



# Sources of Potentially Avoidable Emergency Department Visits

Report

November 2014



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## Executive Summary

Canadians visit the emergency department (ED) frequently, often for minor medical problems that might be more appropriately treated in another setting. However, EDs give priority to patients with urgent needs who require highly skilled care.<sup>1</sup> As such, opportunities to shift patients with more minor medical problems away from the ED to other settings (such as doctors' offices) may improve a patient's continuity of care and overall experience. Such opportunities could also benefit the health care system, by allowing ED resources to focus on those who more appropriately require them.

Building on previous research from Ontario's Institute for Clinical Evaluative Sciences and the Health Quality Council of Alberta, this study examined 2 groups of patients who might obtain more appropriate care in settings other than the ED:

1. Patients who visited the ED for conditions that could be treated in a doctor's office or clinic, called "family practice sensitive conditions"
  - 1 in 5 ED visits where patients were discharged home and not admitted to a hospital bed fell into this category.
  - The most common reasons for these visits included upper respiratory infections such as colds (13%), antibiotic therapies (13%), sore throats (8%), ear infections (7%) and care following surgery such as dressing changes and removal of stiches (5%). These 5 conditions accounted for nearly half (46%) of all visits to EDs for family practice sensitive conditions in 2013–2014.
  - Young children and rural patients had more of these visits than other groups. More than one-third (35%) of non-admitted visits for children younger than age 5 were for family practice sensitive conditions, compared with only 12% for patients age 85 and older. Similarly, 32% of non-admitted visits to the ED for patients from rural areas fell into this category (versus 17% for patients from urban areas).
2. Seniors who live in long-term care (LTC) facilities, where access to preventive care and basic treatment is often available on site; building on earlier research, these patients were segmented into 2 subcategories: visits for potentially preventable conditions, and visits considered less urgent where the patient was not admitted to a hospital bed
  - In 2013–2014, 1 in 3 seniors living in LTC visited the ED, similar to numbers for community-dwelling seniors
  - And 1 in 3 of their ED visits was potentially avoidable:
    - 24% of visits were for potentially preventable conditions. Urinary tract infections and pneumonia accounted for more than half (56%) of these.
    - 10% of visits were for non-urgent reasons not requiring inpatient admission. Falls accounted for one-quarter (25%) of this group.

Many jurisdictions are evaluating strategies to reduce avoidable ED visits, with the aim of improving appropriateness of care. Identifying and quantifying specific types of potentially avoidable ED visits can help inform these efforts.

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Please note that the analyses and conclusions in this report do not necessarily reflect those of the individuals or organizations mentioned above.

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## Introduction

Emergency departments (EDs) are intended to provide care in emergency and life-threatening situations, to offer urgent medical attention for serious conditions and injuries, and to provide access to a wide range of health care specialists and diagnostic equipment.<sup>1,2</sup>

Canadians appear to use the ED more frequently than people in other countries. In the 2013 Commonwealth Fund International Health Policy Survey, 41% of adult Canadians reported visiting the ED in the previous 2 years.<sup>3</sup> This was similar to the rate for the United States (39%) but higher than the average (29%) for all 11 countries surveyed.<sup>3</sup>

Compared with respondents from other countries, Canadians also reported longer waits to see a doctor when they needed care, and were more likely to report visiting the ED for a condition that could have been treated in their usual place of care. For some, EDs may be the only available or accessible alternative.<sup>4</sup> In a survey commissioned for this study (Research House CIHI survey), 47% chose to seek care in the ED because they could not get an appointment with a primary health care provider. 38% felt the ED would give them the best care for their condition and another 7% said they were not aware of other settings they could use.

Due to the high rate of reported ED utilization in Canada and the known challenges with access to community-based primary care, experts and policy-makers alike have argued that EDs can be better utilized. They have also expressed concern that Canadians often do not use the ED appropriately and that this may have an effect on the continuity of care for many patients.

Appropriate care can lead to more efficient use of health care services and better outcomes for patients.<sup>5</sup> In some circumstances, providing care in EDs may cost more than alternative settings and present challenges for continuity of care. As well, less urgent patients may face delays in being seen in the ED. By identifying and targeting types of ED visits that could be better served in different care settings, the continuity of care for these patients and their overall experience could be improved. As a result, patients' quality of care could be enhanced and ED resources could be more closely targeted to those who need them the most.

This study is intended to highlight the issue of the appropriateness of visiting the ED for conditions that might better be dealt with in a different care setting. There are various ways and approaches to examine this issue. This study includes 2 types of potentially avoidable ED visits that illustrate different aspects of appropriateness:

### **1. ED visits for “family practice sensitive conditions” (FPSCs)**

These are ED visits for health conditions that may be appropriately managed at a family physician's office. They are typically low-acuity complaints that do not result in inpatient admission. In 2013–2014, 1 in 5 ED visits where patients were discharged home and not admitted to a hospital bed were for FPSCs.

## 2. ED visits among seniors who live in long-term care (LTC)

In 2013–2014, 1 in 3 ED visits among seniors in LTC were identified as potentially preventable or classified as low acuity without a need for inpatient admission. These conditions may have been treatable in their residential care setting had appropriate resources or care practices been in place.

This study will discuss the frequency and characteristics of these potentially avoidable visits, and will provide an in-depth look at the patients making these visits, with the aim of informing the discussion on appropriateness of care and potential barriers to accessing the right care in the right place, at the right time. The study also highlights examples of initiatives in place to reduce unnecessary visits to the ED or improve access to primary care and continuity of care for patients.

## Emergency Department Visits for FPSCs: Avoidable With Improved Access to Care in Other Settings?

Each year, millions of Canadians visit EDs for minor medical complaints, such as sore throats, earaches and skin conditions. However, EDs are designed to give priority to patients with critical or emergency needs who require timely and highly skilled care.<sup>6</sup> As such, other settings such as doctors' offices may be more appropriate for treating patients with minor health complaints.

One approach to looking at ED patients who might be better cared for in another setting is to use FPSCs, a set of conditions originally developed by the Health Quality Council of Alberta and adapted for this study.<sup>i</sup> These are conditions for which the likelihood of being admitted to acute inpatient care after presenting to the ED is very low (less than 1%).

In 2013–2014, among the 83% of all ED visits where patients were discharged home and not admitted to a hospital bed, about 1 in 5 were for FPSCs. This is based on data from the jurisdictions that submitted ED records with complete diagnosis codes to CIHI.<sup>ii</sup> This rate has been stable over the last 5 years and translates to just more than 1.4 million visits that could potentially have been avoided (21% of all non-admitted ED visits). If the same rate (21%) was applied across the country, it would represent more than 2.7 million potentially avoidable ED visits for FPSCs each year.

i. See Appendix A for detailed information on FPSCs used in the study.

ii. All facilities in Alberta and Ontario, and some facilities in Yukon, Saskatchewan, Nova Scotia and Prince Edward Island. See Appendix A for additional details.



The 2 most common FPSCs were *unspecified*<sup>iii</sup> *acute upper respiratory infections* and *other medical care* (mainly provision of antibiotic therapy), each representing 13% of all FPSC visits. These were followed by *acute inflammation of the throat* (8%), *bacterial infections of the middle ear* (7%) and *other surgical follow-up care* (mainly change of dressing and removal of sutures) (5%). Taken together, these top 5 reasons accounted for almost half (46%) of all FPSC visits to EDs in 2013–2014. Table 1 provides more details on the most common FPSCs.

**Table 1: The 10 Most Common Family Practice Sensitive Conditions in Canadian EDs, 2013–2014**

Conditions	Volume of ED Visits	Percentage of ED Visits
Acute upper respiratory infection of multiple and unspecified sites (e.g., cold)	186,055	13
Other medical care: mainly antibiotic therapy such as intravenous cephalosporin or other anti-infective agents	183,271	13
Acute pharyngitis (inflammation of the throat)	107,198	8
Suppurative and unspecified otitis media (bacterial infection of the middle ear)	92,874	7
Other surgical follow-up care (mainly change of dressing and removal of sutures)	75,991	5
Migraine	45,118	3
Persons encountering health services in other circumstances (mainly for issue of repeat prescriptions)	41,326	3
Conjunctivitis (inflammation of the outermost layer of the eye and the inner surface of the eyelids)	36,641	3
Follow-up examination after treatment for conditions other than malignant neoplasms, such as medical follow-up after treatment	34,197	2
Diseases of pulp (centre of tooth) and periapical (apex of the root of tooth) tissues	33,105	2
All other FPSCs	567,329	40
<b>Total</b>	<b>1,403,105</b>	<b>100</b>

#### Notes

Percentages may not add up to 100 due to rounding.

FPSCs were identified using ICD-10-CA codes that were assigned as primary diagnoses. Included only patients discharged home. Excluded patients who died in the ED; were admitted to acute inpatient care; were transferred to another facility; or who left against medical advice or without being seen.

#### Source

National Ambulatory Care Reporting System, 2013–2014, Canadian Institute for Health Information.

There was variation in the frequency of these conditions by age group. Unspecified acute upper respiratory infections were more common among children younger than age 5 than among other age groups; 40% of FPSC visits by infants and 32% by young children were for acute upper respiratory infections. The second most common FPSC for children younger than age 5 was a bacterial infection of the middle ear: 13% of visits by infants and 24% by young children were for such infections. For patients older than age 17, middle ear infections were no longer among the

iii. An unspecified diagnosis can be assigned when a definitive diagnosis has not been established by the end of the encounter, when sufficient clinical information isn't known or available about a particular health condition, or when the available medical record documentation is not sufficient for data coding.



top 3 presenting FPSC complaints. For example, for seniors, the most common conditions were *other medical care* (mainly antibiotic therapy) (26%) and *other surgical follow-up care* (mainly change of dressing and removal of sutures) (10%).

Upper respiratory infections are usually short-lived and commonly treated in doctors' offices.<sup>7</sup> Similarly, the provision of antibiotic therapy, a non-emergency intervention, could be carried out in an urgent care centre, clinic or possibly a doctor's office. Many visits for surgical follow-up care could also likely be provided outside of the ED. For example, with a doctor's referral, Ontario's community care access centres offer home-based wound care programs for post-surgical follow-up. As well, visits for prescription refills are likely not an appropriate use of ED resources and could indicate challenges with access to or availability of primary care.

## Are FPSCs Contributing to ED Overcrowding?

There is a great deal of debate among clinicians, policy-makers and health services researchers about the root cause of overcrowding in Canada's EDs. Previous studies have looked at the number of people using ED services, alternate level of care (i.e., patients in acute care beds waiting for another level of care to become available) or other factors such as efficiency of patient flow.

For this study, a separate analysis examined whether FPSCs are contributing to the overcrowding of EDs. In this analysis, a "busy" period was defined as being at 90% or more of the maximum occupancy of that ED in a given year. A comparison of the number of patients presenting with FPSCs during both busy and less-busy periods was performed using 2012–2013 data from CIHI's National Ambulatory Care Reporting System (NACRS).

The results showed that ED patients with FPSCs were no more likely to be present during busy periods (17% of ED population) than during other times (18% of ED population). FPSC patients also had shorter overall ED lengths of stay (LOS) compared with other patients (both admitted and non-admitted), regardless of how busy the ED was. The ED LOS was longer for everyone during busy periods.

The low complexity of FPSC patients' care needs may contribute to this, as they likely do not require stretchers and do not need to wait for test results. This suggests that while reducing avoidable visits for FPSCs may have important benefits for the patients, and may result in cost-savings to the system, it would not be expected to have a major impact on improving ED flow or reducing wait times.

Compared with the rest of non-admitted patients who visited the ED for other reasons, FPSC patients were more likely to

- Be younger: Approximately one-third (30%) of FPSC patients were younger than age 18 compared with one-fifth (20%) of other patients;
- Live in rural areas: 41% of FPSC patients lived in rural areas compared with 23% of non-FPSC patients;
- Present with low-acuity conditions: 70% of FPSC visits were assessed by ED staff as low acuity (CTAS levels<sup>iv</sup> IV and V) compared with 39% of non-FPSC visits;

iv. Canadian Triage and Acuity Scale (CTAS) levels are as follows: I Resuscitation; II Emergency; III Urgent; IV Semi-Urgent; V Non-Urgent.

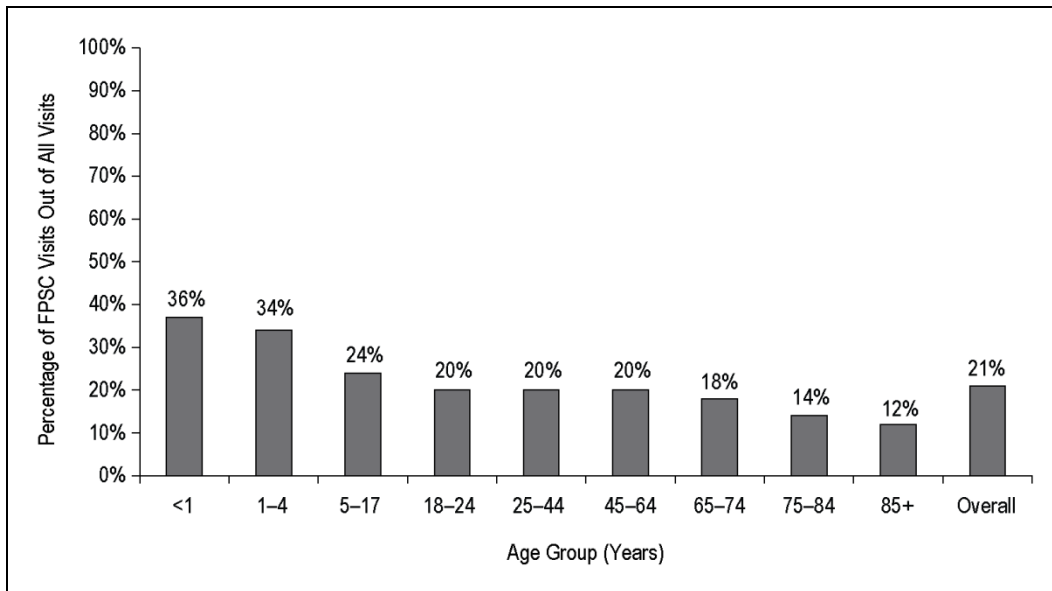
- Visit in the morning: More FPSC visits (20% versus 15% for non-FPSC visits) occurred between 6 a.m. and 10 a.m.
- Have short stays: ED visits for FPSCs had a shorter median LOS (less than 90 minutes) than visits for non-FPSCs (more than 2.5 hours).
- Not receive any intervention: Only 1 in 6 (17%) FPSC patients had any documented intervention compared with nearly half (47%) of non-FPSC patients.

A detailed profile of FPSC visits is available in Appendix B. Other data, including regional FPSC rates for Ontario and Alberta, is available for free download as part of the companion data tables for this report.

## Infants and Young Children Have More FPSC Visits Than Other Age Groups

Infants (younger than 1 year) and young children (age 1 to 4) have the highest rates of FPSC visits compared with other age groups. As can be seen in Figure 1, FPSCs were the reason for non-admitted visits for more than one-third (34%) of young children and for 36% of infants. In contrast, only 12% of non-admitted visits for patients age 85 and older were for FPSCs. Overall, patients younger than 18 accounted for 30% of all FPSC visits, more than half of which were infants and young children.

Figure 1: Rate of FPSC Visits by Age Group, 2013–2014



**Note**

All visits included FPSCs and all other non-admitted visits only.

**Source**

National Ambulatory Care Reporting System, 2013–2014, Canadian Institute for Health Information.

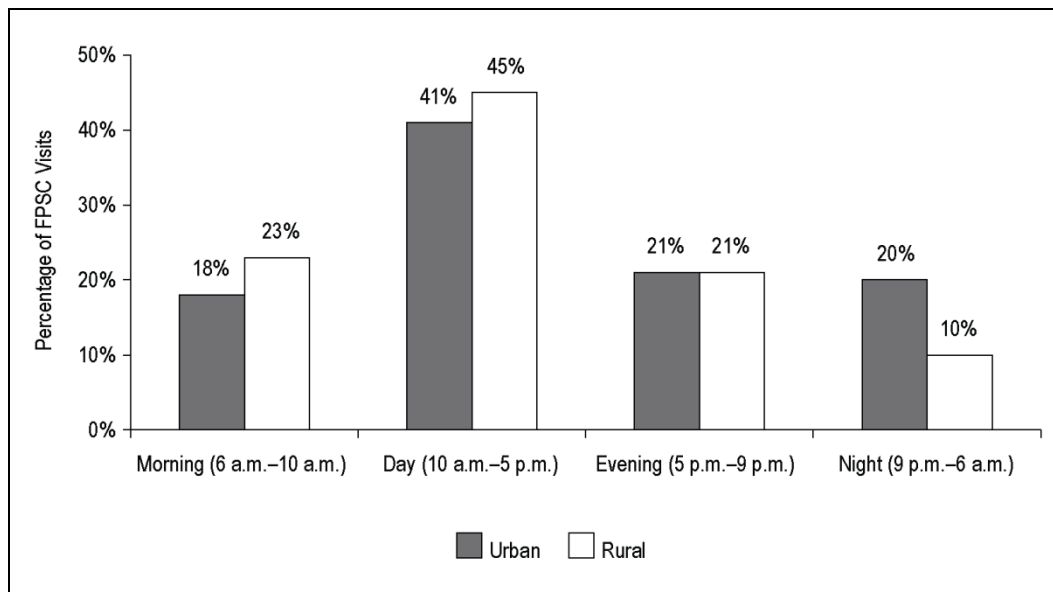
It is important to separate out non-medical circumstances that may also be contributing to the higher rate of FPSCs among children. For example, a recent U.S. study found that a significant proportion of parents brought their children to the ED seeking doctors' notes authorizing return to child care centres or days off work for parents who stayed home caring for sick children.<sup>8</sup> However, the children younger than age 5 in this study were more likely to be triaged as high acuity (CTAS levels I, II and III) compared with other age groups. The higher frequency of upper respiratory tract infections likely contributed to this, as signs of respiratory distress are one of the first-order modifiers in the ED triage process for infants and young children.<sup>9</sup>

## FPSC Visits More Common in Rural Areas Than in Urban Areas

Patients from rural areas visit the ED for FPSCs much more frequently than patients from urban areas. In 2013–2014, 32% of non-admitted ED visits by patients living in rural areas were FPSC-related compared with 17% by patients living in urban areas. Of all FPSC visits in 2013–2014, 41% involved patients who live in rural areas. In comparison, rural patients represented only 23% of non-admitted ED visits for other conditions.

The higher rate of FPSC visits in rural areas may reflect greater overall challenges with access to alternative care settings in rural areas, the delivery of a broader range of care in rural EDs, or both. Figure 2 illustrates the time of day urban and rural populations seek care in the ED for FPSCs. Urban patients were more likely to visit for FPSCs overnight while rural patients were more likely to visit the ED during working hours (i.e., 6 a.m. to 5 p.m.).

**Figure 2: Timing of FPSC-Related Visits in Urban and Rural Populations, 2013–2014**



**Note**

Visits were excluded where a patient's place of residence could not be identified as either urban or rural.

**Source**

National Ambulatory Care Reporting System, 2013–2014, Canadian Institute for Health Information.

There were also differences in FPSC visits between rural and urban patients by age and acuity: rural patients were older and had lower acuity than urban patients. The main problems also differed for these 2 groups. Detailed data is available for free download as part of the companion data tables for this report.

## Potential Benefits of Shifting FPSCs to More Appropriate Care Settings

Reducing the use of EDs for FPSCs may result in potential benefits for the health care system. In 2013–2014, the total cost of FPSC-related visits exceeded \$200 million,<sup>v</sup> representing 13% of the cost of all non-admitted ED visits for the facilities included in the analyses. Extrapolated to include all of Canada, the FPSC visits would cost about \$400 million. However, this total cost does not represent a true savings to the health care system even if all FPSC patients were seen in other settings. FPSC visits to other settings have associated costs, which could be considerable, especially if those settings would require additional resources to expand their current capacity and/or coverage. Similarly, significant costs could be required for new alternatives to ED to be created where none currently exist.

In addition, appropriate use of primary health care could improve the overall patient experience and could allow ED resources to be more closely targeted to those who appropriately require them. While primary health care can sometimes be a less resource-intensive setting for patients, it could more importantly also offer better continuity of care. Benefits of appropriate care provided in accordance with the principles of continuity of care include the following:<sup>10</sup>

- Familiarity with a patient's medical history makes it easier to adjust standard treatments to individual patients' needs and may help reduce unnecessary tests.
- Continuous monitoring of drug reactions facilitates the prompt adjustment of medications in case of an adverse drug event.
- A family doctor is in a better position to predict and prevent possible acute exacerbations of chronic conditions.

## Reducing Inappropriate ED Visits

Across Canada, programs and policies are being put in place to help reduce the number of potentially preventable or inappropriate ED visits in several jurisdictions. Experts have cautioned that policy-makers need to ensure that these strategies do not inadvertently end up increasing ED utilization and to be careful about dissuading people from going to the ED if they are concerned about their health. While the evaluation of the effectiveness and return on investment of such strategies is beyond the scope of this study, the following are highlights of some common strategies currently in place:

- Bolstering the primary care workforce by increasing the number of primary care physicians, as well as encouraging group practices with extended hours and cross-coverage between physicians.<sup>11</sup> Increased coverage could improve the chance that a patient may receive same-day care and no longer need to visit the ED.

v. Based on CIHI's Case Mix Group+ (CMG+) methodology.

- Utilizing a combination of walk-in clinics, after-hours clinics and urgent care centres to redirect care for less complex conditions away from the ED.<sup>12</sup>
- Providing phone or internet services whereby health care providers such as nurses, dietitians and pharmacists are available to answer questions about patients' health and direct the patients to appropriate care settings.<sup>13, 14</sup>
- Posting ED wait times online for patients to review prior to seeking treatment at a facility.<sup>15</sup>

Examples of specific provincial initiatives are provided below:

- In Ontario, **rapid response nurses** see patients in their homes within 24 hours of discharge from the hospital.<sup>16</sup> They focus on ensuring that the patient connects with a physician or nurse practitioner within 7 days of discharge to prevent ED and hospital readmissions.<sup>16</sup>
- **Advanced practice paramedics** now work in many regions across different provinces including Nova Scotia, Prince Edward Island, Saskatchewan, Ontario and Alberta.<sup>17–20</sup> In certain medical situations, they are able to assess and treat patients on the scene or bring them to alternative settings such as an urgent care centre.<sup>20</sup> Follow-up between the patient and his or her family physician is encouraged to promote continuity of care.
- Several provinces have **prioritized care for high users** of the health care system.<sup>21–23</sup> These individuals typically visit the ED many times per year. The **Hotspotting** initiative in Saskatchewan targets high users of the ED by connecting them with multidisciplinary teams with expertise in fields such as social work and education.<sup>21</sup> In Ontario, **Health Links** targets high users by coordinating their care and supporting them with collaborative teams from hospitals, primary care, community organizations and long-term care.<sup>22</sup> In Quebec, **Défi Santé** reviews high users and assigns nurse case managers to them to improve the continuity of care across settings and reduce readmissions.<sup>23</sup>

## Urgent Care Centre Visit for FPSCs

Urgent care centres (UCCs) are an alternative to the ED for the treatment of urgent but non-life-threatening conditions.<sup>24</sup> They can be especially effective when located in densely populated areas far from or underserved by EDs, and when they are affiliated with hospitals to facilitate staffing, transfers, admissions, consultations and follow-up. There are many UCCs across the country, staffed by health care professionals specializing in emergency medicine, including physicians and nurses. They typically have diagnostic equipment to perform on-site assessments such as ultrasounds, X-rays and blood tests.

If a timely primary health care appointment is not available, UCCs can effectively handle a range of conditions, including wounds, minor burns, infections, and illnesses of the ear, nose and throat. Admission rates to inpatient care are typically much lower in UCCs than in EDs. Visits to UCCs are not included in this report, but according to CIHI's NACRS, there were more than 142,000 FPSC visits to UCCs in 2013–2014. These represented 27% of all non-admitted visits to UCCs that year, a higher percentage than FPSC visits to EDs (21%).

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Patients who visited UCCs and EDs for FPSCs were generally similar in age, gender and neighbourhood income. They also most commonly sought treatment for similar problems (the following are the top 3 for UCCs):

1. Acute upper respiratory infection of multiple and unspecified sites (e.g., cold)
2. Acute pharyngitis (inflammation of the throat)
3. Suppurative and unspecified otitis media (bacterial infection of the middle ear)

Patients who live in rural areas sought treatment for FPSCs significantly more often in EDs than in UCCs (41% versus 9%, respectively). This likely reflects the current location of UCCs across Canada, found predominantly in densely populated urban areas and often affiliated with teaching or large community hospitals.

## ED Visits for Seniors Living in Long-Term Care Settings: Potentially Avoidable With Improved Access to Specific Services

Visits by seniors (age 65 and older) living in LTC<sup>vi</sup> facilities make up a small proportion (0.8%) of all ED visits. However, for this population, transfers to the ED can pose significant health risks and make for an uncomfortable experience:

- Advanced age (58% are age 85 and older)<sup>25</sup> and cognitive impairment<sup>26</sup> or dementia<sup>25, 27</sup> contribute to the complexity of their health care needs.
- Transitions expose individuals to an unfamiliar place and staff who lack awareness of their health situation, making them particularly vulnerable.
- Insufficient communication between care providers in different settings frequently contributes to breakdowns in continuity of care.
- Ambulances are usually involved in transporting LTC residents to and from the hospital. Ambulance services constitute an additional cost to the cost of receiving care. Also, experts say that waiting for transportation once a patient's care is completed can delay the patient's discharge back to LTC.

Based on the methodology from previous research by Ontario's Institute for Clinical Evaluative Sciences,<sup>27</sup> 2 categories of potentially avoidable ED visits among seniors in LTC care were identified for this study:<sup>vii</sup>

- Visits for selected potentially preventable conditions—similar to ambulatory care sensitive conditions (ACSCs) and validated for LTC residents.
- Visits classified as less or non-urgent (low acuity)—according to the Canadian Triage and Acuity Scale—and without inpatient admission, resulting in the patient returning directly to LTC.

vi. Includes information from Yukon, Alberta and Ontario (excluding complex continuing care patients). See Appendix A for detailed information on LTC and the cohort used in the study.

vii. More detailed definitions of these categories are provided in Appendix A.

These visits among seniors in LTC who have access to around-the-clock supervised care, basic treatment and preventive care on-site are considered potentially avoidable on several fronts. First, for these types of conditions, early identification and treatment can help prevent residents' health from deteriorating to the point where an ED visit is required. Second, visits for relatively less urgent medical reasons not requiring an inpatient admission could likely be handled in a different setting or be prevented altogether.

In 2013–2014, 1 in 3 seniors living in LTC visited the ED, a proportion similar to that for community-dwelling seniors. And 1 in 3 (more than 21,600) of their ED visits was potentially avoidable, either for potentially preventable conditions (24%) or for less or non-urgent reasons not requiring inpatient admission (10%). This analysis focuses on 3 jurisdictions—Ontario, Alberta and Yukon—with comparable data submission to CIHI. If the same pattern were replicated across the country, it would represent nearly 48,000 potentially avoidable visits among seniors in LTC. The rate of ED visits for potentially preventable conditions is similar to findings from previous Ontario studies.<sup>27, 28</sup>

Seniors living in LTC were just as likely to visit the ED as their counterparts living in the community, but for different reasons. Those living in LTC were more likely to be there for potentially preventable conditions (24% versus 16%) but less likely for low-acuity/non-admitted reasons (10% versus 25%) in comparison with community-dwelling seniors. They were also more likely to be admitted (62% versus 35%).

Seniors from LTC were also more likely than community-dwelling seniors to receive documented interventions during their ED visits. The use of interventions may indicate the complexity of assessing confused patients and justify the need for assessment in an ED. In most (83%) of the visits by seniors from LTC for potentially avoidable conditions, at least 1 documented intervention was carried out. The corresponding proportion was lower for community-dwelling seniors (60%). The majority of interventions (58%) among seniors in LTC were X-rays or CT scans only. See Appendix C for more details.

The higher rates of potentially avoidable visits could reflect unique challenges in accessing physicians or specialists or specialized services (e.g., diagnostics) in the LTC setting. Information gathered from different LTC facilities suggests that many would like to see improvement in the on-site availability of doctors. However, differences in demographic and clinical characteristics between seniors who live in LTC and those who do not also provide some context to these findings.

LTC residents differ from community-dwelling seniors in that they experience greater cognitive and functional decline and require more formal care support.<sup>29</sup> In addition, they are generally older than seniors in the community: in 2013–2014, the share of the 85 and older age group among seniors in LTC was 58%<sup>25</sup> compared with 13% in the overall general population of seniors.<sup>30</sup>

Appendix C provides additional detailed data regarding differences in patient profiles, triage levels, length of stay, diagnoses, interventions, and costs for ED visits by seniors living in LTC compared with those living in the community.

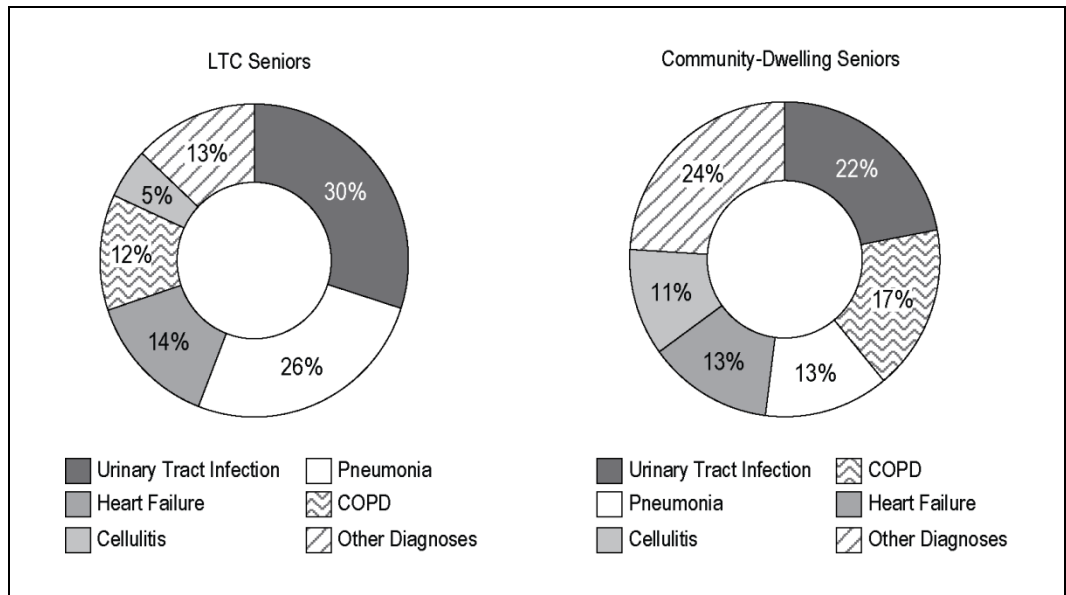


The following section provides separate analyses of the ED visits for potentially preventable conditions, followed by the visits triaged as low acuity/non-admitted.

## UTI and Pneumonia Account for More Than Half of ED Visits for Potentially Preventable Conditions

Urinary tract infections (UTIs) accounted for 30% of ED visits for potentially preventable conditions by seniors in LTC, followed by pneumonia (26%) and heart failure (14%). Figure 3 shows the most common potentially preventable conditions. The figure also illustrates the differences in ranking and the percentages of these visits for the 2 groups of seniors.

**Figure 3: Most Common Potentially Preventable Conditions, 2013–2014**



**Notes**

LTC: Long-term care.

COPD: Chronic obstructive pulmonary disease.

**Sources**

National Ambulatory Care Reporting System and Continuing Care Reporting System, 2013–2014, Canadian Institute for Health Information.

Compared with their counterparts in the community, seniors in LTC were triaged at a higher level and had higher admission rates for both UTIs and pneumonia. See Table 2 for more information.

**Table 2: Acuity and Discharge Destination for ED Visits by Seniors for Urinary Tract Infection and Pneumonia, 2013–2014**

	Seniors Living in LTC		Community-Dwelling Seniors	
	Urinary Tract Infection	Pneumonia	Urinary Tract Infection	Pneumonia
<b>Triage Level</b>				
<b>High Acuity: CTAS I–III (%)</b>	91	94	64	84
<b>Low Acuity: CTAS IV–V (%)</b>	9	5	36	15
<b>Admission to Acute Inpatient Care (%)</b>	52	72	20	51

#### Notes

LTC: Long-term care.

CTAS: Canadian Triage and Acuity Scale.

Includes only visits with valid triage-level information.

#### Sources

National Ambulatory Care Reporting System and Continuing Care Reporting System, 2013–2014, Canadian Institute for Health Information.

ED visits for conditions such as UTIs, pneumonia and dehydration are considered preventable, because they can be reduced through early identification and adequate management. For example, UTIs can be preventable with recommended infection control measures.<sup>31</sup> Several provinces in Canada have guidelines for the prevention and treatment of UTIs in LTC<sup>32, 33</sup> and provide additional resources and tools for LTC homes to assist in identifying, managing and preventing these infections.<sup>34</sup>

## Falls Contribute Significantly to Low-Acuity/Non-Admitted ED Visits

Falls are a common cause of low-acuity/non-admitted ED visits among seniors in LTC. In 2013–2014, falls accounted for 1 in 4 (25%) of the more than 6,400 ED visits by seniors in LTC that were low acuity and non-admitted. By comparison, the percentage of falls among low-acuity ED visits by community-dwelling seniors was much lower, at only 10%.

Falls prevention in LTC is a recognized public health and safety priority in Canada<sup>35, 36</sup> and internationally.<sup>37, 38</sup> In Canada, several jurisdictions developed programs to reduce falls and injuries among seniors. For example, the *Safer Healthcare Now!* program developed a guide to help professionals working in LTC and other sectors implement falls prevention and injury reduction programs for individuals age 65 and older. It includes instruments for multifactorial risk assessment, recommendations on implementing organizational falls prevention strategies and measures of success.<sup>39</sup> Many LTC facilities reported having falls prevention programs.

Given that acute inpatient admission was not necessary for the population in this study, it is possible that much of the medical treatment required for the low-acuity visits could be carried out in the LTC setting. This would mean that residents would not have to be transferred to the ED. Such transfers are stressful to the resident and have other negative consequences, including a break in the continuity of care, inconvenience, long lengths of stay in the ED and potentially higher costs to provide treatment there than in alternate settings. See Appendix C for detailed data.

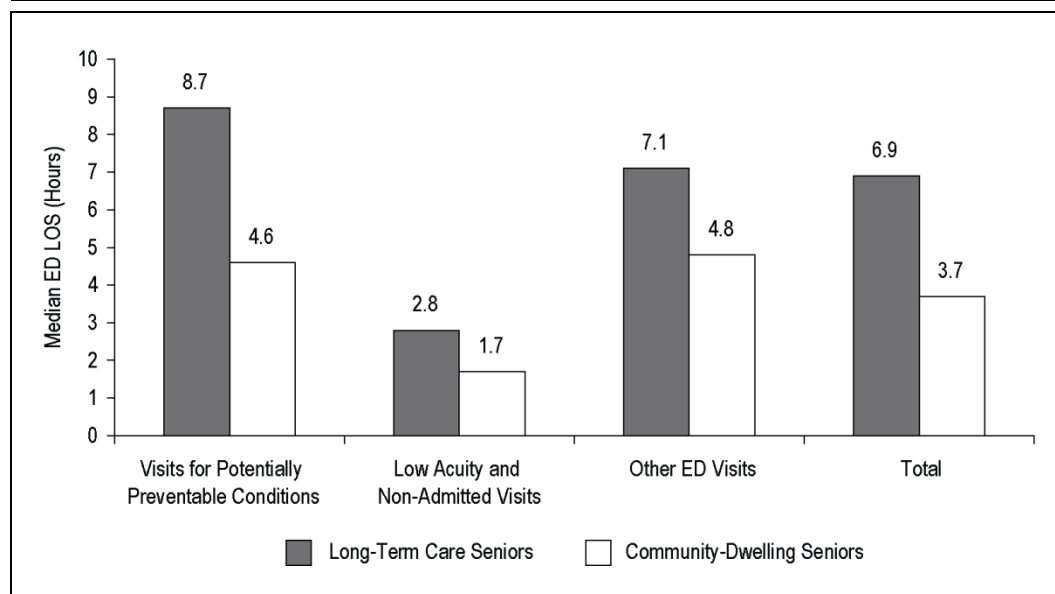
Further, for 4 in 10 (42%) of these patients, no documented intervention was carried out during their ED visit. Among those who did have a documented intervention, X-ray or CT scan was the sole intervention in 4 in 10 (43%) cases. This further supports that many of these patients could be managed in the LTC facility if access to appropriate services (e.g., diagnostics) and providers (e.g., physicians to interpret the diagnostics) was readily available.

## Time Spent in the ED Is Longer for Seniors Who Live in LTC Facilities

In 2013–2014, seniors living in LTC who went to the ED had a longer median LOS compared with community-dwelling seniors (6.9 versus 3.7 hours). The difference was observed for all types of visits (Figure 4). When admitted, LTC residents waited longer for inpatient beds (4.1 versus 3 hours) than community-dwelling seniors. Some experts suggest that non-admitted seniors who require an ambulance to take them back to LTC may stay in the ED longer because they are waiting for transportation. The difference in time spent in the ED for the 2 groups of seniors could also reflect differences in age and underlying health status.

The relatively long ED lengths of stay among seniors who live in LTC underscore the importance of providing care in the appropriate setting for these patients. Visits to the ED have been associated with increased risk of new acute infection among the elderly population in general.<sup>40</sup> A longer LOS for seniors who live in LTC could further compound this risk. In addition, the long exposure to an unfamiliar place may be particularly distressing for older seniors, many of whom also suffer from cognitive impairment. More than half of the potentially avoidable visits involved patients age 85 and older.

Figure 4: Median ED Length of Stay for Seniors, 2013–2014



**Note**

Patients with both potentially preventable conditions and low-acuity visits were classified in the Visits for Potentially Preventable Conditions group.

**Sources**

National Ambulatory Care Reporting System and Continuing Care Reporting System, 2013–2014, Canadian Institute for Health Information.

## Reducing ED Visits by Seniors Living in LTC Facilities

A number of initiatives across Canada are being utilized to reduce the number of avoidable ED visits by LTC residents, specifically. One common practice to achieve this objective is the use of “goals of care” discussions between residents and/or their families/substitute decision-makers and the appropriate personnel in the LTC facility to ensure that care is provided in accordance with the resident’s wishes. Some specific examples of other programs or strategies are as follows:

- **Falls prevention programs** are widespread throughout the country and aim to reduce the number of falls in LTC facilities through exercise programs and education sessions.<sup>35, 36, 39</sup> Fall-related injuries result in a loss of mobility and independence, and averting them can reduce visits to the ED and the associated health care costs.<sup>35, 36, 39</sup>
- In Nova Scotia, some LTC facilities have been staffed with an **extended care paramedic (ECP)** on duty 7 days a week and supported by a physician to help coordinate necessary treatments or transports.<sup>17</sup> Initial results showed that it was possible for the ECPs to treat 73% of patients on site without the need for ambulance transport to the ED.<sup>17</sup>
- In Ontario, a novel assessment tool administered by personal support workers has shown promise in detecting a decline in the health of LTC residents prior to requiring transfer to the hospital. Named **PREVIEW-ED**®, the tool focuses on decreasing ED visits associated with common conditions such as pneumonia, UTIs, dehydration and congestive heart failure.<sup>41</sup> Another tool that has been recently adopted by some facilities is the Interventions to Reduce Acute Care Transfers (INTERACT), designed to improve care and reduce the frequency of potentially avoidable transfers to the hospital.<sup>42</sup>

## Home Care Clients and ED Visits

Many community-dwelling seniors in Canada receive publicly funded home care services. There is an interest among policy-makers in understanding how these home care clients are utilizing the ED. Data from CIHI’s Home Care Reporting System (HCRS) was used to assess how often and for which reasons seniors who are long-stay home care clients visit the ED. Long-stay home care clients are expected to require services for more than 60 days.

Based on analyses of home care data from Ontario and Yukon, 46% of the senior long-stay clients went to the ED in 2013–2014. And 1 in 3 of their ED visits was potentially avoidable, either for potentially preventable conditions (21%) or for minor conditions not requiring inpatient admission (12%). UTIs accounted for 25% of potentially preventable ED visits, followed by heart failure (18%) and pneumonia (16%). Falls accounted for only 14% of less or non-urgent visits not requiring inpatient admission.

Senior long-stay home care clients are more similar to seniors in LTC than to other community-dwelling seniors in their profile and patterns of ED utilization. These similarities may explain why long-stay home care clients often transition to LTC and may indicate challenges in access to appropriate home care services.

Additional detailed data on home care clients who visited the ED is available for free download as part of the companion data tables for this report.

## Conclusion

Every year, many visits to Canadian EDs could potentially be avoided, in part by providing better access to care and services in more appropriate settings. This study found that in 2013–2014, 1 in 5 non-admitted ED visits overall and 1 in 3 ED visits among seniors living in LTC were potentially avoidable.

Some of these potentially avoidable ED visits may result from challenges with access to primary health care for Canadians in general and for seniors living in LTC facilities. The top reasons for FPSC visits (upper respiratory and ear infections, and wound dressing) are for conditions and treatments often handled in a physician's office. The higher rate of FPSC in rural areas may also reflect greater challenges with access to alternative care settings and/or a broader range of care delivered in rural EDs. Further, UTIs, pneumonia and falls were the largest drivers of potentially avoidable ED visits among seniors who live in LTC. This may reflect the need for better access to more appropriate preventive care, physicians/specialists or specialized services (e.g., diagnostics).

Many jurisdictions are evaluating strategies to reduce avoidable ED visits with the aim of providing more appropriate care to their residents. One common strategy is to expand access to primary health care by increasing the number of family physicians overall, as well as the proportion who provide extended care hours. Another common strategy is to provide public education about the different levels of care available, so people can make better informed choices about where to seek care. Publishing current ED wait times by facility has also been tried in a number of jurisdictions. However, surveys continue to show that some Canadians remain unaware of the care options available to them. For example, a survey commissioned for this study found that 7% of respondents were unaware of care settings they could use other than the ED.

Other strategies focus on meeting the needs of patients at home. Strategies include expanding home care services and using rapid response nurses and advanced practice paramedics. An expanded scope of practice for pharmacists may also play a role by helping some patients obtain prescription refills, thereby avoiding an unnecessary ED visit. Several jurisdictions have also prioritized care for high users of the health care system, who often visit the ED many times per year.

Reducing the number of ED visits among seniors in LTC is also a priority in many jurisdictions. Despite the fact that they represent less than 1% of all visits, unnecessary ED visits require communication of often complex medical histories and may present challenges for continuity of care. Additionally, ambulance transport and unfamiliar ED settings may be unsettling for patients, particularly for those who suffer from dementia. To address this challenge, prevention programs are in place to reduce falls, which are a major reason for ED visits among these seniors. In some jurisdictions, extended care paramedics who work with physicians are also now being used to care for seniors in LTC. Another approach involves the use of mobile laboratories that offer diagnostic services to help reduce the use of ED for this purpose.

Other programs are aimed at empowering personal support workers to be more alert for certain symptoms among residents and to report these to appropriate staff for follow up. Prompt attention could potentially prevent visits to EDs for common conditions such as pneumonia, UTIs and dehydration. Experts also believe that even as multiple strategies are being utilized, there is a need for increased education/awareness of appropriate options for seniors in LTC, their family members and those in charge of making decisions about their care. In addition, potential challenges with staffing and other resources in LTC may be factors to consider in reducing avoidable ED visits among LTC residents.

This study focused on 2 specific groups of patients who might obtain more appropriate care in settings other than the ED and identified a substantial number of ED visits that could be avoided or shifted to other settings. Opportunities to shift patients with minor medical problems away from the ED to more appropriate settings such as doctors' offices may benefit patients by improving the continuity of their care and overall patient experience. Such opportunities would also benefit the health care system, by allowing ED resources to be more closely targeted to those who appropriately require them.

# Appendix A: Definitions, Data Sources, Case Selection and Study Limitations

## Definitions

1. Family practice sensitive conditions (FPSCs): These are health conditions or reasons for emergency department (ED) visits that may be appropriately managed at a family physician's office. The FPSC methodology was originally developed by the Health Quality Council of Alberta. The methodology identified a list of 3-digit-level ICD-10-CA diagnoses in EDs for which the probability of being admitted is less than 1%. Examples of conditions included are H10 (conjunctivitis) and J02 (acute pharyngitis or inflammation of the throat). The current study used a slightly modified version of this methodology and list of conditions.  
  
FPSCs are different from ambulatory care sensitive conditions (ACSCs). While FPSCs generally refer to minor medical conditions, ACSCs typically refer to chronic conditions such as diabetes or chronic obstructive pulmonary disease (COPD) that can potentially be effectively managed in the community and where appropriate ambulatory care can prevent or reduce the need for hospitalization.
2. Potentially avoidable visits by seniors in long-term care (LTC): These are ED visits for conditions for which proper primary care management could be effective or visits classified as low acuity (less or non-urgent), according to the Canadian Triage and Acuity Scale (CTAS), and without inpatient admission, resulting in the patient returning directly to LTC. The conditions for which proper primary care management could be effective are similar to ACSCs but have been validated for the LTC population.
3. Long-term care (LTC) refers to the care delivered in a diverse group of residential settings or facilities that serve diverse populations of mostly seniors, who need access to 24-hour nursing care, personal care and other therapeutic and support services. For this study, hospital-based continuing care facilities from Ontario were excluded.

## Data Sources and Case Selection

This study used 2013–2014 data from CIHI's National Ambulatory Care Reporting System (NACRS) and Continuing Care Reporting System (CCRS).

For the FPSC analyses, the NACRS data used was based on the following jurisdictions that submitted ED data with complete diagnoses (i.e., Level 3 data) to CIHI: Ontario (all facilities); Alberta (all facilities); Nova Scotia (5 facilities); Saskatchewan (4 facilities); P.E.I. (1 facility); and Yukon (1 facility).

All unscheduled visits to EDs (excluding urgent care centres) where patients were discharged home (Visit Disposition = 01) were selected. From these, FPSC cases were identified using the main reasons for visits that corresponded to the conditions on the modified FPSC list. The complete modified list of FPSCs is available upon request.

For the purposes of assessment, FPSC visits were compared only with other ED visits where patients were discharged home.



For the analyses of ED visits for seniors in LTC, CCRS data—excluding complex continuing care—from all facilities in Ontario, Alberta and Yukon was linked to corresponding NACRS data to create episodes of care. Residents age 65 and older in LTC were first identified, and then their records were linked to any corresponding ED visits. These ED visits were classified into 2 categories:

1. Potentially preventable, if they were for a selected group of conditions validated for LTC residents; these include pneumonia, kidney or urinary tract infections (UTIs), angina, asthma, cellulitis, COPD, congestive heart failure, dehydration, diabetes, gastroenteritis, seizures, hypertension, hypoglycemia, and severe eye, nose and throat infections.
2. Low acuity, according to the Canadian Triage and Acuity Scale Levels IV and V (less or non-urgent) and without inpatient admission resulting in patient returning directly to LTC.

Additional details on cohort selection and study methodology are available upon request.

## Study Limitations

The following information should be considered when understanding and interpreting the study's findings.

### Data Availability

Only data from mostly Level 3 reporting facilities from provinces that submit data to CIHI's NACRS were included in this study for the FPSC analyses. ED facilities that do not submit Level 3 data or complete diagnosis codes were excluded. Similarly, only jurisdictions with comparable CCRS and NACRS data were included in this study in the LTC analyses.

### Cautions on Interpreting Results

Due to the incomplete national ED and LTC data, caution should be used in generalizing the findings from this study.

ED visits by seniors in LTC were obtained by linking records in CCRS to ED data in NACRS. As such, differences may exist between information on ED visits presented in this study and in other sources that are based on visit information captured solely based on residents' CCRS assessments. These differences may be due to the following:

1. ED visits in this study are based on a period of 1 year; reporting in assessments may reflect visits within a different time period such as a quarter of a year.
2. Residents may have multiple ED visits in a given time period, and this would be captured as such in this study. Other reports may be based only on information that showed that a resident had a visit in the same time period.
3. Reporting of ED visits based on assessments may reflect only visits by residents with CCRS assessments. Assessment information may not be available (assessment missing or rejected due to errors and not resubmitted) or may not have been collected (very short length of stay in LTC, or resident died in another care setting). ED visits by residents without an assessment are captured in this study.

## Appendix B: Comparisons of FPSC Visits to Other Non-Admitted ED Visits, 2013–2014

	Family Practice Sensitive Conditions	All Other Non-Admitted ED Visits
<b>Visits/Unique Patients</b>	1,403,105 (21%)/959,665	5,261,481 (79%)/3,374,171
<b>Female (%)</b>	52	53
<b>Age Group (%)</b>		
<18	30	20
18–44	36	38
45–64	22	24
65+	12	17
<b>High Acuity: CTAS I–III (%)</b>	30	61
<b>Low Acuity: CTAS IV–V (%)</b>	70	39
<b>Rural (%)</b>	41	23
<b>Income Quintile (%)</b>		
Low	24	23
Low–Medium	20	20
Medium	21	20
Medium–High	19	19
High	17	17
<b>Median Total LOS (in Hours)</b>	1.4	2.6
<b>Top 3 Most Common Diagnoses (First 3 Digits of ICD-10-CA)</b>	<ul style="list-style-type: none"> <li>• Acute upper respiratory infection of multiple and unspecified sites (13%)</li> <li>• Other medical care (13%)</li> <li>• Acute pharyngitis (8%)</li> </ul>	<ul style="list-style-type: none"> <li>• Abdominal and pelvic pain (6%)</li> <li>• Pain in throat and chest (4%)</li> <li>• Dorsalgia (3%)</li> </ul>
<b>Intervention (%)</b>	17	47
<b>Top 3 Most Common Interventions</b>	<ul style="list-style-type: none"> <li>• Chest X-ray (26%)</li> <li>• Cephalosporin, using percutaneous approach (5%)</li> <li>• Unspecified anti-infective, using percutaneous approach (4%)</li> </ul>	<ul style="list-style-type: none"> <li>• Chest X-ray (23%)</li> <li>• Abdominal X-ray (4%)</li> <li>• Ankle joint X-ray (4%)</li> </ul>
<b>Distance Travelled (km)</b>		
<b>Median</b>	7	6
<5	42	44
5–10	16	20
>10	42	36
<b>Visit Time (%)</b>		
9 p.m.–6 a.m.	16	20
6 a.m.–10 a.m.	20	15
10 a.m.–5 p.m.	43	44
5 p.m.–9 p.m.	21	22

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	Family Practice Sensitive Conditions	All Other Non-Admitted ED Visits
<b>Facility Type (%)</b>		
<b>Teaching</b>	17	26
<b>Community—Large</b>	20	33
<b>Community—Medium</b>	22	20
<b>Community—Small</b>	41	21

**Notes**

Percentages may not add up to 100 due to rounding.

Visits with invalid or missing postal codes were excluded from rural/urban percentages.

CTAS percentages include only visits with valid or non-missing triage information.

Distance travelled is based on visits with valid postal codes that are adequate for calculating distance travelled.

**Source**

National Ambulatory Care Reporting System 2013–2014, Canadian Institute for Health Information.

## Appendix C: Characteristics of Visits to the ED by Seniors Living in LTC and in the Community, 2013–2014

Characteristics	Seniors Living in LTC				Community-Dwelling Seniors			
	Potentially Preventable Conditions	Low Acuity/ Non-Admitted	Other	Total	Potentially Preventable Conditions	Low Acuity/ Non-Admitted	Other	Total
Visits (N)	15,202	6,465	42,085	63,752	241,220	385,827	910,192	1,537,239
Visits (%)	24	10	66	100	16	25	59	100
Unique Patients (N)	12,040	5,075	28,725	37,703	171,661	244,259	546,690	744,859
Age (Median)	85	85	85	85	77	74	76	76
<b>Age Group (%)</b>								
65–69	5	5	6	5	20	29	23	24
70–74	7	8	8	8	19	23	20	20
75–79	12	12	12	12	19	19	19	19
80–84	21	21	21	21	19	15	18	17
85+	54	54	54	54	23	14	21	20
Female (%)	62	65	64	63	55	52	54	54
Ambulance Transport (%)	92	60	91	88	35	7	37	29
Rural: Using ED Facility (%)	10	37	9	12	21	43	13	22
Rural: Using LTC Facility (%)	13	38	12	15	N/A	N/A	N/A	N/A
<b>Length of Stay (LOS)</b>								
Median Total ED LOS (in Hours)	9	3	7	7	5	2	5	4
Median LOS for Non-Admitted Patients	6	3	5	5	3	2	4	3
Median LOS for Admitted Patients	13	N/A	11	12	11	N/A	10	10
<b>Discharge Disposition (%)</b>								
Acute Inpatient Care	62	0	43	43	35	0	29	22
Home/Residence	37	100	53	54	63	100	65	74
Transfer	<1	0	3	2	1	0	3	2
Other	<1	0	1	1	<1	0	3	2
<b>Specific Diagnosis</b>								
Falls (%)	1	25	23	18	<1	10	11	9
Injuries (%)	0	32	24	19	0	20	14	13
<b>Top 3 Most Common Diagnoses</b>								
1	Avoidable UTI (30%)	Persons encountering health services for specific procedures and health care (17%)	Injuries to the head (8%)	Avoidable UTI (7%)	Avoidable UTI (22%)	Persons encountering health services for specific procedures and health care (16%)	Symptoms and signs involving the circulatory and respiratory systems (7%)	Symptoms and signs involving the circulatory and respiratory systems (11%)

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Characteristics	Seniors Living in LTC				Community-Dwelling Seniors			
	Potentially Preventable Conditions	Low Acuity/ Non-Admitted	Other	Total	Potentially Preventable Conditions	Low Acuity/ Non-Admitted	Other	Total
2	Avoidable pneumonia (26%)	Injuries to the head (10%)	Injuries to the hip and thigh (7%)	Head injury (6%)	Avoidable COPD (17%)	Injuries to the wrist and hand (5%)	General symptoms and signs (5%)	Persons encountering health services for specific procedures and health care (16%)
3	Avoidable CHF (14%)	Complications of surgical and medical care, not elsewhere classified (5%)	Symptoms and signs involving the circulatory and respiratory systems (7%)	Avoidable pneumonia (6%)	Avoidable pneumonia (13%)	Persons encountering health services for examination and investigation (4%)	Symptoms and signs involving the digestive system and abdomen (5%)	General symptoms and signs (8%)
<b>Top 3 Most Common Interventions</b>								
1	Chest X-ray (54%)	Chest X-ray (6%)	Chest X-ray (24%)	Chest X-ray (29%)	Chest X-ray (41%)	Chest X-ray (5%)	Chest X-ray (21%)	Chest X-ray (20%)
2	Brain CT scan (4%)	Hip X-ray (4%)	Head CT scan (8%)	Head CT scan (6%)	Rhythm electrocardiogram—ECG (2%)	Knee X-ray (2%)	Head CT scan (5%)	Head CT scan (3%)
3	Head CT scan (4%)	Repair of scalp (2%)	Brain CT scan (7%)	Brain CT scan (6%)	Antiasthmatic agent (2%)	Foot X-ray (2%)	Brain CT scan (5%)	Brain CT scan (3%)
<b>No Intervention</b>	17	41	21	22	40	62	35	42
<b>Intervention Groups</b>								
<b>Diagnostic Intervention (%)</b>	79	56	76	75	85	60	82	79
<b>Therapeutic Intervention (%)</b>	2	31	6	7	2	33	7	10
<b>Both Therapeutic and Diagnostic Intervention (%)</b>	19	13	18	18	13	7	11	10
<b>X-Ray Only (%)</b>	56	40	41	44	62	46	42	46
<b>CT Scan Only (%)</b>	3	3	8	6	3	3	11	9
<b>X-Ray and CT Scan Only (%)</b>	9	4	15	12	5	1	10	8
<b>Costs</b>								
<b>Median Cost of ED Visit for This Population</b>	627	219	519	507	413	200	432	332
<b>Total Cost of ED Visits for This Population</b>	8,827,676	1,894,167	22,884,237	33,606,079	111,946,729	92,472,827	428,038,749	632,458,305

**Notes**

Percentages may not add up to 100 due to rounding.

Unique patients based on records with valid health card numbers only.

Patients with both potentially preventable conditions and low-acuity visits were classified as potentially preventable conditions.

Records with invalid or missing postal codes were excluded from rural/urban percentages.

Cost estimates were based on CIHI's CMG+ 2013 methodology, using 2012 provincial Cost per Weighted Case values.

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