Homeless Shelter Use by Age and Community with Implications for the Cost of Maintaining City-Wide Systems of Emergency Shelters: A Comparison of Calgary and Toronto

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Homeless Shelter Use by Age and Community with Implications for the Cost of Maintaining City-Wide Systems of Emergency Shelters: A Comparison of Calgary and Toronto

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La présente étude utilise des données administratives de Calgary et de Toronto pour relier trois résultats clés de la littérature sur l'utilisation des refuges pour sans-abri. Ces résultats sont utilisés aux fins d'estimation du coût du maintien d'un système de refuges pour sans-abri à l'échelle communautaire. Les trois résultats principaux (à savoir que les personnes en situation d'itinérance à un refuge vivent leur condition de manières très différentes, que cette situation varie en fonction de l'âge, d'une part, et selon la communauté, d'autre part) sont présentés en utilisant des données comparables collectées sur une période de temps commune et en appliquant des hypothèses et des méthodes communes pour le traitement de ces données. Cette approche permet de mettre à l'essai les différences statistiquement significatives concernant la manière dont l'itinérance à un refuge est vécue, et fournit ainsi un ensemble de résultats confirmant à quel point les personnes en situation d'itinérance à un refuge sont sensibles à leur âge et à leur lieu d'hébergement. Enfin, l'étude montre la façon dont ces différences influent sur le coût du maintien d'un système de centres d'hébergement d'urgence pour sans-abri à l'échelle communautaire. Les résultats confirment que des mesures qui peuvent être considérées comme une solution peu coûteuse pour fournir un abri dans certains lieux et pour certains groupes sont plutôt plus coûteuses dans d'autres lieux et pour d'autres groupes. L'article procède également à une mesure des économies réalisées par les responsables de refuges en logeant les personnes anciennement sans-abri.

Mots clés : itinérance, refuges d'urgence, rentabilité, jeunes, chronique, transitoire

We use administrative data from Calgary and Toronto to tie together three key results from the literature on homeless shelter use. Those results are used to derive estimates of the cost of maintaining a community-wide system of homeless shelters. The three key results—that people experience sheltered homelessness in vastly different ways, that the experience varies by their age, and that these experiences vary by community—are

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shown by using comparable data collected over a common period of time and by applying common assumptions and methods to the treatment of those data. This approach allows us to test for statistically significant differences in how sheltered homelessness is experienced and so provides a set of results confirming how much the ways in which people experience sheltered homelessness are sensitive to their age and their location. Finally, we show how these differences matter for the cost of maintaining a community-wide system of emergency homeless shelters. Our results confirm that what may be an inexpensive solution to providing shelter in some locations and for some demographics is rather more expensive in another location and for a different demographic. The cost savings realized by shelter operators from housing those who were previously homelessness is also measured.

Keywords: homelessness, emergency shelters, cost-effectiveness, youth, chronic, transitional

Introduction

In this article, we use administrative data on sheltered homelessness from two large urban centres, Calgary and Toronto,[1] to tie together three strands of research on how people use homeless shelters and to derive estimates of the cost of maintaining the emergency shelter systems in those cities. Our calculations also allow us to measure the cost savings to shelter operators from successful efforts at housing formerly homeless people.

We begin by using these data to show that people experience sheltered homelessness in vastly different ways. This is a result that is generally well established in the literature (see, e.g., Aubry et al. 2013, Jadidzadeh and Kneebone 2018, and Kuhn and Culhane 1998). Next, we show that the ways in which people experience sheltered homelessness vary by community. Identifying and comparing statistically significant differences in the patterns and intensity of shelter use in different communities is a key contribution of this article. We do this by comparing the ways people experience sheltered homelessness in Calgary and Toronto, two urban centres that differ on many of the local conditions identified in the literature as being correlated with rates of homelessness. In a third set of calculations, we show that the ways in which people experience sheltered homelessness vary by their age. We contribute to the limited evidence that is available on this question but in addition show that age-sensitive experiences with sheltered homelessness vary by community, an issue not previously investigated. Last, we show how these considerations—the ways in which people experience sheltered homelessness by their age and community—matter for the cost of maintaining city-wide systems of emergency homeless shelters. Our analysis shows that although in some communities and for some demographic groups, homeless shelters may be an inexpensive solution to assisting people trying to re-establish permanent housing, the cost may be rather more expensive in another community or for a different demographic of shelter users.

Background

Not all experiences with homelessness are the same. For some, the experience is short and infrequent, what is often described as transitional. For others, the experience is very long and largely uninterrupted, what is often described as chronic.[2] The distinction is important. Public policies aimed at addressing homelessness are frequently explicit in targeting only chronic homelessness. Thus, when it was released in 2017, the target of the federal government's National Housing Strategy (Canada, Employment and Social Development Canada 2017) was to reduce chronic homelessness in half in ten years. This followed similar announcements made by the government of Ontario in 2015 and by many municipalities before and since.[3] Before this, the adoption of ten-year plans to end chronic homelessness were widespread in the United States, leading to the publication of a step-by-step guide (US Interagency Council on Homelessness 2003).

Understanding the differences in sheltered homeless experiences, and understanding the goal of homelessness reduction policies, is important for recognizing homeless shelters as integral parts of public policies meant to address homelessness. Efforts to reduce and, it is hoped, eliminate chronic homelessness are aimed at achieving what has been called *functional zero* (Turner et al. 2017). Functional zero is achieved when all experiences with homelessness are transitional, which is to say they are short and rare. Aiding people experiencing short and infrequent periods of homelessness defines the intended role of an emergency shelter.

But why stop with functional zero? Why not strive to achieve absolute zero, where no one ever experiences homelessness? Defining the policy goal as eliminating chronic homelessness and so achieving functional zero recognizes that communities will only ever be able to minimize, not eliminate, homelessness. For people whose income is nearly totally devoted to the purchase of necessities, with little or no savings and without access to non-predatory lending, unexpected shocks to income or the costs of necessities may force them into a period of transition during which they experience homelessness.[4] Jadidzadeh and Kneebone (2021) report that in Calgary, for example, 300–400 people per month enter the homeless shelter system who have never done so before. Because the number of people in shelters is

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slow to change over time, this suggests a sizeable churn of people into and out of homelessness each month. What is more, as noted by Turner et al. (2017), certain subpopulations might not proactively seek out assistance (i.e., youth and people who use illicit drugs) of the sort that might keep them from experiencing homelessness. All of this is to suggest that even should communities realize the goal of eliminating chronic homelessness, they will still be left with the need to accommodate a fraction of their population who will, at any point in time, be experiencing short periods of homelessness. It is from a recognition that achieving absolute zero is unlikely that the concept of functional zero was developed.

Finally, in an extensive review of studies examining how local conditions affect homelessness, Hanratty (2017) reports that studies frequently find homelessness to be sensitive to local labour and housing markets, climate, demographic variables, and levels of income.[5] Case studies of communities noticeably different in these variables are useful for identifying statistically significant differences in how shelters are used and so how policy interventions will affect sheltered homelessness differently across communities. Our comparison is of sheltered homelessness in Calgary and Toronto, two large urban areas that differ in many of the local conditions identified in the literature as being correlated with rates of homelessness. Thus, in 2016 and relative to Calgary, the percentage of the adult population with an income below the Low-Income Cut-Off was 63 percent higher in Toronto, the median income was 21 percent lower, and the percentage of the population aged 18–24 years was 27 percent lower. In that same year, the percentage of the population self-identifying as Indigenous was nearly four times higher in Calgary than in Toronto. Finally, the average overnight low temperature in January observed over the period 1981–2010 was noticeably lower in Calgary (–13.6°C) than in Toronto (–6.7°C).[6]

With this background provided, we turn to the issue of producing assessments of how people use homeless shelters, how the use of shelters varies by one's age, and how the use of shelters varies by community. All of these considerations are important for understanding the role of homeless shelters and the cost of maintaining a community-wide shelter system. These considerations are also important for measuring the cost savings to providers of shelter spaces resulting from the success of homelessness reduction efforts.[7]

In the next two sections we describe the data used in our investigation and how they can be used to provide an assessment of how sheltered homelessness is experienced by single youth and adults in Calgary and Toronto. In the following section, we use these data to describe the patterns and intensity of shelter use by youth and adults in the two cities and provide tests of the extent to which these differences are statistically significant. On the basis of these results, we then report estimates of the costs of providing emergency shelter beds for both short-term and long-term use by these different demographics in the two cities. We conclude by discussing the implications of our calculations for the future role of homeless shelters and the cost of maintaining a city-wide system of shelters.

The Approach

We use *k-mean* clustering to examine the nature of shelter use in Calgary and Toronto. This approach involves identifying a predetermined number of groupings, or clusters, of individuals whose experience with homelessness is similar in terms of frequency and duration. The separation of individuals into these groups is determined endogenously. That is, the method clusters individuals into groups in such a way that the shelter use of each group is clearly different in length of stay and frequency of use. We follow the literature in defining three such clusters with characteristics summarized in Table 1.[8]

Transitional users of shelters do so only infrequently (few episodes), and their length of stay is short. Episodic users of shelters make more frequent use of the shelter system, but like transitional users, each episode of shelter use is relatively short. So-called chronic users of shelters have few episodes, but the average length of stay in a shelter is long.

Cluster analysis provides measures of these patterns and intensities of homeless shelter use. The methodology relies on observations of how people use shelters over long periods and requires the analysis to include data collected by all shelters potentially used by clients in a community. Thus, data from a single shelter located in a community that has many shelters would not accurately describe how people use shelters. Data must also be high frequency because shelter use is often quite short. The preferred frequency is hourly so that the analyst can accurately identify whether clients visiting a shelter use a bed for sleeping.[9]

The characterization of people as transitional, episodic, or chronic shelter clients is sensitive to the sample of observations used in the calculation. Different samples will produce different points of delineation among the three clusters of clients. Thus, a client whose

Table 1: Patterns of Shelter Stays

	Episodes	
Stays	Few	Many
Short	Transitional	Episodic
Long	Chronic	—

Note: Dash indicates not applicable.

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history of shelter use identifies them as a transitional user of shelters in Calgary might have been identified as an episodic user of shelters had they lived in Toronto. It is important to separately describe shelter use by community because, as noted earlier, local conditions can be expected to influence patterns and intensity of shelter use. Similarly, a youth whose history of shelter use identifies them as an episodic user of shelters relative to other youth might be identified as a chronic user when compared with the way in which adults use shelters. It is important to separately describe shelter use by youth and adults because, as described later, the literature shows that how youth experience homelessness differs in important ways from the experience of adults. To accurately describe the patterns and intensity of shelter use by a certain demographic in a certain city, it is necessary that cluster analysis be limited to using observations on shelter use by people in that demographic and in that city.

Maximizing the accuracy of any comparison across communities requires the choice of a common period of analysis. To the extent that conditions to which homelessness is sensitive are influenced by changes in variables common to all communities, it is desirable to compare cluster analyses using data from different communities collected over a common period of time.[10] Finally, in ways we describe later, the use of cluster analysis requires the analyst to make certain assumptions that eliminate some data points. Imposing these same assumptions on data describing shelter use by adults and youth in different locations maximizes comparability of findings.

Our data come from the cities of Calgary and Toronto, two large urban centres that each maintain a city-wide system of emergency homeless shelters. These data describe the use of shelters by people moving from and to the wider community as well as moving within the shelter system itself. We show calculations for two communities because, as noted earlier, the literature has shown that the experience of homelessness is sensitive to local conditions.[11] Differences in local conditions mean that how homelessness is experienced and the cost of responding to homelessness may vary by community. We test for the statistical significance of differences in the patterns and intensity of use of shelter beds, and so their costs of provision, in those communities.

The literature is also clear in identifying that the experience of homelessness differs by age. Gaetz et al. (2013) emphasize this to be the case because, unlike adults, for youth the experience of homelessness comes before they experience earning a living, securing shelter, paying bills, and, perhaps, establishing trusting non-family relationships. Consistent with this evidence that youth experience homelessness differently from adults, Jadidzadeh and Kneebone (2018) describe how in Toronto youth differ from adults in their use of emergency shelters. Whether the ways in which adults and youth differ in their use of homeless shelters also vary by community in statistically significant ways is tested here.

The literature describing patterns and intensities of use of homeless shelters in Canada contains studies that produce answers to certain of these questions but are limited in their ability to answer others. Aubry et al. (2013) show how patterns and intensity of shelter use vary by three communities (Toronto, Guelph, and Ottawa), but in their cluster analysis they combine data on how youth and adults use shelters and so cannot accurately report how patterns and intensity of use may differ by those demographics. In their analysis, Jadidzadeh and Kneebone (2018) consider adults separately from youth but examine data from only one city (Toronto) and so cannot show how shelter use varies by community. Rabinovitch et al. (2016) group all age groups together in their cluster analysis and so cannot accurately distinguish how youth and adults differ in their use of shelters. They too derive results relevant for only one community (Victoria).

Our goal is to use finely detailed data drawn from two locations spanning a common time frame, to allow for the possibility that youth and adults use shelters differently and apply common assumptions and methods to the treatment of those data. The result is a set of results showing to what extent the different ways in which people experience sheltered homelessness are sensitive to their age and to their location.

The Data

The data for this study were provided to us by the homeless-serving sector administrators in Toronto and in Calgary. After adjustments to the data provided to us, described later, our analysis examines shelter use in the two cities over a six-year period from 1 January 2011 to 31 December 2016.

During this period, the Toronto shelter system operated close to 60 shelters. As of 2016, there were approximately 4,400 full-time shelter beds in the system, including both emergency and transitional shelter beds. The number of shelter beds fluctuates seasonally, with additional beds opened in winter. Shelter referrals were made 24 hours a day, 365 days a year. The number of shelter beds includes spaces made available in hotels.

Client-level data on intakes, admissions and discharges, and basic demographics were provided to us by administrators of the Shelter Management Information System (SMIS). All individuals who have accessed the shelter system since the implementation of SMIS are assigned a unique client identification number that enables

unduplicated tracking over time and across the system. The data are collected daily and enable us to observe movements into and out of the shelter system by de-identified individuals. Before providing us with data, the Toronto system operator removed all identifying information so that our analysis is a secondary use of anonymized administrative data. Data made available to us spanned the period 23 October 2009 to 23 January 2017.

In Calgary, the homeless-serving sector is coordinated by the Calgary Homeless Foundation (CHF). The CHF plays a key role in funding and coordinating the responses of social agencies and shelter providers to changes in the needs of the population experiencing homelessness. To better understand the needs and challenges of the homeless-serving sector, the CHF collects and maintains data describing the daily movements into and out of shelters. Upon first entry into a homeless shelter in Calgary, a person is assigned a unique identifier that makes it possible for the CHF to observe that person's movements between shelter operators and between the shelter system and the community. Self-reported demographic information is also kept. Before providing us with data, the CHF removed all identifying information. Data made available to us span the period 1 May 2005 to 31 December 2019.

The data available from Calgary and Toronto enable us to define a common period of observation defining seven full calendar years from 1 January 2010 to 31 December 2016. To minimize the effect of left-censoring (the fact that we do not observe shelter stays before 1 January 2010), only those persons experiencing their first shelter admission after 1 January 2011 are included. These are people for whom no shelter activity was observed in the 12 months before that date. Similarly, we exclude persons whose first entry into the shelter system was within 12 months of the end of our dataset. These adjustments ensure everyone is given equal opportunity to accrue shelter stays and so reveal their shelter use as transitional, episodic, or chronic in nature.[12]

Definitions

The unit of observation in our study is daily and describes the number of people making use of a bed in a homeless shelter. Thus, a typical observation might identify person X as entering the shelter system on 19 February, exiting on 2 April, re-entering on 23 October, and so forth. We follow the practice in the literature of defining an episode as a period in a shelter that is separated from another period in a shelter by at least 30 days (Kuhn and Culhane 1998). This means that an episode need not define a period during which someone uses a shelter every day. Within the same episode, a person may exit and return to a shelter several times as long as each stay is separated from another by less than 30 days. In the tables of results reported in this article, average days per episode is calculated for each individual and then averaged across all shelter clients.

We discern between youth (aged 18–24 years) and single adult clients (aged 25 years and older) on the basis of their age upon entry into a shelter. If on re-entry to a shelter a person formerly identified as a youth has turned age 25 years, that person is newly identified as an adult, and current observations of that person's shelter use are added to our sample of adult shelter users. All individuals in the data set are single. We exclude people making use of family shelters and exclude youth who remain part of a family using the shelter system.

Tests

To allow for the possibility that adults and youth have different experiences with respect to homelessness and that each of these demographics also differs in their experiences from their counterparts in the other city, we apply cluster analysis separately to four data groupings. Thus, we apply cluster analysis to data describing the use of shelters by youth in Calgary, by adults in Calgary, by youth in Toronto, and finally by adults in Toronto. As part of our analysis, we test for the statistical significance of any differences in our measures of the patterns and intensity of emergency shelter use by these demographic groups in the two cities.

Results of Cluster Analysis

Tables 2 and 3 report the results of our cluster analysis of single youth and adults using the emergency shelter system in Toronto. In both cases, more than 80 percent of youth and adult shelter users are identified as transitional users of shelters. Although the same label identifies people in these age groups, their shelter use is quite different. Thus, whereas the average youth labeled as a transitional user averaged 46.6 days in shelters over six years, the average adult averaged more than 72.0 days. Similarly, although the average youth labeled as a chronic user of shelters stayed in shelters for a total of 535 days over six years, the average adult stayed a total of 839 days over the same period.

Tables 4 and 5 report similar results for homeless shelter users in Calgary. We again see that more than 80 percent of shelter clients are identified in the data as transitional users of shelters. In terms of the average number of days spent in shelter, the difference between youth and adults is again notable. The average youth identified as a transitional client spent just 16 days in shelter over six years, whereas the average adult used shelters for nearly 34 days over that period. The lengths of stay for Calgary are much lower than those in Toronto. With respect to clients identified as chronic users of shelters, the average youth in Toronto stayed a total of 367 days in

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Table 2: Pattern and Intensity of Shelter Use by Youth in the Toronto Shelter System, 2011–2016

	n (%)[a]			
Cluster Characteristics	Transitional	Episodic	Chronic	Total
Unique clients	6,564 (82.3)	614 (7.7)	797 (10.0)	7,975 (100.0)
No. of episodes, mean (*SD*)	1.27 (0.56)	5.58 (2.06)	2.03 (1.09)	1.68 (1.42)
No. of days, mean (*SD*)	46.62 (64.10)	198.83 (162.10)	535.29 (231.26)	107.17 (180.90)
No. of days/episode, mean (*SD*)	36.95 (53.43)	35.83 (26.30)	336.36 (213.75)	66.79 (122.61)
Days/episode				
1–30	64.9	50.5	0.0	57.3
31–60	14.5	32.1	0.0	14.4
61–90	8.3	13.0	1.4	7.9
≥91	12.4	4.4	98.6	20.4
No. of episodes				
1	78.4	0.0	40.8	68.6
2	15.8	0.0	29.2	16.0
3	5.8	0.0	20.2	6.8
4	0.0	40.9	7.2	3.9
5	0.0	22.8	1.9	1.9
≥6	0.0	36.3	0.8	2.9
Occupied shelter beds	305,982 (35.8)	122,080 (14.3)	426,624 (49.9)	854,686 (100.0)

Note: [a]Unless otherwise indicated.
Source: Shelter Management Information System data set and authors' calculations.

Table 3: Pattern and Intensity of Shelter Use by Adults in the Toronto Shelter System, 2011–2016

	n (%)[a]			
Cluster Characteristics	Transitional	Episodic	Chronic	Total
Unique clients	21,299 (83.1)	2,263 (8.8)	2,056 (8.0)	25,618 (100.0)
No. of episodes, mean (*SD*)	1.47 (0.82)	7.55 (2.88)	2.40 (1.63)	2.08 (2.11)
No. of days, mean (*SD*)	72.28 (100.38)	249.95 (210.17)	838.73 (358.27)	149.48 (257.97)
No. of days/episode, mean (*SD*)	52.41 (80.24)	34.18 (27.32)	509.48 (384.21)	87.48 (181.18)
Days/episode				
1–30	59.3	56.1	0.0	54.3
31–60	14.3	26.5	0.0	14.2
61–90	8.1	12.1	0.0	7.8
≥91 or more	18.3	5.3	100.0	23.7
Episodes				
1	69.6	0.0	39.0	61.0
2	18.2	0.0	24.6	17.1
3	8.0	0.0	14.8	7.8
4	4.3	0.0	10.6	4.4
5	0.0	28.3	5.7	3.0
≥6	0.0	71.7	5.3	6.8
Occupied shelter beds	1,539,436 (40.2)	565,628 (14.8)	1,724,422 (45.0)	3,829,486 (100.0)

Note: [a]Unless otherwise indicated.
Source: Shelter Management Information System data set and authors' calculations.

Table 4: Pattern and Intensity of Shelter Use by Youth in the Calgary Shelter System, 2011–2016

	n (%)[a]			
Cluster Characteristics	Transitional	Episodic	Chronic	Total
Unique clients	3,039 (85.5)	407 (11.5)	107 (3.0)	3,553 (100.0)
No. of episodes, mean (*SD*)	1.37 (0.64)	5.58 (2.08)	3.57 (2.63)	1.92 (1.71)
No. of days, mean (*SD*)	16.11 (30.59)	65.40 (57.57)	367.03 (183.92)	32.32 (76.90)
No. of days/episode, mean (*SD*)	11.87 (24.63)	12.63 (12.36)	176.18 (167.53)	16.90 (46.50)
Days/episode				
1–30	89.5	91.2	0.9	87.0
31–60	5.7	8.6	23.4	6.6
61–90	2.7	0.2	17.8	2.9
≥91	2.1	0.0	57.9	3.5
No. of episodes (%)				
1	71.8	0.0	25.2	62.2
2	19.2	0.0	19.6	17.0
3	9.0	4.2	11.2	8.5
4	0.0	34.6	14.0	4.4
5	0.0	22.4	7.5	2.8
≥6	0.0	38.8	22.4	5.1
Occupied shelter beds	48,948 (42.6)	26,616 (23.2)	39,272 (34.2)	114,836 (100.0)

Note: [a]Unless otherwise indicated.
Source: Calgary Homeless Foundation data set and authors' calculations.

Table 5: Pattern and Intensity of Shelter Use by Adults in the Calgary Shelter System, 2011–2016

	n (%)[a]			
Cluster Characteristics	Transitional	Episodic	Chronic	Total
Unique clients	14,906 (83.0)	2,266 (12.6)	782 (4.4)	17,954 (100.0)
No. of episodes, mean (*SD*)	1.62 (0.90)	7.05 (2.56)	2.90 (1.94)	2.36 (2.22)
No. of days, mean (*SD*)	33.92 (63.40)	144.28 (135.40)	816.77 (322.39)	81.95 (189.99)
No. of days/episode, mean (*SD*)	21.31 (43.60)	22.50 (23.15)	454.79 (389.62)	40.34 (126.78)
Days/episode				
1–30	80.6	73.4	0.0	76.2
31–60	9.7	17.5	0.0	10.3
61–90	4.2	7.6	2.7	4.6
≥91	5.5	1.5	97.3	9.0
No. of episodes				
1	61.0	0.0	30.1	51.9
2	21.8	0.0	22.4	19.1
3	11.4	0.0	16.0	10.2
4	5.8	5.6	12.8	6.1
5	0.0	29.7	8.4	4.1
≥6	0.0	64.7	10.4	8.6
Occupied shelter beds	505,665 (34.4)	326,933 (22.2)	638,713 (43.4)	1,471,311 (100.0)

Note: [a]Unless otherwise indicated.
Source: Calgary Homeless Foundation data set and authors' calculations.

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shelter over six years, and the average adult spent a total of 817 days in shelter over six years. The average experience of adults and youth making chronic use of shelters is more similar in the two cities than is the experience of adults and youth identified as transitional users.

The implication of this stratification of shelter clients by city and by age group means that we need to test for statistically significant differences in the results of our cluster analysis across cities and across age groups. Testing for statistically significant differences in the proportion of clients in each cluster, and for differences in average lengths of time in shelter, involves two-proportion *z*-tests and two-sample *t*-tests, respectively. Test results are reported in Tables A.1 and A.2 in the Appendix.

We conducted *t*-tests on the differences, across cities and across age groups, of three characteristics describing shelter use, namely the average number of episodes in shelters, the average number of days in shelters, and the average number of days per episode. With few exceptions, these 48 tests comparing the shelter use of transitional, episodic, and chronic clusters for youth and adults in each city are large enough to reject a difference of zero at the 5 percent level. Thus, the differences in sample averages are statistically significant. Exceptions are that the average number of days spent in shelter by adult chronic shelter users; the average number of episodes in shelter by youth episodic shelter users; and the average number of days in shelter by youth chronic users is not significantly different between the two cities.

In a similar way, a series of *z*-tests was conducted to compare the clusters on two descriptors of shelter use, namely the percentage of clients in each cluster and the percentage of occupied shelter beds by members of each cluster, for youth and adults. Again, with few exceptions, these 24 tests show that these proportions are not the same. Exceptions are that the percentage of adults identified as transitional users of shelters is not significantly different between the two cities: in Toronto, the percentage of transitional users of shelters who are adults is not significantly different from the percentage who are youth, and in Calgary, the percentage of episodic users of shelters who are adults is not significantly different from the percentage who are youth. But except for these relatively few exceptions, it is generally true that patterns and intensity of shelter use differ significantly across the two cities and across adults and youth. An important implication of these calculations is that when policy-makers refer to levels of chronicity in shelter use, they need to be aware that this can mean something quite different depending on the community and the demographic to which they are referring.

The fact that patterns and intensities of shelter use differ by age and across communities has important policy implications. Looking first at youth, the average length of shelter stay per episode by those identified as chronic users of shelters was nearly twice in Toronto (336 days) as in Calgary (176 days). If length of shelter stay can be considered a fair measure of the size of the challenges facing efforts to address chronic youth homelessness, then those challenges are seemingly much greater in Toronto. It is notable that the size of this difference in average length of shelter stay for chronic users of shelters is less apparent for adults. In Calgary, the average adult chronic user of shelters stayed 455 days per episode, whereas the average adult chronic user in Toronto stayed 509 days. Given the emphasis of government policies on addressing chronic homelessness, these results suggest the need for approaches that are specific to community and, most important, to age.

Cost Calculations

In this section, we discuss the implications of our calculations for the costs of maintaining a community-wide system of homeless shelters and the potential savings resulting from the success of programs intended to reduce chronic homelessness. Costs will depend on the length of time clients use a shelter bed and the nightly cost of providing that bed. The nightly cost of providing a shelter bed varies by shelter, by community, by the characteristics of shelter users, and by the services provided by the shelter operator. Reflecting this wide range of possibilities, for shelters in Canada operating in 2005, Pomeroy (2005) estimated a range of costs from $25 to $110 per night, with the lower estimate reflecting the cost of dormitory-style accommodations and the higher estimate including the cost of more intensive 24/7 levels of service.

We assume a per-night cost of $50 per shelter client whose use of shelters is identified as transitional. As we have shown, these clients use shelters infrequently and for very short periods, and so we assume they require, and receive, little in the way of services other than access to dormitory-style sleeping arrangements. For clients whose use of shelters is episodic or chronic, we assume a per-night cost of $80 or $120 per client, respectively. As reported earlier, these clients' stays in shelters are less frequent but of much longer duration relative to transitional users. We assume their length of stay means they seek and receive more intensive services that go beyond the provision of a bed.

These assumed nightly costs are consistent with the range of estimates suggested by Pomeroy (2005). Using 2016 dollars, the average per-person per-night shelter costs cited by Pomeroy range from $30 to $132 per night, depending on the services provided by the shelter operator. Our assumed nightly costs are also consistent with estimates of the average per-night cost derived from financial statements of Toronto's shelter system (Toronto

2016) and from the financial statements of The DI, the largest shelter operator in Calgary (Calgary Drop-In & Rehab Centre Society 2017). From these sources, the average per-night per-bed cost in 2016 was approximately $82 in Toronto and $94 in Calgary.[13] As we show, our assumed nightly costs and our calculations of the number of transitional, episodic, and chronic shelter clients implies an average per-bed per-night cost of approximately $86 in both cities. Our assumed per-night per-bed costs by intensity of shelter use therefore closely mimic the average per-night cost reported in the financial statements of shelter operators in Calgary and Toronto over our period of analysis.

The differences in costs for providing shelter beds for youth and adults in Calgary and Toronto will vary by differences in the patterns and intensity of shelter use reported in Tables 2–5. In the preceding section, we reported that these differences are, with few exceptions, statistically significant, indicating that the cost calculations reported in this section are also statistically significant.

Table 6 provides information on the cost to the Toronto shelter system of providing an emergency shelter bed to a youth. As reported in Table 2, 82 percent of youth in Toronto are classified as transitional users of emergency shelters. In Toronto, the average transitional shelter user spent only 1.27 episodes in shelter, for a total of 46.62 days over six years. Thus, the cost to the shelter system of accommodating the average transitional youth client, at the assumed $50 per night, was $2,331 over six years.

Table 7 provides the same calculations but for a youth making use of the shelter system in Calgary. In Calgary, a youth classified as a transitional shelter user was like a youth in Toronto with respect to the number of episodes spent in shelter, 1.37 episodes over six years. However, the average youth classified as a transitional user of shelters made use of Calgary's shelters for a total of just 16.11 nights over six years, only one-third the number of nights of a similarly classified youth in Toronto. Therefore, the cost to the Calgary shelter system of accommodating the average youth was only $806 over six years.

These relative costs can also be expressed in terms of how many youths were served by the same bed each year. In Toronto, a shelter bed reserved for a youth provided respite for an average of 7.8 youths per year. In Calgary, that same shelter bed provided respite for 22.7 youths per year.

In both cities, the cost of providing an emergency shelter bed to a youth classified as episodically or chronically homeless is much higher, in part because their length of stay in shelters was longer and in part because the per-night cost is higher. For example, in Toronto, to maintain a shelter bed used to accommodate the average youth classified as a chronic user of shelters required

Table 6: Cost of Providing Emergency Shelter Beds to Youth, Toronto, 2011–2016

Cluster Characteristics	Transitional	Episodic	Chronic	Total
No. of occupied shelter beds 2011–2016	305,982	122,080	426,624	854,686
Total cost 2011–2016, $	15,299,100	9,766,400	51,194,880	76,260,380
Total no. of clients	6,564	614	797	7,975
Average no. of episodes	1.27	5.58	2.03	1.68
Average days/episode	36.95	35.83	336.36	66.79
Average days in shelter/client	46.62	198.83	535.29	107.17
Average cost/client, $	2,331	15,906	64,235	9,562

Source: Shelter Management Information System data set and authors' calculations.

Table 7: Cost of Providing Emergency Shelter Beds to Youth, Calgary, 2011–2016

Cluster Characteristics	Transitional	Episodic	Chronic	Total
No. of occupied shelter beds 2011–2016	48,948	26,616	39,272	114,836
Total cost 2011–2016, $	2,447,400	2,129,280	4,712,640	9,289,320
Total no. of clients	3,039	407	107	3,553
Average no. of episodes	1.37	5.58	3.57	1.92
Average days/episode	11.87	12.63	176.18	16.90
Average days in shelter/client	16.11	65.40	367.03	32.32
Average cost/client, $	806	5,232	44,044	2,615

Source: Calgary Homeless Foundation data set and authors' calculations.

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an expenditure of $64,235 over six years. This was considerably more than the cost to the Calgary shelter system ($44,044 over six years) because of the difference in the average days in shelter (535.29 days in Toronto vs. 367.03 days in Calgary).

Tables 8 and 9 present the same calculations for single adults. The cost of maintaining an emergency shelter bed used by an adult classified as a transitional user of shelters was again much lower in Calgary than in Toronto because although the average shelter client in the two cities experienced nearly the same number of episodes, the average length of those episodes was much longer in Toronto (52.41 days) than in Calgary (21.31 days). Providing respite to an adult classified as a transitional user of shelters cost $3,614 over six years in Toronto versus just $1,696 in Calgary. In Toronto, a shelter bed reserved for adults provided respite for just over five adults per year. In Calgary, that same shelter bed provided respite for more than twice as many (10.8) adults per year.

As was the case with youth, the cost of providing shelter beds for adult clients classified as episodic or chronic was much greater. In Toronto, it cost $100,648 over six years to provide shelter to an adult classified as a chronic shelter user. It cost almost the same amount ($98,012) in Calgary because adult clients identified as chronic users of shelters were very similar to those in Toronto with respect to the average number of days spent in shelter (838.73 days in Toronto vs. 816.77 days in Calgary).

Across both cities and across both adults and youth, our calculations suggest that the cost of maintaining a shelter bed was just over $86 per night, an amount very close to the cost derived from financial statements of shelter operators in Toronto and Calgary.

Discussion

We have used comparable data collected from two community-wide systems of emergency shelters over a common span of time and analyzed those data by imposing common assumptions and methods. Our tests show that how adults and youth use shelters differs in statistically significant ways and differs again depending on whether their experience with homelessness occurs in Toronto or Calgary. The experience of sheltered homelessness varies by age and by location in noticeable and statistically significant ways. One implication of these differences is that they suggest the need for approaches to addressing homelessness that are specific to community and to age. Another implication is that the cost of maintaining a system of emergency shelters will vary by community and by the demographic composition of the shelter population.

We think our calculations are particularly interesting when considering the appropriate public policy response to the housing problems faced by youth. The evidence suggests that youth experiencing homelessness are often doing so not because of substance abuse or mental health

Table 8: Cost of Providing Emergency Shelter Beds to Adults, Toronto, 2011–2016

Cluster Characteristics	Transitional	Episodic	Chronic	Total
No. of occupied shelter beds 2011–2016	1,539,436	565,628	1,724,422	3,829,486
Total cost 2011–2016, $	76,971,800	45,250,240	206,930,640	329,152,680
Total no. of clients	21,299	2,263	2,056	25,618
Average no. of episodes	1.47	7.55	2.40	2.08
Average days/episode	52.41	34.18	509.48	87.48
Average days in shelter/client	72.28	249.95	838.73	149.48
Average cost/client, $	3,614	19,996	100,648	12,848

Source: Shelter Management Information System data set and authors' calculations.

Table 9: Cost of Providing Emergency Shelter Beds to Adults, Calgary, 2011–2016

Cluster Characteristics	Transitional	Episodic	Chronic	Total
No. of occupied shelter beds 2011–2016	505,665	326,933	638,713	1,471,311
Total cost 2011–2016, $	25,283,250	26,154,640	76,645,560	128,083,450
Total no. of clients	14,906	2,266	782	17,954
Average no. of episodes	1.62	7.05	2.90	2.36
Average days/episode	21.31	22.50	454.79	40.34
Average days in shelter/client	33.92	144.28	816.77	81.95
Average cost per client, $	1,696	11,542	98,012	7,134

Source: Calgary Homeless Foundation data set and authors' calculations.

challenges but because they are escaping family violence or rejection (Gaetz et al. 2013 and citations therein). This means that, much like women escaping violence, youth need short-term emergency accommodation so that they can sort out a longer-term solution. Just as shelters for women escaping violence are deemed to be important and appropriate public policy responses to assist women recovering from the loss of safe housing, we think that emergency shelters designed to meet the unique needs of youth are appropriate public policy responses to their infrequent need for temporary shelter.

Our cost calculations are also interesting for providing an estimate of the cost savings realized by shelter operators should public policy goals regarding the elimination of chronic homelessness be met. If we assume that the goal of eliminating chronic homelessness is achieved, if we take at face value the calculations in Tables 6–9, and finally if we assume housing formerly chronically homeless individuals does not change the number of transitional users of shelters, then our calculations show that the variable costs of maintaining the shelter system over six years in Toronto would fall from a total of $405.4 million to just $92.3 million. The variable cost of maintaining Calgary's shelter system over six years would fall from $137.4 million to just $27.7 million. The cost savings to shelter operators from eliminating chronic homelessness and so reaching functional zero is therefore substantial. If shelter operators can realize efficiency gains from serving a group of clients with more homogeneous needs, and if shrinking the number of clients being served saves capital costs, the savings will be greater still.[14]

Of course, the goal of achieving functional zero may be a long way off and, indeed, may only be aspirational. A more useful calculation, then, may be the cost savings realized from housing a formerly chronic user of shelters. As indicated by Tables 6–9, the cost savings realized by the homeless shelter system from permanently housing an adult who was formerly a chronic user of shelters in Toronto is $100,648 for every six years that person remains outside the shelter system. Virtually the same amount ($98,012) is saved had that adult been a chronic user of the shelter system in Calgary. The savings from permanently housing a youth who was formerly a chronic user of shelters is $64,235 in Toronto and $44,044 in Calgary for every six years that person remains outside the shelter system. When considering the costs of housing programs designed to achieve functional zero, these cost offsets are important to remember. They are in addition to the savings identified as flowing to the health care system identified by the At Home/Chez Soi demonstration project (Goering 2014) and to possible cost savings realized by police and the justice system (Jadidzadeh et al., 2022).

Our cost calculations are also useful for properly framing the cost of assisting someone working their way toward (re-)establishing permanent housing. If we assume that in 2023 the average variable cost of providing a shelter bed is $100 per night, then a shelter bed costs $36,500 a year to maintain. But only a small minority of people experiencing homelessness use a shelter bed every night. Most people need a temporary solution to an infrequent occurrence. Recognizing this, a bed in an emergency shelter may provide the temporary respite needed by many people working their way toward establishing permanent housing. Rather than ask what it costs to maintain a bed in a homeless shelter, we can use our calculations to ask what it costs to facilitate someone's transition to permanent housing by providing them with access to an emergency shelter bed. The answer for more than 80 percent of people using shelters, those whose use is infrequent and short, is that the cost is small. In Calgary over the period 2011–2016, assisting a youth trying to transition toward permanent housing by providing space in an emergency shelter cost an average of $806 spread over six years. For an adult, the cost is estimated to have been $1,696 spread over six years. In Toronto, these costs are estimated to have been higher, at $2,331 for a youth and $3,614 for an adult, both spread over six years. On their face, these appear to be small public costs for assisting people during short periods of housing dislocation and for facilitating an individual's efforts to re-establish housing.[15] It is perhaps particularly small compared with the personal costs borne by those unable to secure temporary shelter.

A limitation of our calculations is that they are based on measures of patterns and intensity of shelter use observed over a period that ended in 2016. Some changes to these patterns and intensity of use may have changed since then. Even so, we suggest that the key message supported by our calculations, namely, that emergency shelters are cost-effective public policy responses to transitional homelessness, will survive calculations using more recent data. We are also aware that our calculations are based on data describing the use of homeless shelters in just two large urban centres and so may not be generally applicable to all communities. Using data from other communities would reveal whether achieving functional zero can be expected to yield similar cost savings in small- or medium-sized communities.

Finally, it is worth noting that although we have restricted our analysis to comparing typographies of shelter use of single adults with those of single youth, other comparisons are possible that identify shelter users by finer age groupings, by gender, and by ethnicity.[16] Future research making use of finer demographic slices of the population experiencing temporary dislocations from housing would give a clearer picture of who is making transitional use of shelters. This is useful because it will more finely describe the demographic characteristics of those still having to rely on shelters after functional

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zero is achieved and so may increase the effectiveness of interventions intended to assist those people.

Conclusion

Our goal in this article was to tie together three key results from the literature on how people experience sheltered homelessness. By using data drawn from two communities collected over a common time period and by applying common assumptions and methods to the treatment of those data, we were able to test for statistically significant differences in how people use homeless shelters and how their use varies by their age and by the city in which they live. We have shown that there is wide variation in how single people use emergency shelters and that their use varies by age and by where they live. We have used these results to provide estimates of the variable cost of maintaining two city-wide systems of emergency shelters designed to accommodate single people and the cost savings that are realized by those shelter systems when success is achieved in establishing formerly homeless people in permanent housing.

A broad conclusion to be drawn from our analysis is that there is no single way of describing how people make use of homeless shelters. Use of shelters varies significantly by one's age and by the community in which one lives. The communities we have studied, Toronto and Calgary, are both large urban centres, and so one may conjecture that the differences we have identified are due less to community size and more to local conditions specific to each community. On this, the literature cites differences in the available stock and rental price of low-cost housing, rates of poverty, climate, and differences in demographic patterns. An implication of these differences is that there is no single solution or set of solutions to homelessness. Effective approaches for dealing with homelessness are specific to the characteristics of the population of people experiencing homelessness and to the characteristics of the community in which they live.

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Notes

1 Sheltered homelessness describes people staying in shelters provided by governments and by non-profit agencies. People whose experience with homelessness involves sleeping out of doors or in places unfit for human habitation are often described as unsheltered or as rough sleepers. People whose housing is temporary or lacking in security of tenure are identified as provisionally accommodated. They are sometimes referred to as couch surfers. For discussion, see Gaetz et al. (2012).

2 More precise definitions of these terms are provided later.

3 See Ontario (2015). For a recent example of a municipal commitment to adopt a goal of eliminating chronic homelessness, see Regina (2019).

4 Economists refer to temporary bouts of unemployment arising as a result of transitioning from one job to the next as *frictional unemployment* and define it as one of the types of unemployment they recognize as defining the minimum amount that can be expected in a well-functioning economy. In a similar way, people with limited resources for responding to unexpected events, or whose personal issues (poverty and possibly substance abuse, family violence, or mental health challenges) put them at risk of being suddenly and unexpectedly exposed to homelessness, may be said to experience *frictional homelessness*. The rate of frictional homelessness is thus the minimum amount of homelessness that is feasible given local conditions. See Quilgars et al. (2011) for a brief discussion of this concept.

5 See Kneebone and Wilkins (2021), who confirm the sensitivity of both sheltered and unsheltered homelessness to these local conditions using a cross-section of data from 49 Canadian communities.

6 Income and demographic data are from the 2016 Census of Population (Statistics Canada 2023). Climate data are from Canada (n.d.).

7 It is important to stress that our estimate of this cost savings is only that realized by shelter operators. The savings to the broader social safety net that results from housing formerly homeless people, savings in the form of reduced health care expenditures and reduced expenditures by the justice system, for example, will not be captured by our measures. See the report of the At Home/Chez Soi demonstration project (Goering et al. 2014) for estimates of these potential cost savings.

8 The seminal article using cluster analysis is that of Kuhn and Culhane (1998), who examined shelter use by single adults in New York City and Philadelphia.

9 The data provided to us report entries to and exits from shelters by hour of the day. This means that a client may be recorded as entering a shelter but also

be recorded as exiting later in the day before sufficient time has passed for them to have used a shelter bed. We omit these observations and so only consider cases of people who used a shelter to sleep.

10 Choosing a common period of observation can, for example, control for the effects of national recessions, federal economic stabilization efforts, and changes in interest rate policies, all of which might be expected to influence the number of people experiencing homelessness. We recognize that choosing a common time period to minimize the influence of changes in variables having the potential to influence shelter use can only ever be partially successful. In the middle of our period of observation, starting in July 2014, oil prices fell by 50 percent. By lowering retail energy costs, this shock may be expected to have had a common influence on rates of homelessness in the two cities by lowering utility bills but may have had a separate influence in Calgary, where the shock also affected levels of employment. Kneebone et al. (2011) note that in Calgary energy shocks reduce employment but also reduce interprovincial migration into the city, with opposing influences on shelter stays. It is not clear, then, that the oil price shock had a noticeably different effect on homelessness in Calgary than in Toronto. More important, our period of analysis precedes the large influx of refugee claimants into Toronto's shelter system after 2016 (Toronto 2019). This influx has forced the shelter system in Toronto to respond to a large, unexpected inflow of people in need of shelter and represents an important event not experienced in Calgary's homeless-serving sector. Our choice of sample period avoids the effect of this shock.

11 See Note 2. As O'Flaherty (2019) notes, negative events might select an individual for homelessness, but community-level effects can lessen or magnify the consequences of those events.

12 Truncating the data by more (or less) than 12 months on the left increases (or decreases) the likelihood that we have accurately identified someone as having entered the shelter system for the first time. Truncating the data by more (or less) than 12 months on the right increases (or decreases) the precision with which one defines a shelter user as chronic. A long sample period is desirable because it allows the researcher to deal with problems of left- and right-censoring while leaving enough observations to describe the use of shelters in the community.

13 These calculations are based on information provided in financial statements on the average number of daily shelter beds provided and the total expenditure on emergency shelter and related supports. The figures are not directly comparable because of differences in the characteristics of shelter clients and different assumptions regarding what costs are included. The financial statements do not provide cost breakdowns by client characteristics.

14 Our calculations assume that all homelessness reduction efforts are directed through housing programs that focus on people whose experience with homelessness is chronic and that those efforts have no knock-on effects on the number of people experiencing transitional homelessness. If governments are also successful in efforts to reduce rates of poverty, increase the stock of housing affordable to people with limited incomes, or both, then we might expect the number of people whose experience with homelessness is transitional will also fall. This will lead to further cost savings to shelter systems. These cost savings will be in addition to those resulting solely from the successful elimination of chronic homelessness.

15 A public policy alternative to providing access to emergency shelters is to tolerate couch surfing by not enforcing maximum occupancy rules and to tolerate rough sleeping perhaps by providing sanitation facilities to encampments. The fact that some communities choose these responses is apparent from the fact not all provide emergency shelter beds and that some provide far fewer beds per capita than others. The appropriate public policy response needs to consider many dimensions. One is to consider the relative safety and health consequences for the individual from sleeping rough, couch surfing, or using an emergency shelter. Another is the difference in the ability of the individual to re-establish housing, depending on whether they respond to a loss of housing by couch surfing, sleeping rough, or using an emergency shelter. Finally, each of these public responses to transitional homelessness likely imposes different costs on the social safety net. Pleace (2015) and Joffe et al. (2012), for example, provide estimates of the cost to the public sector of sleeping rough that are very high. We know of no studies of the differences in costs incurred by the public sector from people sleeping rough, couch surfing, or making use of an emergency shelter.

16 An examination based on ethnicity would provide insights into why people who self-identify as Indigenous are over-represented in shelter populations.

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Appendix

The tables in this Appendix report tests of the statistical significance of differences in the calculations presented in Tables 2–5, inclusive. These tests assume the four sets of observations—youth and adults in Calgary and in Toronto—are independent. In assuming that samples from Calgary are independent of those from Toronto, we rely on the literature cited in the text that show that how, and for how long, people experience homelessness is sensitive to local housing and labour market conditions, differences in demographic composition, differences in climate, and differences in poverty and levels of income support and that Toronto and Calgary differ noticeably in these respects. In assuming that the samples of youth and adults are independent, we rely on the previously cited literature that emphasizes that the causes and consequences of homelessness for youth differ in important ways from the causes and consequences of homelessness as it is experienced by adults. Thus, events affecting housing and labour markets, for example, affect youth differently than adults. As noted in the text, if on re-entry to a shelter a person formerly identified as a youth has turned age 25 years, that person is newly identified as an adult and current observations of that person's shelter use are added to our sample of adult shelter users. The number of clients formerly identified as youth who in this way enter the sample of adult clients is equal to 2.4 percent of the adult sample in Toronto and 3.0 percent of the adult sample in Calgary. To this limited extent, the samples of youth and adult clients are not strictly independent.

A two-proportion *z*-test is used to test for the statistical significance of differences in calculations presented in Tables 2–5 as percentages. The null hypothesis for the test is that the proportions are the same. Those *z*-statistics greater than 1.96 reject the null hypothesis within a 95 percent confidence level. A two-sample *t*-test is used to test for the statistical significance of differences in calculations presented in Tables 2–5 as levels. The null hypothesis for the test is that the averages come from the same statistical population so that the differences between averages are equal to zero. Those *t*-statistics greater than 1.96 reject the null hypothesis within a 95 percent confidence level.

Table A.1 reports tests of the statistical significance of differences in how adults and youth use shelters in Toronto versus how adults and youth use shelters in Calgary. Table A.2 reports tests of the statistical significance of differences in shelter use by adults versus shelter use by youth in Toronto (Calgary).

Table A.1: Difference between Toronto and Calgary Shelter Utilization by Adults and Youth

	Adults		Youth	
Sample Characteristics	Toronto – Calgary, p.p.	*z*-statistics or *t*-statistics	Toronto – Calgary, p.p.	*z*-statistics or *t*-statistics
% of sample				
Transitional	0.1	0.3	–3.2	4.3*
Episodic	–3.8	12.8*	–3.8	6.6*
Chronic	3.7	15.3*	7.0	12.9*
Average no. of days				
Transitional	38.4	41.2*	30.51	25.0*
Episodic	105.7	20.1*	133.43	16.0*
Chronic	22.0	1.5	168.26	7.2*
Total	67.5	29.9*	74.85	23.7*
Average no. of episodes				
Transitional	–0.2	–16.5*	–0.10	–7.5*
Episodic	0.5	6.2*	0.00	0.0
Chronic	–0.5	–6.9*	–1.54	–11.0*
Total	–0.3	–13.3*	–0.24	–7.8*
Average no. of days/episode				
Transitional	31.1	43.1*	25.08	24.7*
Episodic	11.7	15.5*	23.20	16.6*
Chronic	54.7	3.4*	160.18	7.4*
Total	47.1	30.1*	49.89	23.5*
% of occupied shelter beds				
Transitional	5.8	123.5*	-6.8	45.1*
Episodic	–7.5	205.3*	-8.9	78.5*
Chronic	1.6	33.6*	15.7	100.1*

Note: p.p. = percentage point

*$p < 0.01$ for differences that are statistically different from zero.

Source: Authors' calculations.

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Table A.2: Difference between Adults and Youth Shelter Users in Toronto and Calgary

	Toronto		Calgary	
Sample Characteristics	Adults – Youth, p.p.	*z*-statistics or *t*-statistics	Adults – Youth, p.p.	*z*-Statistics or *t*-Statistics
% of sample				
Transitional	0.8	1.7	–2.5	3.7*
Episodic	1.1	3.2*	1.2	1.9
Chronic	–2.0	5.5*	1.3	3.7*
Average no. of days				
Transitional	25.7	19.5*	17.8	15.1*
Episodic	51.1	5.6*	78.9	11.6*
Chronic	303.4	22.2*	449.7	14.1
Total	42.3	13.6*	49.6	15.3*
Average no. of episodes				
Transitional	0.2	18.1*	0.3	14.5*
Episodic	2.0	15.8*	1.5	10.9*
Chronic	0.4	6.0*	–0.7	–3.2*
Total	0.4	15.9*	0.4	11.2*
Average no. of days/episode				
Transitional	15.5	14.6*	9.4	11.6*
Episodic	–1.7	–1.3	9.9	8.4*
Chronic	173.1	12.0*	278.6	7.3*
Total	20.7	9.5*	23.4	10.9*
% of occupied shelter beds				
Transitional	4.4	75.3*	–8.3	56.5*
Episodic	0.5	11.5*	–1.0	7.5*
Chronic	–4.9	82.0*	9.2	60.8*

Note: p.p. = percentage point

*$p < 0.01$ for differences that are statistically different from zero.

Source: Authors' calculations.

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