the presence of an immediate hazard or they have experienced even a short lapse in attention" (Pickett, Streight, Simpson & Brison, 2003, p. e367). APH has a *Parent Child Information Line* that is staffed by a public health nurse; conversations about growth and development and injury prevention topics are common.

The findings in this report can help guide APH and community partners in identifying priorities for parent education and community campaigns that focus on messages that will aim to reduce the number of injuries due to falls of children 0 to 6 years.

Priority Populations

APH with partner agencies provides a range of programs and services that aim to improve the health of residents in Algoma. Some of these programs are population based, that is they serve the general population, while others are geared to priority populations. Priority populations are a key component of the requirements outlined in the 2008 Ontario Public Health Standards (OPHS) to identify and work with local priority populations. Priority populations are identified by surveillance, epidemiological, or other research studies and are those populations that are at risk and for whom public health interventions may be reasonably considered to have a substantial impact at the population level.

In May 2010, the Ontario Ministry of Health Promotion (MHP) published a framework entitled *Prevention of Injury Guidance Document* that provides background information to assist public health in meeting the injury prevention standards (MHP, 2010). This *guidance document*, as it will now be referred to, informs current public health practice and provides evidence to support future considerations and recommendations.

The *guidance document,* the primary resource for APH's work on injury prevention in Ontario, identifies the following as priority populations for the 0 to 6 age group:

- Parents and caregivers of infants
- Young children from birth to two years of age
- Parents and caregivers of boys
- Families in low socioeconomic and low-income neighbourhoods with poor quality housing.

Data Analysis

The data in this section is grouped for the ages 0 to 6 years to correspond to the age group of children served by APH's *Parent Child Services*. Rates and frequency distributions are included. For more explanation on data analysis, see the *Data Details* section in this report, page 8.

Findings for the Early Years, Ages 0 to 6

Figure 2.1: Average Annual Age-specific Rates for Fall-related ER Visits and Fall-related Hospitalizations, 0 to 6 years, Algoma and Ontario, 2003-2010

	ER Visits	Hospitalizations
Algoma	62.9	1.8
Ontario	22.3	5.4
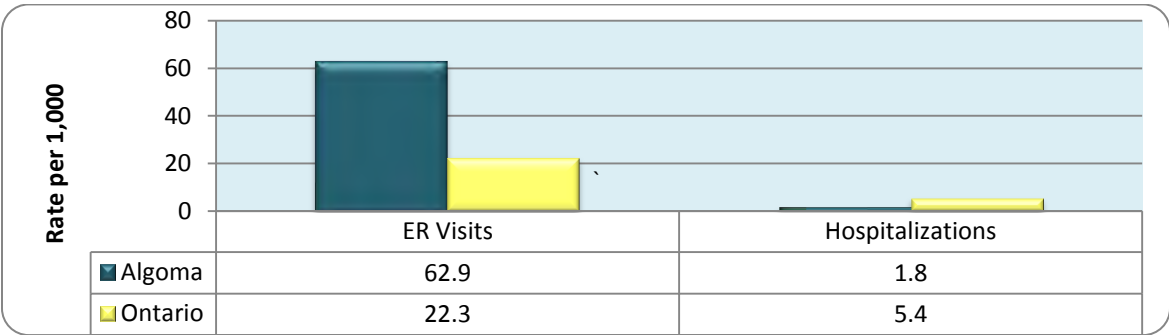
Source: intelliHEALTH Ontario

- From 2003 to 2010, fall-related ER visits in Algoma for the age group 0 to 6 years were higher than Ontario. In Algoma, the average annual rate was 62.9 per 1,000 compared to the provincial rate of 22.3 per 1,000.

- The average annual fall-related hospital admission rate for Algoma was 1.8 per 1,000 compared to the provincial rate of 5.4 per 1,000 (Figure 2.1).

- Residents in Algoma visited the ER more often when their children fell compared to the rest of Ontario. Conversely, Algoma hospitalizations for injuries are less than the province.

Figure 2.2: Fall-related ER Visits Ages 0 to 6 by Year, Algoma, 2003-2010 (N=3,589)

	2003	2004	2005	2006	2007	2008	2009	2010	2003-2010 Mean
Fall-Related ER Visits 0-6	474	474	451	496	419	411	436	428	449
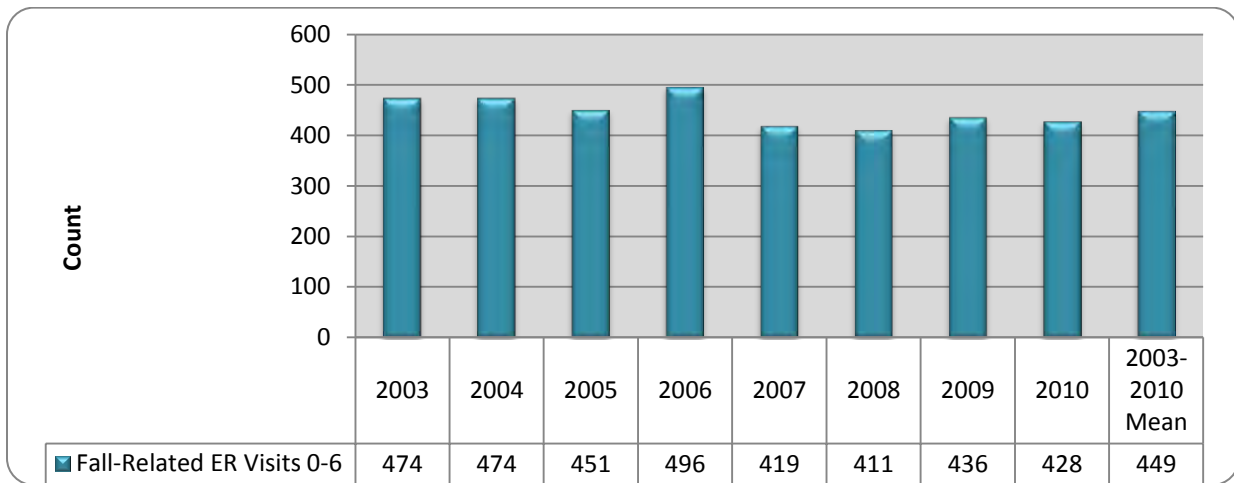
Source: intelliHEALTH Ontario

- The mean number of ER visits for ages 0 to 6 years, 2003-2010, was 449 visits.

- The number of ER visits ranged from a high of 474 visits in 2003 to a low of 411 visits in 2008 (Figure 2.2).

Figure 2.3: Number of Fall-related ER Visits, Ages 0 to 6 by Age, Algoma, 2003-2010 (N=3,589)

	< 1 year	1 year	2 years	3 years	4 years	5 years	6 years
Fall-Related ER Visits	361	732	676	515	462	419	424
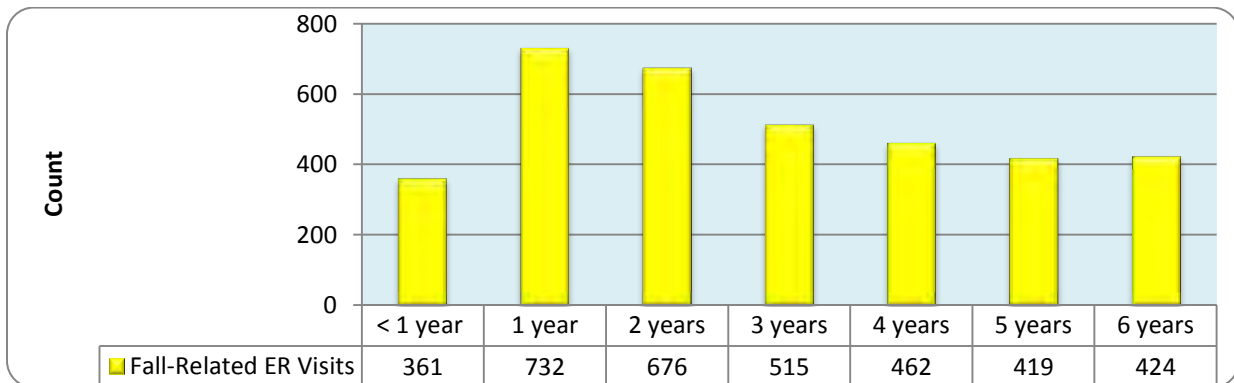
Source: intelliHEALTH Ontario

- The incidence of ER visits for falls peaked during the ages of 1 and 2 years with 732 visits by 1 year olds and 676 visits by 2 year olds (Figure 2.3).

- Developmentally, children are becoming more mobile, beginning to move on their own to explore their environments and parents and caregivers are discovering the importance of supervision.

Figure 2.4: Percentage of Fall-related ER Visits, 0 to 6 years, Age and Sex, Algoma, 2003-2010 (N=3,589)

	0 years	1 year	2 years	3 years	4 years	5 years	6 years	Total 0 to 6 years
Female	47.6%	47.8%	45.7%	43.7%	44.8%	43.2%	42.7%	45.3%
Male	52.4%	52.2%	54.3%	56.3%	55.2%	56.8%	57.3%	54.7%
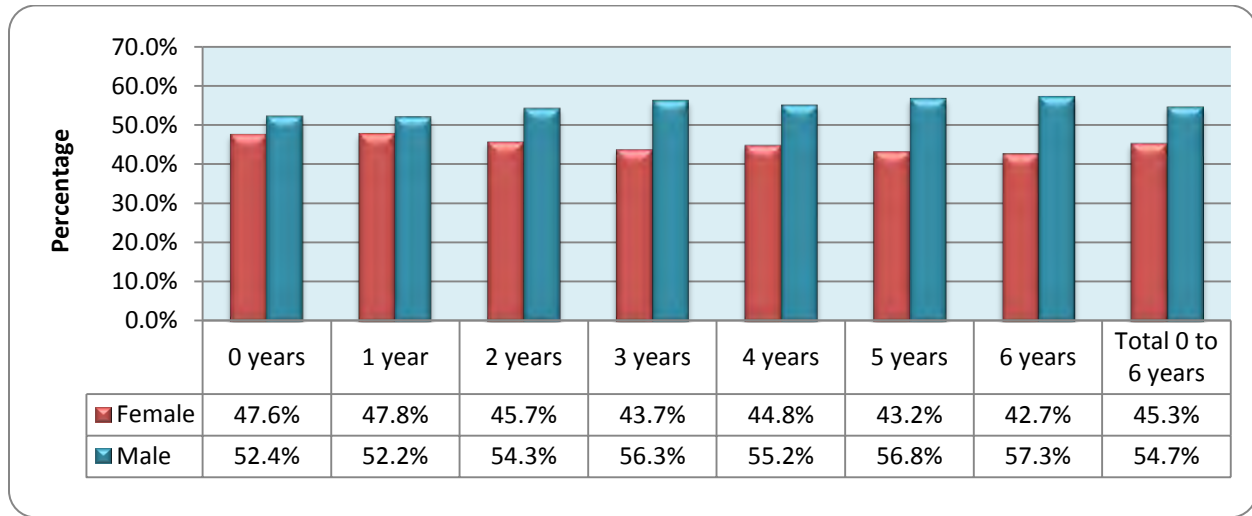
Source: intelliHEALTH Ontario

- Males fall 9% more than females when all ages 0-6 years were compared (Figure 2.4).

- The older the child, the greater the percentage difference between male and female ER visits for falls.

Figure 2.5: Types of Fall-related ER Visits in Algoma for Ages 0 to 6, 2003-2010 (N=3,589)
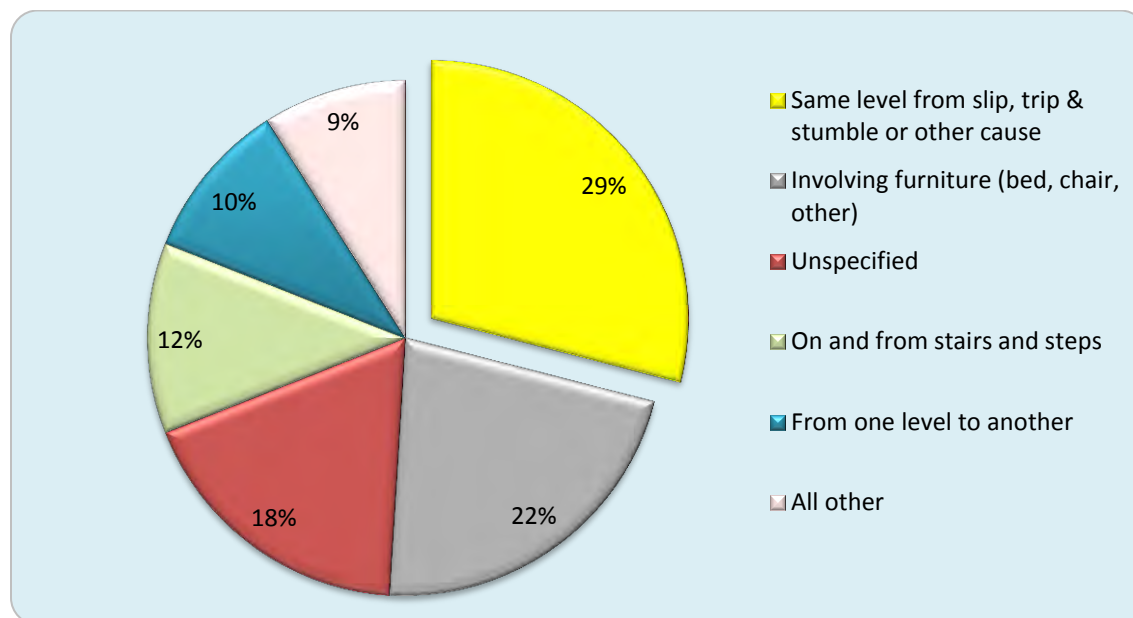
Source: intelliHEALTH Ontario

- Falls occurring on *"same level from slip, trip & stumble or other cause"* (27%) and falls *"involving furniture (bed, chair, other)"* (21%) were the two most common types of fall resulting in ER visits for children 0 to 6 years of age in Algoma from 2003-2010.

- Eighteen percent of the fall-related injuries did not indicate the type or cause of the fall in the ER documentation (Figure 2.5).

Figure 2.6: Percentage of Fall-related ER Visits by Type of Furniture Involved, 0 to 6 years in Algoma, 2003-2010 (N=742)

	Fall Involving Bed	Fall Involving Chair	Fall Involving Other Furniture
Percentage	44%	26%	31%
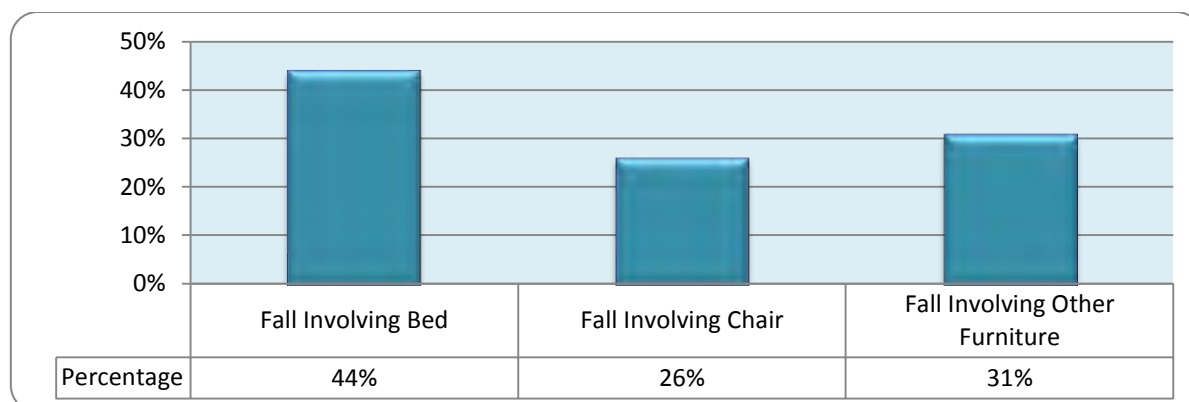
Source: intelliHEALTH Ontario

- Falls involving a bed accounted for 44% of furniture fall-related ER visits in children 0 to 6 years (Figure 2.6).

- There was a 3 times higher incidence of falls from a bed for children 0 to 3 years at 241 falls compared to children 4 to 6 years at 83 falls.

Figure 2.7: Fall-related Hospitalizations with Cause as Furniture by Type of Injury, 0 to 6 years in Algoma, 2003-2010 (N=105)

	<1 year	1 year	2 years	3 years	4 years	5 years	6 years	Total 0 to 6 years
Fracture	0	3	7	8	9	13	18	58
Head Injury	10	10	5	3	2	2	2	34
Other Injury	3	1	0	4	2	1	2	13
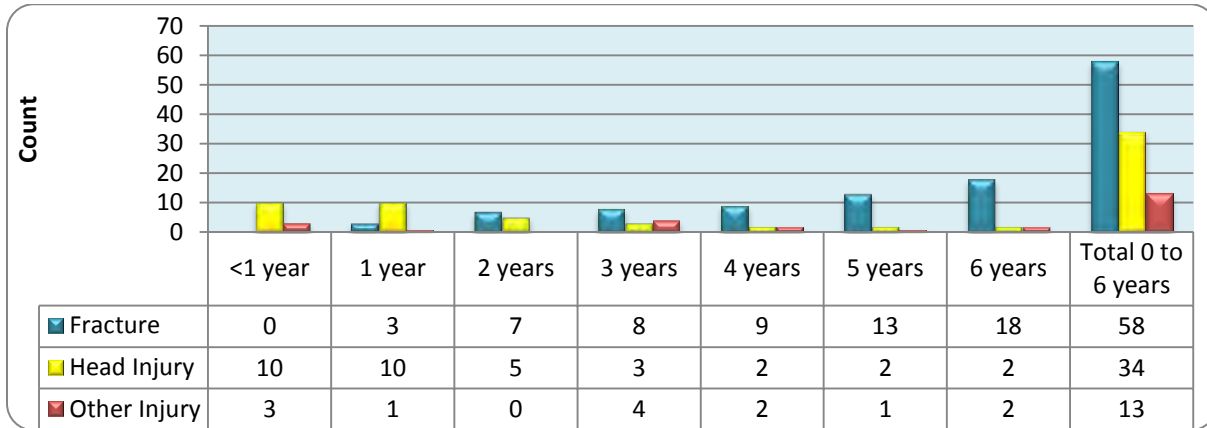
Source: intelliHEALTH Ontario

- The two most common injuries from falls for children ages 0 to 6 years were head injuries and fractures (88%) (Figure 2.7).
- Head injuries are more common in the infant and toddler ages with fractures being more prevalent for children 3 to 6 years of age when children become more mobile and independent.

Protective Factors

Some key protective factors which can play an important role in injury prevention of young children identified in the *Guidance Document* are:

- Parental Supervision
- Wearing the Gear: wrist/knee/elbow pads/helmet
- Playground equipment meeting Canadian Standards Association (CSA) standards and actively supervising play of young children
- Access to home safety devices (i.e. stair gates and window guards)
- Securing furniture (i.e. big screen TV's and bookcases)
-

Promising Practices

Three programs that APH and their community partners provide in an effort to reduce falls and other childhood injuries are:

Creating Safer Homes for Families involved in the *Healthy Babies Healthy Children* Home Visiting Program. APH offers a home safety program within the *Healthy Babies Healthy Children (HBHC)* Home Visiting Program. This visiting program provides regular home visits for families who require extra supports within their parenting environment. An *HBHC* family support worker helps families assess their risks for childhood injuries in the home by completing a room-to-room assessment with the parent and providing education and safety devices as required. Safety gates are provided to prevent falls from stairs. A contractor service is also available for families as needed to install the gate at the top of stairs and insert window stops to prevent falls from windows.

***Million Messages* community campaign.** Ontario is presently developing *a Million Messages* campaign under the guidance of the OIPRC. *Million Messages* was originally developed in Alberta in 1998. This injury prevention program can be implemented within existing health provision structures, to deliver timely and structured injury prevention messages pertinent to children up to six years of age (Saskatchewan Prevention Institute, 2010). Parents can access comprehensive and standardized messages at health care appointments, well baby clinics, *Best Start* hubs, and home visits.

***Let's Grow* program.** In Algoma, the *Let's Grow* package is mailed to all families who have linked with the *HBHC* program. This free subscription is mailed to Algoma families at several key developmental ages and stages from newborn to age five years. Each issue contains injury prevention information. An electronic version is coming soon. A group of child-serving community agencies monitors the content of each issue.

Emerging Trends

From a public health perspective, there are several emerging trends that will impact families with young children.

Changes in health services delivery. The lack of health care providers in Sault Ste Marie during 2003-2010 as well as the convenient, central downtown location of the hospital during these years may have been a factor in higher rate of families accessing health care through hospital ER when compared to the Ontario rate. In 2011, a new hospital in Sault Ste. Marie opened, located in the north end of the city. As well, there has been an increase in the number of walk-in clinics, both physician and nurse practitioner-led, after 2010, and there have been a number of new family physicians. It will be interesting to see how the new hospital as well as the increase in local health care providers will impact fall-related ER visits and hospitalization rates.

Recognition of the importance of falls prevention. There has been positive movement within public health to recognize the burden of injury that falls involving children under 6 years has on the health care system and on healthy child development. The *Million Messages* provincial injury prevention resource will be a welcome addition to assist families.

Safe sleep guidelines. The practice of reinforcing safe sleep best practices, such as the crib being the safest place for infants to sleep, may help to decrease the incidence of injuries to infants caused by falls from beds and furniture. There is a greater emphasis on safe sleep education for new parents for the prevention of Sudden Infant Death Syndrome (SIDS) by Public Health Agency of Canada (PHAC, 2011).

All public health nurses and child protection workers consistently and routinely ensure that all families with newborns are aware of safe sleep guidelines.

Funding cutbacks. The federal and provincial governments are experiencing fiscal challenges due to an underperforming economy resulting in cutbacks in discretionary funding for social assistance recipients who are among the most vulnerable families. Recent provincial cutbacks to Ontario Works discretionary funds, effective July 2012, have reduced the funds available for essential baby equipment such as cribs, car seats and safety devices. Each local District Social Services Administration Board now decides the level of discretionary funding. Other services, like dental treatment, have also been reduced for this priority population.

Another program that was cancelled by the Ministry of Community and Social Services is the *Community Start-Up Benefit* for the Ontario Works and the Ontario Disability Support Program, which provided start-up help for people in poverty or with major housing challenges. This fund was accessible on a one-time basis every 24 months for individuals and families. Assistance included first and last month's rent, furniture purchases, small appliances, repairs, household items, rental and utility arrears and post-incarceration and post-domestic-violence-abuse assistance. There will now be a greater demand on the volunteer sector services like the *Community Assistance Trust*, administered through the United Way (Della-Mattia, 2012). These funding cuts will have deleterious effects of the health of families throughout Algoma.

Recommendations for Falls Prevention in the Early Years
Ages 0 to 6 Years

- Focus programming on priority populations such as parents of infants guided by our local data, for example, falls from beds for children less than one year of age.

- Educate families about the risk of falls in addition to the risk of SIDS when providing safe sleep education for parents of infants. Capitalize on this opportunity to educate families about the risk of falls while providing safe sleep guidelines to prevent SIDS and head injuries that can occur because of falls from beds and furniture.

- Use local data for community wide communication campaigns on falls prevention aimed at parents and caregivers of children 0 to 6 years of age.

- Train staff who work in homes with families about the risk of falls associated with male children ages 3 to 6 (a priority population) so they can focus programming and messaging to parents and caregivers.

- Improve local community capacity to meet community health needs by addressing the determinants of health. Build capacity for using *Health Equity Impact Assessment (HEIA)* tools within the community. The funding cutbacks for baby equipment and safety devices for families on social assistance is an example of a program decision that may have benefited from an equity lens to reduce disparities across population groups.

Falls in the School-Age & Adolescence Years

5-19

Falls in the School-Age and Adolescence Years

Introduction

Risk-taking behaviours in school-age children increase as they approach adolescence, making them more vulnerable to injury. This can be attributed to the development of executive brain function and appreciation of the thrill of risk-taking in this stage of growth and development. There is an increased risk of harm when social and economic determinants interact with adolescents' biological tendencies toward higher risk-taking behaviours, resulting in inappropriate or excessive risk-taking (Johnson & Jones, 2011).

While this risk taking behaviour is a normal developmental task of adolescence, it may result in serious injury consequences like hospitalization (Safe Kids Canada, 2006). Falls involving skates, skis, sport boards, rollerblades or falling from playground equipment are the most common type of injuries experienced by this age group (Ward, 2008). An international study of injury in adolescents has revealed that sports-related injuries are more common in groups with higher socioeconomic status (SES), this can be attributed to increased access to recreational opportunities (Atlantic Collaborative on Injury Prevention [ACIP], (2012).

The findings in this report can help guide Algoma Public Health (APH) and community partners in identifying priorities for parent education and community campaigns that focus on messages that will aim to reduce the number of injuries due to falls in the 5 to 19 years age group.

Priority Populations

APH with partner agencies provides a range of programs and services that aim to improve the health of residents in Algoma. Some of these programs are population based, that is they serve the general population, while others are geared to priority populations. Priority populations are a key component of the requirements outlined in the 2008 Ontario Public Health Standards (OPHS) to identify and work with local priority populations. Priority populations are identified by surveillance, epidemiological, or other

research studies and are those populations that are at risk and for whom public health interventions may be reasonably considered to have a substantial impact at the population level.

In May 2010, the Ontario Ministry of Health Promotion published a framework entitled *Prevention of Injury Guidance Document* that provides background information to assist public health in meeting the injury prevention standards (MHP, 2010). This *guidance document,* as it will now be referred to, informs current public health practice and provides evidence to support future considerations and recommendations.

The *guidance document* identifies parents and caregivers of boys as a priority population for the 5 to 19 age group. The majority of evidence suggests that the highest incidence of injuries in this age group points to males.

Data Analysis

The data in this section is grouped for the ages 5 to 19 years as well as subgroups of 5 to 9 years, 10 to 14 years, and 15 to 19 years. Rates and frequency distributions are included. For more explanation on data analysis, see the *Data Details* section in this report, page 8.

Findings

ER visits for 5 to 19 years.

Figure 3.1: Annual Age-specific Rates for Fall-related ER Visits, 5 to 19 years, Algoma and Ontario, 2003-2010
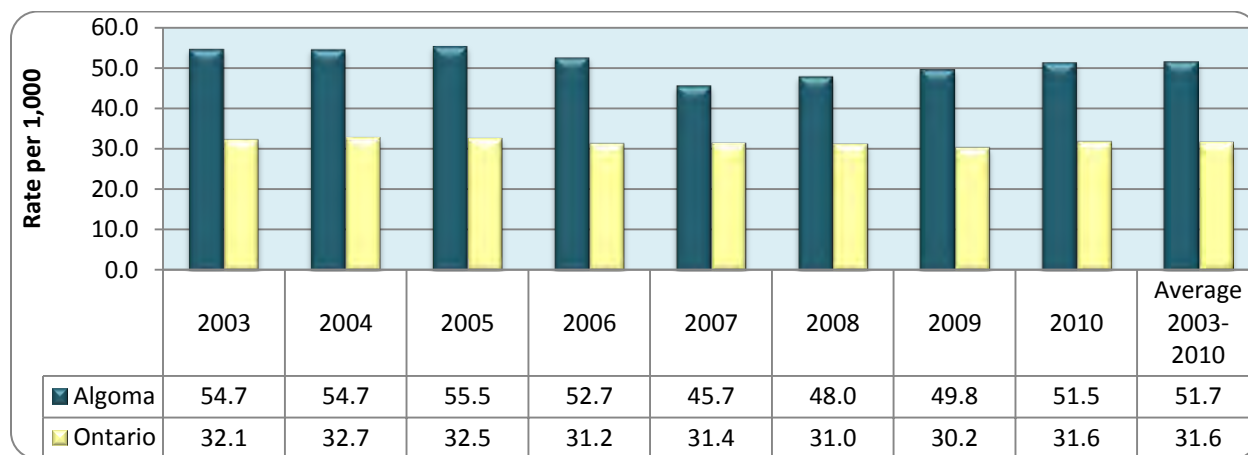
	2003	2004	2005	2006	2007	2008	2009	2010	Average 2003-2010
Algoma	54.7	54.7	55.5	52.7	45.7	48.0	49.8	51.5	51.7
Ontario	32.1	32.7	32.5	31.2	31.4	31.0	30.2	31.6	31.6

Source: intelliHEALTH Ontario

- Algoma's rates were consistently statistically higher than the provincial rate for fall-related ER visits (Figure 3.1).

Figure 3.2: Percentage of Fall-related ER Visits Ages 5 to 19 years, Algoma, 2003-2010 (N=8,640)

25.3%
33.3%
41.4%

5 to 9 years
10 to 14 years
15 to 19 years
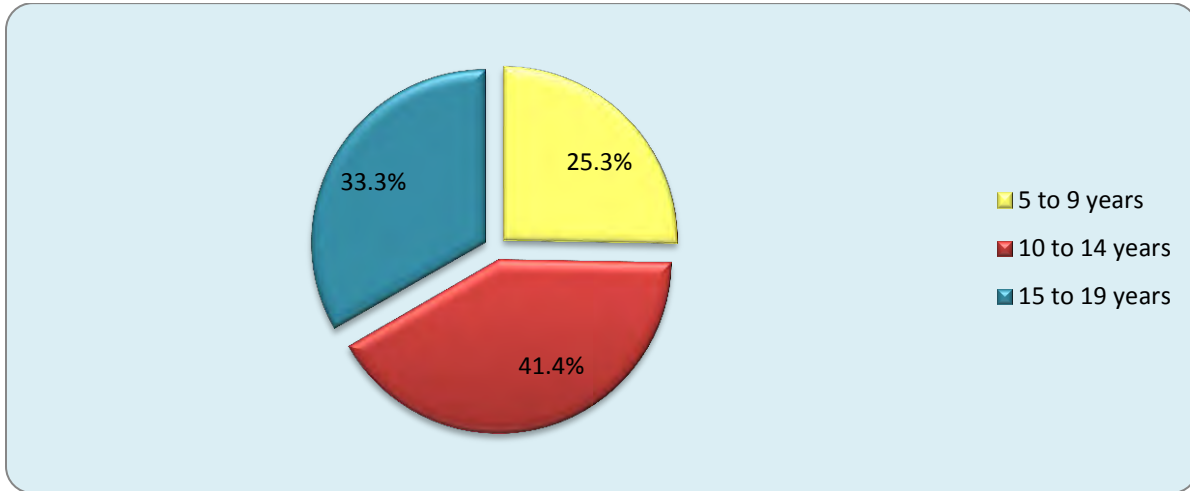
Source: intelliHEALTH Ontario

- The highest fall-related ER visits for ages 5 to19 years was the 10 to 14 year age group (41.4%) compared to the 15 to 19 year age group (33.3%) and the 5 to 9 year age group (25.3%) (Figure 3.2).

Risk Taking is a Developmental Task of Adolescence

10 to 19 year olds take on risk-taking behaviours, and thrill seeking characteristics. Growth and developmental characteristics of adolescents identify teens at an increased risk (e.g., vulnerability, independence, peer pressure, experimentation, impulsivity and curiosity) (Ryb, Dischinger, Kufera, & Read, 2006).

Figure 3.3: Fall-related ER Visits Ages 5 to19 years by Sex, Algoma, 2003-2010 (N=8,640)

	5 to 9 years			10 to 14 years			15 to 19 years		
	Females	Males	Both	Females	Males	Both	Females	Males	Both
Total Falls	1041	1143	2184	1564	2015	3579	1195	1682	2877
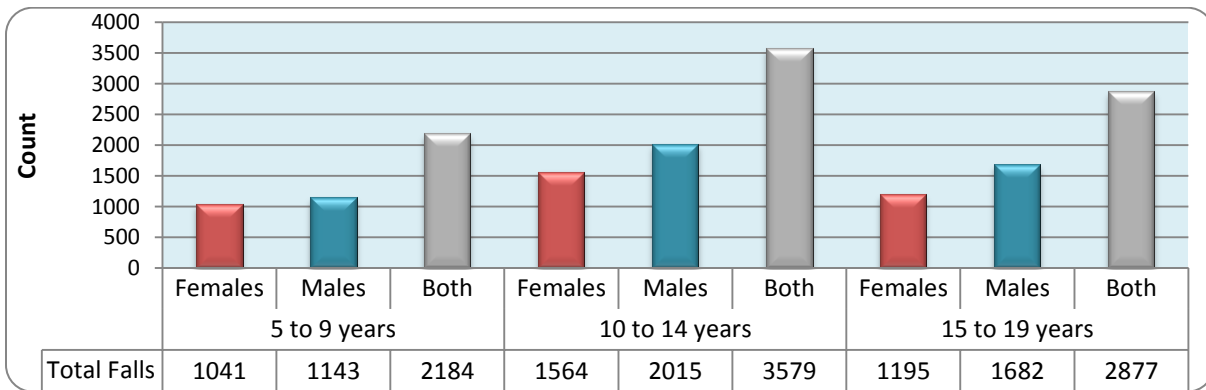
Source: intelliHEALTH Ontario

- In all age groups, males had a higher incidence of fall-related ER visits in Algoma from 2003-2010 compared to females.

- The 10 to 14 year age group had the highest incidence of fall-related ER visits for both males and females in Algoma 2003-2010 (Figure 3.3).

Figure 3.4: Fall-related ER Visits by Occurrence, Ages 5 to 9 years, Algoma, 2003- 2010

	From One Level to Another	Furniture (bed, chair, other)	On and from Stairs and Steps	On Same Level	Playground Equipment	Same Level Slip, Trip & Stumble	On Same Level Ice and Snow	Sports Activity
Female 5 to 9 yrs	79	58	55	137	170	157	42	92
Male 5 to 9 yrs	106	95	47	156	146	161	52	82
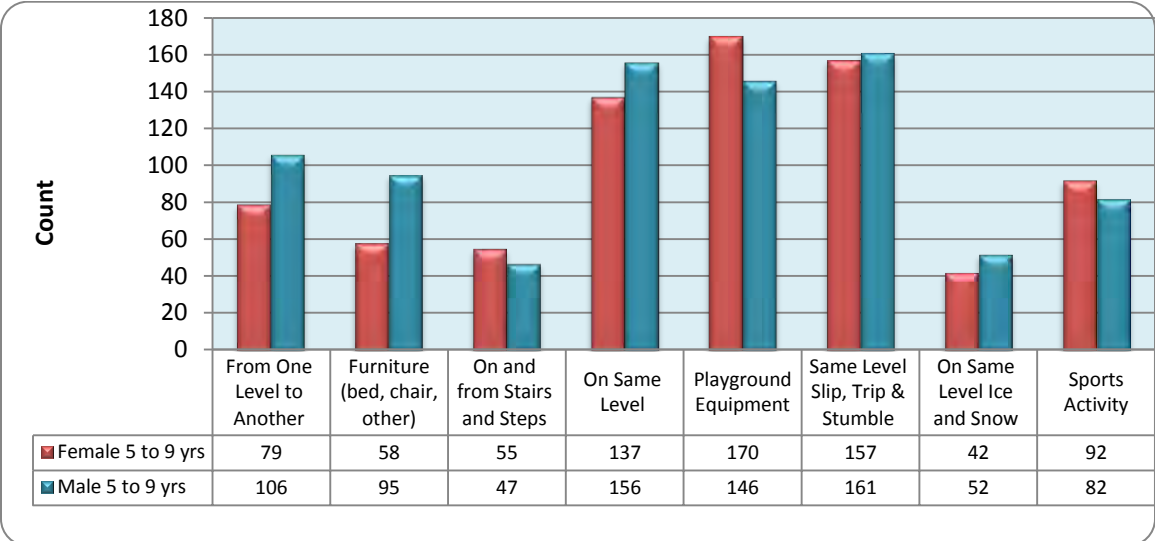
Source: intelliHEALTH Ontario

- For youth in the 5 to 9 year age group, aside from *"unspecified and miscellaneous"*, the most common cause for fall-related ER visits was from *"same level from slip, trip & stumble"* followed closely by *"playground equipment"* (Figure 3.4).

Figure 3.5: Fall-related ER Visits by Occurrence, Ages 10 to 14 years, Algoma, 2003- 2010

	From One Level to Another	Furniture (bed, chair, other)	On and from Stairs and Steps	On Same Level	Playground Equipment	Same Level Slip, Trip & Stumble	On Same Level Ice and Snow	Sports Activity
Female 10 to 14 yrs	84	30	129	231	49	277	104	317
Male 10 to 14 yrs	134	29	80	261	58	317	116	585
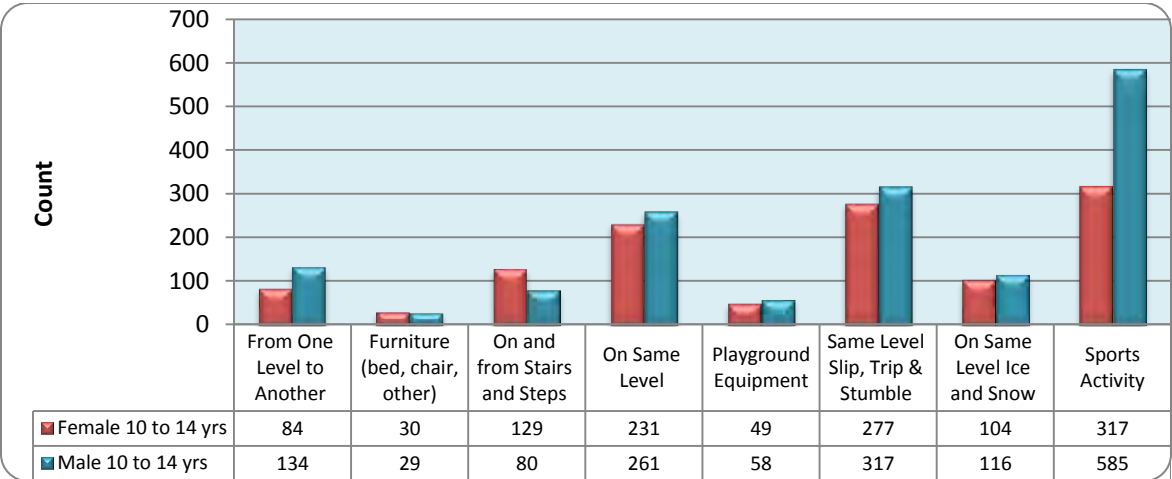
Source:intelliHEALTH Ontario

- For youth in the 10 to 14 year age group, *"sports activity"* was the most common reason for fall-related ER visits.

- Males had a higher incidence of fall-related ER visits from *"sports activity"* at 585 visits compared to females at 317 visits (Figure 3.5).

Figure 3.6: Fall-related ER Visits by Occurrence, Ages 15 to 19 years, Algoma, 2003-2010

	From One Level to Another	Furniture (bed, chair, other)	On and from Stairs and Steps	On Same Level	Playground Equipment	Same Level Slip, Trip & Stumble	On Same Level Ice and Snow	Sports Activity
Female 15 to 19 yrs	77	29	216	175	6	199	75	176
Male 16 to 19 yrs	118	13	151	174	16	240	86	535
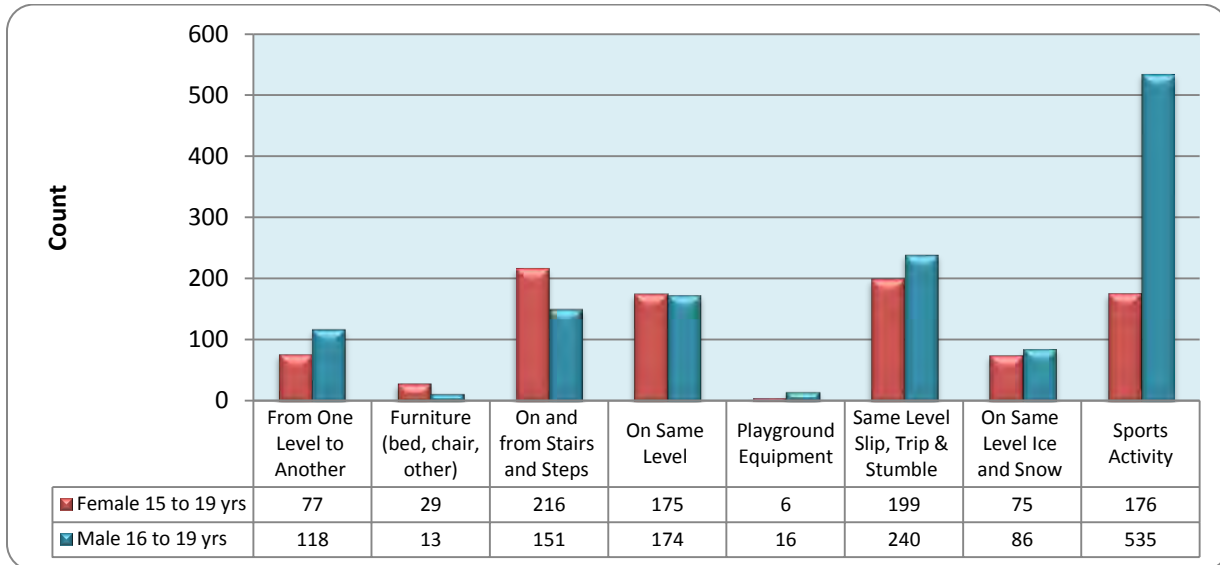
Source: intelliHEALTH Ontario

- For 15 to 19 year olds, "s*ports activity"* had the highest incidence with 711 fall-related ER visits, *"unspecified and miscellaneous"* had the second highest at 591 visits and *"same level from slip, trip & stumble"* was third with 439 visits (Figure 3.6).

Figure 3.7: Fall-related ER Visits Involving Playground Equipment 5 to 19 years by Age Group and Sex, Algoma, 2003-2010 (N=445)

	5 to 9 years	10 to 14 years	15 to 19 years	5 to 19 years Total
Female	170	49	6	225
Male	146	58	16	220
Total	316	107	22	445
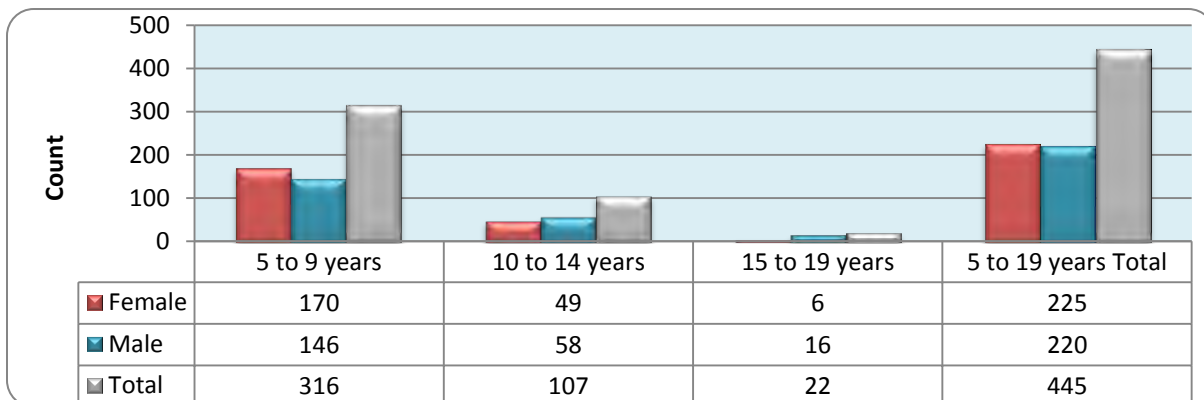
Source: intelliHEALTH Ontario

- Children in the 5 to 9 year age group had considerably more fall-related ER visits (n=316) than the other age groups (Figure 3.7).

Figure 3.8: Fall-related ER Visits Involving Snowboards 5 to 19 years by Age Group and Sex, Algoma 2003-2010 (N=635)

	5 to 9 years	10 to 14 years	15 to 19 years	5 to 19 years Total
Female	8	105	82	195
Male	14	200	226	440
Total	22	305	308	635

- There was a higher incidence of fall-related ER visits involving snowboards for the 10 to 14 (n=305) and 15 to19 (n=308) age groups compared to the 5 to 9 age group (n=22).
- There was a higher incidence of fall-related ER visits involving snowboards for males (n= 440) than females (n=195) for the 5 to19 years age group (Figure 3.8).

Figure 3.9: Fall-related ER Visits Involving Skateboards 5 to 19 years by Age Group and Sex, Algoma, 2003-2010 (N=416)

	5 to 9 years	10 to 14 years	15 to 19 years	5 to 19 years Total
Female	4	17	19	40
Male	17	170	189	376
Total	21	187	208	416
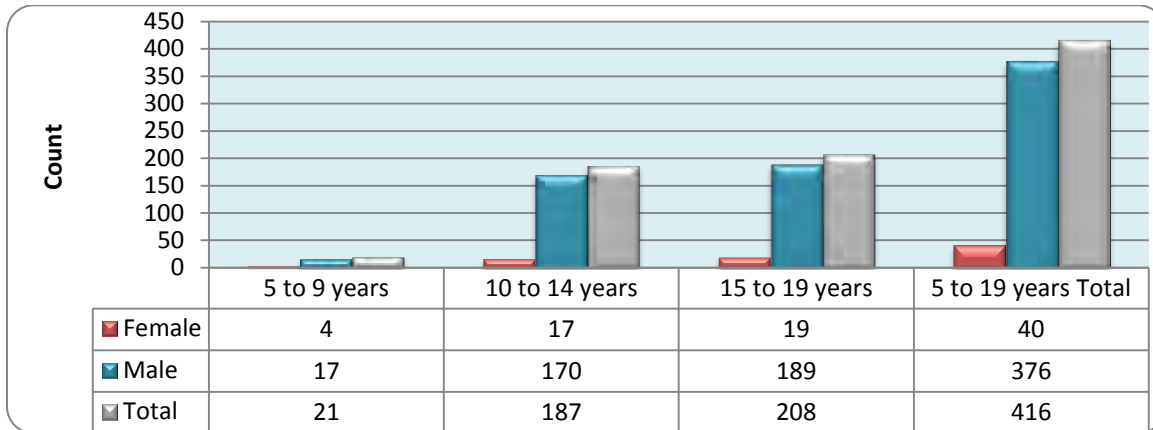
Source: intelliHEALTH Ontario

- There was a higher incidence of fall-related ER visits involving skateboards for males in the 10 to14 (n=170) and 15 to19 (n=189) age groups as compared to the 5 to 9 age group (n=17) (Figure 3.9).

- In this 5 to 19 years age group, males visited the ER for skateboard related injuries almost 10 times more than females.

Figure 3.10 Fall-related ER Visits Involving Ice Skates, Ages 5 to 19 years by Age Group and Sex, Algoma, 2003-2010 (N=335)

	5 to 9 years	10 to 14 years	15 to 19 years	5 to 19 years Total
Female	47	88	38	173
Male	32	85	45	162
Total	79	173	83	335
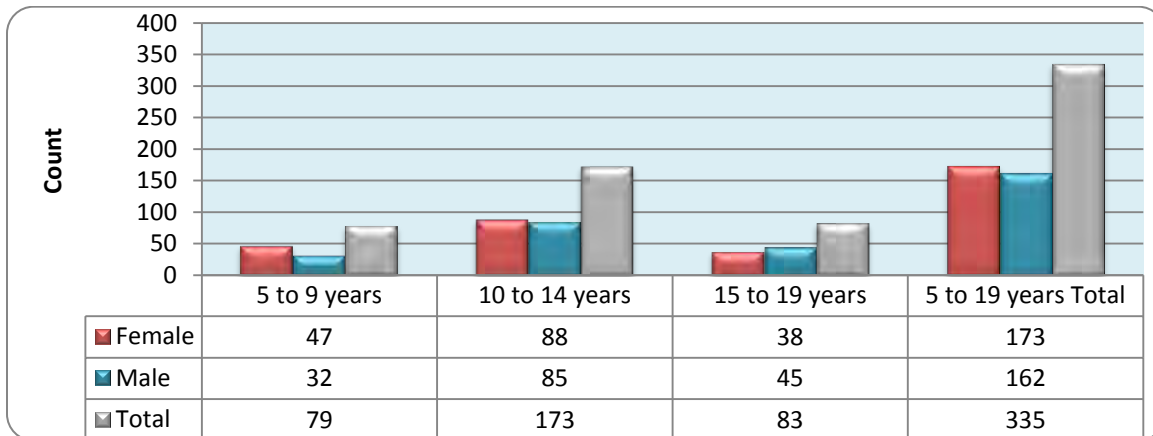
Source: intelliHEALTH Ontario

- The incidence of fall-related ER visits involving ice skates was highest for the 10 to 14 age group (n=173).

- There was a considerable difference in the incidence of fall-related ER visits involving ice skates for both males and females in the 15 to 19 years (n= 83) and 5 to 9 years (n= 79) age groups compared to the 10 to 14 year age group (n=183) (Figure 3.10).

Figure 3.11: Fall-related ER Visits Involving Skis, Ages 5 to 19 years by Age Group and Sex, Algoma, 2003-2010 (N=282)

	5 to 9 years	10 to 14 years	15 to 19 years	5 to 19 years Total
Female	16	77	19	112
Male	12	99	59	170
Total	28	176	78	282
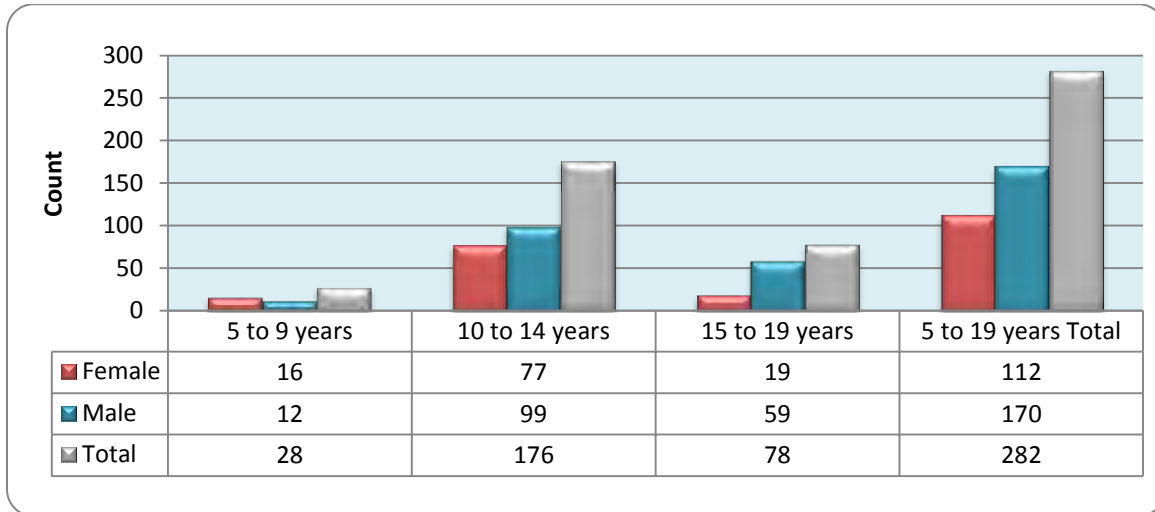
Source: intelliHEALTH Ontario

- Fall-related ER visits involving skis was highest among the 10 to14 year old age group (n=176).
- In the 15 to 19 year age group, males accounted for three times more fall-related ER visits involving skis than females (Figure 3.11).
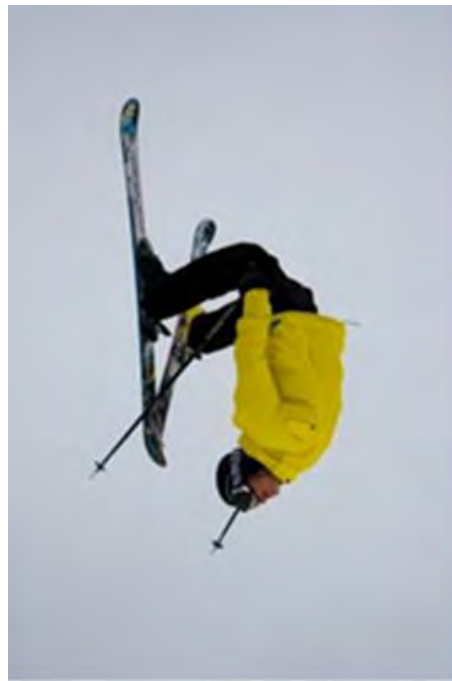
Figure 3.12: Fall-related ER Visits for Recreational Related Activities, Ages 5 to 19 years by Sex, Algoma, 2003-2010 (N=2,113)

	Skateboards	Snowboards	Playground Equipment	Ice Skates	Skis	All
Female	40	195	225	173	112	745
Male	376	440	220	162	170	1,368
Total	416	635	445	335	282	2,113
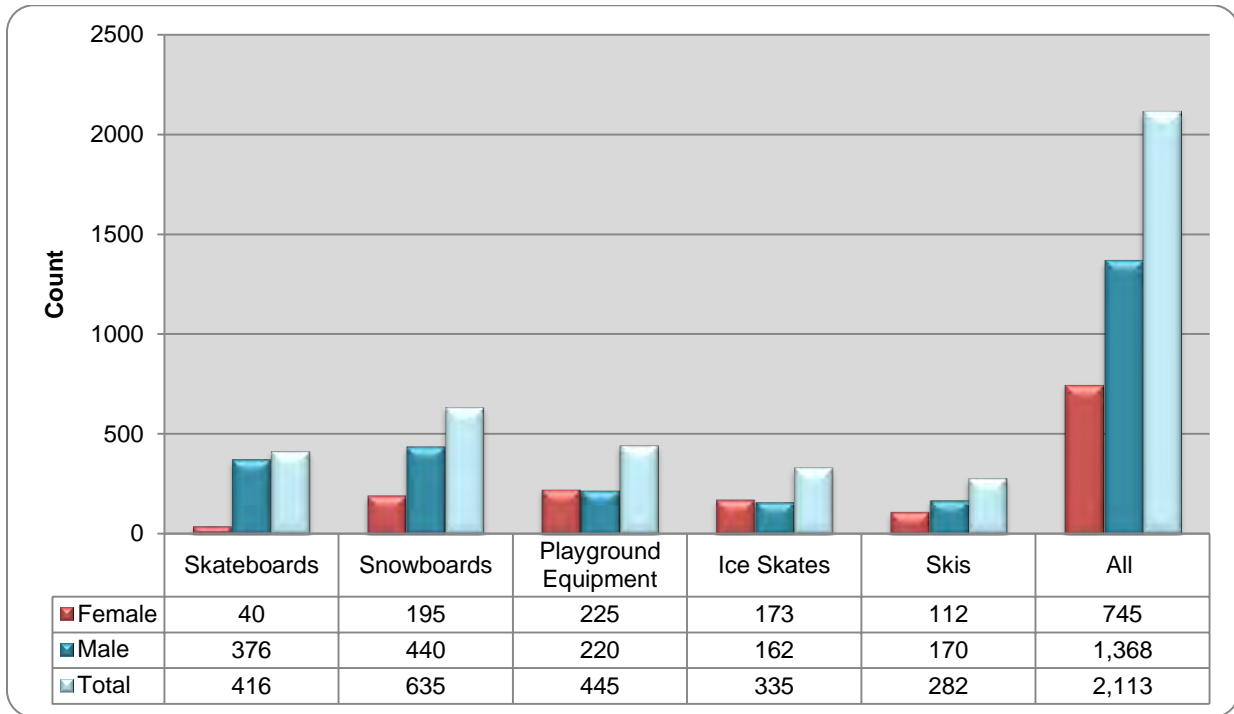
Source: intelliHEALTH Ontario

- The highest incidence of fall-related ER visits involved snowboards (n=635).

- The lowest incidence of fall-related ER visits involved skis (n=282) (Figure 3.12)

Males and Risk Taking Behaviour

Males have been found to be more likely to engage in risk-taking behaviour compared to females. Males are also less likely to believe that they will get hurt when taking risks and more likely to see injury as a product of bad luck rather than a result of their behaviours (MHP, 2010).

Hospitalizations for 5 to 19 year olds.

Figure 3.13: Fall-related Hospitalizations, 5 to 19 years by Age Group, Algoma, 2003-2010 (N=304)
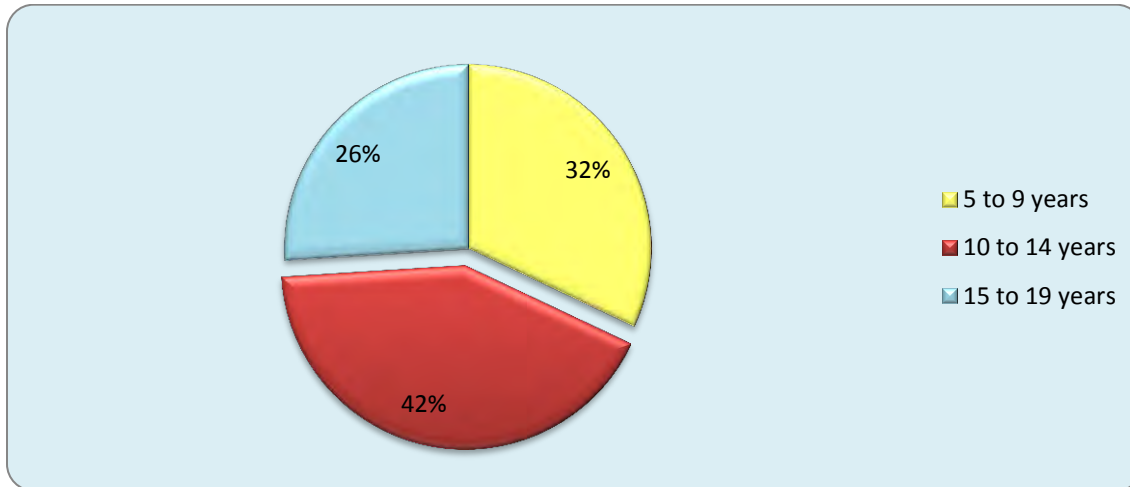
Source: intelliHEALTH Ontario

- The 10 to 14 age group represent the highest percentage of fall-related hospitalizations at 42% (Figure 3.13).

Figure 3.14: Fall-related Hospitalizations for 5 to 19 years by Injury Type and Age Group, Algoma, 2003-2010 (N=304)

	Fracture	Head Injury	Internal Injury	Laceration	Other	Sprain
5 to 9 years	81%	7%	5%	0%	6%	0%
10 to 14 years	76%	12%	2%	2%	7%	2%
15 to 19 years	76%	8%	3%	1%	10%	3%
Total 5 to 19 years	78%	10%	3%	1%	8%	1%
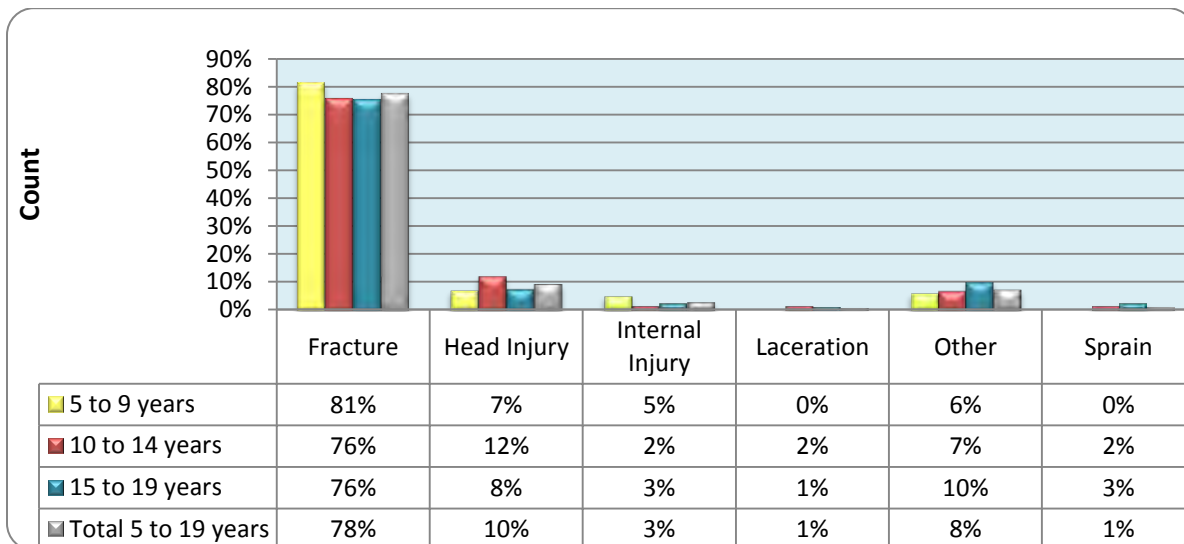
Source: intelliHEALTH Ontario

- Fractures accounted for 78% of all fall-related hospitalizations for the 5 to 19 age group (Figure 3.14).

Protective Factors

Some key protective factors which may play an important role in injury prevention of school age children identified in the *Guidance Document* include:
- Wearing the gear: wrist/knee/elbow pads/helmet
- Awareness of child/youth developmental stages
- Educating parents/caregivers/coaches
- Working with community partners for safer recreational environments
- Provide skill building opportunities for the 5 to19 year olds

Promising Practices

Services and programs that APH and their community partners provide in an effort to reduce falls and other childhood injuries include:

Kidz Summer Festival. This event is hosted annually by the Safe Communities Partnership Sault Ste Marie in collaboration with other injury prevention partners. APH provides information on wearing properly fitted bicycle helmets.

RiskWatch. An injury prevention program designed for children from junior kindergarten to grade 8; it addresses the top eight risks for injuries, including falls.

TD Think First for Kids. A national injury prevention elementary school program that informs youth of the risks of brain and spinal cord injuries and how to develop life-long injury prevention strategies. Some topics include brain and spinal cord knowledge, vehicular and pedestrian safety, bicycle safety, playground, recreational, sport, and water safety, creative problem solving and safety around weapons, avoiding choking, suffocation, and strangulation hazards.

KidSafe Algoma. The Sault Ste. Marie local chapter of SAFEKIDS CANADA (national charitable organization founded in 1992), KidSafe Algoma collaborates with many community partners to reduce injuries in children under the age of 15 years.

Emerging Trends

Bicycle helmet legislation. Several provinces across Canada have amended the bicycle helmet legislation to include bicycle helmets mandatory for all ages. Helmet legislation in Ontario requires that all cyclists under the age of 18 wear a helmet.

Safer environments for cyclists and pedestrians. Communities are striving to enhance the built environment through the improvement of infrastructure that encourages safe and healthy active living. Examples of these in Algoma are the John Rowswell HUB Trail in Sault Ste. Marie, and the Elliot Lake Trail.

Concussion prevention and management. A bill to amend the Education Act to establish policies and guidelines about head injuries and concussions in pupils passed first reading on March 6, 2012. When the Ontario government prorogued on October 15, 2012, this bill will have to be reintroduced by the new government.

Recommendations for Falls Prevention in 5 to 19 Years
The School Age and Adolescence Years

- Focus programming on priority populations such as parents, caregivers and coaches of school age children and youth guided by our local data, for example falls related to sports activities.

- Educate families about the risk of falls in relation to the developmental stages of children and youth.

- Use local data for community wide communication campaigns on falls prevention aimed at parents, caregivers, and school age children and youth.

- Through community partnerships increase awareness about the importance of wearing protective gear, including concussion prevention and management.

- Raise awareness about social determinants of health with community partners in order to plan effective falls and injury prevention programs.

Falls in the Older Adult

55+

Falls in the Older Adult

Introduction

Falls are the most common cause of major injury hospitalization for seniors and the leading cause of preventable injury that results in avoidable emergency department visits. It is estimated that one in three seniors will fall each year (Public Health Agency of Canada [PHAC], 2010).

The impact of a fall for an older adult has the potential for devastating consequences. It often results in serious injuries, such as fractures that require hospitalization, long-term care admission, rehabilitation or death. In addition to personal costs of pain, suffering and loss of independence, falls among seniors is a heavy burden on the health care system. Unintentional injuries due to falls are the costliest category of injury within the Ontario health care system (Ontario Injury Prevention Resource Centre [OIPRC], 2008).

Older adults injured because of a fall often face an irreversible decline in function, which can lead to institutionalization and death (PHAC, 2010). Many seniors when they fall, even if they are not injured, develop a fear of falling. A cyclical pattern occurs as the senior then tends to limit participation in physical and social activities. They subsequently become less physically fit, become socially isolated and depressed, which, in turn, increases actual risk of falling (Delbaere, Close, Brodaty, Sachdev, & Lord, 2010). Indirect costs affect the individual and the family in terms of loss of independence, pain and suffering, disability and reduced quality of life (Scott, Wagar, Sum, Metcalfe & Wagar, 2010).

Priority Populations

APH with partner agencies provides a range of programs and services that aim to improve the health of residents in Algoma. Some of these programs are population based, that is they serve the general population, while others are geared to priority populations. Priority populations are a key component of the requirements outlined in the 2008 Ontario Public Health Standards (OPHS) to identify and work with local priority populations. Priority populations are identified by surveillance, epidemiological, or other research studies and are those populations that are at risk and for whom public health interventions may be reasonably considered to have a substantial impact at the population level.

In May 2010, the Ontario Ministry of Health Promotion (MHP) published a framework entitled *Prevention of Injury Guidance Document* that provides background information to assist public health in meeting the injury prevention standards (MHP, 2010). This *guidance document,* as it will now be referred to, informs current public health practice and provides evidence to support future considerations and recommendations

The *guidance document* identifies the following as priority populations for the older adult:

- 50 to 65-year-olds and over 65 years for primary prevention
- Women over 65 years and men over 75 years
- A distinction needs to be made between seniors at low risk, medium risk and high risk for falls

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Social Determinants of Health Plays a Part

Seniors with lower socioeconomic status are at a greater risk for falls than other seniors. Insufficient income, lack of education and limited social connectedness leave these older adults in a vulnerable position where they are unable to afford adequate nutrition, access to health care services, and safe, reliable housing (Atlantic Collaborative on Injury Prevention [ACIP], 2012).

The rate of falls is 1.2 times higher for older adults 65 and older, living in less affluent neighbourhoods than their counterparts in the most affluent areas (Canadian Institute for Health Information [CIHI], 2010).

Data Analysis

The data in this section is grouped for the ages 55 years and over with subgroups of 55 to 64 years, 65 to 74 years, 75 to 84 years, 85 years and over. Rates and frequency distributions are included. For more explanation on data analysis, see the *Data Details* section in this report on page 8.

Findings

ER visits ages 55 years and older

Figure 4.1: Fall-related ER Visit Rates, Ages 55+, Algoma and Ontario, 2003-2010
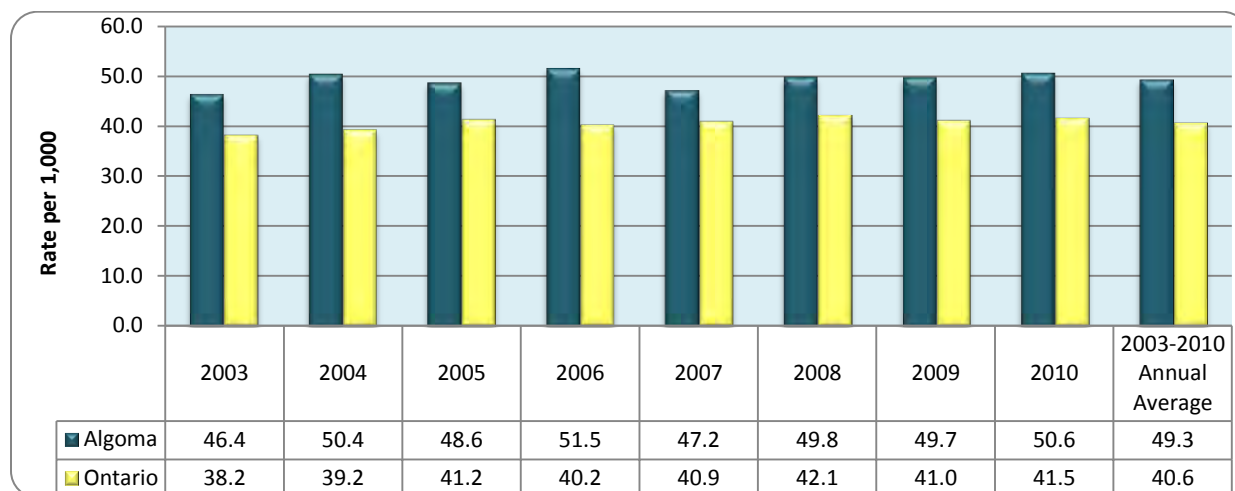
	2003	2004	2005	2006	2007	2008	2009	2010	2003-2010 Annual Average
Algoma	46.4	50.4	48.6	51.5	47.2	49.8	49.7	50.6	49.3
Ontario	38.2	39.2	41.2	40.2	40.9	42.1	41.0	41.5	40.6

Source: intelliHEALTH Ontario

- Algoma's rates were consistently statistically higher than the provincial rate for fall-related ER visits (Figure 4.1).

Figure 4.2: Fall-related ER Visits Count, Ages 55+ by Sex, Algoma, 2003-2010 (N=15,424)

	55 to 64 years	65 to 74 years	75 to 84 years	85+ years	Total 55 to 85+ years
Female	2,561	2,383	2,819	1,888	9,651
Male	1,776	1,630	1,635	732	5,773
Total	4,337	4,013	4,454	2,620	15,424
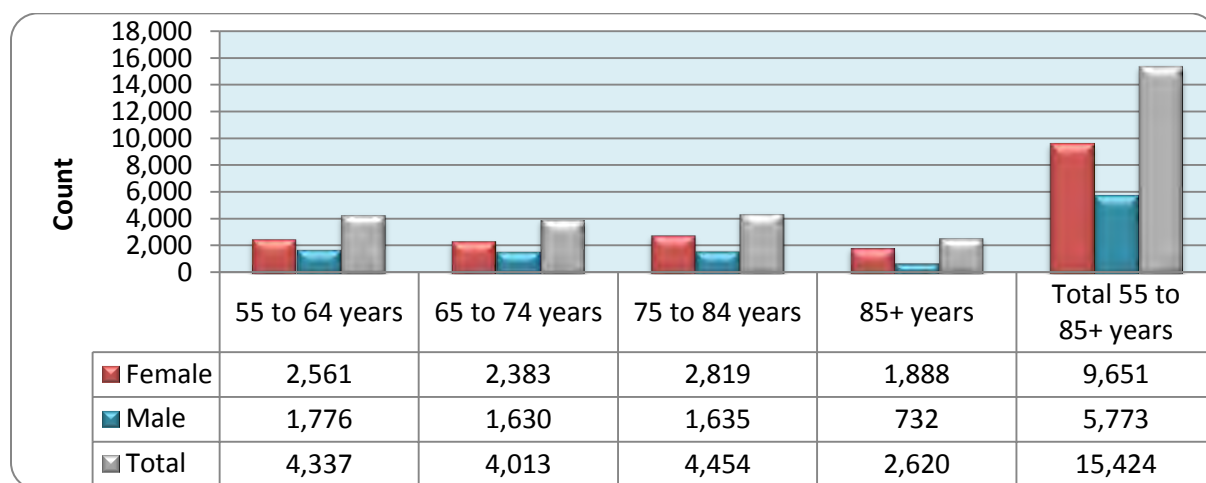
Source: intelliHEALTH Ontario

- For men, the highest incidence for fall-related ER visits occurred in the 55 to 64 age range (n=1,776).

- For women, the highest incidence for fall-related ER visits occurred in the 75 to 84 year range(n=2,819)
- Overall, fall-related ER visits for women at 9,651 accounted for 63% of fall-related ER visits while men at 5,773 accounted for 37% (Figure 4.2).

Figure 4.3: Fall-related ER Visits Count, Ages 55+by Location of Fall and Sex, Algoma, 2003-2010

	Same Level from Slip, Trip & Stumble	Same Level	On and from Stairs and Steps	Same Level Ice and Snow	Bed, Chair, Other Furniture	Ladder	From One Level to Another	Wheelchair or Adult Walker	Other	Ice Skates, Skis, Snowboard
Females	2,655	1,481	1,172	625	551	102	162	195	37	69
Males	1,291	803	677	557	287	328	244	93	88	48
Total	3,946	2,284	1,849	1,182	838	430	406	288	125	117
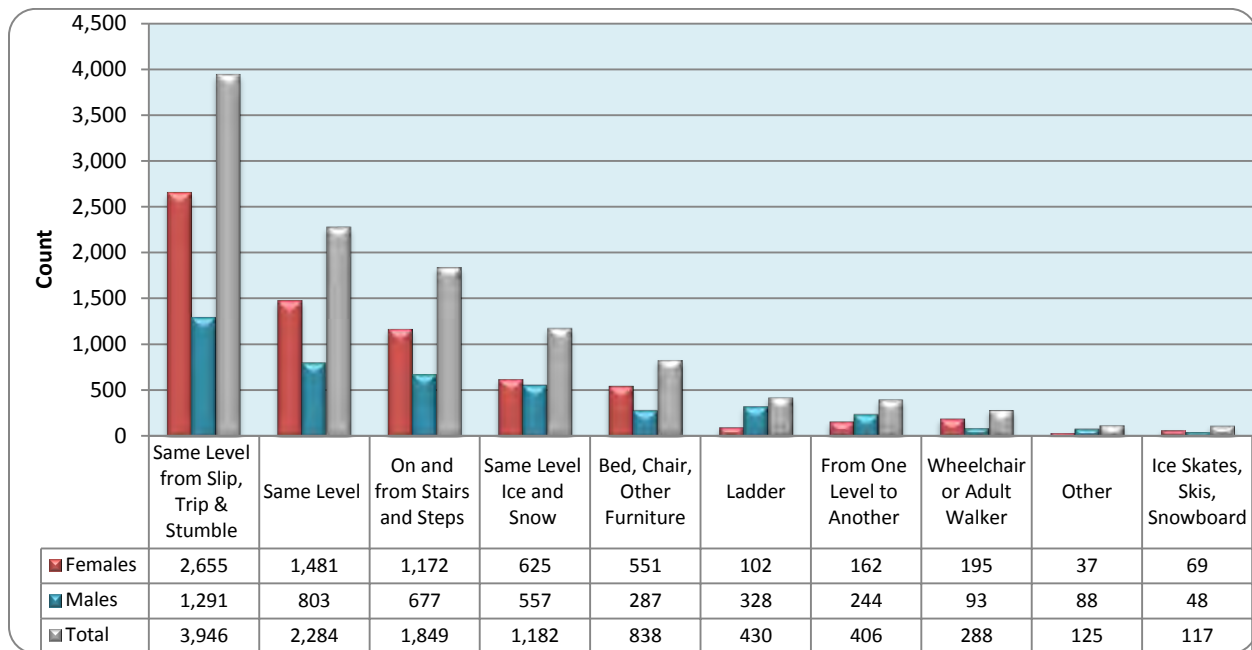
Source: intelliHEALTH Ontario

- For ages 55 to 85+, falls on the *"same level due to slip, trip & stumble"* were the most common type of fall leading to ER visits at 2,655 for females and 1,291 for males.

- Falls on *"stairs and steps"* was the third reason for ER visits in Algoma by both men and women.

- Same level ice and snow was the fourth reason for ER visits in Algoma by both men and women (Figure 4.3).

Figure 4.4: Top Reasons for Fall-related ER Visits Count, Ages 55 to 64 by Location of Fall and Sex, Algoma, 2003-2010

	Same Level from Slip, Trip, Stumble	Stairs and Steps	Same Level Ice and Snow	Same Level	Ladder	From One Level to Another
Females 55 to 64 years	698	431	287	297	49	70
Males 55 to 64 years	357	220	213	200	155	134
Total 55 to 64 years	1,055	651	500	497	204	204
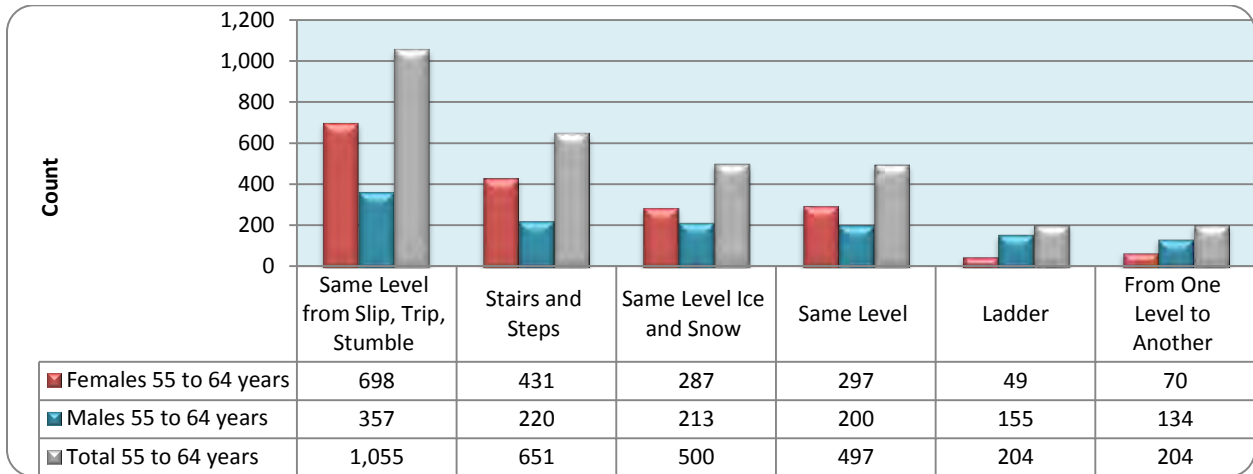
- Almost twice as many women (n=698) as men (n=357) in ages 55 to 64 fell due to a *"same level slip, trip & stumble"* - the most common reason for a fall-related ER visit.

- Three times as many men (n=155) compared to women (n= 49) visited the ER because of falling from a ladder.

- Overall, falls *"on and from stairs and steps"* was the second most common reason for attending the ER for both men and women ages 55 to 64 (Figure 4.4).

Figure 4.5: Top Reasons for Fall-related ER Visits Count, Ages 65 to 74 by Location of Fall and Sex, Algoma, 2003-2010

	Same Level from Slip, Trip, Stumble	Same Level	Stairs and Steps	Same Level Ice and Snow	Bed, Chair, Other Furniture	Ladder
Females 65 to 74 years	667	375	345	178	120	34
Males 65 to 74 years	374	230	202	192	59	103
Total 65 to 74 years	1,041	605	547	370	179	137
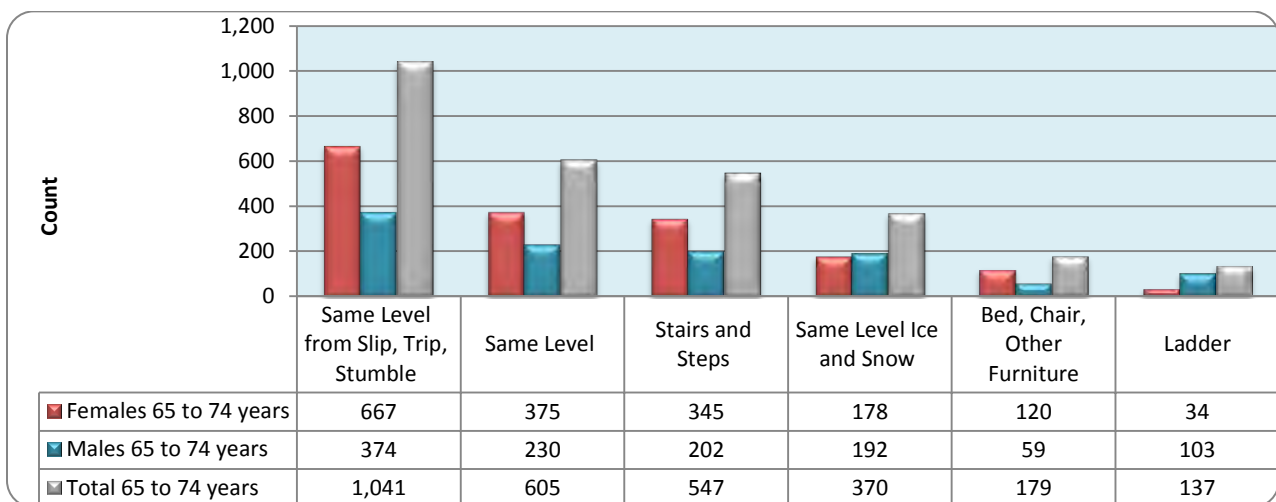
- More women (n=667) than men (n=374) in ages 65 to 74 fell due to a *"same level from slip, trip & stumble"* – the most common reason for a fall-related ER visit.

- Almost three times more men than women ages 65 to 74 fell from a ladder (Figure 4.5).

Figure 4.6: Top Reasons for Fall-related ER Visits Count, Ages 75 to 84 by Location of Fall and Sex, Algoma, 2003-2010

	Same Level from Slip, Trip, Stumble	Same Level	Stairs and Steps	Bed, Chair, Other Furniture	Same Level Ice and Snow	Wheelchair or Adult Walker
Females 75 to 84 years	813	448	297	169	136	70
Males 75 to 84 years	399	249	197	100	127	39
Total 75 to 84 years	1,212	697	494	269	263	109
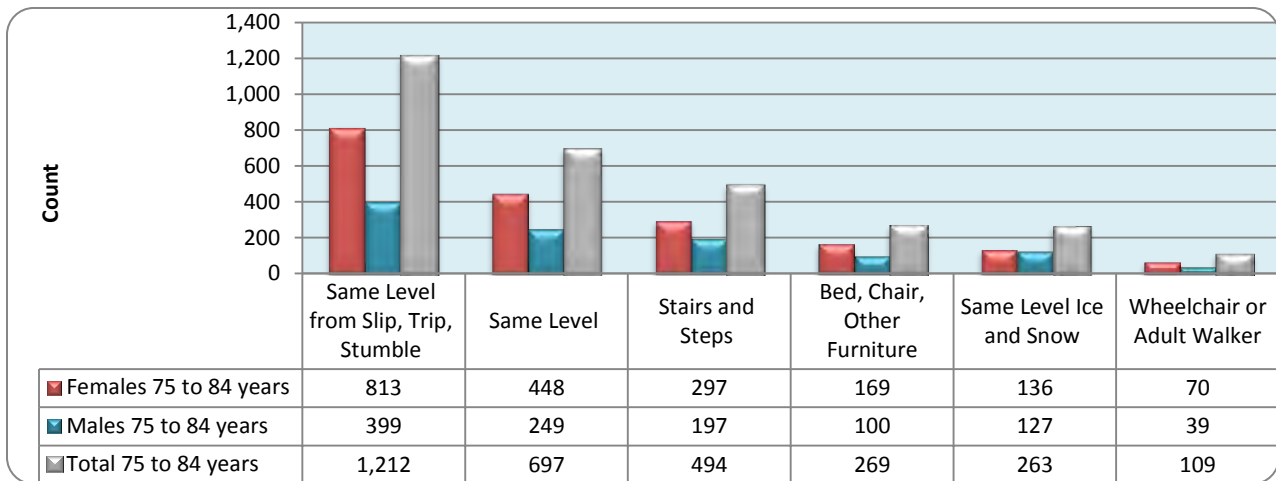
Source: intelliHEALTH Ontario

- Twice as many women (n=813) as men (n=399) in ages 75 to 84 fell due to a *"same level from slip, trip & stumble"* - the most common reason for a fall-related ER visit.

- *"Wheelchair or adult walker"* emerged as a top reason for fall-related ER visits among the 75 to 84 years age group (Figure 4.6).

Figure 4.7: Top Reasons for Fall-related ER Visits Count, Ages 85+ by Location of Fall and Sex, Algoma, 2003-2010

	Same Level from Slip, Trip, Tumble	Same Level	Bed, Chair, Other Furniture	Stairs and Steps	Wheelchair or Adult Walker	Same Level Ice and Snow
Females 85+ years	477	361	174	99	85	24
Males 85+ years	161	124	81	58	28	25
Total 85+ years	638	485	255	157	113	49
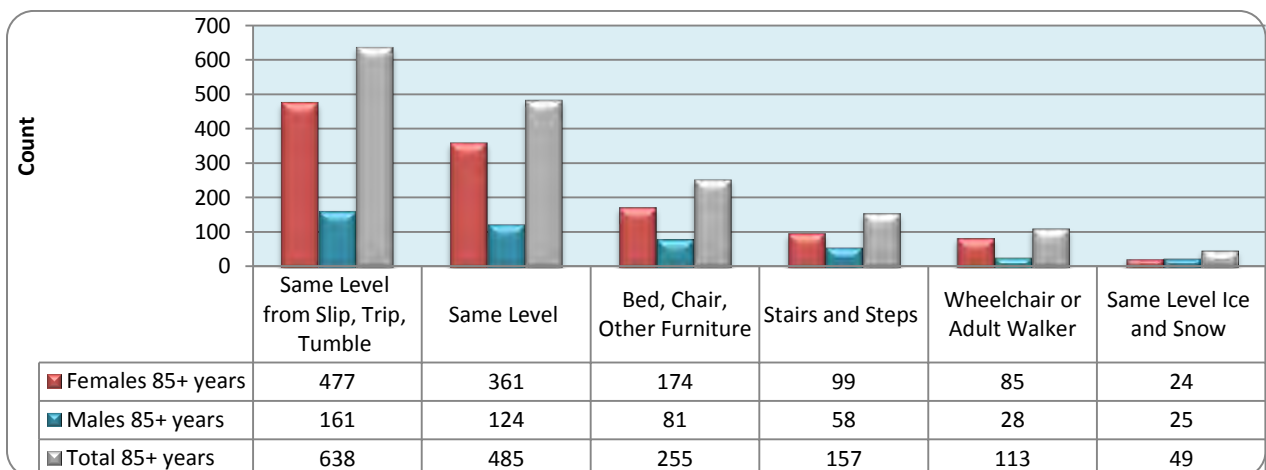
Source: intelliHEALTH Ontario

- In the 85+ age group, almost three times as many females (n=477) as males (n=161) visited the ER department for a *"same level from slip, trip & stumble"*.

- *"Bed, chair, other furniture"* emerged as a top reason for fall-related ER visits among the 85+ age group.

- *"Wheelchair or adult walker"* remained one of the top reasons for fall-related ER visits among the 85+ age group (Figure 4.7).

Hospitalizations 55 years and Older

Figure 4.8: Fall-related Hospitalizations, Ages 55+ by Age Group and Sex, Algoma, 2003-2010 (N=3,702)

	55 to 65 years	65 to 74 years	75 to 84 years	85+ years	Total 55 to 85+ years
Female	321	477	882	783	2,463
Male	265	305	423	246	1,239
Total	586	782	1,305	1,029	3,702
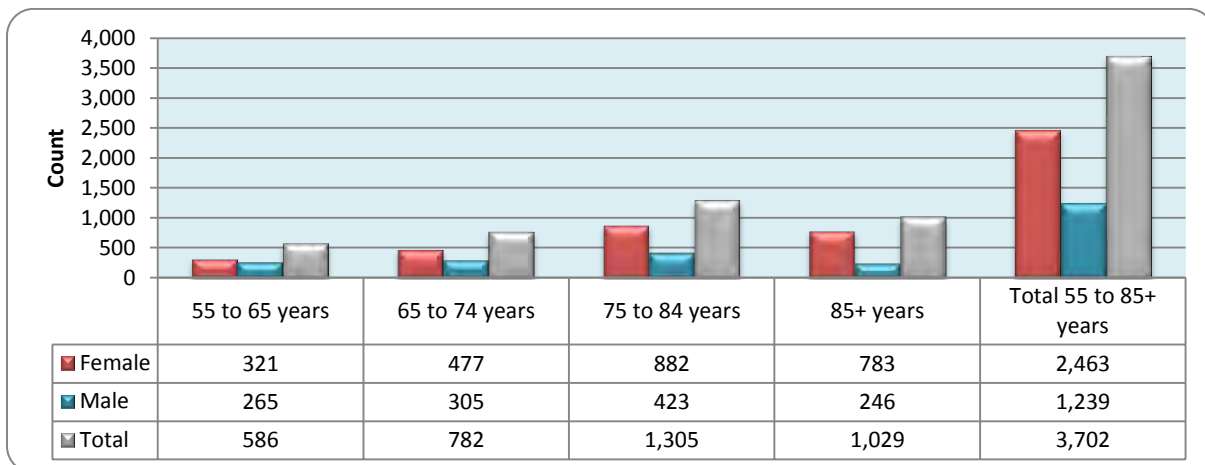
Source: intelliHEALTH Ontario

- The incidence of hospitalizations due to falls increased with age.

- The 75 to 84 age group had the highest incidence of fall-related hospitalizations (n= 1305).

- Overall, females accounted for twice the number of fall-related hospitalizations (n=2,463) than males (n=1,239) (Figure 4.8).

Figure 4.9: Fall-related Hospitalizations by Diagnosis, Ages 55+, Algoma, 2003-2010 (N=3,702)

Pie chart legend:
- Fractures
- Other - Not injuries eg. infections, mental health, dementia, dizziness, neurological conditions
- Other injuries
- Chronic diseases eg. cancer, stroke, cardiac
- Head injuries
- Other medical conditions eg. gallbladder

Values shown: 62.0%, 14.7%, 9.0%, 7.8%, 6.4%, 2.5%
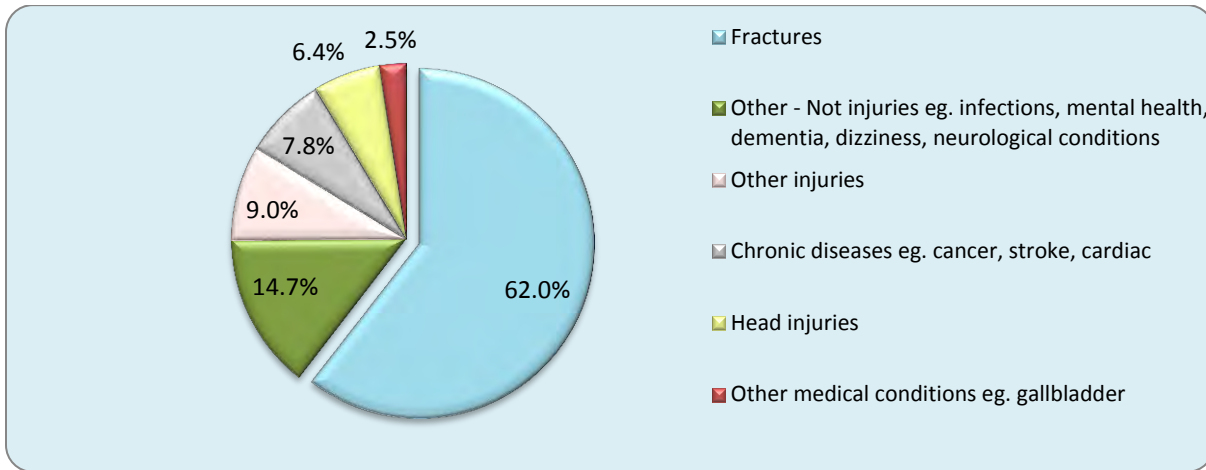
Source: intelliHEALTH Ontario

- Fractures accounted for 61% of all fall-related hospitalizations for ages 55 years and over.
- The second most prevalent fall related hospitalization was other (e.g. infections, mental health, dementia, dizziness, and neurological conditions) at 14 % (Figure 4.9).

Figure 4.10: Fall-related Hospitalizations by Type of Discharge, Age 55+, Algoma, 2003-2010 (N=3,702)

Pie chart legend:
- Discharged Home with No Support Services
- Transferred to Continuing Care Facility (incl. Mental Health, Rehab, Nursing Home, Chronic Care Etc.)
- Discharged Home with Support Services (Home Care, Supportive Housing, Retirement Homes)
- Transferred to an Acute Inpatient Facility
- Deceased

Values shown: 53%, 19%, 15%, 12%, 1%
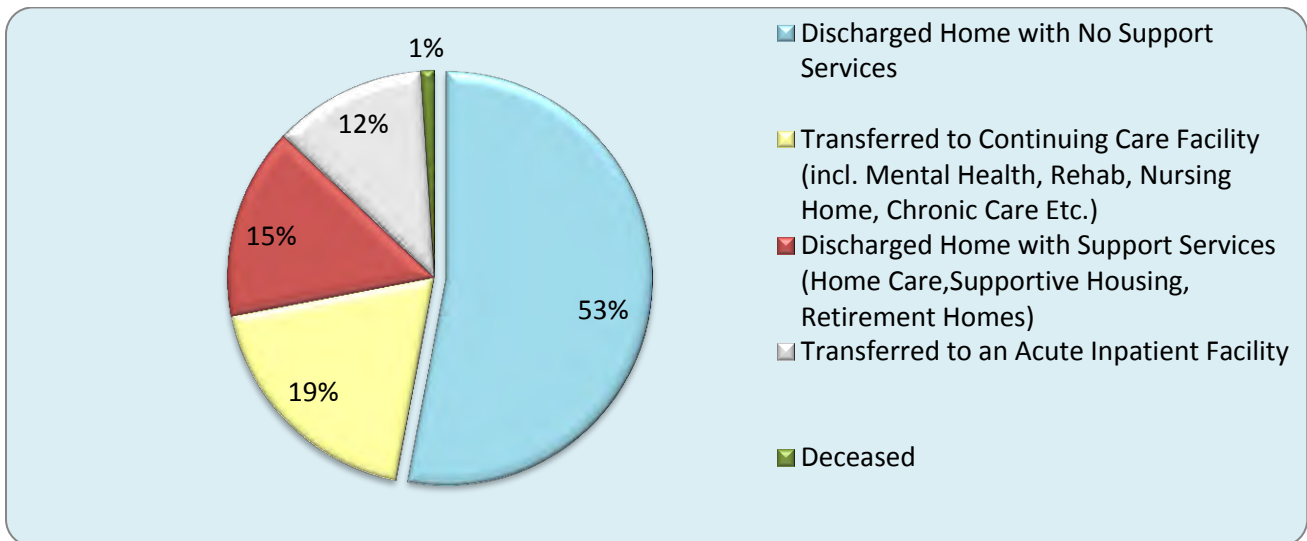
Source: intelliHEALTH Ontario

- More than half (53%) of Algoma residents 55 years and older who were hospitalized for falls, were discharged home with no support services meaning that the physician determined that no at home support services were required at the time the patient was sent home.

- Nineteen percent of patients 55 years and older who were hospitalized for falls were transferred to a continuing care facility (including mental health, rehab, nursing home, chronic care, etc).

- Fifteen percent of patients 55 years and older who were hospitalized for falls were discharged home with support services for example home care, supportive housing, and retirement homes (Figure 4.10).

Figure 4.11: Fall-related Hospitalizations by Type of Location of Fall, Age 55+, Algoma, 2003-2010 (N=3,702)
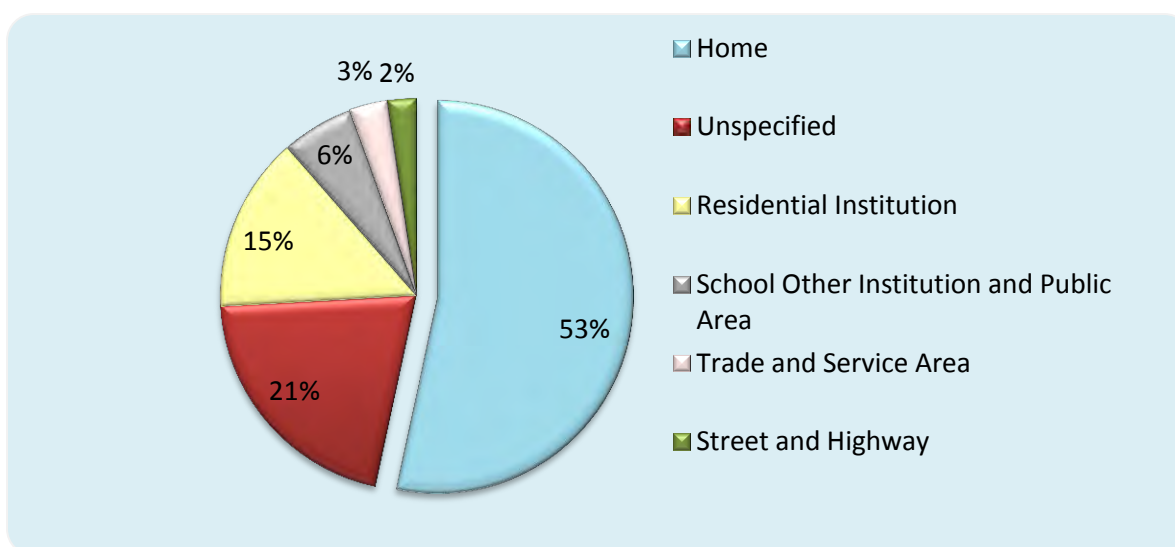
Source: intelliHEALTH Ontario

- Over half (53%) of all fall-related hospitalizations in Algoma for ages 55 and older occurred at home compared to 15% in residential institutions (Figure 4.11).

Deaths 55 years and Older

Figure 4.12: Fall-related Hospitalizations Resulting in Death, Age 55+ by Age Group, Algoma, 2003-2010 (N=229)

	55 to 64 years	65 to 74 years	75 to 84 years	85+ years
Deceased	9	35	90	95
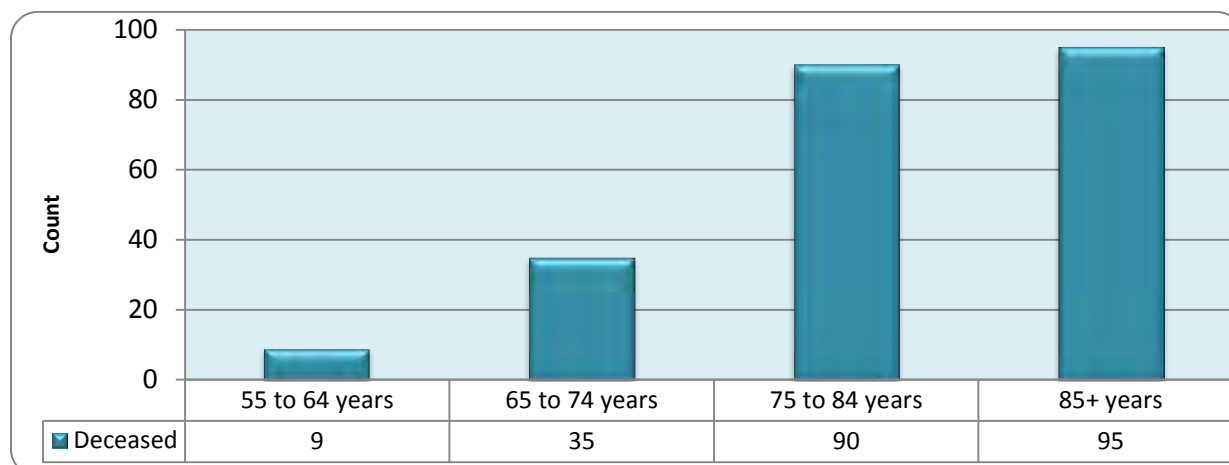
Source: intelliHEALTH Ontario

▪ The age groups 75 to 84 years and 85+ years accounted for 81% of fall-related hospitalizations resulting in death (n=185); 4 times more than in the 55 to 74 years age group (Figure 4.12).

Risk Factors

According to PHAC (2005), falls in older adults occur because of a complex interaction of risk factors that can best be grouped into four categories:

▪ biological and medical
▪ behavioural
▪ environmental
▪ socio-economic

The biological and medical risk factors are associated with the physical, cognitive, affective, sensory and musculoskeletal changes that occur with aging, including any pathological conditions (PHAC, 2005).

Behavioural risk factors are those aspects that are within the control of the individual such as medication use, amount of alcohol consumption, type of footwear, level of activity, and nutritional intake. A history of falls and fear of falling are significant predictors of future falls (PHAC, 2005).

Hazards in the home environment, such as poorly fitted handrails, slippery surfaces and even family pets, put older adults at increased risk of falling. Uneven sidewalks, tree roots, and obstacles in walkways are areas of concern in the community setting (ACIP, 2012).

Seniors with low income are more likely to live in neighbourhoods that suffer from disrepair, poor design features and inadequate home maintenance. These older adults may experience barriers to access assistive devices such as hearing aids, eyeglasses, home safety supports (handrails, grab bars, non-slip surfaces), and/or walking devices. They may also experience challenges in accessing healthy nutrition, safe adequate housing, transportation, and opportunities for participating in physical and social activities. Language barriers and lower education may limit access to appropriate health and social services and community resources (ACIP, 2012).

Protective Factors to Prevent Falls in Older Adults

Modifications in the environment and changes in personal behaviours are key protective factors for the prevention of falls in older adults (World Health Organization (WHO), 2007).

Protective Factors

Since most falls occur in or near the home, maintaining or modifying home environments can reduce risk of falls and enhance overall safety. Of particular risk are loose carpets, electrical cords, general clutter and inadequate lighting (PHAC, 2010).

In public places, poor building design, cracked uneven sidewalks, and insufficient lighting create unsafe conditions, which put older adults at risk for falls (WHO, 2007). Creating barrier-free, age-friendly design in public places, such as that recommended by the *Age Friendly Sault Ste. Marie* initiative, is an important and progressive step towards building safe environments and preventing falls in older adults.

Personal behaviour changes, such as adopting a healthier lifestyle that includes no smoking, moderate alcohol or no alcohol consumption, healthy nutrition, and participating in physical activities, is effective in reducing the risks of falls (MHP, 2010).

Promising Practices

APH works with community organizations, agencies, businesses, educational institutions and senior volunteers to reduce falls and fall-related injuries among older adults in Algoma by helping to decrease the frequency, severity, and impact of preventable falls. Most falls are predictable and therefore, preventable (Moyer, 2012). APH fall prevention interventions focus on eliminating or reducing risk factors associated with falling.

Sault Rising Stars. The *Sault Rising Stars*, an older adult acting troupe, educates and entertains audiences about falls prevention strategies through performances to community audiences. The troupe promotes physical activity, safe and knowledgeable medication use, and home hazard reduction as a controllable means of preventing falls. The *Sault Rising Stars* have been instrumental in initiating older adult acting troupes in communities throughout Northern Ontario and spreading the message of falls prevention. The *Sault Rising Stars* have performed in many venues throughout the province including conferences to increase awareness of falls prevention. The troupe distributes resources such as "Knowledge is the Best Medicine" and "Independent Living Guide" to audiences. They promote the message that falls are predictable and preventable and are not an inevitable part of aging. These dynamic troupe members are ambassadors for falls prevention.

Slips, Trips & Falls Coalition. The *Slips, Trips & Falls Coalition*, under the umbrella of Sault Ste. Marie Safe Communities Partnership, has developed a home safety checklist titled "Independent Living Guide". This guide is now used by health agencies, organizations and other public health units throughout Algoma, Northern Ontario, and nationally. The coalition is advocating for a falls risk assessment clinic for older adults, promotes awareness of falls risk factors, distributes falls prevention resources, and works toward influencing inclusion of falls prevention strategies in curriculum development at the local level.

North East Local Health Integration Network (NE LHIN) Partnership. APH collaborates with NE LHIN to provide input and strategic direction to the rollout of *NE LHIN Falls Prevention Initiative* and the implementation of the *Integrated Provincial Falls Prevention Framework & Toolkit*.

Sault Ste. Marie Age Friendly Communities. APH has partnered with the City of Sault Ste. Marie's *Age Friendly Communities Initiative* to support and create safe, respectful and inclusive environments for older adults. The *Age Friendly Communities Initiative* collaborative addresses the determinants of health.

Falls Prevention Inventory Assessment Tool. The falls prevention assessment tools *Timed Up and Go* and the *Morse Fall Scale* are used at St. Joseph's Hospital in Elliot Lake. All patients admitted to this hospital are assessed for their risk factors for falling. These tools are also used to gather data about falls. Information sheets on falls prevention and nutrition, for example, the importance of vitamin D, are made available to patients as part of this initiative. In conjunction with this, falls prevention presentations have been done in the community.

Stay on Your Feet. Elliot Lake, a Northern Ontario retirement community in Algoma, acted as one of the pilot sites for the Ontario Neurotrauma Foundation's *Stay on Your Feet* project. Through this project, Elliot Lake adopted some measures specifically related to falls prevention including the purchase of a sidewalk grinder that smoothes out rough areas on city sidewalks and walkways. In addition, uneven parts of sidewalk and curbs where crosswalks are located and where pedestrians step up and down from curbs have been painted bright yellow for better visibility.

A city subdivision pathway that has been a main route for pedestrians walking to the central commercial area of the city has recently been paved for easier and safer access for pedestrians, scooters and motorized wheelchairs.

Falls Prevention Tips for Older Adults

Use prescription and over the counter medication safely;

Have regular vision and hearing checks;

Be aware of the built environment and identify hazards to reduce the risk of falling at home and in the community;

Ensure adequate nutrition including calcium and vitamin D; and

Exercise to improve balance and strength such as tai chi that increases flexibility, posture and strength (Moyer, 2012)

Emerging Trends

The population of adults age 65 years and older has increased significantly in the last 30 years and is expected to continue to grow as the baby boomer generation (people born between 1946 to1962) ages. The life expectancy of seniors has also steadily increased and is expected to continue to do so. In less than a decade, almost one in five people in Canada will be a senior citizen (PHAC, 2010)

Older women more likely to be injured. Among seniors, elderly women are more likely to be injured through falls than elderly men (ACIP, 2012).

Hip fractures are the primary injury. Both the direct and indirect cost of falls is substantial. It is estimated that almost half of falls that lead to hospitalization are due to hip fractures (SMARTRISK, 2006). Other direct costs include rehabilitation, need for assistive devices, resulting in a requirement for residential and home care (Moyer, 2012). This statistic becomes increasingly important as the proportion of adults age 65 and older continues to grow (SMARTRISK, 2006).

Societal costs will rise. Without effective interventions that result in reduced rates of injuries, the direct and indirect cost of falls on our society will continue to escalate (SMARTRISK, 2006).

Recommendations for Falls Prevention in the 55 and Older Years
The Older Adult Years

- Continue to address falls prevention strategies through collaborative partnerships and initiatives with the Sault Rising Stars, Safe Communities Partnership, and Slips, Trips and Falls Coalition.

- Middle age is an ideal time to promote fitness in order to reduce the risk of falls in older ages. Target healthy older adults who are not yet 65 with preventative interventions and messages to lessen future risk of falling (OIPRC, 2008). This same multi-strategy approach can also be used to prevent falls in the 30 to 54 years age group (OIPRC, 2008).

- A previous fall is one of the best predictors of a future fall. At least once a year health care providers need to ask older adults if they have fallen recently and refer for additional assessments as required (CIHI, 2010). Screening of individuals for falls risk by health care providers and caregivers is the initial step in determining risk and appropriate interventions. Seniors at low risk may be offered a simple self-assessment. Frail older adults with multiple medical concerns and at higher risk would benefit from a multi-disciplinary, comprehensive assessment (LHIN Collaborative, 2011).

- Falls are more common in older women than men; however, fall-related mortality is higher among older men. Consider the gender factor when developing policies and programs that address falls (WHO, 2007).

Conclusions

Falls Across the Lifespan in Algoma: 2003-2010

This report reflects the current trends of fall-related ER visits and hospitalizations comparing Algoma to Ontario. Promising practices for priority age groups are also highlighted. The information presented in this report will inform Algoma Public Health (APH) and the community regarding the impact and significance of falls. APH is committed to collaborating with community partners and stakeholders to reduce falls.

Key Findings

The following are the key findings from the *Falls Across the Lifespan in Algoma 2003-2010* report:

1. Overall, for fall-related injuries, Algoma residents visited the hospital ER more and were admitted to hospital less than our Ontario counterparts.

ER visits. The average age-standardized rate for fall-related ER visits among Algoma residents at 41.5 per 1,000 per year was significantly higher than that observed among Ontario residents at 27.6 per 1,000 per year.

Hospitalizations. The average age-standardized rate for fall-related hospitalizations among Algoma residents at 3.5 per 1,000 per year was significantly lower than that observed among Ontario residents at 11.2 per 1,000 per year.

We cannot be sure why Algoma residents visited the hospital ER more and were admitted to the hospital less than our provincial counterparts. Factors that may have impacted these rates besides the actual rates of injury could be attributed to availability of both primary care and hospital beds. Hospital culture and resources can also determine how triage occurs at each hospital ER; therefore, caution must be exercised when making direct comparisons about the rates of falls across geographical areas.

2. In Algoma, falls from furniture accounted for 20% of falls for children 0 to 6 years who visited the hospital ER.

Falls from beds were most common, with infants having the highest incidence of these falls. The crib is the safest place for an infant to sleep. Infants who sleep in adult beds are not only at risk of sudden infant death syndrome but also at risk for falls from beds. Public health promotes safe sleep practices as part of clinical practice, parenting interventions and public education campaigns to create awareness of the dangers of allowing infants to sleep in adult beds.

3. In Algoma, for children 0 to 6 years, head injuries and fractures accounted for 88% of hospitalizations for furniture related falls.

Infants and Toddlers. Infants are more likely to land on their heads when they fall because they have a higher head to body ratio compared to adults. Infants and toddlers (to age 2) accounted for 74% of the hospitalizations for head injuries due to falls from furniture. The risk for head injury is thus higher for children under 2 years of age. Parents and caregivers can prevent falls by providing adequate supervision, and using safety devices that can prevent falls such as safety gates and window stops.

Children aged 3 to 6. As children become more mobile and independent, the risk of fractures becomes more common. Children 3 to 6 years accounted for 83% of hospitalizations for fractures due to falls from furniture. Again, parental supervision is a key component to reducing fall-related injuries.

4. In Algoma, youth ages 10 to 19 years accounted for 6,456 fall-related ER visits with skateboarding and snowboarding as the two main causes.

The 10 to 14 age group accounted for 3,579 fall-related ER visits and the 15 to 19 age group accounted for 2,877 fall-related ER visits in Algoma. Skateboards accounted for 1,362 fall-related ER visits, twice as many as snowboards at 635 visits. Wearing safety gear consistently and properly is a key factor in reducing fall-related injuries among this risk taking age group.

5. Algoma's rate for ER visits for ages 55 years and older was statistically higher than the provincial rate.

For 2003-2010, Algoma's average annual rate for fall-related ER visits for the age group 55 years and older was statistically higher at 49.3 per 1,000 than the Ontario rate at 40.6 per 1,000.

Again, we cannot be sure why Algoma residents aged 55 and over visited the hospital ER more than their provincial cohort. Some reasons could be related to the determinants of health such as housing, access to health care and nutritious food, low income, geographic distances and weather conditions. Other reasons could include hospital culture and resources. APH supports the work of *Sault Ste. Marie Age Friendly Communities* that is currently working on ensuring that supports and programs are in place to facilitate healthy aging.

6. In Algoma, *"Slips, trips & stumbles"* was the most common type of fall resulting in the reason for 26% of fall-related ER visits for ages 55 years and older.

Falls from "*same level*" accounted for 15% of fall-related ER visits and falls *"on and from stairs and steps"* accounted for 12% of fall-related ER visits ages 55 years and older.

Biological and medical factors such as reduced muscle strength, loss of balance and flexibility, certain medications, improper footwear, inadequate nutrition, and chronic illness place individuals at risk of falling. Strategies that help prevent falls include identification of indoor home hazards such as inadequate lighting, poorly fitted or no handrails on stairs, uneven non-uniform stairs, clutter and scatter mats. Despite the number of falls that occur within the home, potential hazards in the community such as poor building design, inadequate maintenance of buildings and sidewalks, and slippery and glare-producing flooring also need to be addressed.

7. In Algoma, 54% of falls resulting in a visit to a hospital ER for ages 55 years and older occurred at home.

Older adults are at higher risk of falls in their homes especially, since the older cohort of this age group tends to spend more time at home indoors. Falls are a result of an interaction of multiple factors. Community agencies and organizations need to address the primary causes of falls in the home environment with a multifaceted approach.

APH supports the *Sault Rising Stars Acting Troupe* in their efforts to educate the community with their peer-to-peer lighthearted vignettes on falls prevention, promoting physical activity, identifying home hazards and safe medication use. Local community partners utilize and distribute the *Independent Living Guide* developed by the local *Slips, Trips & Falls Coalition* for self-identification of potential fall risks in the home.

A Call to Action

APH is committed to monitoring trends over time to inform practice to ensure that our falls prevention programs address the changing needs of the community. APH is dedicated to building partnerships, collaborating and engaging community partners, influencing policy, identifying and delivering best practice interventions.

Individuals, groups, policy makers, political partners and the collective community all have a part to play in the prevention of falls. Some aspects of preventing falls such as behavioural choices are an individual responsibility however many others are best addressed collectively. No one strategy or individual is as effective as a collaborative community approach.

Falls are Predictable and Preventable

APH recognizes that falls occur due to a complex interaction of risk factors encompassing biological and medical, behavioural, environmental and socio-economic conditions. According to SMARTRISK, a leading Canadian organization on injury prevention most injuries are predictable and preventable; however, society believes that these events are "accidents" (2006). Communication campaigns and efforts to change social norms, to view accidents as incidences, events and injuries, have the potential to change attitudes and beliefs to view injuries as predictable and thus, preventable.

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Appendix A - 2011 Populations for Algoma and Ontario by Age Group and Sex

Age Groups	Algoma (Census division)			Ontario		
	Total	Male	Female	Total	Male	Female
0 to 4 years	5,210	2,710	2,495	704,260	360,590	343,670
5 to 9 years	5,235	2,610	2,625	712,755	365,290	347,465
10 to 14 years	5,845	3,085	2,760	763,755	391,630	372,125
15 to 19 years	7,155	3,680	3,475	863,635	443,680	419,950
15 years	1,345	680	665	168,840	86,700	82,140
16 years	1,455	735	715	172,840	89,195	83,645
17 years	1,440	735	705	171,405	88,230	83,170
18 years	1,460	745	715	173,930	89,225	84,705
19 years	1,460	785	675	176,620	90,330	86,290
20 to 24 years	6,660	3,375	3,280	852,910	432,490	420,415
25 to 29 years	5,810	2,845	2,960	815,120	400,045	415,075
30 to 34 years	5,680	2,685	2,995	800,365	383,340	417,030
35 to 39 years	5,830	2,810	3,020	844,335	405,845	438,485
40 to 44 years	6,800	3,325	3,470	924,075	447,920	476,155
45 to 49 years	8,890	4,255	4,630	1,055,880	517,510	538,370
50 to 54 years	10,265	4,885	5,380	1,006,140	492,560	513,580
55 to 59 years	9,545	4,705	4,845	864,620	418,755	445,865
60 to 64 years	8,910	4,405	4,505	765,655	370,370	395,275
65 to 69 years	7,060	3,375	3,690	563,485	270,875	292,610
70 to 74 years	5,950	2,875	3,075	440,780	206,350	234,435
75 to 79 years	4,800	2,265	2,535	356,150	161,345	194,805
80 to 84 years	3,555	1,600	1,955	271,510	113,620	157,890
85 years and over	2,675	915	1,760	246,400	80,925	165,475
Total	**115,870**	**56,405**	**59,465**	**12,851,820**	**6,263,140**	**6,588,685**
Source: Statistics Canada. 2012. Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released June 27 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E Date retrieved: July 18, 2012						

Appendix B - Algoma Fall-Related ER Visits by Age Groups by Year, 2003-2010

Age Group	Sex	2003	2004	2005	2006	2007	2008	2009	2010	Grand Total
00-<01	F	20	22	24	27	14	19	28	18	172
	M	17	25	27	27	30	22	23	18	189
00-<01 Total		37	47	51	54	44	41	51	36	361
01-04	F	143	148	131	157	136	119	132	125	1,091
	M	181	162	146	185	137	166	151	166	1,294
01-04 Total		324	310	277	342	273	285	283	291	2,385
05-09	F	146	142	151	134	123	124	115	106	1,041
	M	180	167	169	165	121	106	120	115	1,143
05-09 Total		326	309	320	299	244	230	235	221	2,184
10-14	F	234	242	213	180	147	182	178	188	1,564
	M	303	306	273	260	229	213	219	212	2,015
10-14 Total		537	548	486	440	376	395	397	400	3,579
15-19	F	146	129	157	176	146	153	145	143	1,195
	M	252	241	249	200	175	181	187	197	1,682
15-19 Total		398	370	406	376	321	334	332	340	2,877
20-24	F	103	117	122	115	108	139	121	117	942
	M	134	145	122	110	116	126	116	137	1,006
20-24 Total		237	262	244	225	224	265	237	254	1,948
25-29	F	114	101	108	91	74	111	88	109	796
	M	99	93	103	102	90	93	113	106	799
25-29 Total		213	194	211	193	164	204	201	215	1,595
30-34	F	85	88	106	89	97	119	80	95	759
	M	108	101	95	96	97	82	90	89	758
30-34 Total		193	189	201	185	194	201	170	184	1,517
35-39	F	115	118	133	113	88	96	100	100	863
	M	115	114	101	115	95	124	80	85	829
35-39 Total		230	232	234	228	183	220	180	185	1,692
40-44	F	143	146	146	131	139	141	125	126	1,097
	M	124	131	134	145	122	135	108	101	1,000
40-44 Total		267	277	280	276	261	276	233	227	2,097
45-49	F	145	126	148	155	146	153	140	148	1,161
	M	150	154	150	151	120	159	127	131	1,142
45-49 Total		295	280	298	306	266	312	267	279	2,303
50-54	F	144	149	151	162	164	205	182	203	1,360
	M	143	134	136	100	139	137	160	145	1,094
50-54 Total		287	283	287	262	303	342	342	348	2,454

Algoma Fall-Related ER Visits by Age Groups by Year, 2003-2010 (Con'd)

Age Group	Sex	2003	2004	2005	2006	2007	2008	2009	2010	Grand Total
55-59	F	138	152	162	197	166	173	165	217	1,370
	M	103	115	118	103	112	141	135	117	944
55-59 Total		241	267	280	300	278	314	300	334	2,314
60-64	F	140	146	153	157	144	134	171	146	1,191
	M	94	114	86	93	96	122	120	107	832
60-64 Total		234	260	239	250	240	256	291	253	2,023
65-69	F	99	144	134	158	138	169	138	161	1,141
	M	86	83	96	96	95	126	118	114	814
65-69 Total		185	227	230	254	233	295	256	275	1,955
70-74	F	168	149	156	167	146	154	158	144	1,242
	M	91	108	94	119	87	108	103	106	816
70-74 Total		259	257	250	286	233	262	261	250	2,058
75-79	F	155	168	162	195	177	178	153	182	1,370
	M	82	129	121	108	108	113	115	91	867
75-79 Total		237	297	283	303	285	291	268	273	2,237
80-84	F	171	177	180	183	190	166	191	191	1,449
	M	66	79	90	90	97	80	125	141	768
80-84 Total		237	256	270	273	287	246	316	332	2,217
85-89	F	120	130	119	148	124	141	160	182	1,124
	M	46	40	55	72	71	67	55	66	472
85-89 Total		166	170	174	220	195	208	215	248	1,596
90+	F	79	98	84	82	90	97	117	117	764
	M	28	28	30	29	27	43	28	47	260
90+ Total		107	126	114	111	117	140	145	164	1,024
Grand Total		**5,010**	**5,161**	**5,135**	**5,183**	**4,721**	**5,117**	**4,980**	**5,109**	**40,416**

Data Source: Ambulatory Visits (2003-2010), Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, Extracted December 2011.

Appendix C - Algoma Fall-Related Hospitalizations by Age Groups by Year, 2003-2010

Age Group (5 year)	Sex	2003	2004	2005	2006	2007	2008	2009	2010	Grand Total
00-04	FEMALE	6	1	6	3	2	4	2	3	27
	MALE	5		12	5	5	5	6	2	40
00-04 Total	BOTH	11	1	18	8	7	9	8	5	67
05-09	FEMALE	4	8	5	5	6	3	3	6	40
	MALE	4	12	6	10	6	6	6	7	57
05-09 Total	BOTH	8	20	11	15	12	9	9	13	97
10-14	FEMALE	5	8	3	7	1	2	8	3	37
	MALE	16	11	13	16	14	6	12	4	92
10-14 Total	BOTH	21	19	16	23	15	8	20	7	129
15-19	FEMALE	2	1	1	1	3	2	3	1	14
	MALE	8	7	13	8	9	3	5	11	64
15-19 Total	BOTH	10	8	14	9	12	5	8	12	78
20-24	FEMALE	4	6	4	2	3	4	8	4	35
	MALE	4	7	3	5	7	5	6	5	42
20-24 Total	BOTH	8	13	7	7	10	9	14	9	77
25-29	FEMALE	9	1	4	1	3	3	3	4	28
	MALE	5	8	7	6	5	4	2	6	43
25-29 Total	BOTH	14	9	11	7	8	7	5	10	71
30-34	FEMALE	1	2	3	1	3		3	5	18
	MALE	6	8	11	6	5	4	3	5	48
30-34 Total	BOTH	7	10	14	7	8	4	6	10	66
35-39	FEMALE	4	6	6	6	4	3	5	3	37
	MALE	5	6	3	9	4	8	10	3	48
35-39 Total	BOTH	9	12	9	15	8	11	15	6	85
40-44	FEMALE	6	14	9	9	11	7	11	7	74
	MALE	8	7	5	9	10	14	6	7	66
40-44 Total	BOTH	14	21	14	18	21	21	17	14	140
45-49	FEMALE	9	8	6	12	11	3	13	14	76
	MALE	7	15	20	11	12	6	12	7	90
45-49 Total	BOTH	16	23	26	23	23	9	25	21	166
50-54	FEMALE	16	13	12	15	10	22	17	20	125
	MALE	14	15	10	12	10	12	16	12	101
50-54 Total	BOTH	30	28	22	27	20	34	33	32	226
55-59	FEMALE	19	19	12	29	17	10	21	21	148
	MALE	8	17	11	18	12	22	11	14	113
55-59 Total	BOTH	27	36	23	47	29	32	32	35	261
60-64	FEMALE	16	21	19	23	21	29	26	18	173
	MALE	16	22	20	18	8	23	28	17	152
60-64 Total	BOTH	32	43	39	41	29	52	54	35	325

Algoma Fall-Related Hospitalizations by Age Groups by Year, 2003-2010, (Con'd)

Age Group (5 year)	Sex	2003	2004	2005	2006	2007	2008	2009	2010	Grand Total
65-69	FEMALE	18	25	23	31	25	30	25	30	207
	MALE	17	14	19	15	18	24	12	22	141
65-69 Total	BOTH	35	39	42	46	43	54	37	52	348
70-74	FEMALE	32	36	30	33	38	35	31	35	270
	MALE	15	29	16	28	11	21	14	30	164
70-74 Total	BOTH	47	65	46	61	49	56	45	65	434
75-79	FEMALE	47	47	40	58	58	45	44	78	417
	MALE	15	34	26	29	22	35	29	21	211
75-79 Total	BOTH	62	81	66	87	80	80	73	99	628
80-84	FEMALE	44	53	63	65	61	48	56	75	465
	MALE	18	28	19	23	20	27	41	36	212
80-84 Total	BOTH	62	81	82	88	81	75	97	111	677
85-89	FEMALE	51	61	44	55	57	55	66	70	459
	MALE	14	16	18	20	17	27	20	32	164
85-89 Total	BOTH	65	77	62	75	74	82	86	102	623
90+	FEMALE	34	43	34	40	28	39	55	51	324
	MALE	8	7	8	13	14	11	7	14	82
90+ Total	BOTH	42	50	42	53	42	50	62	65	406
Grand Total		520	636	564	657	571	607	646	703	4904

Data Source: Inpatient Discharges (2003-2010), Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, Extracted December 2011.

Appendix D - Age Specific Rates, Fall–Related ER Visits 2003-2010

Year	Age Group	Algoma Rate per 1,000	Ontario Rate per 1,000	Algoma Low CI per 1,000	Algoma High CI per 1,000
			No observed statistical difference		
2003	0-4 yrs	69.2	49.1	62.3	76.1
2004	0-4 yrs	70.5	53.0	63.4	77.5
2005	0-4 yrs	65.8	51.7	58.9	72.6
2006	0-4 yrs	79.6	52.0	72.1	87.2
2007	0-4 yrs	64.2	50.7	57.4	71.1
2008	0-4 yrs	66.5	50.1	59.5	73.5
2009	0-4 yrs	69.2	52.3	62.0	76.3
2010	0-4 yrs	67.8	52.9	60.7	74.9
2003	10-14 yrs	66.7	42.6	61.3	72.2
2004	10-14 yrs	70.0	43.2	64.3	75.6
2005	10-14 yrs	64.4	43.2	58.9	70.0
2006	10-14 yrs	60.8	41.2	55.3	66.3
2007	10-14 yrs	54.3	41.7	49.0	59.6
2008	10-14 yrs	60.3	41.9	54.5	66.0
2009	10-14 yrs	63.0	40.9	57.0	69.0
2010	10-14 yrs	66.3	43.4	60.0	72.6
2003	15-19 yrs	30.9	17.6	27.2	34.6
2004	15-19 yrs	26.2	17.9	22.7	29.6
2005	15-19 yrs	32.0	18.1	28.2	35.7
2006	15-19 yrs	26.6	17.0	23.1	30.1
2007	15-19 yrs	22.9	17.7	19.7	26.1
2008	15-19 yrs	26.1	17.2	22.6	29.6
2009	15-19 yrs	27.7	16.7	24.1	31.4
2010	15-19 yrs	31.0	17.2	27.0	34.9
2003	20-29 yrs	34.9	18.6	31.8	38.1
2004	20-29 yrs	35.2	18.7	32.0	38.4
2005	20-29 yrs	34.4	19.7	31.3	37.5
2006	20-29 yrs	31.7	18.9	28.7	34.7
2007	20-29 yrs	29.3	19.4	26.4	32.1
2008	20-29 yrs	34.9	19.8	31.8	38.0
2009	20-29 yrs	32.3	18.5	29.3	35.2
2010	20-29 yrs	34.1	18.9	31.1	37.2
2003	30-54 yrs	29.1	17.9	27.6	30.7
2004	30-54 yrs	29.3	17.8	27.7	30.9
2005	30-54 yrs	30.7	19.0	29.0	32.3
2006	30-54 yrs	30.0	17.9	28.4	31.7
2007	30-54 yrs	29.2	18.5	27.6	30.9
2008	30-54 yrs	33.3	19.4	31.5	35.0
2009	30-54 yrs	30.2	18.0	28.5	31.9
2010	30-54 yrs	31.8	17.9	30.1	33.6

Age Specific Rates, Fall-Related ER Visits 2003-2010 (Con'd)

Year	Age Group	Algoma Rate per 1,000	Ontario Rate per 1,000	Algoma Low CI per 1,000	Algoma High CI per 1,000
					No observed statistical difference
2003	55-64 yrs	31.1	22.5	28.3	33.9
2004	55-64 yrs	33.5	22.8	30.7	36.3
2005	55-64 yrs	32.1	24.6	29.4	34.8
2006	55-64 yrs	33.2	23.2	30.5	35.9
2007	55-64 yrs	30.6	24.7	28.0	33.2
2008	55-64 yrs	32.9	26.0	30.2	35.5
2009	55-64 yrs	33.0	24.4	30.4	35.6
2010	55-64 yrs	32.0	24.3	29.4	34.5
2003	5-9 yrs	49.4	36.2	44.2	54.7
2004	5-9 yrs	49.3	37.4	43.9	54.6
2005	5-9 yrs	54.1	36.9	48.3	59.8
2006	5-9 yrs	53.3	36.7	47.4	59.2
2007	5-9 yrs	45.0	36.4	39.5	50.5
2008	5-9 yrs	42.8	35.9	37.4	48.2
2009	5-9 yrs	43.6	35.2	38.2	49.1
2010	5-9 yrs	41.2	36.6	35.9	46.5
2003	65-74 yrs	36.6	30.1	33.3	40.0
2004	65-74 yrs	39.5	30.8	36.0	42.9
2005	65-74 yrs	39.0	32.8	35.6	42.5
2006	65-74 yrs	43.6	32.0	40.0	47.2
2007	65-74 yrs	37.4	32.2	34.1	40.8
2008	65-74 yrs	44.3	33.8	40.7	47.9
2009	65-74 yrs	40.7	32.5	37.3	44.2
2010	65-74 yrs	40.8	32.3	37.4	44.2
2003	75-84 yrs	70.5	59.2	64.4	76.6
2004	75-84 yrs	78.4	61.7	72.1	84.7
2005	75-84 yrs	75.2	63.5	69.2	81.3
2006	75-84 yrs	74.8	62.7	69.0	80.7
2007	75-84 yrs	72.0	62.7	66.3	77.7
2008	75-84 yrs	66.1	62.9	60.7	71.5
2009	75-84 yrs	71.3	63.0	65.8	76.9
2010	75-84 yrs	73.5	64.2	67.8	79.1
2003	85+ yrs	152.0	125.7	135.4	168.6
2004	85+ yrs	157.0	129.2	140.6	173.5
2005	85+ yrs	143.6	132.0	128.3	159.0
2006	85+ yrs	155.2	128.7	139.8	170.5
2007	85+ yrs	136.7	125.8	122.6	150.8
2008	85+ yrs	145.2	126.3	131.1	159.3
2009	85+ yrs	144.1	126.9	130.3	157.8
2010	85+ yrs	157.3	132.1	143.4	171.3

Data Source: Ambulatory Visits (2003-2010), Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, Extracted December 2011

Appendix E - Age Specific Rates, Fall-Related Hospitalizations 2003-2010

Year	Age Group	Algoma Rate per 1,000	Ontario Rate per 1,000	No observed statistical difference	
				Algoma Low CI per 1,000	Algoma High CI per 1,000
2003	00-04	2.1	6.2	0.9	3.4
2004	00-04	0.2	6.4	-0.2	0.6
2005	00-04	3.6	5.7	3.6	3.6
2006	00-04	1.6	5.4	0.5	2.7
2007	00-04	1.4	5.5	0.4	2.5
2008	00-04	1.8	5.6	0.6	3.0
2009	00-04	1.7	6.2	1.6	1.7
2010	00-04	1.0	6.4	1.0	1.0
2003	05-09	1.2	4.1	0.4	2.1
2004	05-09	3.2	4.2	1.8	4.6
2005	05-09	1.9	3.6	1.8	1.9
2006	05-09	2.7	3.4	1.3	4.0
2007	05-09	2.2	3.4	1.0	3.5
2008	05-09	1.7	3.3	0.6	2.8
2009	05-09	1.7	3.2	1.7	1.7
2010	05-09	2.4	3.4	2.4	2.4
2003	10-14	2.6	4.8	1.5	3.7
2004	10-14	2.4	4.9	1.3	3.5
2005	10-14	2.1	4.2	2.1	2.1
2006	10-14	3.2	3.7	1.9	4.5
2007	10-14	2.2	3.7	1.1	3.3
2008	10-14	1.2	3.6	0.4	2.1
2009	10-14	3.2	3.7	3.2	3.2
2010	10-14	1.2	4.0	1.1	1.2
2003	15-19	1.2	7.2	0.5	1.9
2004	15-19	1.0	7.1	0.3	1.6
2005	15-19	1.7	6.6	1.7	1.7
2006	15-19	1.1	6.1	0.4	1.8
2007	15-19	1.5	6.0	0.6	2.3
2008	15-19	0.6	5.7	0.1	1.2
2009	15-19	1.0	5.5	1.0	1.0
2010	15-19	1.7	5.8	1.6	1.7
2003	20-29	1.7	5.9	1.0	2.4
2004	20-29	1.7	5.9	1.0	2.4
2005	20-29	1.4	5.7	1.4	1.4
2006	20-29	1.1	5.3	0.5	1.6
2007	20-29	1.4	5.1	0.7	2.0
2008	20-29	1.2	4.8	0.6	1.8
2009	20-29	1.4	4.8	1.4	1.4
2010	20-29	1.4	4.8	1.4	1.4

Age Specific Rates, Fall-Related ER Visits 2003-2010 (Con'd)

Year	Age Group	Algoma Rate per 1,000	Ontario Rate per 1,000	Algoma Low CI per 1,000	Algoma High CI per 1,000
			No observed statistical difference		
2003	30-54	1.7	8.2	1.3	2.1
2004	30-54	2.2	8.1	1.7	2.6
2005	30-54	2.0	8.1	2.0	2.0
2006	30-54	2.2	7.6	1.7	2.6
2007	30-54	1.9	7.3	1.5	2.4
2008	30-54	1.9	7.3	1.5	2.4
2009	30-54	2.4	7.5	2.4	2.4
2010	30-54	2.2	7.6	2.2	2.2
2003	55-64	3.9	16.3	2.9	4.8
2004	55-64	5.0	16.2	3.9	6.1
2005	55-64	3.8	16.1	3.8	3.8
2006	55-64	5.3	15.9	4.2	6.4
2007	55-64	3.4	15.3	2.5	4.3
2008	55-64	4.8	15.4	3.8	5.9
2009	55-64	4.8	16.1	4.8	4.8
2010	55-64	3.8	16.6	3.8	3.8
2003	65-74	6.8	30.0	5.3	8.2
2004	65-74	8.5	30.3	6.9	10.1
2005	65-74	7.2	30.4	7.1	7.2
2006	65-74	8.6	29.9	7.0	10.3
2007	65-74	7.4	28.5	5.9	8.9
2008	65-74	8.8	28.4	7.1	10.4
2009	65-74	6.5	29.7	6.5	6.5
2010	65-74	9.1	30.5	9.1	9.1
2003	75-84	18.4	52.7	15.2	21.7
2004	75-84	23.0	53.5	19.5	26.5
2005	75-84	20.1	54.1	20.1	20.2
2006	75-84	22.7	52.8	19.4	26.1
2007	75-84	20.3	51.1	17.2	23.4
2008	75-84	19.1	51.2	16.1	22.1
2009	75-84	20.8	53.8	20.7	20.8
2010	75-84	25.5	55.1	25.5	25.5
2003	85+	59.6	86.4	48.6	70.5
2004	85+	67.4	85.4	56.1	78.7
2005	85+	51.9	83.8	51.7	52.1
2006	85+	60.0	80.8	49.9	70.1
2007	85+	50.8	78.7	41.8	59.8
2008	85+	55.1	79.3	45.9	64.2
2009	85+	59.2	81.4	59.0	59.4
2010	85+	63.8	83.8	63.6	63.9

Data Source: Inpatient Discharges (2003-2010), Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, Extracted December 2011.

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