Patient Pathways

Transfers From Continuing Care to Acute Care

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Introduction

In 2006–2007, almost 200,000 Canadians lived in continuing care settings such as homes for the aged, nursing homes and rest homes,[1] and recent reports have shown that these residents are older and more medically complex than ever before.[2, 3] Given the elderly and frail population living in continuing care settings, residents may have unplanned transfers into hospitals for reasons such as exacerbation of existing cardiovascular or respiratory conditions[4] and fractures due to falls.[5]

Few studies have examined the transfer of patients between continuing care settings and acute care hospitals.[3] This report highlights this important patient pathway with a focus on seniors 75 and older. The characteristics of transferred residents, including the reason for their transfer and wait time for discharge following their acute care stay are explored. We also raise questions related to patient safety and potentially avoidable admissions.

With an increased focus on accountability for patient safety, efficiency and appropriate allocation of resources, it is important for policy-makers and health system planners in both community and hospital settings to focus on patient pathways—including reasons for patient transfers.

Key Findings

In 2007–2008, 35% of acute care hospitalizations in Canada (excluding Quebec) were for persons age 75 and older, and out of those, 10% were for patients who had been transferred from a continuing care setting.

Based on our analyses of this group of seniors, we found the following:

- One-quarter of these patients had been transferred two or more times in the year.
- The majority (91%) of these patients were admitted via the emergency department (ED).
- Respiratory and circulatory conditions and fractures (due to falls) were the most common reasons for transfer from continuing care and subsequent hospital admission. These conditions raise questions related to potentially preventable admissions and patient safety.
- The majority (75%) of these patients were transferred back to a continuing care setting following their acute care stay.
- One in 10 of these patients were assigned as alternate level of care (ALC)—in other words, the acute care portion of their stay was complete and they were waiting for discharge to a more appropriate setting.
- Only 4% of those who returned to the same continuing care setting waited as ALC. In comparison, 60% of seniors who were originally admitted from home and then discharged to a continuing care setting waited as ALC.
- Sixteen percent of transferred residents died while in the hospital (compared with 9% of non-transferred patients 75 and older).

A Focus on Those 75 and Older

For the purpose of this analysis, we identified **patients admitted via transfer from continuing care** as residents who were either transferred to a hospital emergency department (ED) and then admitted to acute care, or those who were admitted directly to an inpatient unit.

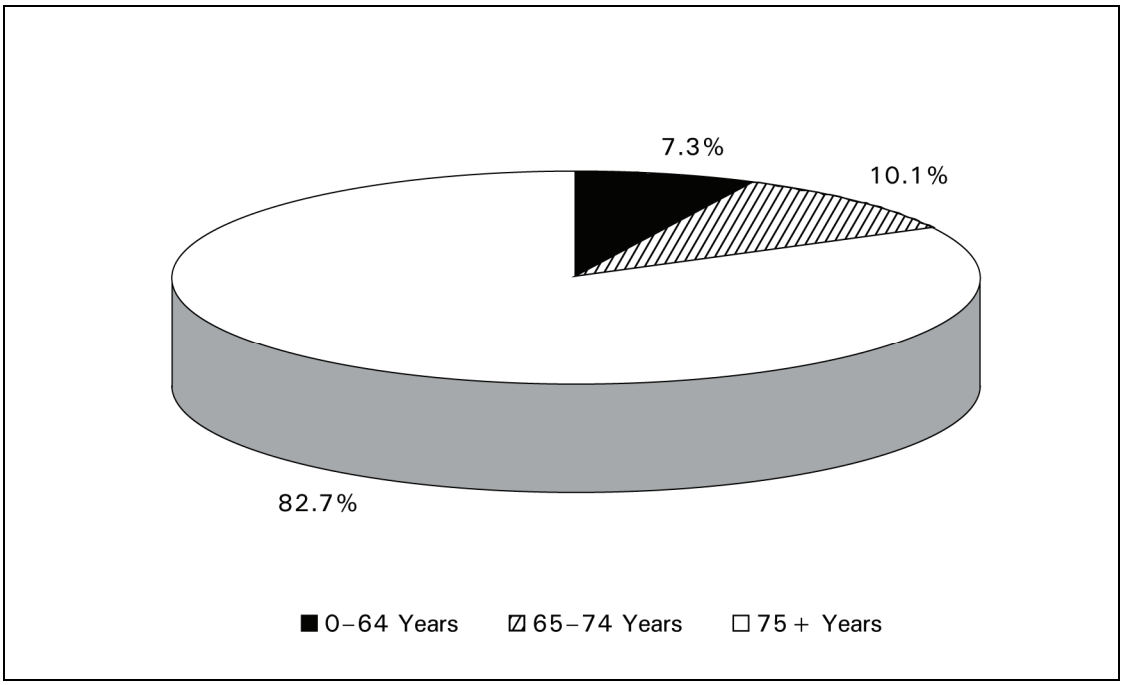
Continuing care settings are defined as publicly, semi-publicly or privately owned residential care facilities that include nursing homes, homes for the aged or chronic care facilities (or designated units/beds in the same or another hospital). We have also included Ontario's free-standing complex continuing care (CCC) settings or CCC beds in the same or another hospital because our analysis revealed similar patient characteristics and reasons for transfer for those age 75 and older.

Patients admitted from home or other non-continuing care settings may be admitted either directly to an acute care unit or via the ED.

In 2007–2008, 35% of acute care hospitalizations in Canada (excluding Quebec) were for persons age 75 and older, and out of those, 10% were for patients who had been transferred from a continuing care setting.

Continuing care settings in Canada are designed to provide a secure place for individuals requiring 24-hour services such as health care, personal care, meals and other housekeeping needs.[2, 6] Typically, we think of continuing care settings as nursing homes or homes for the elderly. But across Canada these settings are referred to by a variety of names and may provide care for individuals of all ages with a variety of care needs. For example, in the recently released report on staffing and care standards for long-term care homes in Ontario, it was identified that due to changes in the hospital sector, "residents with multiple care needs that were previously cared for in chronic care hospitals are now cared for in LTC [long-term care] homes."[2]

Figure 1 Transfers From Continuing Care Into Acute Care by Age Group



Note
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

The majority (82.7%) of transferred residents were 75 and older. These residents are often:

- Medically complex with significant health care needs that will likely require hospitalization at some point[2, 7, 8] if the continuing care settings they reside in are not equipped to deal with some of their more complex health care needs;
- Admitted to hospital via the emergency department—seniors have the longest waits in the ED for access to a bed;[9] and
- Returned to hospital multiple times and have lengths of stay that potentially make them resource intensive.[10, 11]

Understanding the pathways of care travelled by residents of continuing care settings, including their use of acute care services, can help policy-makers and those allocating resources feel confident that the right services are available within the right care setting when these residents require them.

Transfer Rate Variation: Practice- or Data-Driven?

Our analysis reveals provincial and territorial variation in transfer rates. However, variations in the definitions of continuing care and the way services are organized across Canada limit the value of making jurisdictional comparisons. This is because it is unclear to what extent these variations reflect real differences in rates of transfer or differences in data collection.

Potential practice-driven variation

A recent cross-Canada review of provincial differences in staffing and care delivery models in long-term care homes concluded that direct comparisons among Canadian jurisdictions can be challenging because "there are differences in the way each province's continuing care sector is organized to provide health care services to individuals that require the availability of 24-hour nursing care and supervision within a secure setting."[2] Service delivery models (including staffing), funding frameworks and the approach to assessment of resident care needs are among the most significant areas where provinces differ.[2]

Other than the need for a nurse to be present 24 hours a day, seven days a week, and for each long-term care setting to have a director of nursing and personal care, there are currently no provincial staffing standards for long-term care settings in Ontario, and staffing standards vary across Canada.[2] There are no specific standards or guidelines related to expected hours of care to be provided by nurses and personal support workers.

Studies have shown that staffing models influence acute care admissions. For example, according to results of a United States–based literature review, long-term care residents were less likely to be admitted to acute care when nurse practitioner, registered nurse and/or physician staffing is increased/available.[12]

Potential data-driven variation

As part of CIHI's reporting standards, hospitals are required to track patient transfers including the type of health care facility a patient was transferred from.[13] Given this mandatory reporting, transfers from publicly funded continuing care settings should be reasonably captured. However, some under-reporting still exists because:

- There are variations in the way provinces and territories define and identify other settings, such as home care or continuing care;
- Patients arriving from privately owned facilities may not be reported as transfers; and
- Possible formal and informal arrangements between some continuing care facilities and acute care hospitals may result in different approaches to coding patient transfers.

A Comparison to Other Seniors

Arrival and Admission to Hospital

Over eighty percent of continuing care residents were transferred by ambulance (83.4%). Most (90.5%) were admitted via the ED. From previous CIHI analyses[9] we know that seniors admitted via the ED experience long wait times in the ED for access to an inpatient bed.

The majority of residents were admitted into medium-sized (100 to 399 beds) and teaching hospitals (47.4% and 26.2%, respectively). We found similar results among patients admitted via home or other settings (see Table 8 in the appendix).

Reflective of the distribution of men versus women in continuing care settings, there were more females in this group than among those admitted via home or other settings (66.1% versus 54.1%, respectively). Those admitted from continuing care were also slightly older (median age of 86 versus 81, respectively), but the two groups were similar in terms of their median length of stay (LOS) in acute care (six days for admissions via continuing care and five days for admissions via home or other settings).

Table 1 Comparison of Modes of Arrival, Admission and Characteristics

Patients 75 and Older	Admitted via Transfer From Continuing Care	Admitted From Home or Other
Number of hospitalizations	51,730	385,762
Percent arrived by ambulance	83.4%	42.9%
Percent admitted via emergency department	90.5%	74.7%
Percent of female patients	66.1%	54.1%
Median age (years)	86	81
Median acute LOS (days)	6	5

Note
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

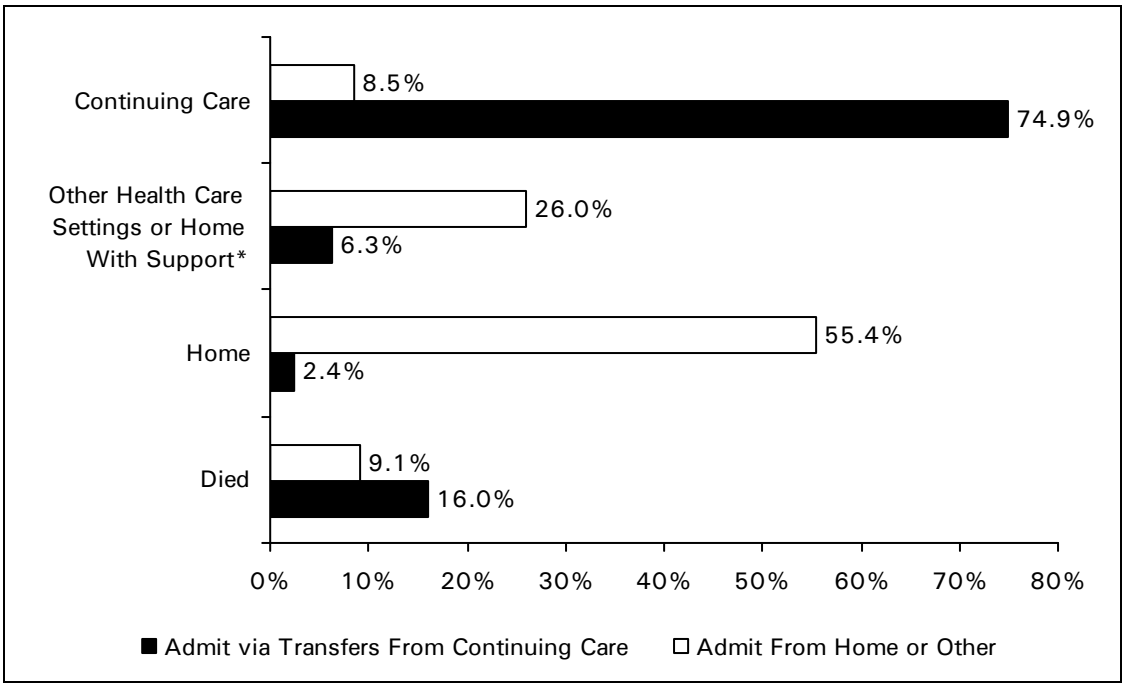
Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Alternate Level of Care and Discharge Destination

The main differences between the two groups—those transferred from continuing care and those admitted from home or other settings—relate to discharge destination and the length of time waiting for discharge at the end of their acute care stay.

Three-quarters (74.9%) of patients admitted via continuing care were transferred back to a continuing care setting, while more than half (55.4%) of other seniors were discharged home.

Figure 2 Comparison of Discharge Disposition



Notes

* Includes other acute, sub-acute, psychiatric, rehabilitation, cancer centre or home settings with support services.

Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Patients who signed out against medical advice or were transferred to other types of facilities (palliative care/hospice, addiction treatment centre, etc.) were not presented, as they accounted for just 0.4% of admissions via transfers from continuing care and 1.0% of admissions from home or other settings.

Source

Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Only 1 in 10 patients admitted via continuing care spent time as alternate level of care (ALC)—in other words, the acute care portion of their stay was complete and they were waiting for discharge to a more appropriate setting. In comparison, a much larger proportion of seniors (59.9%) who were admitted to hospital from home or another setting and discharged to continuing care waited as ALC. Six in ten of these seniors waited two weeks or more for access to a continuing care bed. Our results are consistent with the findings of CIHI's recently released analysis, *Alternate Level of Care in Canada*,[14] which shows the most predominant discharge destination among ALC patients to be a long-term care setting.

Table 2 Comparison of Alternate Levels of Care

Patients 75 and Older	Admitted via Transfer From Continuing Care	Admitted From Home or Other
Number discharged to continuing care (percent)	38,741 (74.9%)	32,936 (8.5%)
Number who spent time as ALC (percent)*	3,894 (10.4%)	18,858 (59.9%)
Median ALC LOS (days)*	12	15

Notes
* Only among patients identified as ALC (excluding Manitoba).
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Based on guidelines for short-term leaves of absence from publicly funded long-term care facilities, it is expected that residents arriving from continuing care settings would be more likely than other seniors to have immediate access to a bed and the necessary level of care to return to following their hospital stay. For example, in Ontario, Alberta and Prince Edward Island, a long-term care facility will hold a resident's bed for a specific period of time when a resident is transferred into an acute care setting.

For 50.6% of our transfer patients, we could identify, through facility coding, which facility they were transferred from and which facility they were discharged to following the completion of their acute care admission. When we performed analyses on this subset of patients, we found an important distinction—only 4.2% experienced ALC days, with a median wait time of six days.

Top Reasons for Transfer

Patients recorded in CIHI's Discharge Abstract Database (DAD) are assigned to a major clinical category (MCC) based on their most responsible diagnosis or the reason that accounts for the majority of their hospital stay. Within each MCC, patients are grouped further based on their most frequent clinical characteristics. These smaller groups are referred to as case mix groups (CMGs).

Respiratory and circulatory conditions and fractures (due to falls) were the most common reasons for transfer from continuing care and subsequent hospital admission. This is different from those admitted from home or other non-acute settings.

Table 3 Comparison of Reasons for Admission

Patients 75 and Older	Admitted via Transfer From Continuing Care	Admitted From Home or Other
Most Common Diagnosis or Condition	**Respiratory Condition (19.8%)**	**Circulatory Condition (22.8%)**
Three most frequent clinical characteristics	viral/unspecified pneumonia	heart failure without cardiac catheter
	chronic obstructive pulmonary disease (COPD)	arrhythmia without cardiac catheter
	aspiration pneumonia	myocardial infarction/shock/ arrest without cardiac catheter
Second Most Common Diagnosis or Condition	**Circulatory Condition (17.7%)**	**Digestive Condition (12.7%)**
Three most frequent clinical characteristics	heart failure without cardiac catheter	gastrointestinal hemorrhage
	myocardial infarction/shock/arrest without cardiac catheter	symptom/sign of digestive system
	arrhythmia without cardiac catheter	non-severe enteritis
Third Most Common Diagnosis or Condition	**Traumatic Injury (12.3%)**	**Respiratory Condition (12.5%)**
Three most frequent clinical characteristics	fixation/repair hip/femur	chronic obstructive pulmonary disease (COPD)
	hip replacement with trauma/complication of treatment	viral/unspecified pneumonia
	fracture of femur	malignant neoplasm of respiratory system

Note
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Admissions Due to Respiratory Conditions

Almost one in five continuing care residents were transferred into acute care for respiratory problems. Pneumonia and COPD were among the two most common conditions.

COPD has been defined as an ambulatory care sensitive condition (ACSC) for those living within the community and who are younger than 75 years of age. This condition has also been referred to as a high-discretionary condition, which means that physicians face a higher degree of uncertainty when making decisions about whether to hospitalize patients with COPD versus other treatment options.[15] ACSCs are typically discussed in the context of individuals under the age of 75 and the high rate of COPD-related hospitalizations in our study cohort could be related to the higher prevalence of COPD in adults 75 and older.[16]

Table 4 Hospitalizations for Respiratory Conditions

Patients 75 and Older	Admitted via Transfer From Continuing Care	Admitted From Home or Other
Number of hospitalizations (percent)	10,218 (19.8%)	48,032 (12.5%)
Percent admitted via emergency department	95.5%	90.2%
Median acute LOS (days)	6	6
Number with ALC stays (percent)*	697 (7.1%)	4,027 (8.9%)
Median ALC LOS (days)*	8	9

Notes

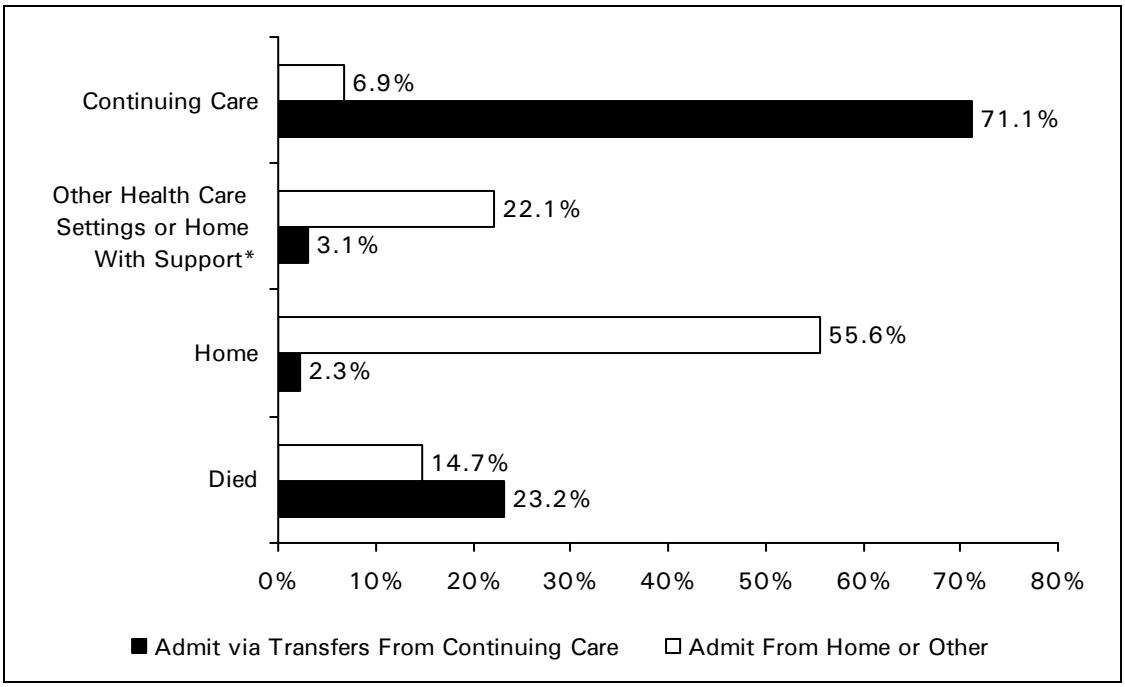
* Only among patients identified as ALC (excluding Manitoba).

Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Source

Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Figure 3 Discharge Disposition for Hospitalizations for Respiratory Conditions



Notes

* Includes other acute, sub-acute, psychiatric, rehabilitation, cancer centre or home settings with support services.

Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Patients who signed out against medical advice or were transferred to other types of facilities (palliative care/hospice, addiction treatment centre, etc.) were not presented, as they accounted for just 0.3% of admissions via transfers from continuing care and 0.8% of admissions from home or other settings.

Source

Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Admissions Due to Circulatory Conditions

Nearly one in five transfers from continuing care to acute care were for emergent circulatory issues such as heart failure and acute myocardial infarction (AMI). This is not surprising as, outside of childbirth and pregnancy, cardiovascular disease is the most common reason for hospitalization in Canada.[17] Furthermore, the rate of hospitalization for AMI per 100,000 Canadians increases substantially after age 75.[18] An expert panel of geriatricians noted that nursing home residents who experience AMI are among the most likely to be hospitalized for treatment, given that this condition requires immediate and intensive medical attention.[19] Almost twice as many patients admitted via continuing care died in acute care compared with persons admitted from home (16.1% versus 7.7%, respectively).

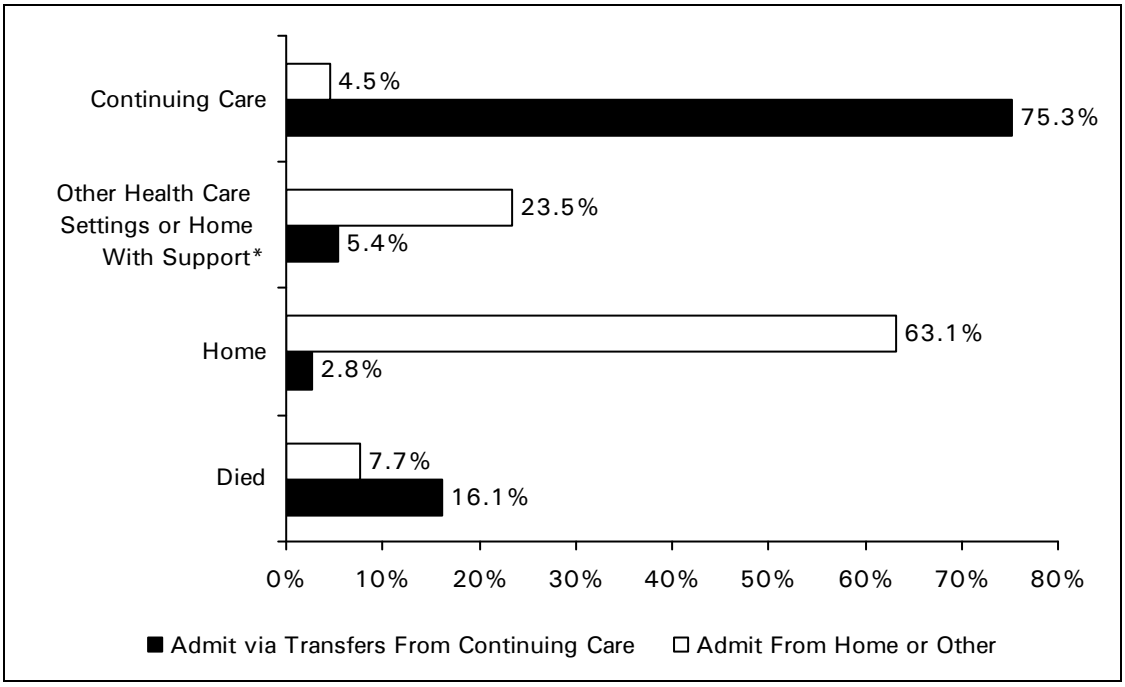
Table 5 Hospitalizations for Circulatory Conditions

Patients 75 and Older	Admitted via Transfer From Continuing Care	Admitted From Home or Other
Number of hospitalizations (percent)	9,145 (17.7%)	87,861 (22.8%)
Percent admitted via emergency department	93.4%	83.4%
Median acute LOS (days)	5	5
Number with ALC stays (percent)*	654 (7.4%)	4,779 (5.8%)
Median ALC LOS (days)*	8	9

Notes
* Only among patients identified as ALC (excluding Manitoba).
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Figure 4 Discharge Disposition for Hospitalizations for Circulatory Conditions



Notes
* Includes other acute, sub-acute, psychiatric, rehabilitation, cancer centre or home settings with support services.
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.
Patients who signed out against medical advice or were transferred to other types of facilities (palliative care/hospice, addiction treatment centre, etc.) were not presented in the figure, as they accounted for just 0.4% of admissions via transfers from continuing care and 1.2% of admissions from home or other settings.

Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Admissions Due to Traumatic Injury

Falls were the cause of injury among both patients admitted from continuing care and from home (90.3% and 76.2%, respectively). Falls have been attributed to a variety of risk factors, including age, previous falls, levels of mobility, cognitive impairment and medication errors.[5, 20]

A report by the Canadian Patient Safety Institute identifies falls as one of the most frequently reported adverse events in continuing care, and a common reason for seniors' visits to the ED.[3] Patient safety advocates suggest that a focus on fall management as opposed to fall prevention may be appropriate as it might balance the fine line between encouraging ongoing mobility and functionality through exercise with these residents and mitigating some of the risk factors for falls.[21]

Hip fracture hospitalizations and in-hospital hip fractures are being monitored in annual reports of health indicators as a means of identifying areas for improving the performance of the Canadian health care system with regard to patient safety. Since this monitoring began, hospitalizations for hip fractures in Canada for seniors have declined, down 13% between 2000–2001 and 2005–2006.[22]

Table 6 Hospitalizations for Traumatic Injury

Patients 75 and Older	Admitted via Transfer From Continuing Care	Admitted From Home or Other
Number of hospitalizations (percent)	6,381 (12.3%)	26,544 (6.9%)
Percent admitted via emergency department	94.7%	90.6%
Median acute LOS (days)	7	7
Number with ALC stays (percent)*	925 (15.1%)	5,495 (21.8%)
Median ALC LOS (days)*	10	9

Notes

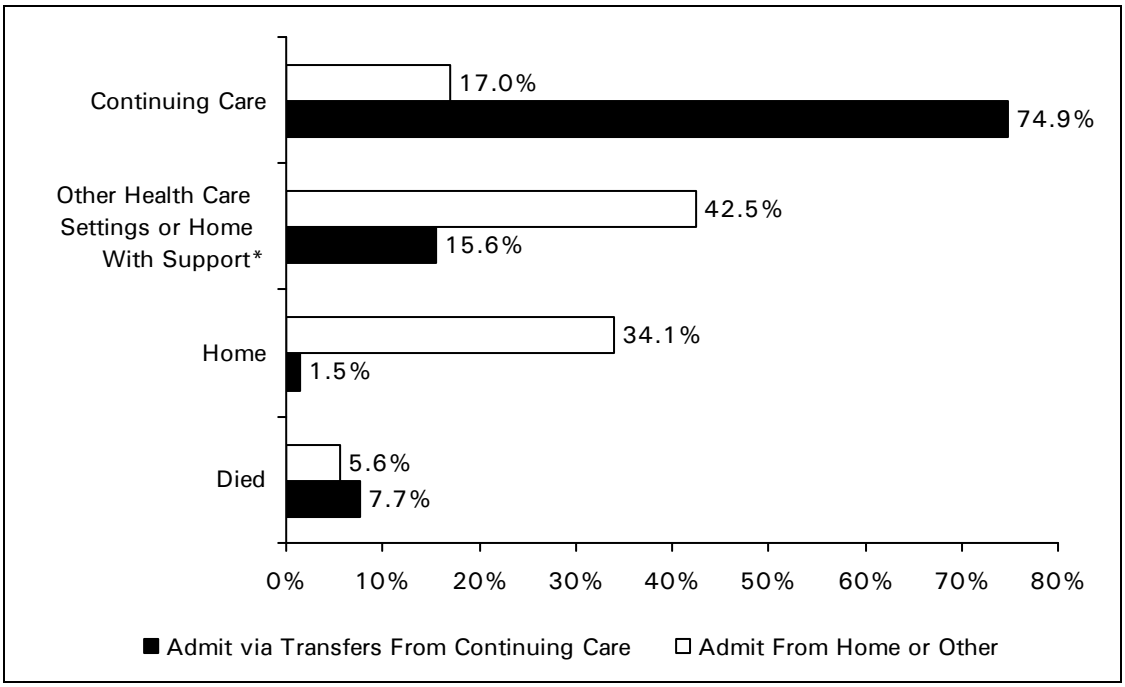
* Only among patients identified as ALC (excluding Manitoba).

Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Source

Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Figure 5 Discharge Disposition for Hospitalizations for Traumatic Injury



Notes

* Includes other acute, sub-acute, psychiatric, rehabilitation, cancer centre or home settings with support services.

Based on hospitalizations (not individual patients) in Canada, excluding Quebec.

Patients who signed out against medical advice or were transferred to other types of facilities (palliative care/hospice, addiction treatment centre, etc.) were not presented, as they accounted for just 0.3% of admissions via transfers from continuing care and 0.8% of admissions from home or other settings.

Source

Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

Continuing Care Residents With Multiple Transfers

Given that continuing care residents are a vulnerable population, they may be more at risk for multiple hospitalizations than seniors living in the community.[10, 11] To investigate the frequency of transfers from continuing care into acute care, we identified a cohort of patients who were transferred from a continuing care setting in 2006–2007 and followed each resident for up to one year. There were approximately 35,000 continuing care residents who had at least one transfer into acute care in that time, and more than 9,000 of them (25.9%) had a subsequent transfer within 365 days of the initial one. These patients were very similar in terms of gender proportion, median age and lengths of stay compared with patients who only transferred once that year. The most common reasons for the initial transfer into acute care were respiratory (22.0%), circulatory (19.0%) and digestive system problems (12.6%). These remained the same for subsequent visits.

Table 7 Characteristics of Continuing Care Residents With Multiple Transfers

Patients 75 and Older	Admitted via Transfers From Continuing Care	
Number of patients	9,050	
Percent of female patients	64.4%	
Median age (years)	86	
	First Transfer	All Subsequent Transfers
Median acute LOS (days)	6	6
Number with ALC stays (percent)*	754 (8.7%)	295 (7.9%)
Median ALC LOS (days)*	10	10

Notes

* Only among patients identified as ALC (excluding Manitoba).

Based on individual patients in Canada, excluding Quebec.

Source

Discharge Abstract Database, 2006–2007 and 2007–2008, Canadian Institute for Health Information.

What We Know

The reasons for patient transfers from continuing care settings to acute care hospitals and the health care resources used by these patients have not been thoroughly explored at a national level. However, some localized initiatives have investigated aspects of this patient population.

- During the severe acute respiratory syndrome (SARS) outbreak in 2003, the importance of tracking where patients were going within Ontario was paramount, and the Provincial Transfer Authorization Centre was implemented to ensure full recording of all patient transfers.[23] Current policy requires patients to be screened for infectious respiratory diseases before each inter-facility transfer.
- A report of the Independent Review of Staffing and Care Standards for Long-Term Care Homes in Ontario calls for enhanced staff capacity, local planning and evaluation and strengthened accountability for the quality of resident outcomes.[2]

What We Don't Know

An important aspect of what we don't know is the appropriateness of transfers and how this varies by province and territory. Furthermore, beyond staffing, the question remains, What can be done to reduce or minimize the need for a transfer and subsequent admission?

Finally, based on current coding challenges, we don't know:

- Whether transfer agreements between continuing care settings and acute care hospitals affect coding practices;
- The extent to which transfers from privately owned and operated continuing care settings in each province and territory contribute to the overall number of transfers, as these facilities are not well identified within our data; or
- The extent to which transfer rates vary across the provinces and territories due to differences in how settings are defined.

Appendix

Table 8 Distribution of Hospitalizations

Acute Care Hospital Type	Patients 75 and Older Admitted via Transfer From Continuing Care Setting	Patients 75 and Older Admitted From Home or Other
	Number (Percent)	
Up to 99 beds	10,460 (20.2%)	92,702 (24.0%)
100–399 beds	24,531 (47.4%)	163,586 (42.4%)
400+ beds	3,209 (6.2%)	22,049 (5.7%)
Teaching	13,530 (26.2%)	107,425 (27.8%)
Pediatric	–	–
All	**51,730**	**385,762**

Notes
Based on hospitalizations (not individual patients) in Canada, excluding Quebec.
Hospitals were grouped into five categories using the national Comparison of Hospital Activity Program (CHAP) Peer Groupings.

Source
Discharge Abstract Database, 2007–2008, Canadian Institute for Health Information.

References

1. Statistics Canada, *Residential Care Facilities 2006-2007* (Ottawa, Ont.: Statistics Canada, 2008), catalogue no. 83-237-X.

2. S. Sharkey, *People Caring for People: Impacting the Quality of Life and Care of Residents of Long-Term Care Homes—A Report of the Independent Review of Staffing and Care Standards for Long-Term Care Homes in Ontario* (Toronto, Ont.: MOHLTC, 2008), [online], cited November 18, 2008, from <http://www.health.gov.on.ca/english/public/pub/ministry_reports/staff_care_standards/staff_care_standards.pdf>.

3. L. M. Wagner and T. B. Rust, *Safety in Long-Term Care Settings* (Alta.: Canadian Patient Safety Institute, 2008).

4. J. D. Walker et al., "Identifying Potentially Avoidable Hospital Admissions From Canadian Long-Term Care Facilities," *Medical Care* 47, 2 (February 2009): pp. 1–5.

5. Canadian Institute for Health Information, *Resident Safety: Characteristics Associated With Falling in Ontario Complex Continuing Care* (Ottawa, Ont.: CIHI, 2007).

6. Health Canada, *What Is Long-Term Facilities-Based Care?* (Ottawa, Ont.: Health Canada, January 10, 2004), [online], cited November 26, 2008, from <http://www.hc-sc.gc.ca/hcs-sss/home-domicile/longdur/index-eng.php>.

7. S. Jayasinghe et al., "Hospital Care of People Living in Residential Care Facilities: Profile, Utilization Patterns and Factors Impacting on Quality and Safety of Care," *Geriatrics & Gerontology International* 7 (December 12, 2006): pp. 271–278.

8. L. Robichaud et al., "Quality of Life Indicators in Long Term Care: Opinions of Elderly Residents and Their Families," *Canadian Journal of Occupational Therapy* 73, 4 (2006): pp. 245–251.

9. Canadian Institute for Health Information, *Emergency Departments and Children in Ontario* (Ottawa, Ont.: CIHI, 2007).

10. G. Warshaw, S. Mehdizadeh and R. A. Applebaum, "Infections in Nursing Homes: Assessing Quality of Care," *Journal of Gerontology* 56A, 2 (2001): pp. M120–M123.

11. H. Y. Cheng et al., "Inpatient Care for Nursing Home Patients: An Opportunity to Improve Transitional Care," *Journal of the American Medical Directors Association* 7, 6 (July 2006): pp. 383–387.

12. R. T. Konetzka, W. Spector and M. R. Limcangco, "Reducing Hospitalizations From Long-Term Care Settings," *Medical Care Research and Review* 65, 1 (February 2008): pp. 40–66.

13. Canadian Institute for Health Information, *DAD Abstracting Manual, 2007–2008* (Ottawa, Ont.: CIHI, 2007).

14. Canadian Institute for Health Information, *Alternative Level of Care in Canada* (Ottawa, Ont.: CIHI, 2009).

15. M. W. Carter, "Variations in Hospitalization Rates Among Nursing Home Residents: The Role of Discretionary Hospitalizations—Methods—Illustration," *Health Services Research* 38, 4 (2003): pp. 1177–1205.

16. Public Health Agency of Canada, *Life and Breath: Respiratory Disease in Canada* (Ottawa, Ont.: PHAC, 2007).

17. Centre for Chronic Disease Prevention and Control et al., *The Growing Burden of Heart Disease and Stroke in Canada 2003* (Ottawa, Ont.: Heart and Stroke Foundation of Canada, 2003).

18. Health Canada et al., *The Changing Face of Heart Disease and Stroke in Canada 2000* (Ottawa, Ont.: Heart and Stroke Foundation of Canada, 1999).

19. A. J. O'Malley et al., *Deriving a Model of the Necessity to Hospitalize Nursing Home Residents* (SAGE, 2007), [online], cited November 17, 2008, from <http://roa.sagepub.com/cgi/content/abstract/29/6/606>.

20. E. Fonad et al., "Fall and Fall Risk Among Nursing Home Residents," *Journal of Clinical Nursing* (February 1, 2008): pp. 126–134.

21. E. M. J. Burland, "An Evaluation of a Fall Management Program in a Personal Care Home Population," *Healthcare Quarterly* 11, Special Issue (2008): pp. 137–140.

22. Canadian Institute for Health Information, *Health Indicators 2007* (Ottawa, Ont.: CIHI, 2007).

23. Provincial Transfer Authorization Centre, Provincial Transfer Authorization Centre website, [online], cited November 2008, from <https://hospitaltransfers.com/Transfer/about_ptac.aspx>.