

The Health Index

Unintentional Falls in Older Adults

Issue 8, March 2004

- For adults 65 years or older, one in five adults in the City of London and Middlesex County reported having had a fall in the past 12 months.
- One-third of seniors reporting falls reported that the fall limited their daily activities, while the remaining two-thirds reported having a fall, although said it was non-serious.
- Rates of reported falls have remained steady over the past three years in Middlesex-London.
- Further efforts should continue to be directed at preventing falls in seniors 65 years or older.

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BACKGROUND

Falls pose a significant health risk to Ontarians. The 2002 Chief Medical Officer of Health Report on "Injury: Predictable and Preventable" identified that unintentional injury due to falls is a serious health problem among older adults. According to that report, nearly two-thirds of hospitalizations in 1999/2000 due to unintentional injury are the result of falls (38,513 or 59 per cent). Nearly two-thirds of those admitted for falls were 65 years and over and 60 per cent were women. The impact of falls in older persons is a matter of increasing public concern as the population aged 65 years and older increases in number. According to the 2001 Census, 13% or 52,570 residents of the

City of London and Middlesex County are aged 65 years and older. It has previously been shown that around one third of older adults experience a fall each year (Tinetti, 1988, O'Loughlin et al. 1993) and about half of these do so recurrently (Tinetti and Speechley, 1989). Falls by seniors often result in more serious fractures, longer periods of recovery and greater use of health care resources compared to falls experienced by younger residents (Health Canada, 2002). Finally, other Canadian research has found that seniors who fall face a greater risk of permanent institutionalization – with the odds of entering into care following an injurious fall being nearly 3 times the odds for people who had not fallen (Wilkins, K., Health Reports, 1999).

Falls are an important public health issue for seniors. The 1997 Mandatory Health Programs and Services Guidelines identify the public health objective to reduce the rate of fall related injuries in the elderly (age 65+ years) that lead to hospitalization or death by 20 per cent by the year 2010. Yet, falls in adults 65 years and older are often the result of complex combinations of factors and therefore require tailored approaches to address falls prevention. Generally fall prevention strategies include: individual assessments, physical activity, home modifications, education and medication review (Health Canada, 2002, Speechley, 2002).

Health promotion interventions such as mass media campaigns have also been shown to reduce or eliminate high-risk behaviours or risk factors which contribute to falls.

Results from the Rapid Risk Factor Surveillance System (RRFSS) were used to monitor the rate of falls and serious falls (a fall serious enough to limit daily activities) for Middlesex-London. The RRFSS is an ongoing population health survey supported by the Middlesex-London Health Unit. RRFSS collects approximately 100 telephone responses for each participating health unit area in monthly increments (waves). Falls and serious falls in particular have been monitored in London and Middlesex County since January 2001.

In addition to RRFSS data, the following report also incorporated other sources of data to allow a comprehensive look at the effect of falls in older adults. Provincial estimates obtained from the National Population Health Survey (NPHS 1998/1999) and the Ontario Trauma Registry (Southwestern region 1996/1997) data obtained from the Canadian Institute for Health Information (CIHI) were included to highlight injury rates as a result of accidental falls as well as hospitalizations for unintentional falls.

MLHU FALL PREVENTION ACTIVITIES

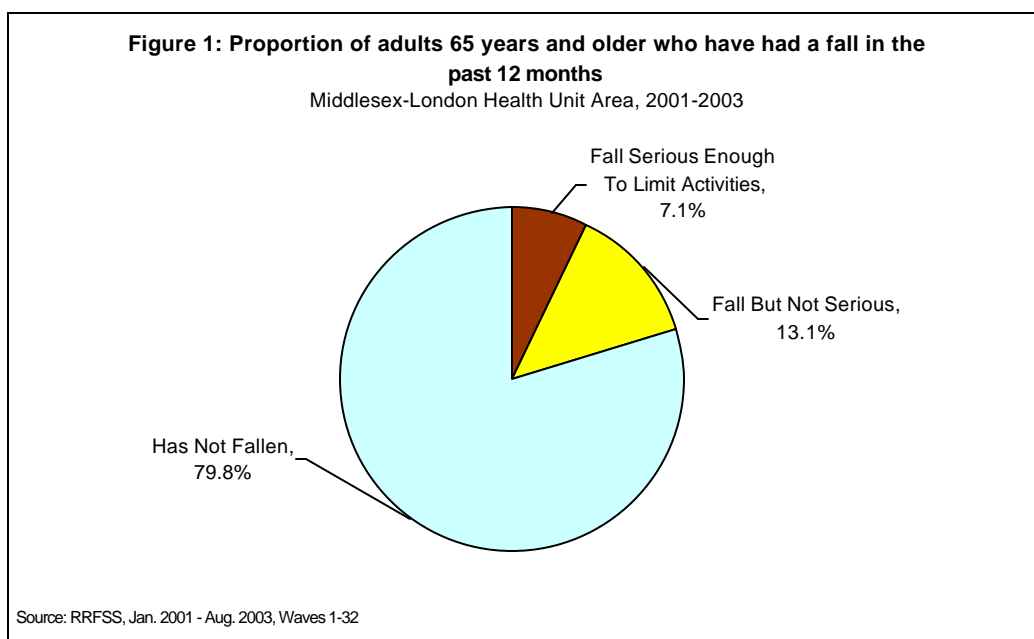
To address the issue of falls, the Middlesex-London Health Unit has taken steps to increase

community awareness of the risk of falls among seniors. Various printed informational brochures on fall risk factors, such as physical activity, nutrition, safe environment, and substance and medication use have been distributed to the community. Falls prevention information has also been disseminated through newsletters of community organizations such as the “Council for London Seniors”. The “Southwest Falls Prevention Committee”, made up of representatives from the nine health units in Southwestern Ontario, was formed in 2002 to share information and work collaboratively on senior falls prevention initiatives.

OVERALL FALLS

For City of London and Middlesex County residents aged 65 years or older, one in five reported having had a fall in the past 12 months; of these over one third (35.2%) indicated that the fall resulted in an injury that was serious enough to make it difficult to walk, get dressed, go to work, or do most things they normally do. Therefore 7.1% ($\pm 2.4\%$) reported having had a fall that had affected their daily activities and 13.1% ($\pm 3.1\%$) of all respondents 65 years or older reported having a fall, although it was non-serious (Figure 1).

These local results from the RRFSS appear to be lower than the findings from the literature which suggest that approximately one third of individuals 65 years or older will fall each year (Tinetti, 1988, O’Loughlin et al. 1993).



Differences in how RRFSS monitors falls may explain the lower falls estimates for adults 65 years or older for the Middlesex-London area compared to estimates published in the literature for the same 65 years or older age group.

Falls by Age Group

The proportion of residents residing in the City of London or Middlesex County who reported that they have had a fall in the past 12 months that affected daily activity was similar across age groups – although slightly lower for the older age groups (Table 1). A look at adults 65 years and older found only small differences in the proportions of residents who reported falls and falls that were serious enough to limit daily activity across the older age groups (Figure 2).

Provincial and national estimates, however, suggest that falls incidence and the severity of falls increase with age. Results from the Nation Population Health Survey (1998/99) for Ontario residents found that the proportion of adults having sustained an injury as a result of an accidental fall in the year prior to the survey was higher for those 65 years and older ($56.6 \pm 0.3\%$) than for adults aged 20 through 64 years ($33.0 \pm 0.1\%$). The proportion of adults having sustained an injury as a result of an accidental fall was also highest for those 80 years and older ($88.1 \pm 0.4\%$) compared to adults 75-79 years ($57.6 \pm 0.6\%$), 70-74 years ($51.6 \pm 0.7\%$), and 65-69 years ($28.8 \pm 0.5\%$) (Figure 3).

FALLS BY GENDER

In the Middlesex-London area, for adults 65 years and older similar proportions of males and females reported having had a fall in the past 12 months. However, compared to men ($4.3 \pm 2.9\%$), slightly more women ($9.1 \pm 3.5\%$) indicated having had a fall serious enough to limit daily activities. Men in this age group indicated having had more falls that did not limit daily activities ($15.1 \pm 5.2\%$) compared to women ($11.7 \pm 3.9\%$)(Figure 4).

TRENDS IN FALLS BY YEAR

The proportion of residents 65 years and older in the City of London and Middlesex County who indicated that they had had a fall remained stable for 2001 through 2003; 19.3%, 19.7% and 21.4% of residents reported falls annually.

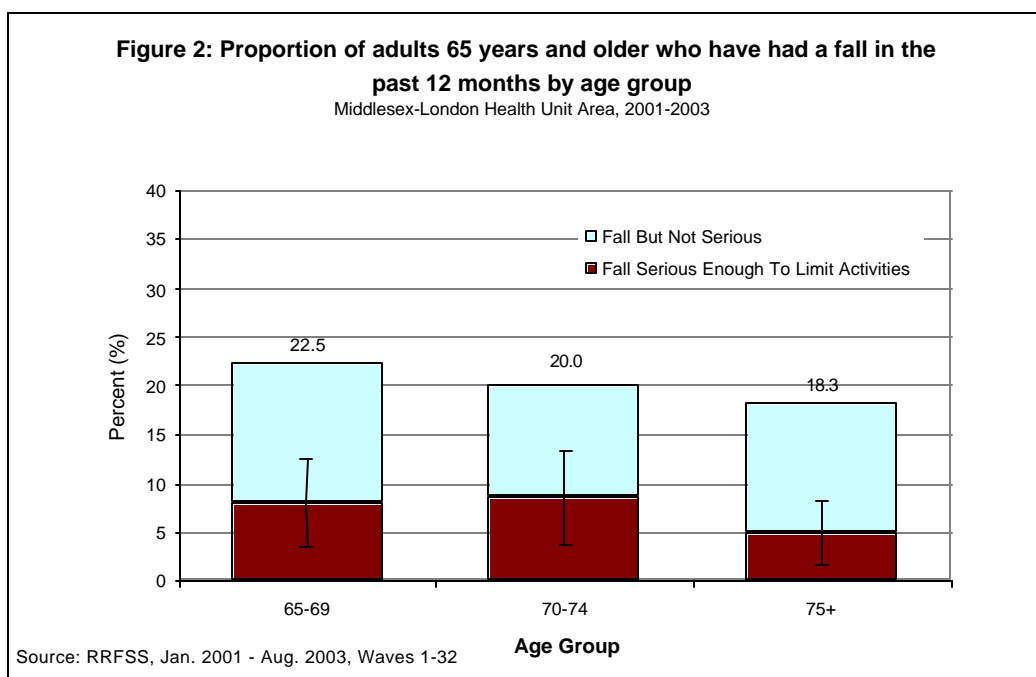
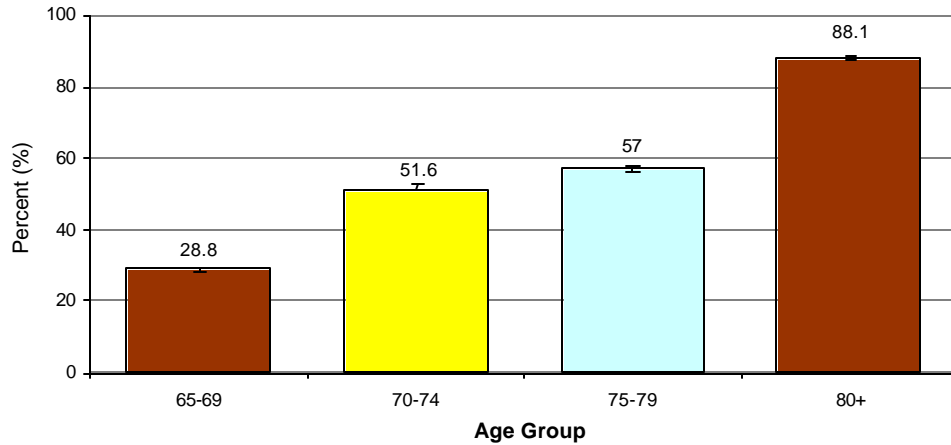


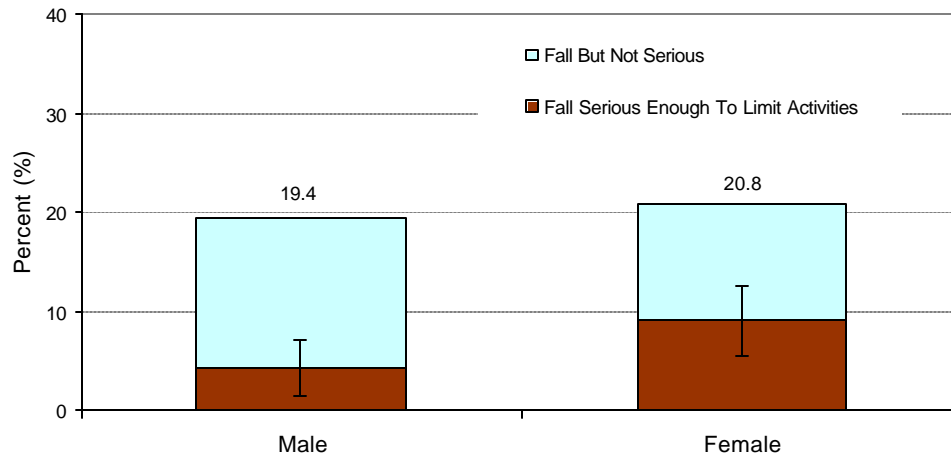
Figure 3: Proportion of adults 65 years and older who reported an injury in the past 12 months that was due to an "accidental fall" by age group
Ontario 1998/99



Source: NPHS, 1998/99, ON

Figure 4: Proportion of adults 65 years and older who have had a fall in the past 12 months by gender

Middlesex-London Health Unit Area, 2001-2003



Source: RRFSS, Jan. 2001 - Aug. 2003, Waves 1-32

REGIONAL AND SOCIO-ECONOMIC DIFFERENCES

No differences in the proportion of residents who indicated that they had had a fall in the past 12 months were found between City of London residents and those residing in Middlesex County. Similarly, the proportion of residents who indicated that they have had a fall in the past 12 months was similar for all income groups. Also, only small differences were found across levels of education, none of which were statistically significant.

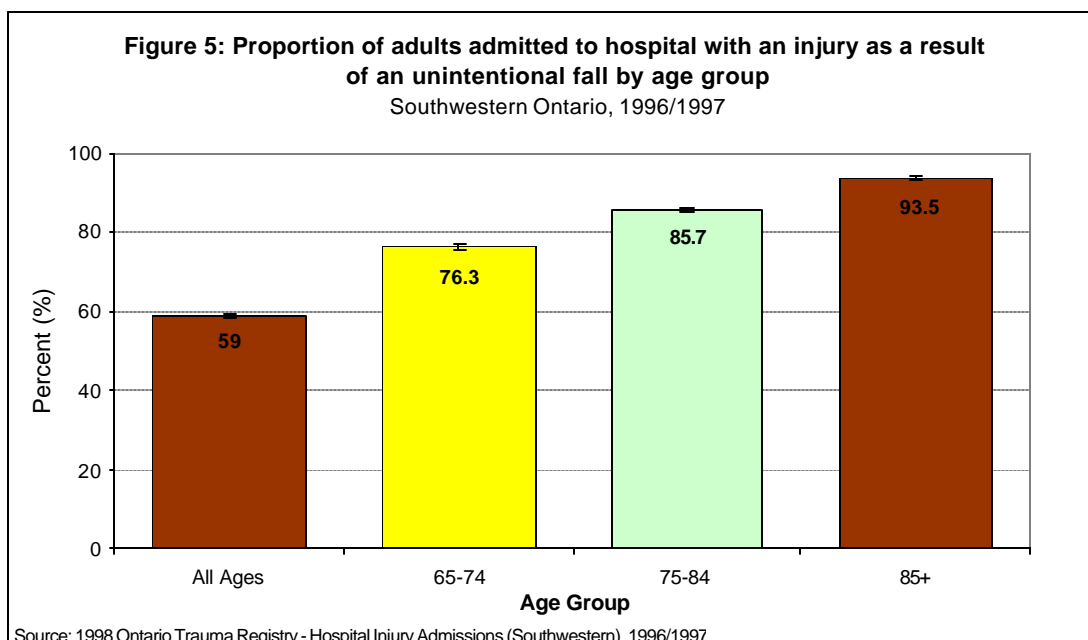
HOSPITALIZATIONS AND FALLS

In Southwestern Ontario falls are the leading cause of injury admission; 59% of hospital admissions were caused by falls (Ontario Trauma Registry Report, 1996/1997). This proportion increased with increasing age: 76.3% of adults aged 65-74, 85.7% of those aged 75-84 years, and 93.5% of adults aged 85 years and older were admitted to a Southwestern Ontario hospital with an injury as a result of a fall (Figure 5). Southwestern Ontario (59%), along with Central (60%) and Eastern Ontario (60%) had the highest proportions of hospital admissions caused by falls compared to the regions of Northeastern and Northwestern Ontario which reported 55% and 49% of hospital admissions were the result of falls.

IMPLICATIONS AND FUTURE PROGRAM PLANNING

Information systems to establish the fall rates in local seniors have provided two different pictures of falls in seniors. RRFSS appears to underestimate the rate of fall related injuries as compared to the NPHS. It is possible that due to the wording of the question, "*Falling downstairs, off a ladder, or on an icy walkway or tripping and falling down over something left on the floor, happen to many people everyday. Have you had a fall in the past 12 months?*" that seniors who may have had a fall (for reasons other than those listed in the question i.e. when getting up in the middle of the night) may not have identified having had a fall based on how the RRFSS question was asked. Future efforts to validate these self-reported surveys are therefore warranted.

Despite the limitations of the self-reported rates, there is evidence that falls place a heavy burden on Southwestern Ontarians, both in economic costs and personal loss. Falls account for the highest portion of injury hospitalization costs and this portion increases with increasing age groups. Injury death rates also rise steeply with age. For Southwestern Ontario, the injury death rates among those 65-74 were 46/100,000 and 245/100,000 among those over age 75 (Ontario Trauma Registry – Southwestern region, 1996/1997).



To achieve the MHPSTG objective to reduce by 20% fall related injuries in the elderly there is a need for increased awareness by Southwestern Ontario residents, notably those 65 years and older, of the risk factors associated with fall-related injuries and of strategies to prevent falls. The Middlesex-London Health Unit, in collaboration with the recently formed Southwest Falls Prevention Committee, is evaluating the feasibility of delivering a media campaign in Southwestern Ontario to raise awareness of the significant consequences and the preventability of falls among the region's senior population. The media campaign is tentatively scheduled for the autumn of 2004.

METHODS AND DEFINITIONS

Three sources of data were used:

- the Rapid Risk Factor Surveillance System (RRFSS January 2001 to August 2003),
- the National Population Health Survey (NPHS 1998/1999) – Middlesex London Health Unit area (public use file) and
- the Ontario Trauma Registry – Southwestern Region 1996/1997, Canadian Institute for Health Information, 1998

RRFSS:

All data describing falls as either; i) serious enough to limit activities or, ii) not serious reported for adults 18 years and older are from RRFSS. These data are collected for the Middlesex-London Health Unit (MLHU) by the Institute of Social Research, York University. Data were collected in a series of monthly telephone surveys (waves). Households were selected randomly from all households with telephones in London and Middlesex County and respondents aged 18 and older were systematically selected from within each household for the adult that had the next birthday. Once a respondent was identified every effort was made to complete the interview with the appropriate respondent. Although on average five calls were made to a single household in order to complete the interview with the designated respondent, up to 12 attempts was standard practice.

Data related to falls was collected from January 2001 to August 2003. The unweighted or

household sample consists of 3264 respondents from London and Middlesex County surveyed during that time period (waves 1-32). All thirty-two waves included questions related to falls for which 3264 respondents provided valid responses. The sample for Middlesex County residents was 737 and for the City of London was 2527. Those that did not respond to any individual questions were excluded provided the non-response category represented less than 5% of the total respondents.

Respondents were first asked: "*Falling downstairs, off a ladder, or on an icy walkway or tripping and falling down over something left on the floor, happen to many people everyday. Have you had a fall in the past 12 months?*". All respondents who indicated that they had fallen in the past 12 months were then asked: "*Did your fall result in an injury that was serious enough to make it difficult to walk, get dressed, got to work, or do most of the things you normally do?*". Results from the two questions allowed both the proportion of adults reporting a fall in the past 12 months as well as the proportion of adults reporting a fall in the past 12 months that affected their daily activities to be estimated.

All percentages were provided with 95% confidence intervals. Difference in proportions were considered significant at $p < 0.05$. Where possible bar charts included error bars illustrating 95% confidence intervals.

Region was divided into two areas, the City of London and the County of Middlesex (excluding the city). The City of London residents include all those respondents who identified that they in London. All other respondents that identified they live in Middlesex County are included in the Middlesex County group.

The full questionnaire is available at www.cehip.org/rrfss.

TABLE

Table 1: RRFSS Reported Falls by Age Group							
Middlesex - London Health Unit Area, 2001-2003							
		Fall Serious Enough To Limit Activities		Fall But Not Serious		Has Not Fallen	
Age Group		%	95% C.I.	%	95% C.I.	%	95% C.I.
	18-24	9.2	2.4	27.6	3.7	63.2	3.9
	25-44	9.8	1.7	13.8	2	76.4	2.4
	45-64	7.2	1.6	12.6	2.1	80.2	2.5
	65-69	8.0	4.5	14.5	5.9	77.5	4.6
	70-74	8.5	4.8	11.5	5.5	80.0	6.9
	75+	5.0	3.2	13.3	4.9	81.8	5.6
Seniors (65+)	65 +	7.1	2.4	12.9	3.1	80.0	3.7

NPHS:

The NPHS 1998/99 was used to assess proportion of Ontarians who sustained an injury caused by an unintentional fall, by age, for the household population aged 65 and older. These results were derived from the NPHS data file for Ontario residents.

Respondents were asked: *“Not counting repetitive strain injuries, in the past 12 months, were you injured?”* and respondents who answered “Yes”, were then asked the reason for injury; those who indicated *“accidental fall”* as the reason for their injury were included in the analysis.

The Ontario Trauma Registry – Southwestern Region 1996/1997, Canadian Institute for Health Information, 1998:

The Ontario Trauma Registry was used to assess proportion of Ontario hospital injury admissions by type injury (unintentional falls), by age, for both sexes combined for the Southwestern region. Unintentional falls were designated by E-Code (E880-888).

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