

SUPPORTIVE HOUSING FOR SENIORS: REFORM IMPLICATIONS FOR MANITOBA'S OLDER ADULT CONTINUUM OF CARE



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EXECUTIVE SUMMARY

Introduction and Research Purpose

The older adult care continuum is generally comprised of home care services, community-based supportive housing, and nursing homes (called personal care homes or PCHs in Manitoba). Despite having different names and providing various care options across Canada, the general goal of supportive housing is to extend community-based living for some individuals as an alternate to PCH care.

Supportive housing in Manitoba provides care to people who are still able to reside in the community, but who are frail and/or cognitively impaired to the point where they can no longer manage in their own home even with informal supports and home care services. Supportive housing tenants typically receive: i) help with meals, laundry, and light housekeeping; ii) 24-hour on-site assistance to complete personal tasks like bathing, dressing, and grooming; and iii) some (but not 24-hour) professional home care services as deemed eligible by the home care program. For the purposes of this research, the term 'supportive housing' defines dwellings that are authorized by government and/or health regions to receive some financial support. Tenants are also approved by stakeholders to reside in these dwellings as part of the continuing care eligibility assessment process, meaning that supportive housing is a formal component of Manitoba's continuum of older adult care. These factors differentiate supportive housing from various other housing options (e.g., 55+ retirement or assisted living complexes) that exist in Manitoba. These alternate housing options are not part of this research.

The purpose of this research is to examine supportive housing and PCH use in the Winnipeg Health Region of Manitoba, Canada. Three types of analyses were conducted. *First*, we examined the clinical profile (e.g., defining the amount of help people needed to complete activities of daily living tasks like dressing and bathing, their level of cognitive impairment, their severity of behavioural challenges, their frequency of bowel and bladder incontinence) of supportive housing tenants and PCH residents. Our goal in this part of the research was to identify how many PCH residents were clinically similar to the majority of supportive housing tenants (these PCH residents are called 'less clinically burdened' in this report). These results were used to estimate the extent to which supportive housing in Winnipeg can be expanded to help offset growing PCH demands.

Second, we compared the additional features of supportive housing and PCH users, comparing things like: i) the fees people paid to use these different components of continuing care, ii) differences in their healthcare use patterns (e.g., how often they visited an emergency department), and iii) differences in their informal support networks (e.g., if they had an informal caregiver and if so, how healthy this person was). Collectively, this information is used to discuss ways in which our continuing care system may need to change, helping to ensure that supportive housing is used optimally. *Third*, we also calculated the government/health region contributions to supportive housing and PCH care operational costs. These results provide a useful framework for discussing continuing care reform strategies from a financial perspective.

This information is summarized in the following three research questions, stated as follows:

1. What percent of newly admitted PCH residents are clinically similar to the majority of newly admitted supportive housing tenants?
2. Aside from their clinical characteristics, to what extent do supportive housing tenants and PCH residents differ by other factors, such as user demographics and various healthcare use patterns?
3. What are the government/health region contributions to operational costs (with and without considering healthcare use) of both supportive housing and PCH use?

CHAPTER 1: INTRODUCTION AND RESEARCH PURPOSE

Rationale and Study Purpose

Across Canada, the older adult care continuum has traditionally been comprised of home care services and personal care homes (PCHs).¹ Home care provides a variety of services that help people to stay in their homes for as long as safely possible (Manitoba Health, 2013), while PCHs provide 24-hour professional care in an institutional setting (Manitoba Health, 2015). Home care is provided at no direct charge in Manitoba, while PCH residents pay a daily fee ranging from \$35 to \$81 depending on their net income and marital status (Manitoba Health, 2015).

Healthcare planners across Canada have added various types of community-based congregate housing structures – termed supportive housing in Manitoba – as an intermediate care continuum option. Supportive housing in Manitoba provides care to people who are still able to reside in a congregate setting, but who are frail and/or cognitively impaired to the point where they can no longer manage in their own home even with informal supports or home care services. These tenants typically require help with meals, laundry, and light housekeeping, and also have available 24-hour on-site personal support to complete personal tasks like bathing, dressing and grooming. Supportive housing tenants may also require some (but not 24-hour) professional home care services as deemed eligible by the home care program (Manitoba Health, 2012; Winnipeg Regional Health Authority, 2014).

Supportive housing tenants in Manitoba are typically charged a monthly rent fee and also a service fee for meals, laundry, and light housekeeping. The cost to provide personal support and supervision is offset by the government and/or the health regions. Tenants are also approved by stakeholders to reside in these dwellings as part of the continuing care eligibility assessment process, meaning that supportive housing is a formal component of Manitoba's continuum of older adult care. This financial support and assessment process differentiates supportive housing from other housing options (e.g., 55+ retirement or assisted living complexes) that are not formally part of the continuing care system in Manitoba. It is important to note that the nomenclature used to define supportive housing varies widely across Canada (e.g., planners in British Columbia use the term 'assisted living' as equivalent to supportive housing in Manitoba; while in Alberta these dwellings are called residential facilities, a term used elsewhere to define PCHs). A report by the Canadian Centre for Elder Law provides an excellent summary of these different terms used and their care continuum implications (Canadian Centre for Elder Law, 2008).

Manitoba Health, Healthy Living and Seniors has recently produced a blueprint to support the advancement of the older adult care continuum (Manitoba Health, 2014), in part to better understand the appropriate volume of continuum care services required now and in the future, but also to determine how these services can better be configured, specifically to ensure that supportive housing serves as an appropriate alternative to PCH care. While past research from the Manitoba Centre for Health Policy (MCHP) (Chateau et al., 2012; Doupe et al., 2011) has helped to support this restructuring process, many additional challenges exist and the need for additional evidence is summarized in the following text:

- Assuming the present care continuum remains at status quo, Manitobans are projected to require between 32% and 53% more PCH beds by the year 2031, depending on the extent to which past reductions in PCH use will continue into the future (Chateau et al., 2012; Doupe et al., 2011). This information, however, should be considered from the perspective that Manitoba currently has one of the highest supplies of PCH beds in Canada (i.e., 338 beds per 1,000 people 85 and older) as compared to provinces like New Brunswick, British Columbia, and Alberta (each with a PCH bed supply of less than 270 beds per 1,000 people 85 and older) (Sivanathan, Doupe, & McGregor, 2015). This evidence highlights the need to consider expanding community-based care options in Manitoba, versus developing reform strategies that focus only on increasing the number of PCH beds.

1 Personal care homes are referred to as nursing homes or residential facilities in most other Canadian provinces.

CHAPTER 2: DEFINING THE STUDY COHORT

Chapter Highlights

This research was conducted on a cohort of 927 supportive housing tenants and 5,267 long stay personal care home (PCH) residents (i.e., excluding people who were in a PCH temporarily for respite reasons) who were newly admitted into these care options between April 1, 2006 and March 31, 2011. One additional year of data (extending until March 31, 2012) was used to ensure that healthcare use patterns were measured on all participants for at least one year or until death, whichever came first. During the study period, 31.3% of supportive housing tenants (N=290 people) were also reported as newly admitted PCH residents. With one exception (i.e., measuring lengths of PCH stay for people who had previously used supportive housing), this subset of users was not considered separately in this report.

For inclusion in this study, supportive housing tenants and PCH residents had to have been assessed at least once using the interRAI Minimum Data Set (MDS) data system.³ More specifically, PCH residents had to have had an MDS 2.0 assessment completed within 30 days of their PCH move-in date (thus profiling residents at about their time of PCH admission). Supportive housing tenants had to have had an MDS-HC assessment completed at some point during their stay. For tenants with multiple MDS-HC assessments, we selected the one closest to their supportive housing move-in date. For 95.4% of tenants, this first assessment was completed within six months of their supportive housing move-in date. Our clinical profiles in this chapter therefore define supportive housing tenants early during their supportive housing stay.

Data Sources Used in the Research

MCHP houses the Population Health Research Data Repository (Repository), a comprehensive collection of administrative data that is collected to administer the universal healthcare system in Manitoba. The Repository contains information of key interest to healthcare planners, including data on mortality and birth, contacts with physicians and hospitals, pharmaceutical dispensing, as well as the use of home care services and PCHs. A variety of social services and housing data are also now available at MCHP.

Person-level data in the Repository are de-identified and do not contain information such as patient name. However, the data can be linked at the person level across various Repository files using a scrambled number assigned to each registered Manitoban. Strict regulations are enforced at MCHP to protect patient confidentiality. All data management, programming and analyses were performed using SAS® version 9.4.

Several Repository files were linked to conduct this research. Because some of these files are available in the Winnipeg Health Region only, our analyses are confined to this region. A list of these files is provided in the following text.

- Manitoba Health Insurance Registry: This file was used as the central file for creating all other linkages, and to identify people's sex, birth date, death date, and the residential location of supportive housing and PCH users prior to their admission (for calculating area-level income quintiles).
- The Supportive Housing file: This file was provided by the Winnipeg Health Region specifically for this research and was used to identify supportive housing users and their admission dates. Tenants who had moved out of supportive housing also had a discharge date and disposition status (e.g., transferred to a PCH, death).
- Long Term Care Utilization History file: This file was required to identify newly admitted PCH residents and their length of PCH stay.

3 The Canadian versions of MDS-HC and MDS 2.0 are Copyright© Canadian Institute for Health Information, 2002.

Table 2.3: Final Number of Personal Care Home Residents Newly Admitted between April 1, 2006 and March 31, 2011 (Study Cohort)

Site	Number (%) of Beds	Number (%) of Newly Admitted Residents
Total	5,636 (100)*	5,267 (100)
Actionmarguerite (Saint-Boniface)	309** (5.5)	259 (4.9)
Actionmarguerite (Saint-Vital)	154 (2.7)	122 (2.3)
Beacon Hill Lodge	175 (3.1)	135 (2.6)
Bethania Mennonite Personal Care Home	148 (2.6)	98 (1.9)
Calvary Place Personal Care Home	100 (1.8)	88 (1.7)
Charleswood Care Centre	155 (2.8)	244 (4.6)
Concordia Place	140 (2.5)	112 (2.1)
Deer Lodge Centre	235** (4.2)	290 (5.5)
Donwood Manor	121 (2.1)	90 (1.7)
Extendicare/Oakview Place	245 (4.3)	330 (6.3)
Extendicare/Tuxedo Villa	213 (3.8)	351 (6.7)
Extendicare/Vista Park Lodge	100 (1.8)	79 (1.5)
Fred Douglas Lodge	136 (2.4)	121 (2.3)
Golden Door Geriatric Centre	78 (1.4)	41 (0.8)
Golden Links Lodge	88 (1.6)	57 (1.1)
Heritage Lodge	86 (1.5)	121 (2.3)
Holy Family Home	276 (4.9)	195 (3.7)
Kildonan Personal Care Centre	120 (2.1)	93 (1.8)
Lions Personal Care Centre	116 (2.1)	135 (2.6)
Luther Home	80 (1.4)	80 (1.5)
Maples Care Centre	200 (3.5)	162 (3.1)
Meadowood Manor	88 (1.6)	61 (1.2)
Middlechurch Home of Winnipeg	197 (3.5)	268 (5.1)
Misericordia Place	100 (1.8)	124 (2.4)
Park Manor Personal Care Home	100 (1.8)	132 (2.5)
Parkview Place	277 (4.9)	228 (4.3)
Pembina Place Mennonite Personal Care Home	57 (1.0)	19 (0.4)
Poseidon Care Centre	218 (3.9)	363 (6.9)
River East Personal Care Home	120 (2.1)	60 (1.1)
River Park Gardens	80** (1.4)	33 (0.6)
Riverview Health Centre	228 (4.0)	164 (3.1)
St. Joseph's Residence	100 (1.8)	86 (1.6)
St. Norbert Personal Care Home	91 (1.6)	64 (1.2)
The Convalescent Home of Winnipeg	84 (1.5)	123 (2.3)
The Salvation Army Golden West Centennial Lodge	116 (2.1)	21 (0.4)
The Saul and Claribel Simkin Centre	200** (3.5)	102 (1.9)
The Sharon Home	155** (2.8)	113 (2.1)
West Park Manor Personal Care Home	150 (2.7)	103 (2.0)

* this is the number of beds in the 2010/11 fiscal year plus the number of beds in 2008/09 for The Sharon Home (which closed in 2009/10). The actual number of PCH beds in the 2010/11 fiscal year was N=5,481.

** indicates that the number of beds changed over the study period.

Actionmarguerite (Saint-Boniface) changed from 314 to 309 beds.

Deer Lodge Centre changed from 290 to 235 beds.

River Park Gardens Personal Care Home did not open until the 2007/08 fiscal year.

The Saul and Claribel Simkin Centre changed from 72 to 200 beds.

The Sharon Home changed from 157 to 155 beds, and then closed in the 2009/10 fiscal year.

CHAPTER 3: COMPARING THE CLINICAL PROFILE OF PERSONAL CARE HOME AND SUPPORTIVE HOUSING USERS

Chapter Highlights

This chapter examines the clinical profile of newly admitted personal care home (PCH) residents and supportive housing tenants during the study period, looking specifically for subgroups of these people with similar profiles. All people were defined by the amount of help they needed to conduct activities of daily living tasks (ADLs), their level of cognitive impairment, their severity of behavioural challenges, and their frequency of bladder and bowel incontinence.

Highlights of our findings are summarized in the following text:

- For the most part, supportive housing and PCH users differed greatly in their clinical profile. For example, 92.0% of supportive housing tenants required at most verbal supervision to complete ADL tasks as compared to only 18.5% of PCH residents.
- The profile of supportive housing tenants was quite homogeneous. Most of these tenants required at most ADL supervision, had at most minor cognitive and bladder incontinence challenges, and had very few behavioural or bowel continence challenges. Conversely, the cohort of PCH residents was clinically very diverse, ranging from individuals who were clinically similar to supportive housing tenants, to many people who experienced significant and co-morbid challenges.
- Cluster analysis is a statistical technique that groups similar objects or people based on multiple characteristics. The results from this technique build upon our descriptive findings, and demonstrate that 10.4% of all newly admitted PCH residents in the Winnipeg Health Region were clinically similar to most newly admitted supportive housing tenants. The vast majority of these *'less clinically burdened'* PCH residents (and also the supportive housing tenants): i) required at most verbal supervision to complete ADL tasks; ii) had at most mild challenges with cognitive impairment; iii) had behavioural challenges that were easily managed; iv) were bladder incontinent less than daily; and, v) had no challenges with bowel continence.
- Volume-based analysis in this chapter demonstrates that across all PCH days of the study period, PCH residents were less clinically burdened 8.1% of the time. These analyses – showing that 10.4% of newly admitted PCH residents were less clinically burdened at the time of admission and that 8.1% of all PCH days were occupied by less clinically burdened residents – illustrate the potential for supportive housing in the Winnipeg Health Region to offset PCH use.
- While not the focus of this research, the results in this chapter also demonstrate the large number of PCH residents with significant and co-morbid challenges. As an example, in addition to requiring weight-bearing help to complete ADLs at the time of PCH admission, 15.5% of this cohort had severe cognitive challenges, and many experienced frequent bouts of both bladder (e.g., multiple times daily) and bowel (e.g., two to three times per week) incontinence. This latter evidence heightens the importance of shifting Manitoba's care continuum in such ways that extend community-based models of care, hence reserving the current supply of PCH beds for those who need them the most. These findings also emphasize the present complexity of PCH care environments, which would be further increased if only sicker people were admitted into these facilities.

Chapter Methods

Variables Used to Conduct Analyses

In consultation with our Advisory Group, analyses in this chapter are based on five key MDS variables. These variables are described in the following text, with further information provided in Table 3.1:

- *Activities of Daily Living (ADL) Hierarchy Scale*: Measures a hierarchy of ADL dependency when performing select tasks (personal hygiene, toilet use, locomotion, eating) and provides a score ranging from 0 (independent in all tasks) to 6 (completely dependent in all tasks). People needing assistance to complete early-loss ADLs (e.g., hygiene) are assigned lower scores than people needing assistance to complete late-loss ADLs (e.g., eating).
- *Cognitive Performance Scale (CPS)*: Measures the extent and severity of people's ability to make daily decisions (e.g., when to eat), to make themselves understood, and their short-term memory recall. This scale ranges from 0 (intact) to 6 (very severe impairment). A score of 3 defines individuals with impairments in at least two of these areas, and with a more severe impairment either when making daily decisions or when making themselves understood.
- *Behavioural Challenges*: MDS records measure people's behavioural challenges related to wandering, being verbally or physically abusive, being socially disruptive, or resisting care. Response options to these questions can be used to identify people with no challenges in any of these areas, challenges in one or more area(s) that can be easily managed, or challenges in one or more area(s) that cannot be easily managed.
- *Bladder and Bowel Continence*: These variables, while analyzed separately, define people who are continent with or without appliances, and who are incontinent with varying degrees of frequency (ranging from less than once per week to multiple times daily).

For analysis purposes individual response options for each variable were collapsed into a four point scale (see Table 3.1), defined as follows:

- *SCORE of 1*: Defines people who were reported to have no discernable challenges in a given area (e.g., people who could complete ADL tasks independently, had no discernable behavioural challenges, were completely continent, were cognitively intact).
- *SCORE of 2*: Defines people who were reported to have mild challenges only (e.g., who required verbal supervision only to complete ADL tasks, displayed behavioural challenges that were easily managed, were bowel incontinent at most once per week, were bladder incontinent less than daily, had cognitive impairments not considered to be severe).
- *SCORE of 3*: Defines people who were reported to have moderate challenges (e.g., required limb guiding assistance to complete ADL tasks; occasionally displayed behavioural challenges that were not easily managed; were bowel incontinent at most two to three times per week; were bladder incontinent at most once per day; had more severe cognitive challenges in at most two areas of daily decision making, making one's self understood, or short-term memory).
- *SCORE of 4*: Defines people who were reported to have severe challenges (e.g., required weight-bearing help to complete at least some ADL tasks; frequently displayed behavioural challenges that were not easily managed; were bowel incontinent daily; were bladder incontinent multiple times daily; had severe cognitive challenges and as a result either never made daily decisions, were comatose, or were fully dependent on others for eating).

Table 3.1: An Overview of the Outcome Scales and Individual Measures used from MDS-HC (for Supportive Housing Tenants) and MDS 2.0 (for Personal Care Home Residents) to Conduct this Research

Clinical Measure	MDS-HC (Supportive Housing) Assessment Questions	MDS 2.0 (PCH) Assessment Questions	MDS Scoring	Scoring Used in this Research
Activities of Daily Living (ADL) Hierarchy Scale*	Personal hygiene Toilet use Locomotion Eating	Personal hygiene Toilet use Locomotion Eating	Independent in each task (0)	No challenges (Score of 1)
			At most, supervision (e.g., oversight) required for each task (1)	Mild challenges (Score of 2)
			At most, limited assistance (non-weight-bearing help; e.g., guided maneuvering of limbs) required for each task (2)	Moderate challenges (Score of 3)
			Extensive (weight-bearing) or total help required for personal hygiene or toilet use (3) Extensive (but not total) help needed for locomotion, eating (4) Total help needed for one or both of locomotion, eating (5) Total help needed for all four ADLs (6)	Severe challenges (Score of 4)
Cognitive Performance Scale (CPS)*	Cognitive skills for daily decision-making Short-term memory recall Making self understood Eating self-performance	Cognitive skills for daily decision-making Short-term memory recall Making self understood Being comatose Eating self-performance	Intact (0)	No challenges (Score of 1)
			Borderline intact (challenges in one area but not severe) (1)	Mild challenges (Score of 2)
			Mild impairment (challenges in two or three areas, but none severe) (2)	Moderate challenges (Score of 3)
			Moderate impairment (challenges in two or three areas, and more severe in one area) (3) Moderate severe impairment (challenges in two or three areas, and more severe in two) (4)	
Behavioural Challenges**	Wandering Verbally abusive Physically abusive Socially disruptive Resists care	Wandering Verbally abusive Physically abusive Socially disruptive Resists care	No symptoms exhibited	No challenges (Score of 1)
			Symptoms occurred in last seven days, but were easily altered	Mild challenges (Score of 2)
			Symptoms occurred in one to three of last seven days; at least some were not easily altered	Moderate challenges (Score of 3)
			Symptoms occurred in four or more of last seven days; at least some were not easily altered	Severe challenges (Score of 4)
Bladder Continence**	Continent without device Continent with device Incontinent ≤ 1/week Incontinent ≥ 2/week Incontinent daily Multiple daily incontinence	Continent Incontinent ≤ 1/week Incontinent ≥ 2/week Incontinent daily Multiple daily incontinence	Continent (complete control)	No challenges (Score of 1)
			Usually continent (incontinent about once per week)	Mild challenges (Score of 2)
			Occasionally incontinent (two or more times per week)	
			Frequently incontinent (daily)	Moderate challenges (Score of 3)
Bowel Continence**	Continent, no ostomy Continent with ostomy Incontinent ≤ 1/week Incontinent 1/week Incontinent 2-3/week Incontinent almost all of time	Continent Incontinent <1/week Incontinent 1/week Incontinent 2-3/week Incontinent almost all of time	Continent (complete control)	No challenges (Score of 1)
			Usually continent (incontinent less than once per week)	Mild challenges (Score of 2)
			Occasionally incontinent (once per week)	
			Frequently incontinent (two to three times per week)	Moderate challenges (Score of 3)
			Completely incontinent (daily)	Severe challenges (Score of 4)

* Outcome scales are provided as a part of the MDS-HC and MDS 2.0 systems.

** Measure developed using individual items from MDS-HC and MDS 2.0 assessments

PCH = Personal Care Home

Note: Table amended from Doupe M et al. Population Aging and the Continuum of Older Adult Care in Manitoba. Manitoba Centre for Health Policy; 2011

Table 3.5: Distribution of Clinical Scores Amongst People Who Required Limb-Guiding Assistance to Complete Activities of Daily Living Tasks

	Supportive Housing Tenants (N=58)				Personal Care Home Residents (N=1,536)			
	Cognitive Performance N (%)	Behavioural Challenges N (%)	Bladder Continen- ce N (%)	Bowel Continen- ce N (%)	Cognitive Performance N (%)	Behavioural Challenges N (%)	Bladder Continen- ce N (%)	Bowel Continen- ce N (%)
No Challenges	s	43 (74.1)	30 (51.7)	45 (77.6)	501 (32.6)	1,062 (69.1)	566 (36.8)	1,040 (67.7)
Mild Challenges	34 (58.6)	11 (19.0)	9 (15.5)	s	373 (24.3)	242 (15.8)	366 (23.8)	253 (16.5)
Moderate Challenges	18 (31.0)	s	7 (12.1)	s	532 (34.6)	156 (10.2)	267 (17.4)	114 (7.4)
Severe Challenges	s	s	12 (20.7)	s	130 (8.5)	76 (4.9)	337 (21.9)	129 (8.4)

's' indicates suppressed due to small numbers

Note: Refer to Table 3.1 for definitions of "no", "mild", "moderate", and "severe challenges".

Table 3.6: Distribution of Clinical Scores Amongst People Who Required Weight-Bearing Help to Complete Activities of Daily Living Tasks

	Supportive Housing Tenants (N=16)				Personal Care Home Residents (N=2,759)			
	Cognitive Performance N (%)	Behavioural Challenges N (%)	Bladder Continen- ce N (%)	Bowel Continen- ce N (%)	Cognitive Performance N (%)	Behavioural Challenges N (%)	Bladder Continen- ce N (%)	Bowel Continen- ce N (%)
No Challenges	0 (0.0)	9 (56.3)	7 (43.8)	12 (75.0)	683 (24.8)	1,765 (64.0)	555 (20.1)	1,100 (39.9)
Mild Challenges	7 (43.8)	s	s	s	463 (16.8)	443 (16.1)	405 (14.7)	449 (16.3)
Moderate Challenges	s	s	s	s	982 (35.6)	288 (10.4)	377 (13.7)	277 (10.0)
Severe Challenges	s	s	s	s	631 (22.9)	263 (9.5)	1,422 (51.5)	933 (33.8)

's' indicates suppressed due to small numbers

Note: Refer to Table 3.1 for definitions of "no", "mild", "moderate", and "severe challenges".

Results from Cluster Analysis

Descriptive results are strongly supported by our findings from cluster analysis. This statistical process allocated *ADL-independent participants* (N=1,066)⁹ into nine subgroups based on the challenges they were reported to have in other clinical domains (Table 3.7). Cluster 1 of this subgroup was the largest in size (N=711), and is comprised of 256 PCH residents (4.9% of the overall PCH cohort) and about half (N=455; 49.1%) of all supportive housing tenants. In addition to being able to complete ADL tasks independently, these individuals were reported to have on average mild challenges with cognitive performance (i.e., mean CPS score of 1.6; 95% confidence limits of the mean ranging from 1.6-1.7), and on average no challenges in each of the behavioural, bladder continence, and bowel continence domains. As a second example, Cluster 2 of ADL-independent participants (8.2% of all supportive housing tenants, 0.6% of PCH residents) were reported to experience no challenges in the behavioural and continence domains (i.e., mean scores of about 1), and had on average moderate challenges in the cognitive domain (i.e., mean score of 3.1; 95% confidence limits of the mean ranging from 3.0-3.1; thus identifying people who had moderately severe cognitive challenges in at most two areas of daily decision making, making one's self understood, or short-term memory).

⁹ This number does not equal the number of ADL-independent users reported descriptively in Table 3.2 (N=1,126). In the cluster analysis on this subgroup, there were 60 people who were not allocated into any cluster reflecting this difference in counts. For more information see footnotes in Tables 3.7 to 3.10.

Table 3.7: Cluster Results for People Who Could Independently Complete Activities of Daily Living Tasks

	Cluster Size		Clinical Profile Mean (95% Confidence Limits of Mean Values)			
	N (% of entire cohort)	Personal Care Home N = 401 (7.6)	Supportive Housing N = 665 (71.7)	Behavioural Challenges	Bladder Contenance	Bowel Contenance
Cluster 1	455 (49.1)	256 (4.9)	1.6 (1.6-1.7)	1.0 (1.0-1.0)	1.1 (1.1-1.2)	1.0 (1.0-1.0)
Cluster 2	76 (8.2)	31 (0.6)	3.1 (3.0-3.1)	1.0 (1.0-1.0)	1.2 (1.1-1.2)	1.0 (1.0-1.0)
Cluster 3	60 (6.5)	32 (0.6)	1.7 (1.6-1.8)	1.0 (1.0-1.0)	3.5 (3.4-3.6)	1.0 (1.0-1.0)
Cluster 4	25 (2.7)	15 (0.3)	1.7 (1.5-1.8)	2.0 (2.0-2.0)	1.1 (1.0-1.2)	1.0 (1.0-1.0)
Cluster 5	19 (2.0)	17 (0.3)	3.1 (3.0-3.2)	2.0 (2.0-2.0)	1.1 (1.0-1.2)	1.0 (1.0-1.0)
Cluster 6	11 (1.2)	18 (0.3)	1.7 (1.5-1.9)	1.0 (1.0-1.0)	1.7 (1.6-1.9)	2.0 (2.0-2.0)
Cluster 7	6 (0.6)	s	1.5 (1.1-1.8)	1.0 (1.0-1.0)	3.3 (3.0-3.6)	2.0 (2.0-2.0)
Cluster 8	s	s	1.5 (1.3-1.8)	3.0 (3.0-3.0)	1.3 (1.0-1.5)	1.0 (1.0-1.0)
Cluster 9	s	16 (0.3)	3.2 (3.0-3.3)	3.0 (3.0-3.0)	1.1 (1.0-1.3)	1.0 (1.0-1.0)

's' indicates suppressed due to small numbers

60 ADL-independent individuals were not allocated to any cluster, and are excluded from this table.

Percentage values demonstrating cluster size are based on the overall cohort of 927 supportive housing tenants, and on the overall cohort of 5,267 personal care home residents.

The pseudo R² value for this analysis is 0.780, indicating that 78% of the 'variance' (multi-dimensional distance using clinical scores) between participants exists between (versus within) cluster groups.

Note: Refer to Table 3.1 for an overview of clinical scores. In general, scores ≤2 depict people with at most mild challenges, while scores of ≥3 depict people with moderate to severe challenges.

Amongst individuals who required verbal supervision to complete ADL tasks (Table 3.8; N=680 people), cluster analysis created six subgroups of people based on their challenges in other clinical domains. As an example, Cluster 1 of this group (147 supportive housing tenants, 15.9% of this cohort; 367 PCH residents, 7.0% of this cohort) were reported to experience no obvious difficulties in the behavioural and continence domains (mean score of about 1.0 in each of these domains) and on average mild cognitive challenges (mean score of 2.2; 95% confidence limits of the mean ranging from 2.1-2.3). Alternatively, Cluster 2 of this cohort contains people (N=60; 1.7% of all supportive housing tenants and 0.8% of all PCH residents) with negligible challenges in the cognitive, behavioural, and bowel continence domains (mean score of about 1.0 in each of these areas), but who experienced moderate (mean score of 3.4; 95% confidence limits of the mean ranging from 3.2 to 3.6) bladder continence difficulties (meaning that they were bladder incontinent about daily).

Table 3.8: Cluster Results for People Who Required Verbal Supervision to Complete Activities of Daily Living Tasks

	Cluster Size		Clinical Profile Mean (95% Confidence Limits of Mean Values)			
	Supportive Housing N = 171 (18.4)	Personal Care Home N = 509 (9.7)	Cognitive Performance	Behavioural Challenges	Bladder Contenance	Bowel Contenance
Cluster 1	147 (15.9)	367 (7.0)	2.2 (2.1-2.3)	1.3 (1.3-1.4)	1.2 (1.2-1.3)	1.1 (1.1-1.1)
Cluster 2	16 (1.7)	44 (0.8)	1.5 (1.4-1.7)	1.2 (1.1-1.3)	3.4 (3.2-3.6)	1.2 (1.1-1.3)
Cluster 3	s	22 (0.4)	3.4 (3.2-3.6)	1.2 (1.0-1.3)	3.2 (2.9-3.5)	1.3 (1.1-1.5)
Cluster 4	s	20 (0.4)	1.1 (1.0-1.2)	2.7 (2.3-3.0)	1.1 (1.0-1.3)	1.0 (1.0-1.0)
Cluster 5	s	12 (0.2)	2.9 (2.5-3.3)	1.4 (1.1-1.7)	3.3 (2.9-3.7)	3.4 (3.1-3.7)
Cluster 6	0 (0.0)	44 (0.8)	3.2 (3.0-3.3)	3.6 (3.5-3.8)	2.1 (1.8-2.4)	1.3 (1.2-1.5)

's' indicates suppressed due to small numbers

19 ADL-supervision individuals were not allocated to any cluster, and are excluded from this table.

Percentage values demonstrating cluster size are based on the overall cohort of 927 supportive housing tenants, and on the overall cohort of 5,267 personal care home residents.

The pseudo R² value for this analysis is 0.771, indicating that 77% of the 'variance' (multi-dimensional distance using clinical scores) between participants exists between (versus within) cluster groups.

Note: Refer to Table 3.1 for an overview of clinical scores. In general, scores ≤2 depict people with at most mild challenges, while scores of ≥3 depict people with moderate to severe challenges.

Table 3.9: Cluster Results for People Who Required Limb-Guiding Assistance to Complete Activities of Daily Living Tasks

	Cluster Size		Clinical Profile Mean (95% Confidence Limits of Mean Values)				
	Supportive Housing N = 58 (6.3)	Personal Care Home N = 1,535 (29.1)	Cognitive Performance	Behavioural Challenges	Bladder Continence	Bowel Continence	
Cluster 1	50 (5.4)	1,160 (22.0)	2.1 (2.0-2.1)	1.2 (1.2-1.2)	2.0 (2.0-2.1)	1.3 (1.2-1.3)	
Cluster 2	s	217 (4.1)	3.0 (2.9-3.1)	3.3 (3.3-3.4)	2.3 (2.2-2.5)	1.7 (1.6-1.8)	
Cluster 3	s	83 (1.6)	1.3 (1.2-1.4)	1.0 (1.0-1.1)	3.3 (3.1-3.5)	3.6 (3.5-3.7)	
Cluster 4	s	64 (1.2)	3.4 (3.3-3.5)	1.3 (1.2-1.4)	3.7 (3.5-3.8)	3.8 (3.6-3.9)	
Cluster 5	0 (0.0)	11 (0.2)	1.6 (1.3-2.0)	2.8 (2.3-3.3)	3.8 (3.5-4.1)	3.7 (3.4-4.0)	

's' indicates suppressed due to small numbers

1 individual requiring limb-guiding assistance to complete ADL tasks was not allocated to any cluster, and is excluded from this table.

Percentage values demonstrating cluster size are based on the overall cohort of 927 supportive housing tenants, and on the overall cohort of 5,267 personal care home residents.

The pseudo R² value for this analysis is 0.698, indicating that 70% of the 'variance' (multi-dimensional distance using clinical scores) between participants exists between (versus within) cluster groups.

Note: Refer to Table 3.1 for an overview of clinical scores. In general, scores ≤2 depict people with at most mild challenges, while scores of ≥3 depict people with moderate to severe challenges.

Table 3.10: Cluster Results for People Who Required Weight-Bearing Help to Complete Activities of Daily Living Tasks

	Cluster Size		Clinical Profile Mean (95% Confidence Limits of Mean Values)			
	N (% of entire cohort)	Personal Care Home N = 2,759 (52.4)	Cognitive Performance	Behavioural Challenges	Bladder Continence	Bowel Continence
Cluster 1	s	1,128 (21.4)	1.6 (1.6-1.6)	1.0 (1.0-1.1)	2.8 (2.8-2.9)	1.8 (1.8-1.9)
Cluster 2	s	814 (15.5)	3.5 (3.4-3.5)	1.6 (1.6-1.7)	3.9 (3.8-3.9)	3.4 (3.3-3.4)
Cluster 3	s	322 (6.1)	3.3 (3.2-3.3)	1.6 (1.5-1.7)	1.4 (1.4-1.5)	1.2 (1.2-1.3)
Cluster 4	s	234 (4.4)	3.5 (3.5-3.6)	4.0 (4.0-4.0)	3.3 (3.2-3.4)	2.8 (2.6-2.9)
Cluster 5	s	110 (2.1)	2.1 (2.0-2.2)	2.9 (2.8-3.0)	3.0 (2.8-3.2)	1.3 (1.2-1.3)
Cluster 6	0 (0.0)	122 (2.3)	2.5 (2.3-2.7)	1.6 (1.4-1.7)	1.4 (1.3-1.5)	3.7 (3.6-3.8)
Cluster 7	0 (0.0)	29 (0.6)	1.4 (1.2-1.6)	3.3 (3.1-3.5)	3.6 (3.2-3.9)	3.8 (3.6-3.9)

's' indicates suppressed due to small numbers

Percentage values demonstrating cluster size are based on the overall cohort of 927 supportive housing tenants, and on the overall cohort of 5,267 personal care home residents.

The pseudo R² value for this analysis is 0.798, indicating that 80% of the 'variance' (multi-dimensional distance using clinical scores) between participants exists between (versus within) cluster groups.

Note: Refer to Table 3.1 for an overview of clinical scores. In general, scores ≤2 depict people with at most mild challenges, while scores of ≥3 depict people with moderate to severe challenges.

- Visit-based profiles (disposition status, length of stay) were developed from the supportive housing and personal care home files, and linked to the Repository file verifying death. Length of stay data were calculated both prospectively and retrospectively. The prospective analysis was conducted on the entire study cohort, specifically to compare lengths of stay for more versus less clinically burdened PCH residents. It is important to note, however, that these calculations provide censored results, as study participants were newly admitted after April 1, 2006 with at most six years of follow-up. To provide “true” or more accurate lengths of stay, a retrospective analysis was conducted on a separate cohort of PCH residents who died between April 1, 2010 and March 31, 2012, and looking backwards in time to capture their actual admission date. A similar strategy was used for supportive housing tenants, on the subset of people who died, transferred to a PCH, or were sent home between April 1, 2010 and March 31, 2012.
- Healthcare use profiles (e.g., ED visits, hospitalizations, physician visits, and prescription drug use) were developed by linking several administrative files. Further details about these linkages are provided in the appropriate sections of this chapter. As mentioned previously, these measures were captured using data until March 31, 2012, ensuring that healthcare use patterns were studied for at minimum one year or until death, whichever occurred first.

Detailed Chapter Results

User-Based Profiles

User-based profiles are provided in Table 4.1. Overall, 10.5% of the cohort was younger than 75 years of age, while 56.0% was 85 and older. This age distribution varied somewhat by care environment, with PCH residents tending to be younger (6.9% of supportive housing tenants versus 11.0% of PCH residents were younger than 75 years). Also, a greater proportion of supportive housing tenants (80.6%) versus PCH residents (67.6%) were female. This difference by sex exists within each age category. As an example, amongst 75-84 year olds, 79.0% of supportive housing tenants versus 63.6% of PCH residents were female. These age and sex distributions did not vary discernably by PCH subgroups.

During the study period, approximately 92% of supportive housing and PCH users originated from the Winnipeg Health Region (Table 4.1). Across all users combined, 37.9% were admitted from the lowest income areas (i.e., income quintile 1 and 'not found'), while 42.2% of people were admitted from higher income areas (quintiles 3-5). While this income distribution is similar for the overall groups of supportive housing tenants and PCH residents, a somewhat greater proportion of less (44.3%) versus more (36.8%) clinically burdened residents moved into a PCH from the lowest income areas.

Table 4.1: Demographic Profile of Supportive Housing Tenants and Personal Care Home Residents

People admitted from April 1, 2006 - March 31, 2011

Demographic Profile	Cohorts			Personal Care Home Cohort Subgroups	
	Overall N (%)	Supportive Housing N (%)	Personal Care Home N (%)	Less Clinically Burdened N (%)	More Clinically Burdened N (%)
Total	6,194 (100)	927 (100)	5,267 (100)	548 (100)	4,719 (100)
Age					
≥64	189 (3.1)	14 (1.5)	175 (3.3)	19 (3.5)	156 (3.3)
65-74	458 (7.4)	50 (5.4)	408 (7.7)	44 (8.0)	364 (7.7)
75-84	2,080 (33.6)	348 (37.5)	1,732 (32.9)	176 (32.1)	1,556 (33.0)
85+	3,467 (56.0)	515 (55.6)	2,952 (56.0)	309 (56.4)	2,643 (56.0)
Sex					
Male	1,886 (30.4)	180 (19.4)	1,706 (32.4)	163 (29.7)	1,543 (32.7)
Female	4,308 (69.6)	747 (80.6)	3,561 (67.6)	385 (70.3)	3,176 (67.3)
Female Stratified by Age*					
≥64	95 (50.3)	8 (57.1)	87 (49.7)	7 (36.8)	80 (51.3)
65-74	233 (50.9)	30 (60.0)	203 (49.8)	28 (63.6)	175 (48.1)
75-84	1,377 (66.2)	275 (79.0)	1,102 (63.6)	119 (67.6)	983 (63.2)
85+	2,603 (75.1)	434 (84.3)	2,169 (73.5)	231 (74.8)	1,938 (73.3)
Geography					
Non-Winnipeg	504 (8.5)	72 (7.8)	432 (8.7)	41 (7.8)	391 (8.8)
Winnipeg Health Region	5,400 (91.5)	855 (92.2)	4,545 (91.3)	487 (92.2)	4,058 (91.2)
Income Quintile					
Lowest (NF/Q1)	2,237 (37.9)	365 (39.4)	1,872 (37.6)	234 (44.3)	1,638 (36.8)
Middle (Q2)	1,177 (19.9)	185 (20.0)	992 (19.9)	92 (17.4)	900 (20.2)
Highest (Q3-Q5)	2,490 (42.2)	377 (40.7)	2,113 (42.5)	202 (38.3)	1,911 (43.0)

NF = Income Quintile Not Found

*Unlike all other categories in this table, percent columns in these strata do not total 100. Rather, these values represent the percent of each age category that are female (e.g., 36.8% of all less clinically burdened people 64 years old or younger were female, meaning that 63.2% were male).

As demonstrated in Chapter 3, study groups differed greatly regarding the challenges they experienced completing activities of daily living (ADL) tasks, their cognitive impairment, the behaviours they displayed, and how frequently they were bladder and/or bowel incontinent. Consistent with the manner in which the subgroups of PCH residents were developed, less burdened PCH residents were very similar to supportive housing tenants, and different from their more clinically burdened counterparts on each of these clinical measures (Table 4.2). The following text highlights these group comparisons, further emphasizing the overlap between supportive housing and less clinically burdened PCH users, and the substantive diversity that exists amongst PCH residents.

- Thirty percent of all study participants required at most verbal supervision (i.e., ‘independent’ or ‘mild challenges’ in Table 4.2) when conducting ADL tasks. This varies tremendously by study group, ranging from 92.0% of all supportive housing tenants, 100% of less clinically burdened PCH residents, and only 9.0% of more clinically burdened PCH residents. Amongst this latter group, 58.5% of people required some form of weight-bearing assistance (severe challenges) to complete ADL tasks, versus only 1.7% of supportive housing tenants.
- Across all groups combined, 55.2% of people experienced at most mild cognitive impairments when making daily decisions, communicating, and/or with short term memory recall. This degree of impairment varies by study group, ranging from 80.1% of supportive housing tenants, 86.1% of less clinically burdened PCH residents, and only 46.8% of more clinically burdened residents. Conversely, 17.2% of this latter group was severely cognitively impaired, meaning that residents had extreme challenges making daily decisions and at least at times needed to be fed.
- Seventy percent of all study participants (88.5% of supportive housing tenants, 93.6% of less clinically burdened PCH residents) displayed no discernable behavioural challenges during the study period. Conversely, 19.7% of more clinically burdened PCH residents experienced moderate to severe behavioural challenges, meaning that at least once in the week preceding their MDS assessment, these residents exhibited behavioural challenges (wandering, being verbally or physically abusive, being socially disruptive, or resisting care) that were difficult to manage.
- During the study period, 43.3% of all participants were bladder incontinent at least daily (moderate and severe challenges in Table 4.2). This proportion of people with bladder incontinence varies by study group, ranging from 13.8% of supportive housing tenants, 0.0% of less clinically burdened PCH residents, and 54.2% of more clinically burdened PCH residents. Similarly, 31.6% of more clinically burdened PCH residents were bowel incontinent multiple times per week (i.e., moderate to severe challenges in Table 4.2), versus virtually no supportive housing tenants and less clinically burdened PCH residents.

Table 4.2: Clinical Profile of Supportive Housing Tenants and Personal Care Home Residents

People admitted from April 1, 2006 - March 31, 2011

	Cohorts			Personal Care Home Cohort Subgroups	
	Overall N (%)	Supportive Housing N (%)	Personal Care Home N (%)	Less Clinically Burdened N (%)	More Clinically Burdened N (%)
Total	6,194 (100)	927 (100)	5,267 (100)	548 (100)	4,719 (100)
Activities of Daily Living (ADL)					
No Challenges	1,126 (18.2)	679 (73.2)	447 (8.5)	296 (54.0)	151 (3.2)
Mild Challenges	699 (11.3)	174 (18.8)	525 (10.0)	252 (46.0)	273 (5.8)
Moderate Challenges	1,594 (25.7)	58 (6.3)	1,536 (29.2)	0 (0.0)	1,536 (32.5)
Severe Challenges	2,775 (44.8)	16 (1.7)	2,759 (52.4)	0 (0.0)	2,759 (58.5)
Cognitive Performance					
No Challenges	1,712 (27.6)	111 (12.0)	1,601 (30.4)	315 (57.5)	1,286 (27.3)
Mild Challenges	1,709 (27.6)	631 (68.1)	1,078 (20.5)	157 (28.6)	921 (19.5)
Moderate Challenges	1,938 (31.3)	162 (17.5)	1,776 (33.7)	76 (13.9)	1,700 (36.0)
Severe Challenges	835 (13.5)	23 (2.5)	812 (15.4)	0 (0.0)	812 (17.2)
Behavioural Challenges					
No Challenges	4,354 (70.3)	820 (88.5)	3,534 (67.1)	513 (93.6)	3,021 (64.0)
Mild Challenges	893 (14.4)	91 (9.8)	802 (15.2)	35 (6.4)	767 (16.3)
Moderate Challenges	560 (9.0)	s	s	0 (0.0)	s
Severe Challenges	387 (6.2)	s	s	0 (0.0)	s
Bladder Continence					
No Challenges	2,424 (39.1)	672 (72.5)	1,752 (33.3)	477 (87.0)	1,275 (27.0)
Mild Challenges	1,086 (17.5)	127 (13.7)	959 (18.2)	71 (13.0)	888 (18.8)
Moderate Challenges	793 (12.8)	71 (7.7)	722 (13.7)	0 (0.0)	722 (15.3)
Severe Challenges	1,891 (30.5)	57 (6.1)	1,834 (34.8)	0 (0.0)	1,834 (38.9)
Bowel Continence					
No Challenges	3,835 (61.9)	869 (93.7)	2,966 (56.3)	548 (100.0)	2,418 (51.2)
Mild Challenges	842 (13.6)	34 (3.7)	808 (15.3)	0 (0.0)	808 (17.1)
Moderate Challenges	426 (6.9)	15 (1.6)	411 (7.8)	0 (0.0)	411 (8.7)
Severe Challenges	1,091 (17.6)	9 (1.0)	1,082 (20.5)	0 (0.0)	1,082 (22.9)

's' indicates suppressed due to small numbers

Note: Refer to Table 3.1 for definitions of "no", "mild", "moderate", and "severe challenges".

Data on informal supports are captured during MDS-HC assessments (i.e., pre-PCH admission), and are therefore provided for i) the entire cohort of supportive housing residents (N=927), and ii) a subset of PCH residents (N=2,249; 42.7% of this cohort) who had an MDS-HC assessment completed within 90 days of their PCH panel date. MDS-HC assessments identify people with an informal care provider, define the relationship of the informal provider to this person, describe the types of informal support that people provide and their willingness to increase this care, and report on the types of challenges that informal care providers are experiencing. Results from this portion of MDS-HC are provided in Table 4.3, with highlights provided in the following text.

- Almost all (97.6%) of the study cohort reported having an informal care provider. While about one-third (31.9%) of all people lived with their informal care provider, this value ranged from less than one-quarter of all supportive housing and less clinically burdened PCH users, to 39.8% of more clinically burdened PCH residents. Informal caregivers provided assistance to complete ADL tasks for a much smaller proportion of less (23.5%) versus more (37.8%) clinically burdened PCH residents, likely reflecting the clinical differences between these subgroups of residents. Informal care providers were reported to provide both emotional support and assistance with instrumental activities of daily living (e.g., shopping, paying bills, making meals, housekeeping) for the vast majority of supportive housing and PCH users.
- While about half of all informal caregivers in each study group were willing to increase the types of support they provided, those for PCH residents were less able to do so. Overall, informal caregivers reported that they were unable to continue providing care due to their own health challenges for 24.7% of less clinically burdened PCH residents as compared to only 9.9% of supportive housing tenants. Similarly, informal caregivers reported having feelings of distress, anger, or depression related to their care responsibilities for 24.7% of less clinically burdened PCH residents as compared to 12.7% of supportive housing tenants.

Table 4.3: Supportive Housing Tenants' and Personal Care Home Residents' Characteristics Related to Informal Care

People admitted from April 1, 2006 - March 31, 2011

	Informal Care		Cohorts		Personal Care Home Cohort Subgroups*	
	Overall N (%)	Supportive Housing N (%)	Personal Care Home* N (%)	Less Clinically Burdened N (%)	More Clinically Burdened N (%)	
Total	3,176	927	2,249	253	1,996	
Tenant/Resident is Married	780 (24.6)	104 (11.2)	676 (30.1)	60 (23.7)	616 (30.9)	
Tenant/Resident has Informal Caregiver	3,099 (97.6)	920 (99.2)	2,179 (96.9)	247 (97.6)	1,932 (96.8)	
Informal Caregiver Characteristics**						
<i>Living Arrangements</i>						
Caregiver lives with client	990 (31.9)	165 (17.9)	825 (37.9)	57 (23.1)	768 (39.8)	
Caregiver is spouse, child, or child-in-law	2,589 (83.5)	770 (83.7)	1,819 (83.5)	192 (77.7)	1,627 (84.2)	
<i>Type of Support Provided</i>						
Activities of Daily Living†	931 (30.0)	143 (15.5)	788 (36.2)	58 (23.5)	730 (37.8)	
Instrumental Activities of Daily Living†	2,937 (94.8)	868 (94.3)	2,069 (95.0)	225 (91.1)	1,844 (95.4)	
Advice or Emotional Support	3,074 (99.2)	913 (99.2)	2,161 (99.2)	243 (98.4)	1,918 (99.3)	
Caregiver willing to increase any type of support	1,656 (53.4)	491 (53.4)	1,165 (53.5)	125 (50.6)	1,040 (53.8)	
Caregiver unable to continue care due to decline in his/her health	678 (21.9)	91 (9.9)	587 (26.9)	61 (24.7)	526 (27.2)	
Caregiver feeling distressed, angry, or depressed due to care responsibilities	705 (22.7)	117 (12.7)	588 (27.0)	61 (24.7)	527 (27.3)	

* Informal support data are captured during MDS-HC assessments and are not available in MDS 2.0. Results are captured on a subset of personal care home (PCH) residents (N=2,249; 42.7% of the total PCH cohort) prior to PCH admission. For inclusion in this table, people needed to have an MDS-HC assessment completed within 90 days of their PCH panel date.

** Percentages are based on the subset of individuals with an informal care provider.

† Examples of Activities of Daily Living include dressing, personal hygiene, and feeding.

‡ Examples of Instrumental Activities of Daily Living include shopping, paying bills, making meals, and housekeeping

Visit-Based Profiles

Users' disposition status and length of stay are provided in Tables 4.4 and 4.5, respectively. Results are summarized in the following text:

- The study cohort consists of individuals who were admitted into either a supportive housing dwelling or a PCH facility between April 1, 2006 and March 31, 2011. By March 31, 2012, 32.8% of the supportive housing cohort was still residing in this care environment, 52.5% had transferred to a PCH, and 13.4% had died while living in a supportive housing dwelling. While the death rate amongst PCH residents was much higher (53.5%) during this same period, it was somewhat lower amongst less (44.9%) versus more (54.5%) clinically burdened PCH residents. These latter data further emphasize the differences in overall health status between less and more clinically burdened PCH residents.
- As explained in the Methods section of this chapter, length of stay measures were calculated prospectively and retrospectively using different cohorts of people. The prospective analysis was conducted on the usual study cohort (i.e., all people admitted from April 1, 2006 to March 31, 2011; and followed-up until March 31, 2012), specifically to compare lengths of stay for more versus less clinically burdened PCH residents. Coinciding with our findings about death rates, this analysis shows us that less versus more clinical burdened PCH residents stayed in a PCH for a much longer period of time (i.e., a median of 747 versus 585 days, respectively).

The above prospective calculation provides censored lengths of stay that by definition are short. To provide more accurate lengths of stay, we conducted a separate retrospective analysis on all users who left their respective living environments (by death for PCH residents; by death, transferring to a PCH, or going home for supportive housing tenants) between April 1, 2010 and March 31, 2012. This cohort was followed backwards in time to obtain people's actual admission dates and hence calculate their complete lengths of stay. From this method, length of stay for supportive housing tenants (N=393) was measured at a median of 640 (IQR=344-985) days, as compared to a median of 849 (IQR=301-1,673) days for PCH residents (N=3,268). Amongst these latter residents, some (N=166) had transferred into a PCH from supportive housing, and their subsequent length of PCH stay was much shorter (median=444 days; IQR=194-865 days). Further, these latter people spent a median of 1,141 (IQR=723-1,661) total days in both supportive housing and PCH care prior to dying. While perhaps some improvements related to continuing care transitions could be made (i.e., people resided in supportive housing and PCH care for longer than people who resided in PCHs only), overall these results suggest that supportive housing functions as an important alternative to PCH use (i.e., PCH lengths of stay were cut in half).

Table 4.4: Disposition Status of Supportive Housing Tenants and Personal Care Home Residents

People admitted from April 1, 2006 - March 31, 2011

Disposition Status*	Cohorts			Personal Care Home Cohort Subgroups	
	Overall N (%)	Supportive Housing N (%)	Personal Care Home N (%)	Less Clinically Burdened N (%)	More Clinically Burdened N (%)
Total	6,194 (100)	927 (100)	5,267 (100)	548 (100)	4,719 (100)
Still Residing in Same Care Environment	2,595 (41.9)	304 (32.8)	2,291 (43.5)	281 (51.3)	2,010 (42.6)
Death	2,943 (47.5)	124 (13.4)	2,819 (53.5)	246 (44.9)	2,573 (54.5)
Home	60 (1.0)	12 (1.3)	48 (0.9)	12 (2.2)	36 (0.8)
Personal Care Home	487 (7.9)	487 (52.5)	N/A	N/A	N/A
Other**	109 (1.8)	0 (0.0)	109 (2.1)	9 (1.6)	100 (2.1)

* Disposition of residents is calculated as of March 31, 2012.

** The disposition status of "Other" includes extended care hospitals, moved out of the province, or other/not specified.

Healthcare Use Profiles

Emergency department (ED) use patterns are shown in Table 4.6. In total, 37.1% of all study participants had no ED visits during the study period. This visit pattern varied by study group (25.0% of supportive housing versus 39.3% of PCH users had no ED visits during the study period). Conversely, a greater proportion of supportive housing tenants (23.5%) versus PCH residents (18.1%) had at least two ED visits annually during this time.

Visit acuity levels (Canadian Emergency Department Triage and Acuity Scale; CTAS) (Beveridge et al., 1998) also differed by study groups; 47.9% of all visits made by supportive housing tenants were triaged as being less or non-urgent (CTAS 4 and 5) during the study period, as compared to only 33.7% of all ED visits made by PCH residents. Conversely, only 12.8% of all ED visits made by supportive housing tenants were reported as being more acutely urgent (CTAS 1 and 2), as compared to 24.4% of visits made by PCH residents. Chief complaints (reported at the time of triage) denoting the main reason for the ED visit were similar across the study groups, with the exception that more visits made by supportive housing (versus PCH) users were for cardiovascular reasons, while fewer visits made by supportive housing tenants were for respiratory reasons. In general, ED patterns did not vary substantially amongst PCH subgroups.

Table 4.6: Patterns of Emergency Department use Made by Supportive Housing Tenants and Personal Care Home Residents

People admitted from April 1, 2006 - March 31, 2011. Emergency Department use measured until March 31, 2012

Emergency Department Use	Cohorts			Personal Care Home Cohort Subgroups	
	Overall N (%)	Supportive Housing N (%)	Personal Care Home N (%)	Less Clinically Burdened N (%)	More Clinically Burdened N (%)
Total	6,194 (100)	927 (100)	5,267 (100)	548 (100)	4,719 (100)
Visits/year					
0	2,300 (37.1)	232 (25.0)	2,068 (39.3)	205 (37.4)	1,863 (39.5)
>0 to <1	1,774 (28.6)	255 (27.5)	1,519 (28.8)	185 (33.8)	1,334 (28.3)
1 to <2	949 (15.3)	222 (23.9)	727 (13.8)	86 (15.7)	641 (13.6)
2 to <3	443 (7.2)	94 (10.1)	349 (6.6)	28 (5.1)	321 (6.8)
3+	728 (11.8)	124 (13.4)	604 (11.5)	44 (8.0)	560 (11.9)
Distribution of Visits by Urgency*					
Resuscitation/Emergent (CTAS 1, 2)	1,952 (22.1)	225 (12.8)	1,727 (24.4)	197 (22.6)	1,530 (24.7)
Urgent (CTAS 3)	3,529 (40.0)	673 (38.4)	2,856 (40.4)	385 (44.3)	2,471 (39.8)
Less/Non Urgent (CTAS 4, 5)	3,220 (36.5)	840 (47.9)	2,380 (33.7)	274 (31.5)	2,106 (34.0)
Other/Missing	123 (1.4)	14 (0.8)	109 (1.5)	14 (1.6)	95 (1.5)
Distribution of Visits by Chief Complaint*					
Other Complaints	2,382 (27.0)	475 (27.1)	1,907 (27.0)	257 (29.5)	1,650 (26.6)
Orthopedic	1,422 (16.1)	306 (17.5)	1,116 (15.8)	141 (16.2)	975 (15.7)
Neurologic	1,211 (13.7)	226 (12.9)	985 (13.9)	117 (13.4)	868 (14.0)
Respiratory	1,045 (11.8)	122 (7.0)	923 (13.1)	103 (11.8)	820 (13.2)
Cardiovascular	927 (10.5)	303 (17.3)	624 (8.8)	72 (8.3)	552 (8.9)
Gastrointestinal	861 (9.8)	127 (7.2)	734 (10.4)	85 (9.8)	649 (10.5)
Skin	411 (4.7)	67 (3.8)	344 (4.9)	39 (4.5)	305 (4.9)
Genitourinary	270 (3.1)	29 (1.7)	241 (3.4)	21 (2.4)	220 (3.5)
Ear, Nose, Throat	144 (1.6)	37 (2.1)	107 (1.5)	14 (1.6)	93 (1.5)
Mental Health	89 (1.0)	41 (2.3)	48 (0.7)	15 (1.7)	33 (0.5)
Trauma	35 (0.4)	10 (0.6)	25 (0.4)	s	s
Obstetrics and Gynaecology	20 (0.2)	s	s	s	s
Substance Misuse	7 (0.1)	s	s	s	s

* This is a visit-based analysis, and is calculated only for those people with one or more emergency department visits during the study period.

's' indicates suppressed due to small numbers

CTAS = Canadian Emergency Department Triage and Acuity Scale

Table 4.7: Hospital Use and the Physician Visits Patterns of Supportive Housing Tenants and Personal Care Home Residents

People admitted from April 1, 2006 - March 31, 2011. Healthcare use measured until March 31, 2012

Hospital Use and Physician Visits	Cohorts			Personal Care Home Cohort Subgroups	
	Overall	Supportive Housing	Personal Care Home	Less Clinically Burdened	More Clinically Burdened
Total; N (%)	6,194 (100)	927 (100)	5,267 (100)	548 (100)	4,719 (100)
Inpatient Hospital Admissions Per Year; N (%)*					
0	2,459 (39.7)	414 (44.7)	2,045 (38.8)	223 (40.7)	1,822 (38.6)
>0 to <1	2,114 (34.1)	263 (28.4)	1,851 (35.1)	222 (40.5)	1,629 (34.5)
1 to <2	693 (11.2)	147 (15.9)	546 (10.4)	46 (8.4)	500 (10.6)
2 to <3	288 (4.6)	45 (4.9)	243 (4.6)	20 (3.6)	223 (4.7)
3+	640 (10.3)	58 (6.3)	582 (11.0)	37 (6.8)	545 (11.5)
Hospital Lengths of Stay (days); Median (IQR)**	5 (1-12)	35 (10-67)	3 (1-9)	4 (1-9)	3 (1-9)
Primary Care Physician Visits Per Year; N (%)					
0 to <3	609 (9.8)	310 (33.4)	299 (5.7)	24 (4.4)	275 (5.8)
3 to <10	1,211 (19.6)	522 (56.3)	689 (13.1)	76 (13.9)	613 (13.0)
10+	4,374 (70.6)	95 (10.2)	4,279 (81.2)	448 (81.8)	3,831 (81.2)
Specialist Physician Visits Per Year; N (%)					
0	2,944 (47.5)	359 (38.7)	2,585 (49.1)	209 (38.1)	2,376 (50.3)
>0 to <1	1,227 (19.8)	180 (19.4)	1,047 (19.9)	117 (21.4)	930 (19.7)
1 to <2	788 (12.7)	152 (16.4)	636 (12.1)	83 (15.1)	553 (11.7)
2 to <3	414 (6.7)	72 (7.8)	342 (6.5)	50 (9.1)	292 (6.2)
3+	821 (13.3)	164 (17.7)	657 (12.5)	89 (16.2)	568 (12.0)

* Of the 487 supportive housing clients who transferred into a PCH (see Table 4.4), 163 did so through the hospital, and much of the group differences for hospital admissions and length of stay are attributed to this hospitalization. The median (IQR) length of this last hospital stay was 59 (IQR=39-89) days; by excluding this hospitalization, only 14.6% of supportive housing tenants had one or more hospitalizations annually during the study period, with a median length of stay of 14 (IQR=5-36) days.

** Computed amongst the subset of users with one or more hospitalizations during the study period.

IQR = Inter-Quartile Range (25th and 75th percentile)

CHAPTER 5: USER AND GOVERNMENT/HEALTH REGION COST PROFILES

Chapter Highlights

Evidence from across Canada demonstrates that utilization fees are generally higher for supportive housing versus PCHs (British Columbia Ministry of Health, 2015; Government of Alberta, 2014). Such findings may mean that some people's ability to pay impacts their choice to live in a supportive housing dwelling. The present chapter investigates the differences in user fees paid by supportive housing tenants and PCH residents. It also provides some basic information about government/health region contributions to supportive housing and PCH operational costs, including costs related to the broader kinds of healthcare use. Highlights of these results are provided in the following text:

- Supportive housing tenants in Manitoba are typically charged a monthly rent fee and also a service fee for meals, laundry, and light housekeeping. From this perspective, two subcategories of supportive housing exist in Winnipeg: i) Full Pay Dwellings, where tenants pay the market-value fee charged by the supportive housing sites; and, ii) Reduced Pay Dwellings, where the tenant fees for rent are reduced by various means. Nearly three quarters (73.0%; N=677 people) of the supportive housing cohort resided in full pay dwellings during the course of this study, while the remainder (N=250 people, 27.0% of this cohort) resided in reduced pay dwellings.
- Tenant fees were substantially higher in full versus reduced pay supportive housing dwellings. Between April 1, 2006 and March 31, 2011, tenants residing in full pay dwellings paid a median of \$1,789 per month in rent and service fees, while tenants residing in reduced pay dwellings paid a median of \$1,031 in these fees monthly.
- Per diem fees paid by PCH residents are set by the province of Manitoba and are standard across all PCHs. Throughout the study period these fees ranged from between \$24 and \$74 daily, depending on a person's net income and marital status. The median per diem paid by PCH residents during this study period was \$1,287 monthly. When comparing these fee structures across study groups, reduced pay supportive housing tenant fees were at the 30th percentile of per diem fees paid by PCH residents. In other words, fee amounts were highly comparable between these two groups and in fact slightly favour reduced pay supportive housing tenants. However, full pay supportive housing tenant fees ranked at about the 70th percentile of those paid by PCH residents. Keeping in mind that 73% of supportive housing tenants resided in full pay dwellings, our results show that user fees are in general much higher for supportive housing tenants than for PCH residents.
- This difference in fees increases somewhat when considering prescription drug use. Supportive housing tenants pay for their drugs as part of Manitoba's Pharmacare program, while PCH residents receive their drugs at no cost. Overall, supportive housing tenants paid a median of \$1,733 in user fee and drugs costs monthly during the study period (\$1,886 for full pay tenants and \$1,096 for reduced pay tenants), while PCH residents paid a median of \$1,287 monthly during this same time.
- The results in this chapter show only the basic government/health region contributions to supportive housing operational costs. This money is provided as a flat rate to each supportive housing dwelling for costs related to the personal support and supervision of tenants. Based on these values, the government/health region contributed \$1,200 monthly (\$14,400 annually) per unit to supportive housing operational costs during the course of the study, versus \$3,779 monthly (\$45,348 annually) per PCH bed. This lower contribution to supportive housing versus PCHs remains after accounting for differences in these groups' healthcare use. Taking both operational and healthcare use costs into account, we estimate that the median annual government/health region cost associated with supportive housing was \$21,708 per person during the study period, as compared to the median annual cost of \$47,676 per PCH resident. While user fees are often greater for supportive housing tenants than for PCH residents, the government/health region contribution to operational costs (as defined in this report) is substantially less for supportive housing tenants.

Table 5.1: Median Monthly User Fees and Total Costs Paid by Supportive Housing Tenants and Personal Care Home Residents

People admitted from April 1, 2006 - March 31, 2011. Fees measured until March 31, 2012

Fees	Cohorts		Supportive Housing Subgroups	
	Supportive Housing	Personal Care Home	Full Pay Tenants	Reduced Pay Tenants
Total Cohort; N (%)	927 (100)	5,267 (100)	677 (73)	250 (27)
User Fees; (\$) **	1,625 (1,325-1,872)	1,287 (1,002-1,929)	1,789 (1,564-1,918)	1,031 (924-1,305)
Prescription Medication Cost; (\$)	93 (49-148)	N/A	104 (56-160)	73 (40-106)
Total Costs (User Fees plus Medication Costs); (\$) †	1,733 (1,401-1,977)	1,287 (1,002-1,929)	1,886 (1,661-2,019)	1,096 (1,000-1,327)

* All values in this table are presented as the median (inter-quartile range; IQR, 25th and 75th percentile) for each group.

** User fees consist of rent and service packages for supportive housing clients, and per diem fees paid by PCH residents.

† Unlike arithmetic averages, median values cannot be added across categories to obtain a total value. Rather, total costs were first calculated for every individual, and a distribution of these total values is presented across study groups.

N/A: Personal Care Home residents in Manitoba do not pay for their prescription medications.

Table 5.2: Monthly Government/Health Region Contributions per Supportive Housing Tenant and Personal Care Home Resident

People admitted from April 1, 2006 - March 31, 2011. Costs measured until March 31, 2012

Contributions	Cohorts			
	Supportive Housing		Personal Care Home	
Total Cohort; N (%)	927 (100)	5,267 (100)	Median (inter-quartile range)	Mean (standard deviation)
Government/Regional Contributions to Operational Cost (\$) *	1,200 (1,200-1,200)	1,198 (78)	3,779 (3,627-3,806)	3,690 (169)
Healthcare Use Costs (\$)***				
Physicians (Primary Care & Specialist Visits Combined)	22 (13-36)	28 (24)	55 (36-79)	61 (37)
Hospitalizations	156 (0-1,389)	1,411 (2,971)	25 (0-329)	445 (1,596)
Emergency Department Visits	15 (0-30)	25 (45)	7 (0-22)	21 (45)
Home Care Use†	10 (0-93)	118 (289)	Not Applicable	Not Applicable
Prescription Medications	89 (2-214)	164 (473)	80 (29-164)	131 (373)
Total (operational plus healthcare use) Costs (\$) ‡	1,809 (1,388-3,031)	2,943 (3,048)	3,973 (3,855-4,286)	4,349 (1,698)

* All values in this table are presented in two manners: 1) as the median (inter-quartile range; IQR, 25th-75th percentile) for each group, 2) as the mean and standard deviation to show skewed healthcare use costs.

** All components of healthcare use were calculated using a current dollar approach, except for hospitalizations and emergency department visits which were calculated using a constant dollar approach (i.e., applying costs from one time period to use patterns in another).

† Home care use applies to supportive housing tenants only, and not to PCH residents.

‡ Unlike arithmetic averages, median values cannot be added across categories to obtain a total value. Rather, total costs were first calculated for every individual, and a distribution of these total values is presented across study groups.

CHAPTER 6: CONCLUDING STATEMENTS AND FUTURE RESEARCH DIRECTIONS

Concluding Statements

The present research links MDS data with administrative healthcare use records from the Winnipeg Health Region to investigate:

1. The number of newly admitted PCH residents who are clinically similar (termed 'less clinically burdened' in this research) to their supportive housing counterparts;
2. The additional unique features of these PCH residents as compared to supportive housing tenants, to help understand additional factors that may limit the potential for supportive housing to fulfill its intended role; and
3. Government/health region contributions to supportive housing and PCH operating costs, helping to understand care continuum reform strategies from a financial perspective.

The major 'take-home' points from this research are as follows:

1. Evidence from this study clearly demonstrates the potential for supportive housing to further offset PCH use in the Winnipeg Health Region. Our results show that 10.4% of newly admitted PCH residents were similar clinically to most newly admitted supportive housing tenants during the study period. These 'less clinically burdened' PCH residents required at most verbal supervision to complete ADL tasks, had at most mild cognitive challenges and few behavioural challenges, and were bladder and bowel continent almost all of the time. Further, across all PCH days of the study period, residents were 'less clinically burdened' 8.1% of the time. These findings imply that — instead of building only more PCH beds to help care for the growing number of older adults — planners could substantially expand supportive housing in its current form to help offset PCH use. With about 5,500 PCH beds and 516 supportive housing units in Winnipeg, this would equate to doubling the number of supportive housing units. As noted in Chapter 1 of this report, this recommendation is particularly salient as Manitoba currently has one of the highest PCH bed supplies in Canada (Sivananthan et al., 2015).
2. We also show, however, that increasing the number of supportive housing units without changing processes may have limited merit. As an example, the majority of people pay much more to reside in supportive housing dwellings versus PCH facilities. Coupled with this, less clinically burdened PCH residents are often admitted from the poorest Winnipeg neighborhoods, meaning that cost disincentives may limit some people's ability to live in supportive housing. Further, our analyses show that 25% of less clinically burdened PCH residents (versus only 10% of supportive housing tenants) had informal caregivers who were unable to continue providing support because of their own health challenges. Collectively, these results warrant discussion about the potential challenges related to cost disincentives and reliance on informal supports in the current model of long-term continuing care.
3. The results on healthcare use are mixed. On one hand, our analyses show that supportive housing plays an important role in the older adult continuum of care. The median length of stay amongst PCH residents who died during the last two years of the study period was 849 days. Some of these residents (N=166) had transferred into a PCH from supportive housing. Their median length of PCH stay was much shorter (444 days), and their total (supportive housing and PCH) length of stay was 1,141 days. While perhaps some improvements related to continuing care transitions could be made (i.e., people resided in supportive housing and PCH care for longer than people who resided in PCHs only), overall these results suggest that supportive housing functions as an important alternative to PCH use (i.e., PCH lengths of stay were cut in half).
4. Other healthcare use results warrant further discussion. Compared to PCH residents, supportive housing tenants tended to have more of their healthcare use contacts with 'downstream' services. For example, 81.2% of PCH residents had 10 or more visits annually with a primary care physician during the study period as compared to only 10.2% of supportive housing tenants (33.4% of these tenants had fewer than three of these contacts annually).

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