Facility-Based Continuing Care in Canada, 2004–2005

An Emerging Portrait of the Continuum

Continuing Care Reporting System (CCRS)

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Facility-Based Continuing Care in Canada 2004–2005

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Acknowledgements

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Executive Summary

Through analysis of facility and resident characteristics, *Facility-Based Continuing Care in Canada 2004–2005* presents an emerging portrait of a little-known sector. The report reveals substantial differences in the populations served and the services delivered between hospital and residential care settings, illustrating a continuum of care *within* the facility-based continuing care sector.

The goal of the report is to enhance understanding of this sector and the individuals it serves. It will be of interest to front-line clinicians and managers as well as to system planners, policy-makers, researchers and the public.

The CIHI Continuing Care Reporting System (CCRS) captures information on individuals in publicly funded facilities of two types:

- Hospitals that have beds designated and funded as continuing care beds, commonly known across Canada as extended, auxiliary, chronic, or complex care beds; and,
- Residential care facilities, commonly known across Canada as nursing homes, personal care homes or long-term care facilities.

Data used in the report were submitted to the CCRS by 134 Ontario hospitals with designated Complex Continuing Care (CCC) beds and by seven Nova Scotia nursing homes. They represent a snapshot of activity covering the fiscal year 2004–2005.

The inter*RAI* MDS 2.0©, an internationally validated clinical assessment instrument, provides the foundation data standard for the CCRS. The MDS assessment not only supports front-line care planning, but also allows for analysis of facility residents' characteristics, risks and outcomes over time and across service settings.

Hospital-Based Continuing Care

Hospital-based continuing care provides services to a relatively high-turnover population. Most residents were admitted from an acute care hospital bed and stayed 3 months or less. They were assessed as being clinically unstable, dependent on others for basic activities of daily living and having some degree of cognitive impairment, depression and/or pain. More than one quarter of residents were admitted with a diagnosis of cancer. Nearly one third died in the facility and 22% were discharged home during the 2004–2005 fiscal year.

More than 40% of assessed residents qualified for the Special Rehabilitation RUG-III group, reflecting the highest levels of resource use in the case mix classification system. Overall, the data provide evidence of a very diverse population, the majority of whom were assessed as having complex health needs.

Residential Facility-Based Continuing Care

Data from the sample of residential facilities (nursing homes) revealed a different and somewhat more homogenous, longer-stay population profile. While many were admitted from hospitals, nearly one quarter were admitted directly from home. These residents were on average 8 years older than those in hospital-based continuing care, but they were generally more clinically stable. They were much more likely to have an admission diagnosis of dementia (e.g. Alzheimer's) and a large proportion was assessed as having moderate or severe cognitive impairment. They were moderately dependent in activities of daily living. They were somewhat more likely than hospital residents to be pain-free and to engage in social interactions. One third of the resident population was transferred to hospital-based care during the period, 12% died in the facility and no residents were discharged home.

The majority of residents (75%) fell into two RUG-III case mix groups—Impaired Cognition and Reduced Physical Functions—reflecting lower resource use than documented in the hospital sector.

Discussion and Future Directions

While limited volumes of assessments currently available from the residential sector warrant cautious interpretation, these early findings provide evidence, using a standardized comprehensive assessment instrument, of a wide range of continuing care needs being served in Canada.

Future CCRS reports will extend the analysis of facility and population characteristics to new jurisdictions as they begin to submit data, and will also begin to explore special topics such as safety and quality of care.

Given its richness as a source of longitudinal clinical, demographic and resource utilization data in the facility-based continuing care sector, CCRS will be increasingly valuable for monitoring the rapidly evolving models of service delivery as health care renewal activities continue across the country. Providers, planners and policy-makers will have further evidence to support their decisions and information to support accountability.

As more data flow to the CCRS in the coming years, there will be opportunities, not only for further documentation of the structural and population differences across the continuum, but also for exploration of benchmarking of outcomes to allow facilities, regions, provinces and territories to search for best practices. International comparisons will also be possible.

Over the next three years, data are expected to flow to CIHI from British Columbia, Alberta, the Yukon, Saskatchewan and Manitoba, where MDS 2.0 implementations are already well underway. With these data, the emerging portrait will become clearer.

Chapter 1. Introduction and Background

Goal of the Report

Given the aging of the Canadian population and a multitude of other factors driving change in our health care system, information to support accountability, planning and quality across the continuum is critical. Until very recently, there has been no standardized information collected across Canadian provinces and territories on health services beyond acute hospital care.

Facility-Based Continuing Care in Canada 2004–2005 is the first public report based on data from the Continuing Care Reporting System (CCRS) that allows for an early glimpse at the diversity of needs for facility-based continuing care in Canada and at the health system's responses to those needs.

The CIHI Continuing Care Reporting System (CCRS) captures information on individuals in publicly funded facilities of two types:

- Hospitals that have beds designated and funded as continuing care beds, commonly known across Canada as extended, auxiliary, chronic, or complex care beds; and
- Residential care facilities, commonly known across Canada as nursing homes, personal care homes or long-term care facilities.

The goal of this initial report is to begin to shed light on the continuum *within* facility-based continuing care in Canada. The report provides a profile of residents and their care in two quite different continuing care settings—hospitals and residential care facilities. The hospital sector is represented by data from 134 Ontario hospitals with designated Complex Continuing Care (CCC) beds, submitting to CCRS under a ministry mandate. The profile of residential care facilities reflects the characteristics of seven Nova Scotia nursing homes, the first group of facilities in the province to participate in CCRS through a voluntary implementation process.

As the CCRS expands to include more facilities across Canada, we can begin to compare resident outcomes within and across different service delivery models and geographic settings. In the meantime, we present this emerging portrait of the continuum, highlighting facility and resident characteristics to enhance understanding of the sector and the individuals it serves.

Organization of the Report

Chapter 1 introduces the report, the CCRS and basic methodological considerations. Chapter 2 presents a profile of the hospital-based continuing care system found in Ontario, known as Complex Continuing Care (CCC). Chapter 3 presents a profile of residential care facilities in Nova Scotia, known as nursing homes. Chapter 4 summarizes the key findings of the report and identifies future directions for the CCRS. A Glossary of Terms and Abbreviations is provided in Appendix A.

The Continuing Care Reporting System

Health Canada defines continuing care as "the range of medical and social services for individuals who do not have, or have lost, some capacity for self-care and require assistance in activities of daily living. These services often begin in the home, but can include more intensive levels of care normally associated with institutional care".[1]

The goal of care may not be to cure, but to stabilize or improve health and functional status, to maintain function for as long as possible, or to support families with respite and palliative care needs.

The Continuing Care Reporting System (CCRS) accepts detailed clinical, functional and service information collected through the inter*RAI* MDS 2.0©, an internationally validated, comprehensive assessment instrument. This instrument identifies the residents' preferences, needs and strengths, and provides a snapshot of the services they use. The assessment guides front-line care planning and quality improvement, and supports analysis of resident risks and outcomes over time. The MDS 2.0 has undergone extensive reliability and validity testing in a number of countries worldwide.[2, 3, 4, 5, 6, 7, 8, 9]

Each resident is assessed within 14 days of admission with the full MDS assessment. If the resident stays in the facility for more than three months (92 days), quarterly assessments are conducted. The quarterly assessment contains a subset of the items contained in the full assessment. A full assessment of the resident is completed again as an annual assessment and/or when the resident's health condition changes significantly. All of these assessments are submitted to CIHI, where they represent a rich source of information about resident outcomes over time.

Facilities also provide additional information to CIHI concerning their size and geographic location, as well as their facility type (that is, hospital or residential care facility). These data shed light on the settings where residents are receiving their care and the range of needs being addressed across the continuum.

CIHI provides participating organizations with quarterly reports comparing their resident characteristics, clinical outcome scales, quality indicators (QIs) and resource utilization (case mix). The data are also used at an aggregate level for public reporting to support system planning, quality improvement and accountability.

Methodological Considerations

This section represents an overview of methodologies and data limitations to assist the reader in interpreting the findings of the report. Detailed methodological notes and further information on data quality can be found on the CCRS Web site at www.cihi.ca/ccrs.

Data Source

The information presented in this report is based on data collected in the CCRS for residents who received service between April 2004 and March 2005.

Resident Characteristics

The primary focus of this report is the continuing care resident. All indicators are based on unique residents who were counted once within the 2004–2005 fiscal year. If a resident had more than one service episode in the year, the data relating to the most recent admission was used.

Analysis of residents' clinical characteristics requires that a full or quarterly assessment be available within the fiscal year, or within 14 days of the following year for those admitted at the end of 2004–2005. If there was more than one assessment available for the year, the most recent assessment was used for the analysis, except where otherwise noted in the document.

Table 1.1 illustrates the distribution of residents who received MDS assessments and those who did not. More than 75% of residents in both hospital and residential care facilities received assessments and were therefore included in the clinical and utilization analyses. A profile of the excluded residents is provided in the following section on data limitations.

There are several reasons for finding residents in the database with no MDS assessments. The most common reason in the hospital facilities was that residents stayed less than 14 days and an assessment is not mandatory within that period.

The majority of missing assessments in Nova Scotia residential care facilities represented residents who had been in the facility for more than 14 days and who had not received an assessment according to the prescribed schedule. Given that these facilities were participating in the CCRS for the first time, some faced challenges in accommodating the assessment and data submission cycles. We anticipate improvements in subsequent years as the early implementation "bugs" are addressed.

Table 1.1 illustrates that residents were divided into two groups for analysis—those who stayed in the facility for 92 days or less and those remaining beyond 92 days. This categorization highlights the similarities and differences of residents who have relatively shorter and longer stays. The table clearly shows that a larger proportion of the hospital sector population stayed for 92 days or less (70%) compared with the residential sector shorter-stay population (7%).

Table 1.1 Resident Volumes and Populations for Analysis, CCRS 2004–2005

	Hospital-Based (Ontario)		Residential Facility–Based (Nova Scotia)	
	#	%	#	%
Residents With MDS Assessments	**19,125**	**80%**	**416**	**76%**
92 days or less	12,095	51%	20	4%
More than 92 days	7,030	29%	396	72%
Residents With No MDS Assessments	**4,662**	**20%**	**131**	**24%**
92 days or less	4,525	19%	16	3%
More than 92 days	137	1%	115	21%
Total Residents	**23,787**	**100%**	**547**	**100%**

Data Limitations

The data used in this report represent a relatively small portion of continuing care facilities and residents in Canada. Facilities in Ontario and Nova Scotia currently submit data to CCRS; several other jurisdictions are scheduled to begin data submissions between 2006 and 2008.

While all 134 of Ontario's CCC facilities are captured in the CCRS through a ministry mandate, no jurisdictions outside of Ontario currently submit data on hospital-based continuing care.

Nova Scotia's participation in CCRS is voluntary; seven of 71 Nova Scotia nursing homes submitted resident data in 2004–2005 and clearly represent a very small sample of residential care facilities across Canada.

As illustrated in Tables 1.1 and 1.2, there are differences in both volumes and facility profiles between hospital and residential facilities contributing data for use in this report. Where low volumes result in small cell sizes (fewer than 5 observations), the data are flagged for the reader as a caution for interpretation.

Table 1.2 Number (Percent) of Facilities, by Size, CCRS 2004–2005

	Hospital-Based (Ontario)		Residential Facility–Based (Nova Scotia)	
	#	%	#	%
<30 beds	77	57	1	14
30–59 beds	29	22	2	29
60+ beds	28	21	4	57
Total	**134**	**100**	**7**	**100**

Table 1.3 provides an overview of the populations excluded from the clinical and utilization analyses. Data available from the admission and discharge records indicated that in 2004–2005, 20% of residents in CCC hospitals and 24% in residential-care facilities did not have MDS assessments submitted to CCRS.

Given the limited information available for these residents, it is difficult to determine how they might differ in important ways from the remainder of the population. These differences could potentially affect the conclusions that may be drawn from the clinical and case mix data.

In hospital-level continuing care, one characteristic of the non-assessed group clearly stands out in contrast to the assessed population. Those without assessments were much more likely to die in the hospital (49% of the non-assessed population) than those for whom assessments were available (25% of assessed hospital residents). This may represent a segment of the hospital population that is admitted for end of life or palliative care.

Table 1.3 Characteristics of Residents Excluded From Clinical and Utilization Analyses, CCRS 2004–2005

	Hospital-Based (Ontario)	Residential Facility–Based (Nova Scotia)
Volumes of Residents With No MDS Assessment (% of all residents)		
# of Residents	4,662	131
% of All Residents	20%	24%
Demographics (% of all residents with no assessment)		
Average Age	76	83
% Female	53%	44%
Admission/Discharge (% of all residents with no assessment)		
% Admitted From Hospital	80%	56%
% Discharged to Hospital	14%	11%
% Discharged Home	21%	1%
% Died in Facility	49%	15%

In recognition of the above limitations, this report explicitly avoids generalizing the findings beyond the facilities included in the data and avoids comparing the performance of these different kinds of facilities. It simply provides a view of facility and resident characteristics in two very different settings to contribute to a better understanding of the sector and to lay the foundation for future research and analysis.

Chapter 2. Hospital-Based Continuing Care

This chapter presents a profile of hospital-based continuing care using data from Ontario Complex Continuing Care (CCC) facilities. Complex continuing care is provided in Ministry of Health and Long-Term Care (MoHLTC) designated chronic care beds, either in free-standing complex continuing care and rehabilitation hospitals or in designated beds or units within acute care hospitals.[10]

While analysis of historical trends in CCC is, for the most part, beyond the scope of this report, these will be examined in future CCRS publications. In the meantime, readers may refer to *Continuing Care in Ontario: Resident Demographics and System Characteristics*, which describes the Ontario CCC system between 1996 and 2003. This document can be found on the CIHI Web site at www.cihi.ca/ccrs.

The 2004–2005 Ontario data do not include any residential (long-term care) facilities.

Source of Admission

The analysis was conducted on all residents who were admitted to a CCC facility in 2004–2005. Figure 2.1 illustrates that 87% of admitted residents came to hospital-based continuing care from another hospital level of care, primarily from acute care. Smaller numbers were admitted from home (10%) and from residential care facilities (1%).

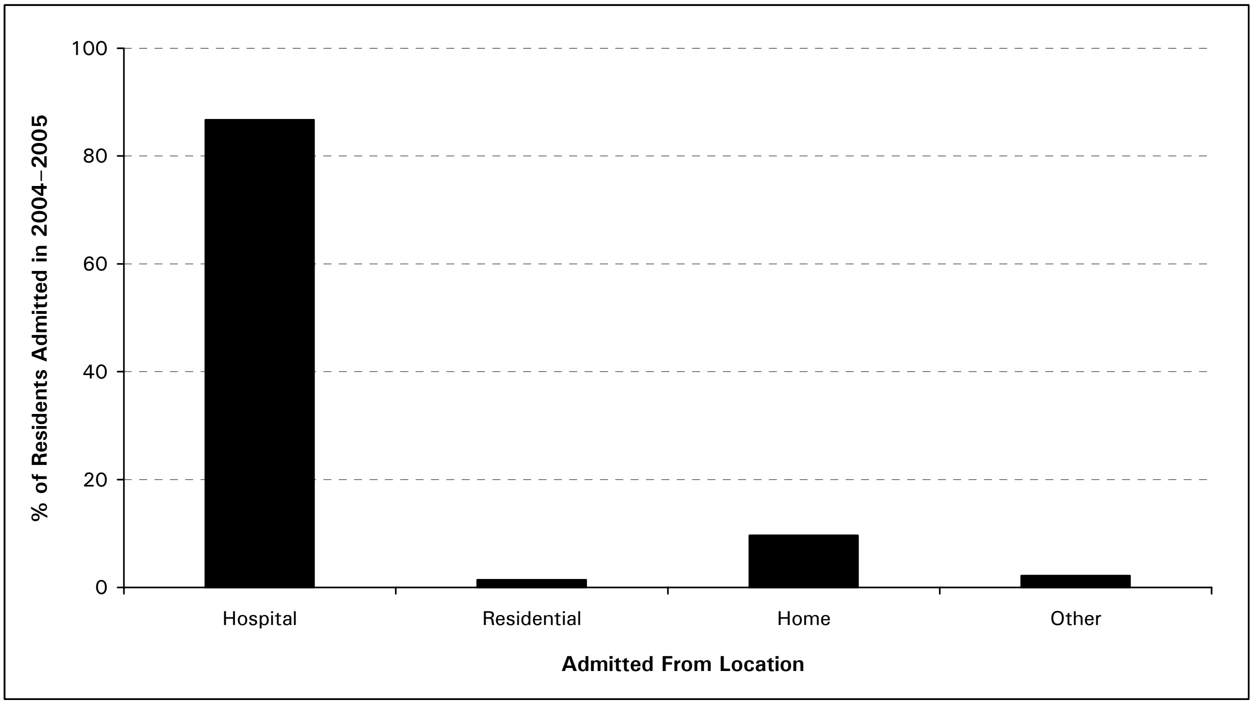

Figure 2.1 **Source of Admission for All Residents Admitted to Hospital-Based Continuing Care, CCRS 2004–2005**

Discharges

Analysis of discharges was based on all residents who were discharged during the fiscal year, including those who died in the facility. In the case where a resident left the CCC facility for periods exceeding 24 hours on multiple occasions during the year, each of these is generally captured in a discharge record for the CCRS. This may occur due to temporary transfers to other levels of care. The last discharge record available in the year was used for the analysis illustrated below.

In 2004–2005, 18,107 residents were discharged from CCC facilities, a slight decrease from previous years.[11] Discharged residents represented 76% of the total resident count for the year, indicating a very high rate of turnover of residents.

Figure 2.2 illustrates different distributions of discharged residents who stayed 92 days or less and those who stayed longer than 92 days prior to discharge. There was little difference between the shorter and longer-stay populations who were transferred to other hospital beds (primarily acute care) at 12% and 14% of discharges in their respective length of stay groups.

Of shorter-stay residents, 17% were discharged to residential care facilities, while 31% went home. Within the longer-stay group, the reverse distribution was observed; 28% were discharged to residential care facilities and 16% went home.

Of all discharged residents, 35% of shorter-stay and 38% of longer-stay residents died in the facility. As a percentage of *all* residents served in CCC facilities during 2004–2005, 27% died in the facility, down slightly from recent historical rates.[11]

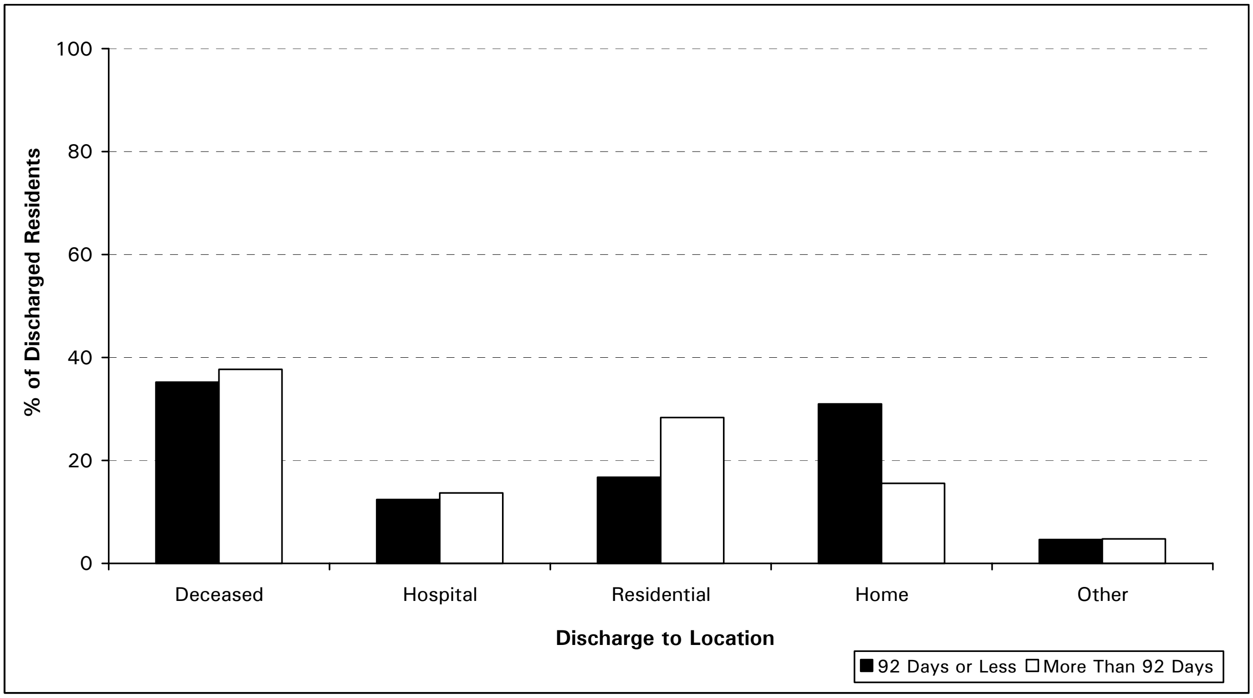

Figure 2.2 **Distribution of Discharges From Hospital-Based Continuing Care, CCRS 2004–2005**

Age and Gender

As illustrated in Table 2.1, females represented the majority of residents, with the largest difference between males and females observed in the older age groups.

Table 2.1 Age and Gender Distribution, Hospital-Based Continuing Care, CCRS 2004–2005

Age Group	Female	Male	All
Younger than 65	9%	9%	18%
65 to 74	9%	9%	18%
75 to 84	21%	17%	38%
85 and older	17%	9%	26%
All Ages	**56%**	**44%**	**100%**

Nearly one in five residents was younger than 65 years of age, which runs contrary to the typical expectation of advanced resident age in the continuing care sector. Further analysis is required to explore the clinical characteristics of these younger residents and the services provided through this level of care. This analysis will be reported in a future CCRS publication.

Figure 2.3 illustrates the age distributions of shorter- and longer-stay residents.

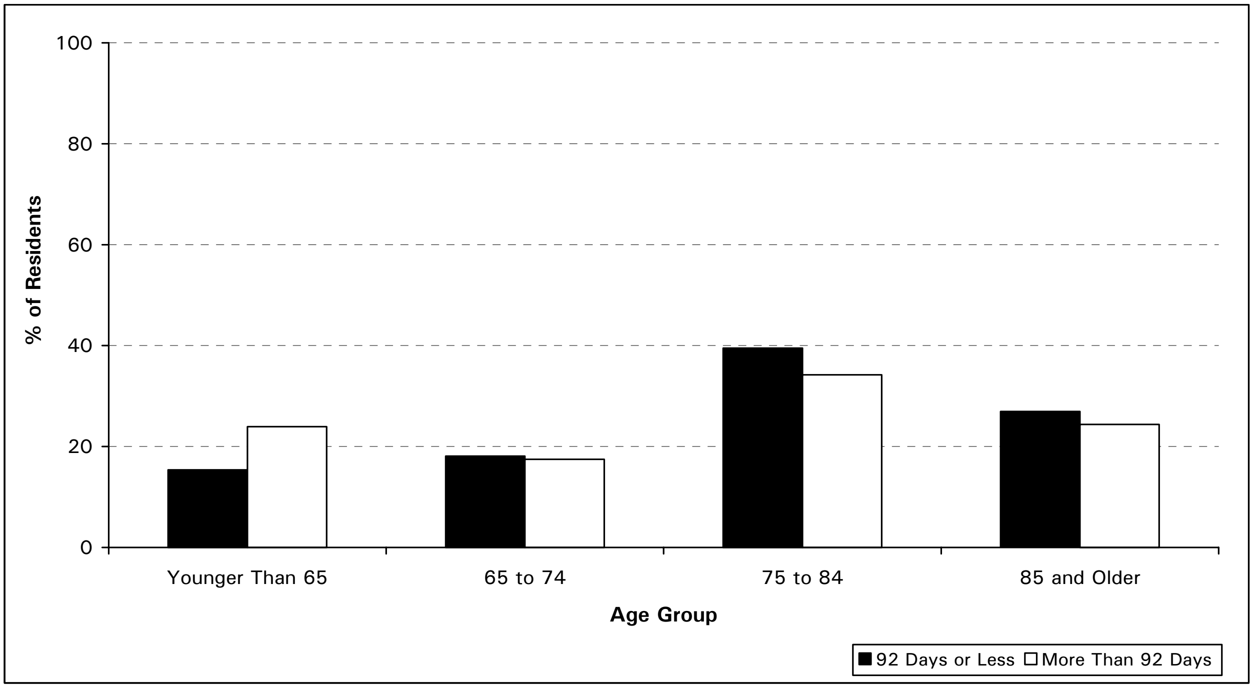

Figure 2.3 Age Distribution Within Shorter- and Longer-Stay Resident Groups, Hospital-Based Continuing Care, CCRS 2004–2005

The average age of shorter-stay residents was 77 years. Longer-stay residents, on average, were three years younger, with an average age of 74.

Health Conditions

The MDS assessment allows for recording of diagnoses that affect the residents' condition or care. Table 2.2 highlights the most commonly reported disease categories/diagnoses on admission assessments. The most common individual diagnoses were hypertension, with 42% of residents reported as having this condition, followed by arthritis, diabetes mellitus and cancer, with 26% of residents reported as having these conditions. Depression was recorded as a diagnosis in one out of five residents.

Table 2.2 Most Common Disease Categories/Diagnoses Reported on MDS Admission Assessments, Hospital-Based Continuing Care, CCRS 2004–2005

Disease Categories/*Diagnoses*	% of Residents With MDS Assessments
Heart/Circulation	**63**
Hypertension	*42*
Neurological	**46**
Cerebrovascular Accident	*21*
Dementias (Alzheimers and Non-Alzheimers)	*23*
Musculoskeletal	**42**
Arthritis	*26*
Endocrine/Metabolic/Nutritional	**33**
Diabetes Mellitus	*26*
Cancer	**26**
Psychiatric/Mood	**25**
Depression	*20*
Pulmonary	**18**
Emphysema	*16*

Outcome Scales

A brief description of each scale derived from the MDS 2.0 assessment is provided in the subsequent sections. Further information may be obtained from the inter*RAI* Web site at www.interrai.org.

Changes in Health, End-Stage Disease, Signs and Symptoms (CHESS)

The MDS CHESS is a scale designed to predict mortality associated with frailty and to measure instability in health as clinical outcomes.[12]

The calculation of the CHESS score is based on symptoms captured by the MDS 2.0 including dehydration, shortness of breath, vomiting, edema, weight loss, declining health conditions and leaving food uneaten. The scale ranges from 0, for no instability, to 5, representing the highest level of instability. Each upward increment in the scale represents an increased risk of mortality, more intense service use and increased health instability. The developers of the CHESS scale found the risk of dying was 10.5 times greater at the high end of the scale than at the low end.[12]

The CHESS score was calculated for those residents who received a full admission assessment in fiscal year 2004–2005.

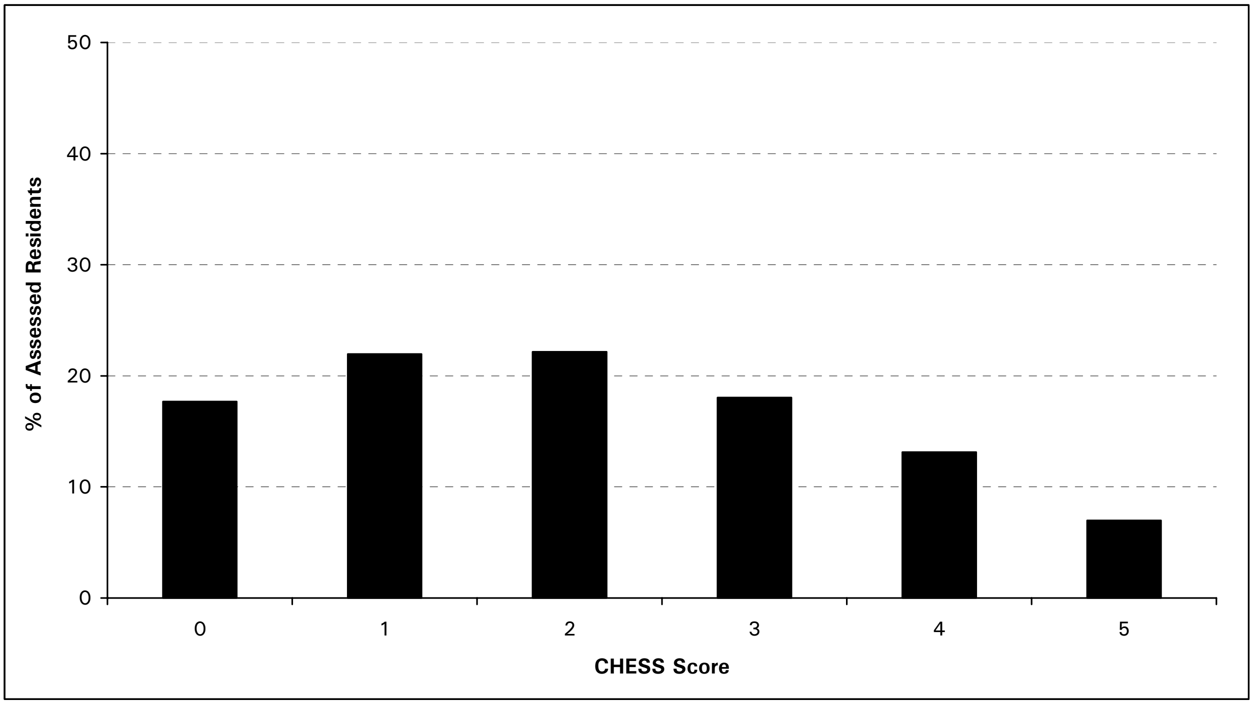

Figure 2.4 **CHESS Scores for Residents Assessed at Admission, Hospital-Based Continuing Care, CCRS 2004–2005**

Figure 2.4 illustrates that the majority (82%) of residents' admission assessments indicated some degree of health instability, with 7% at the highest level, or at greatest risk. The distribution of CHESS scores suggests a diverse population with 38% of residents scoring 3 or higher.

The average CHESS score for hospital residents was 2.1.

Activities of Daily Living (ADL)—Self-Performance Hierarchy Scale

The ADL Hierarchy Scale reflects the resident's self-performance in four key activities of daily living: personal hygiene, toileting, locomotion and eating.[13] As an individual loses function due to illness, the ability to perform personal hygiene activities tends to deteriorate early on, while toileting and locomotion are lost later, followed by the loss of independence in eating.

The ADL Hierarchy score ranges from 0 to 6. A higher score indicates a greater degree of disability, based both on increased dependence upon others and the kind of ADLs (early-, mid- or late-loss) for which self-performance ability has been lost. Calculation of this, and subsequent outcome scales, was based on the last available assessment for a resident.

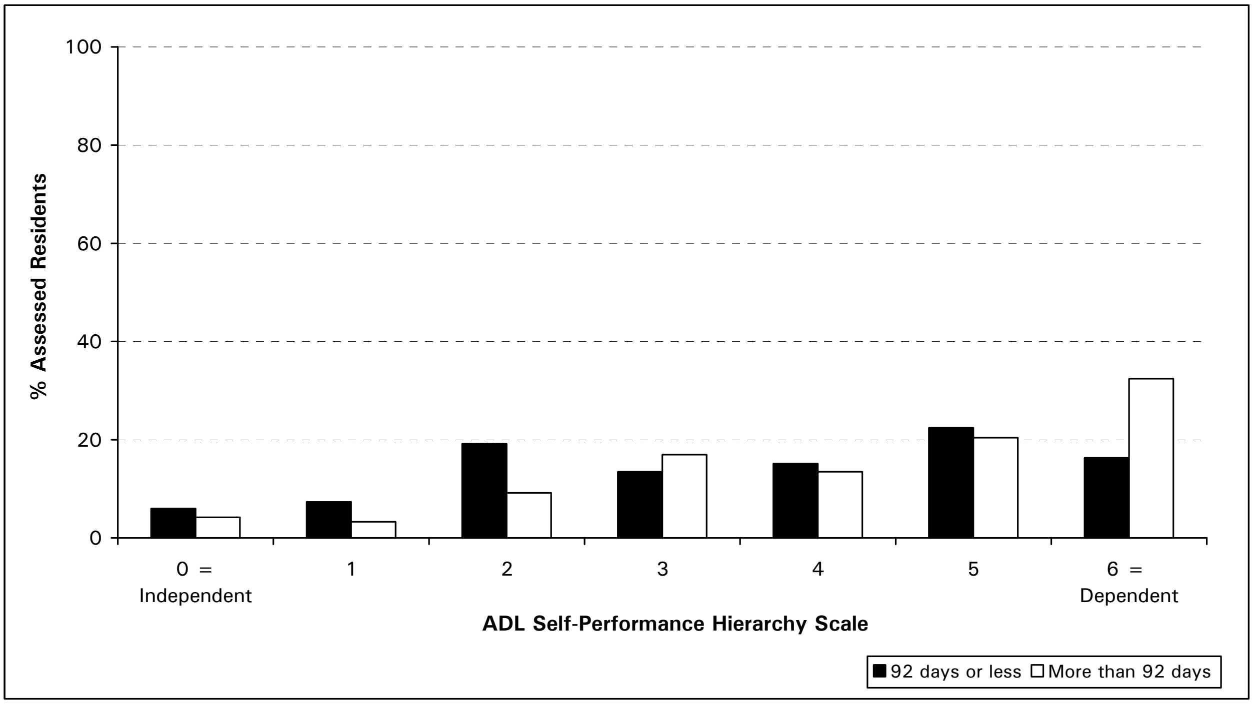

Figure 2.5 **ADL Hierarchy Scale Score Distribution, Hospital-Based Continuing Care, CCRS 2004–2005**

Figure 2.5 illustrates that 16% of shorter-stay residents and 32% of longer-stay residents were totally dependent on others for basic activities of daily living. The distribution, consistent with the previous scale, suggests a population with a broad range of functional losses, with relatively few residents fully independent in ADL.

The average ADL score for shorter-stay residents was 3.6, compared with 4.2 for longer-stay residents, indicating greater dependence in the longer-stay population.

Cognitive Performance Scale (CPS)

The CPS summarizes the resident's cognitive status based on MDS assessment items relating to short-term memory, ability to make daily decisions, expressive communication, late-loss ADL (eating) and whether they are comatose.[14]

The CPS score ranges from 0 to 6. The higher scores on the scale indicate greater levels of impairment in cognitive performance. Scores of 0 to 1 are normally associated with relatively intact cognitive performance, scores of 2 to 3 with mild-to-moderate impairment and scores of 4 to 6 with severe impairment.

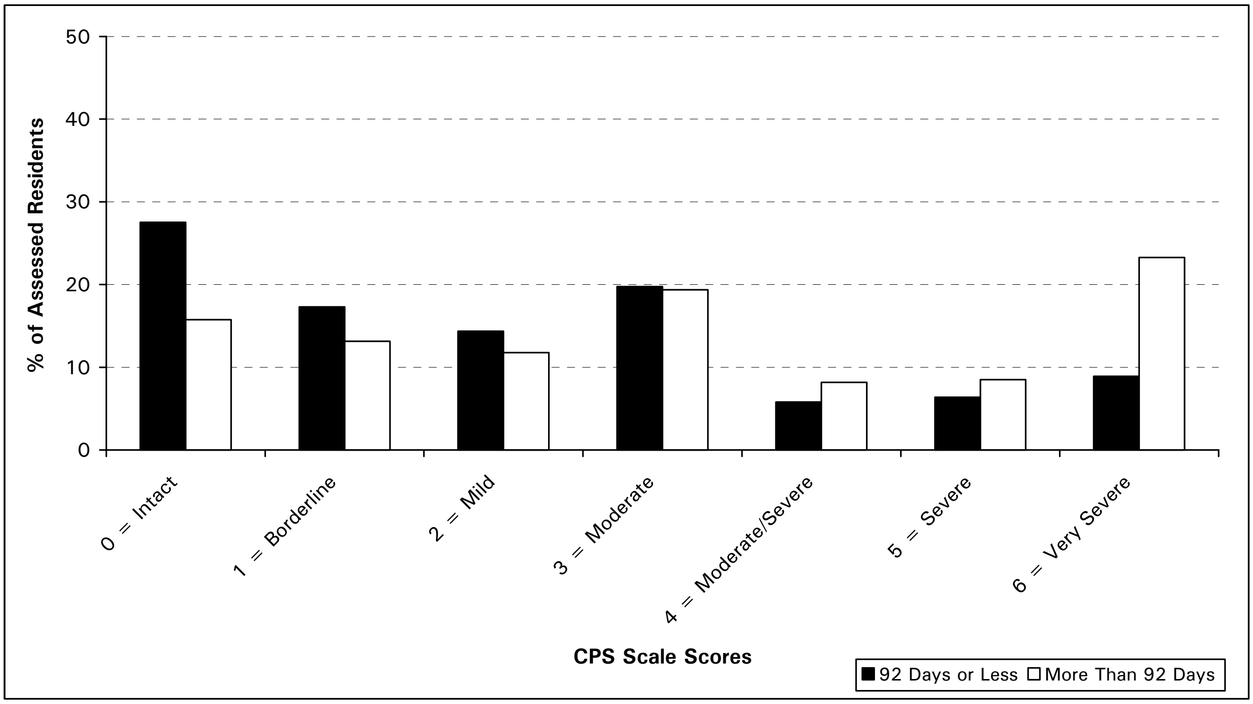

Figure 2.6 Cognitive Performance Scale Score Distribution, Hospital-Based Continuing Care, CCRS 2004–2005

As demonstrated in previous outcome scales, hospitalized residents seem to be well distributed across the scale, indicating a diverse population with a wide range of needs for support and care. Figure 2.6 illustrates distribution differences at the extremes of this scale.

Within a shorter-stay group, 28% had a CPS score of 0 (cognitive function intact) and only 9% scored 6 (very severe impairment). Within the longer-stay group, 16% had a CPS score of 0 and 23% had a score of 6.

The average CPS score was 2.1 for shorter-stay residents and 3.1 for longer-stay residents.

Index of Social Engagement (ISE)

The ISE measures the resident's social functioning, which is generally affected by their physical and mental functional abilities.[5] The scale is based on MDS assessment items, including ease in interacting with others, participation in planned or self-initiated activities and establishing goals.

To ensure that the ISE score reflects residents' social engagement once they are well established in a facility, only residents who had a continous stay of at least 106 days were included in the analysis.

The ISE ranges from 0 to 6, where a higher score indicates a greater level of social engagement.

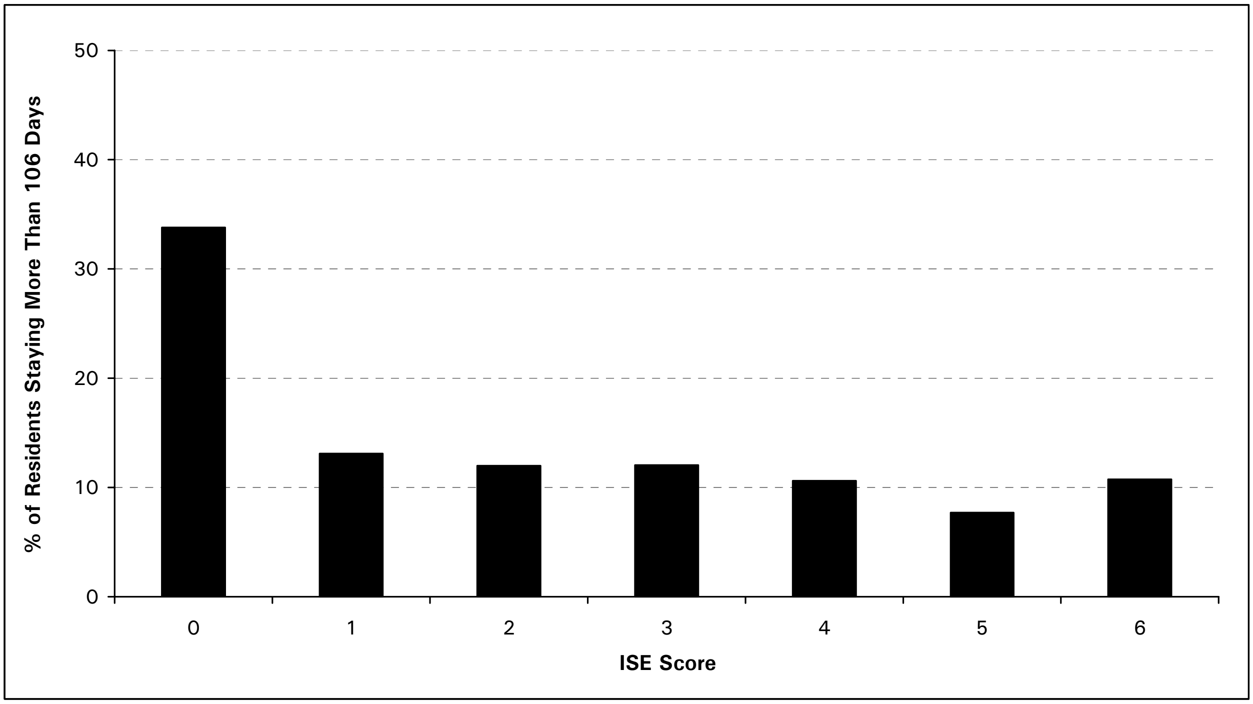

Figure 2.7 **Index of Social Engagement Distribution, Hospital-Based Continuing Care, CCRS 2004–2005**

Again, the distribution of scores indicated a diverse population, with a significant proportion possibly too ill to engage in social behaviours. More than one third of hospitalized residents scored 0 on the ISE, indicating essentially no social involvement, with another quarter of the population in categories 1 and 2 (limited involvement). Only 11% of residents were highly engaged, with a score of 6.

The average of ISE scores for hospital residents was 2.2.

Depression Rating Scale (DRS)

The DRS is a scale intended to screen for depression among residents of continuing care facilities. It uses seven symptoms related to verbal and non-verbal indicators of depression and anxiety.

DRS scores range from 0 to 14, with a score of 3 or greater indicating the potential presence of a depressive disorder.[15]

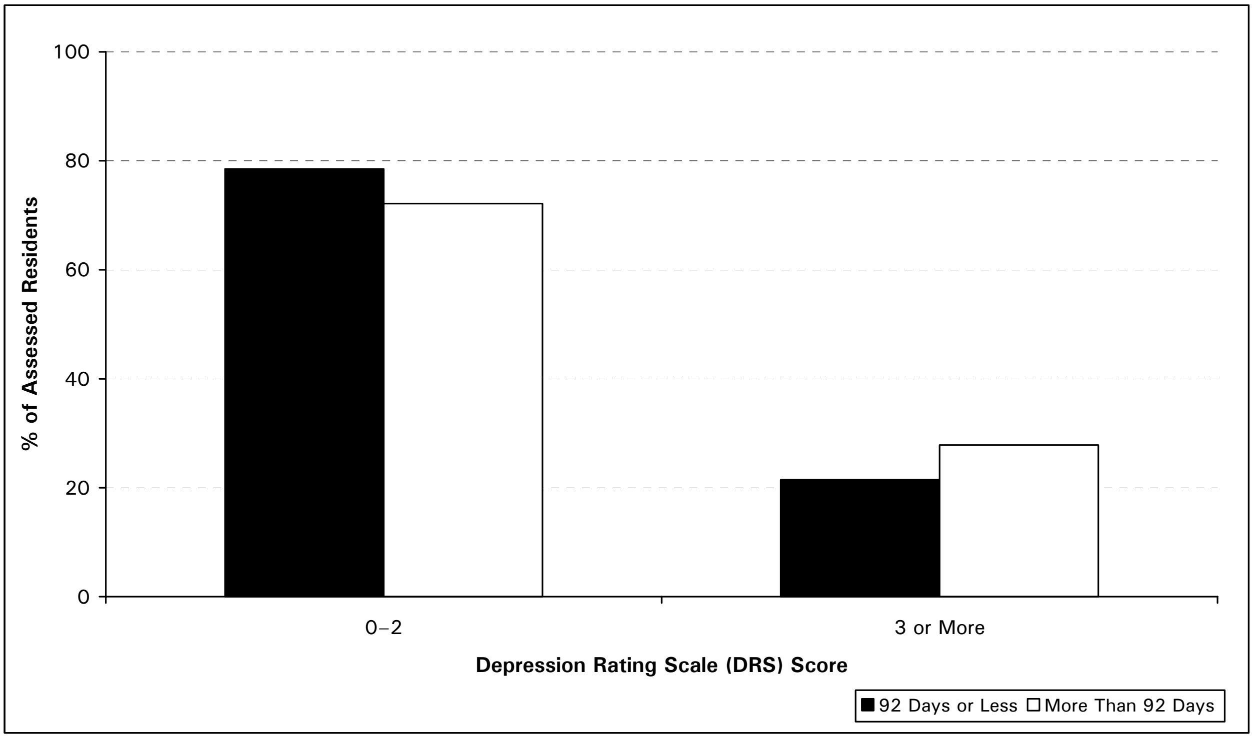

Figure 2.8 **Depression Rating Scale Distribution, Hospital-Based Continuing Care, CCRS 2004–2005**

As illustrated in Figure 2.8, about one in five of shorter-stay residents and 28% of longer-stay residents displayed some signs suggestive of a mood disorder.

Shorter-stay residents in the hospitals demonstrated slightly lower DRS scores overall when compared to longer-stay residents, with average scores of 1.5 and 1.9, respectively.

Pain Scale

The pain scale combines the frequency and intensity of pain, which is unrelieved by treatment(s), as observed by facility staff through the MDS assessment process.[3]

Scores range from 0 to 3, with a score of 0 indicating no pain and a score of 3 indicating severe daily pain.

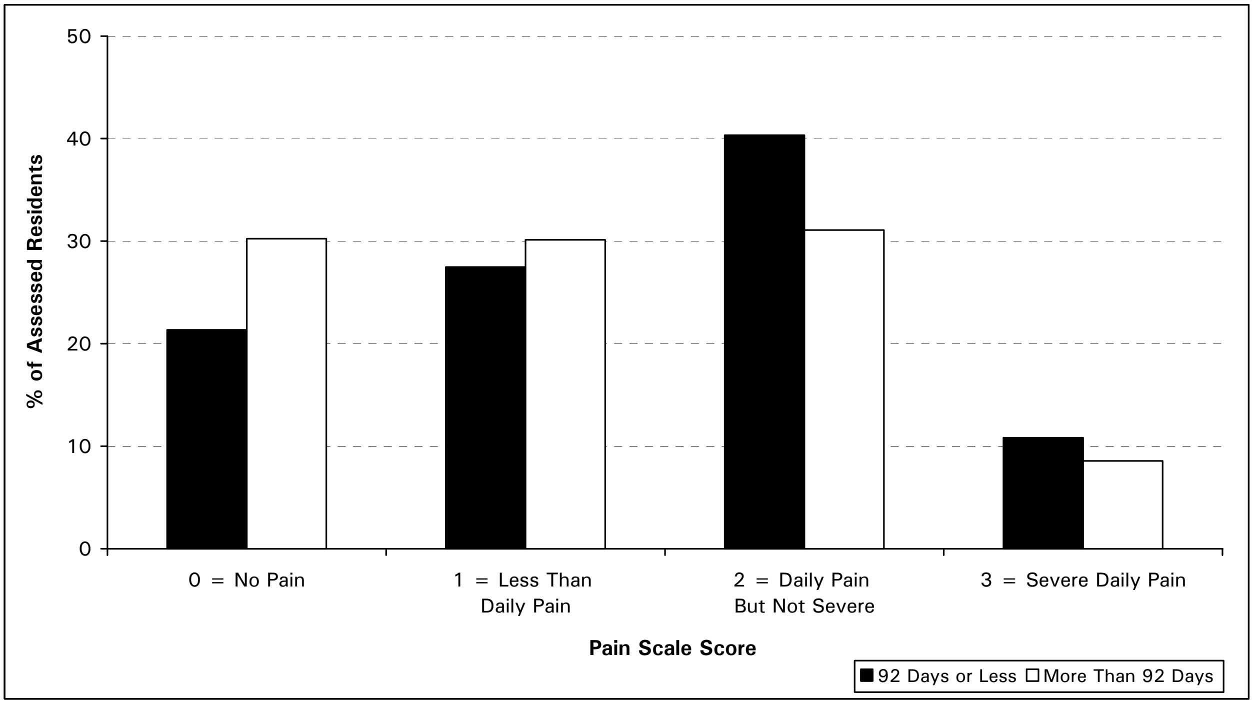

Figure 2.9 Pain Scale Score Distribution, Hospital-Based Continuing Care, CCRS 2004–2005

Nearly half of all residents were assessed as experiencing some degree of unrelieved pain on a daily basis, with 37% assessed as not severe and 10% assessed as being in severe daily pain. Of the shorter-stay group, 21% scored 0 (pain-free) on the pain scale while 30% of longer-stay residents were assessed as being pain-free.

The average pain scores for shorter-stay and longer-stay residents were 1.4 and 1.2, respectively.

Aggressive Behaviour Scale (ABS)

The ABS is intended to measure aggressive behaviours as observed by facility staff, including verbal and physical abuse, disruptive behaviour and resistance to care.

The ABS score ranges from 0 to 12. A higher score indicates a higher frequency of aggressive behaviours.

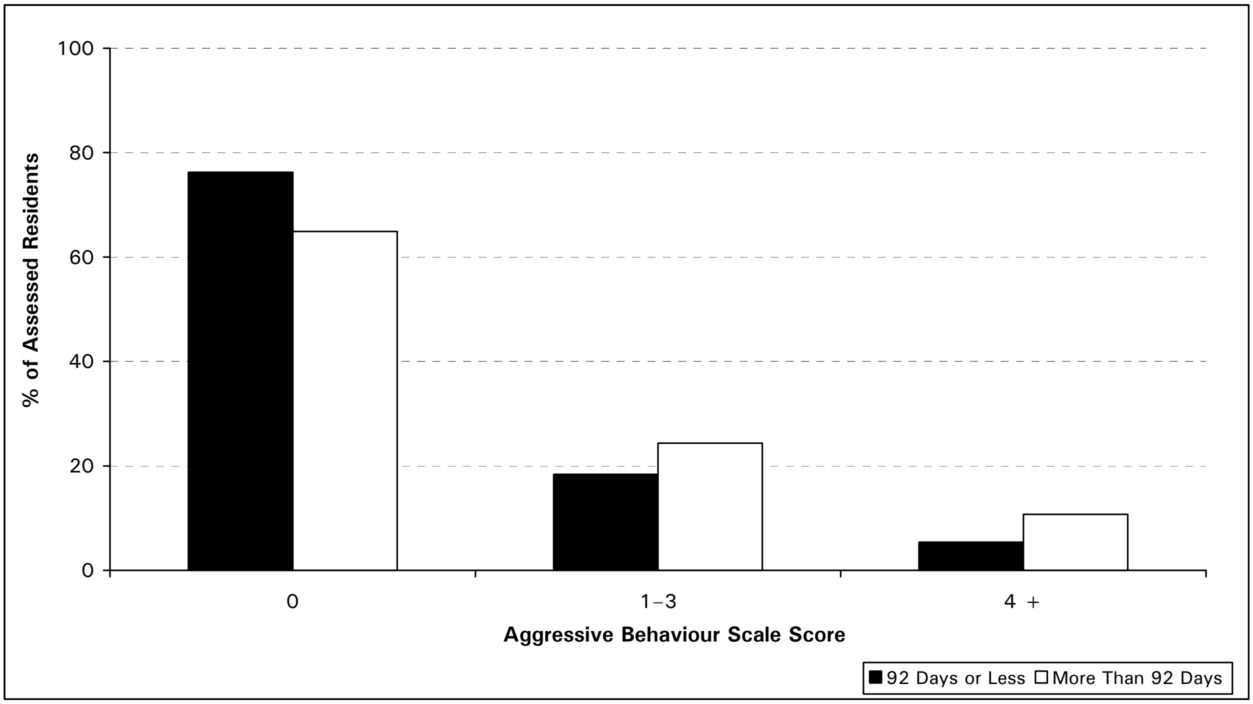

Figure 2.10 **Aggressive Behaviour Scale Distribution, Hospital-Based Continuing Care, CCRS 2004–2005**

Figure 2.10 illustrates that the majority of residents (72%) scored 0 on the scale. However, 28% of the residents demonstrated some amount of aggressive behaviour during the assessment period. While their numbers were relatively small, those at the high end of the scale (7% of all residents) present significant challenges to care providers, with associated resource implications.

Shorter-stay residents were less likely to demonstrate aggressive behaviours than longer-stay residents, with average scores of 0.7 and 1.1, respectively.

Resource Utilization Groups, Version III (RUG-III)

The case mix system associated with the MDS 2.0 is the RUG-III, which classifies residents into similar groups based on their clinical characteristics and a sample of resources consumed during the assessment observation period.

Over 100 MDS 2.0 data items affect the assignment of residents to one of the RUG-III groups. Key items are those related to cognitive and communication skills, mood and behaviour symptoms, ADL score, health conditions and special treatments or therapies received by the resident.

The RUG-III divides residents into seven major categories, which are further divided into 44 distinct sub-groups. The RUG-III major categories in Figure 2.11 are shown from left to right in descending order of the RUG hierarchy, where the order of the RUG hierarchy is based on the sub-group in each category with the highest relative per-diem average variable cost of care. In descending order of resource intensity it ranges from the Special Rehabilitation category to the Reduced Physical Function category.

Further information on the RUG-III grouper is available through the CCRS Web site at www.cihi.ca/casemix.

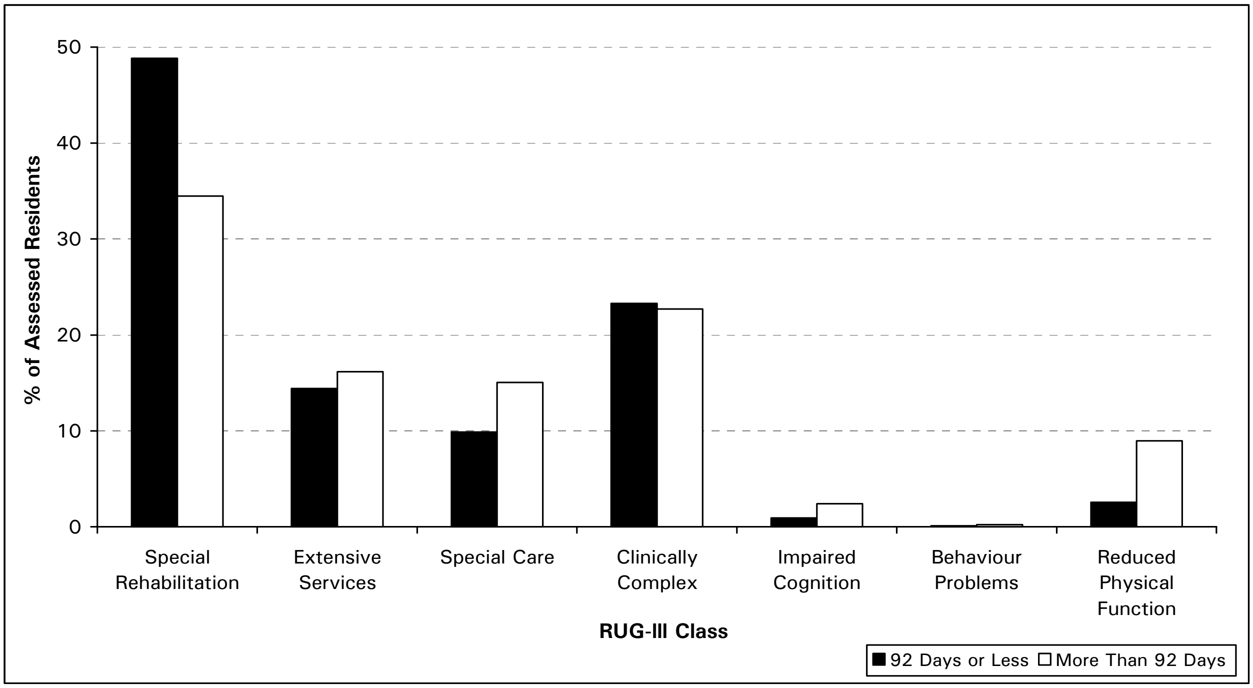

Figure 2.11 RUG-III Distribution, Hospital-Based Continuing Care, CCRS 2004–2005

Figure 2.11 illustrates the RUG-III distribution of the hospital residents who received MDS assessments. Overall, higher proportions of shorter-stay and longer-stay residents were classified into the top four RUG-III groups (93% of all hospital residents with assessments), demonstrating the relative resource intensity for care of this population. This distribution is consistent with the scores on the MDS Outcome Scales that provide evidence of a diverse population, the majority of whom were assessed as having complex health needs.

The Special Rehabilitation category represented the largest group with 44% of all assessed residents. One of the key criteria for this group is that residents receive physical, occupational or speech therapy treatment during the assessment period. Access to these therapies varies across facilities, based on funding and the availability of human resources. It is therefore important to note that the RUG-III classification does not necessarily reflect the residents' *need* for rehabilitation services; rather, the services they actually received.

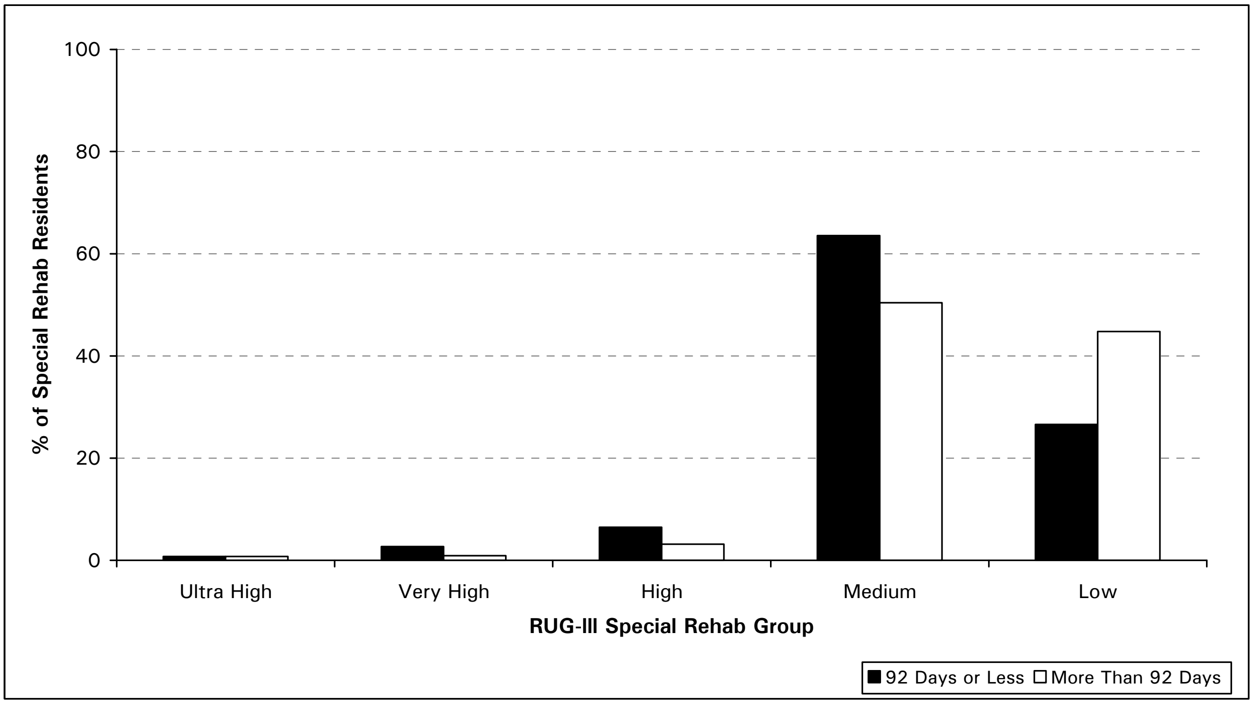

Figure 2.12 Distribution of Special Rehabilitation RUG-III Category, Hospital-Based Continuing Care, CCRS 2004–2005

Figure 2.12 illustrates the further breakdown of the Special Rehabilitation group.
For context, to qualify for Ultra High category of Special Rehabilitation, a resident requires 12 hours or more per week of physical, occupational and/or speech therapy with at least two of these therapies on three or more days each week.

Only 8% of Special Rehabilitation residents fell into the three high rehabilitation groups. This is not surprising given that in Ontario, individuals who require such intensive levels of rehabilitation therapies would generally receive their care in a specialized hospital rehabilitation unit or facility, rather than in CCC.

Chapter 3. Residential Facility-Based Continuing Care

This chapter presents a profile of residential facility-based continuing care, using data from a sample of Nova Scotia nursing homes. As discussed in Chapter 1, results should be interpreted with some caution given the small numbers of resident records in the CCRS this year for this care setting.

Source of Admission

As illustrated in Figure 3.1, 61% of residents admitted to a residential care facility in 2004–2005 came from a hospital, compared with 87% seen in the hospital sector. Nearly one-quarter were admitted directly from home, again contrasting with hospitals, where only 10% were admitted from home. A small number of residents (13%) was admitted from other residential care facilities, likely those who had been waiting for a bed in their facility of choice.

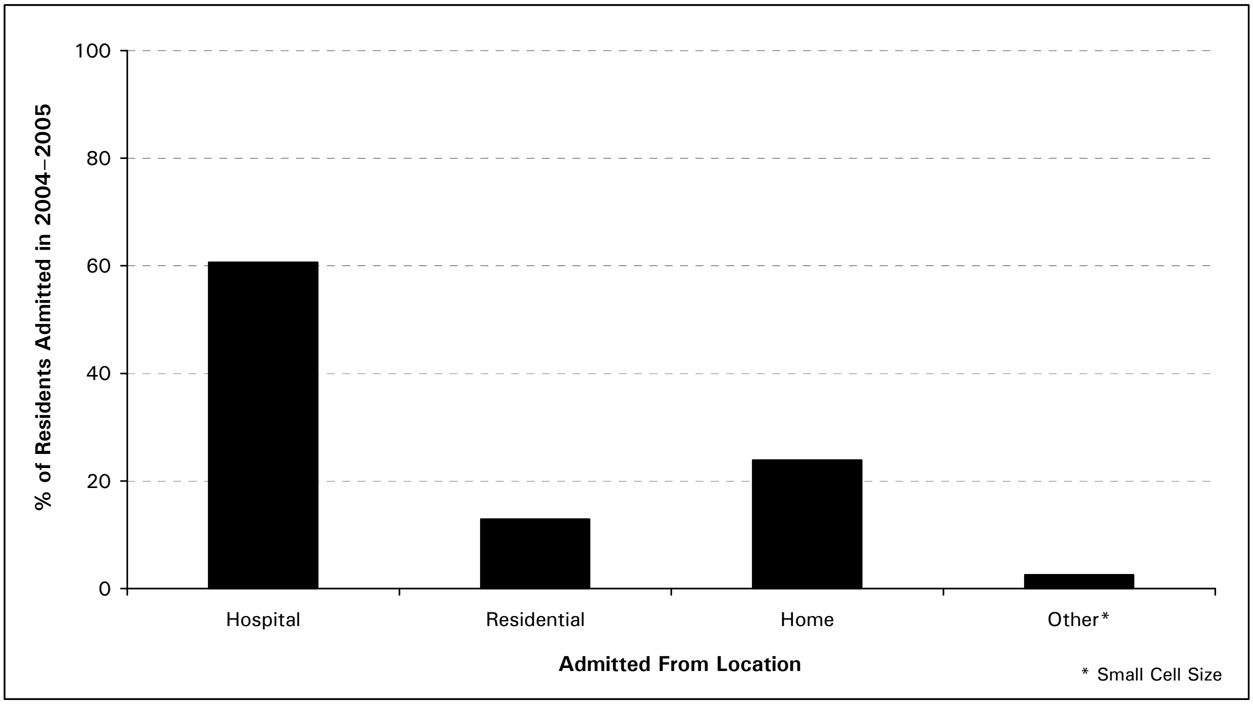

Figure 3.1 **Source of Admission for All Residents Admitted to Residential Continuing Care, CCRS 2004–2005**

Discharges

Analysis of discharges was based on all residents who were discharged during the fiscal year, including those who died in the facility. In the case where a resident left the residential facility for periods exceeding 24 hours on multiple occasions during the year, each of these is generally captured in a discharge record for the CCRS. This may occur due to temporary transfers to other levels of care. The last discharge record available in the year was used for the analysis illustrated below.

In 2004–2005, 121 residents were discharged from the Nova Scotia sample of residential care facilities, representing 22% of the total resident count for the year. This indicates a relatively low turnover of the residential care facility population and contrasts sharply with the discharge rate of 76% seen in the hospital-based continuing care sector.

Figure 3.2 illustrates different distributions of residents who stayed 92 days or less and those who stayed longer than 92 days prior to discharge. Two thirds of the discharged shorter-stay residents and 23% of longer-stay residents went to hospitals. This contrasts with the hospital-based residents at 12% of shorter- and 14% of longer-stay residents discharged to other hospital levels of care.

Transfers to other residential care facilities (again, likely related to provincial policy regarding residents' choice of preferred facility) represented 7% and 11% of discharged shorter-stay and longer-stay residents, respectively.

Of all discharged residents, none returned home, compared with 28% from the hospital facilities in Ontario. Of all discharged residents, 22% of shorter-stay and 64% of longer-stay residents died in the facility.

As a percentage of *all* residents served in the residential facilities during 2004–2005, 12% died in the facility compared with 27% in Ontario hospital-based continuing care.

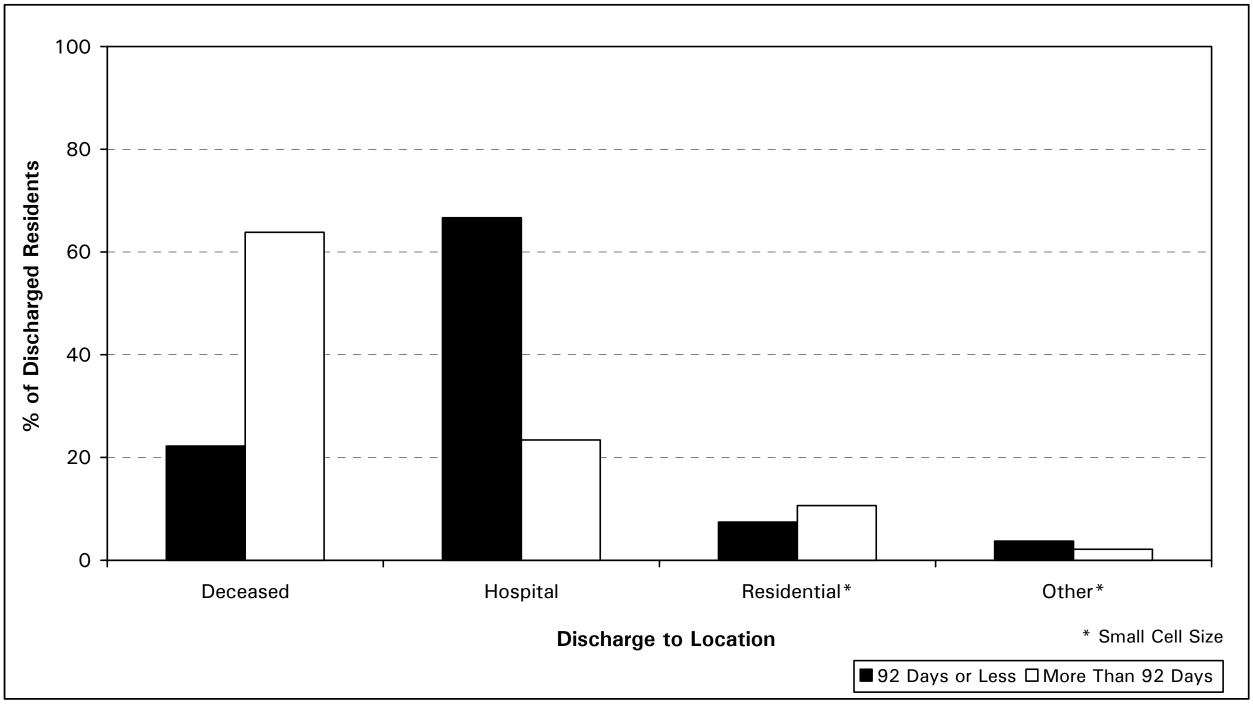

Figure 3.2 Distribution of Discharges from Residential Continuing Care, CCRS 2004–2005

Age and Gender

As illustrated in Table 3.1, females represented a larger majority of residents (71%) compared to the hospital sector (56%).

Table 3.1 Age and Gender Distribution, Residential Continuing Care, CCRS 2004–2005

Age Group	Female	Male	All
Younger than 65	2%	3%	5%
65 to 74	6%	3%	9%
75 to 84	20%	11%	31%
85 and older	43%	12%	55%
All Ages	**71%**	**29%**	**100%**

The younger population (less than 65 years) represented a smaller percentage (5%) of the total compared with this age group in the hospital sector (18%). In each of the higher age categories, the proportion of women steadily increased, with more than 3 times more women than men in the 85 and older group.

The 85 and older segment, at 55% of the residential population, was significantly larger than the corresponding group in the hospital sector (26%).

Figure 3.3 illustrates age and gender distributions for shorter-stay and longer-stay residents.

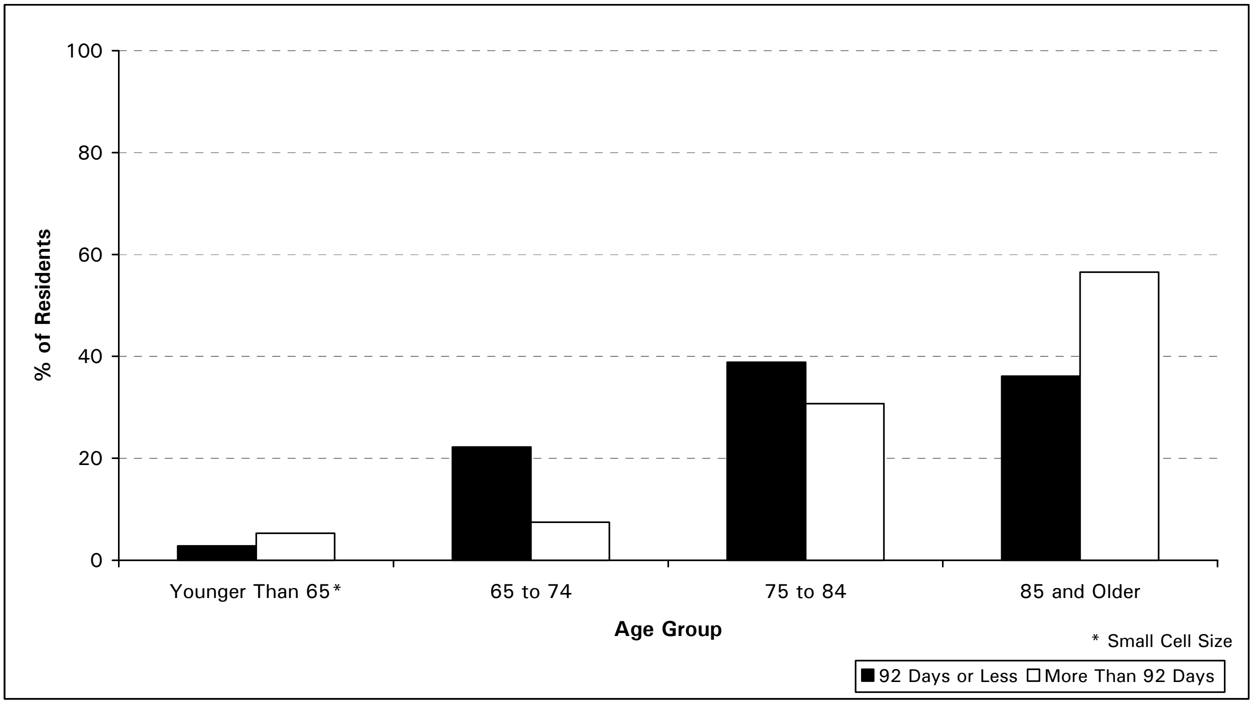

Figure 3.3 **Age Distribution Within Shorter- and Longer-Stay Resident Groups, Residential Continuing Care, CCRS 2004–2005**

The average age for shorter-stay residents was 81; and for longer-stay residents was 84 years.

Health Conditions

The MDS 2.0 assessment allows for recording of all diagnoses that affect the residents' condition or care. Table 3.2 highlights the most commonly reported disease categories and diagnoses on admission assessments. In the residential facilities, the most common diagnoses were Alzheimer's and non-Alzheimer's dementias (64% of the residents), followed by hypertension (45%) and arthritis (31%). Cancer was less frequently reported (8%).

Notably, the distributions of dementia (23%) and cancer (26%) in the Ontario hospital sector contrasted with these findings.

Table 3.2 Most Common Disease Categories/Diagnoses Reported on Admission, Residential Continuing Care, CCRS 2004–2005

Disease Categories/*Diagnoses*	% of Residents With MDS Assessments
Neurological	**77**
Cerebrovascular Accident	*14*
Dementias (Alzheimers and non-Alzheimers)	*64*
Heart/Circulation	**65**
Hypertension	*45*
Musculoskeletal	**40**
Arthritis	*31*
Psychiatric/Mood	**19**
Depression	*13*
Pulmonary	**13**
Emphysema	*13*
Cancer	*8*
Endocrine/Metabolic/Nutritional	**34**
Diabetes Mellitus	*26*

Outcome Scales

The MDS Outcome Scales are described in some detail in the previous chapter on hospital-based continuing care. Further information can be obtained through the inter*RAI* Web site at www.interrai.org.

Changes in Health, End-Stage Disease, Signs and Symptoms (CHESS)

The scale ranges from 0, for no instability, to 5, representing the highest level of clinical instability, and was based on 2004–2005 admission assessments.

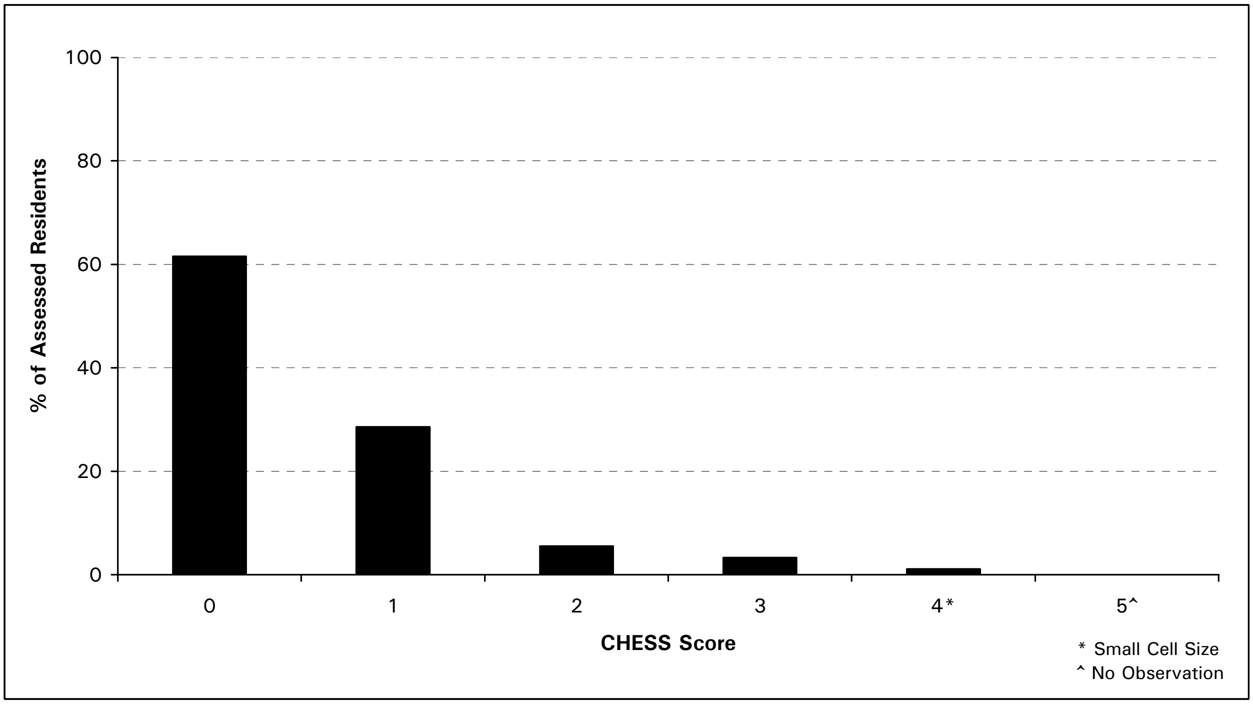

Figure 3.4 **CHESS Scores for Residents Assessed at Admission, Residential Continuing Care, CCRS 2004–2005**

A substantial proportion (61%) of the residential facility-based population admitted in 2004–2005 had a CHESS score of 0, indicating that the admission assessment reflected no key indicators of health instability. No residents scored 5 (highest risk) and only 4% of the residential care population scored 3 or higher on the scale. This distribution contrasted sharply with that of the hospital population, with nearly 40% of its residents scoring 3 or higher.

The average CHESS score on admission to a residential care facility was 0.5 compared with 2.1 in the hospital sector.

Activities of Daily Living (ADL)—Self-Performance Hierarchy Scale

The ADL Hierarchy score ranges from 0 to 6. A higher score indicates a greater degree of disability, based both on increased dependence upon others and the kind of ADLs (early-, mid- or late-loss) for which self-performance ability has been lost. Calculation of this, and subsequent outcome scales, was based on the last available assessment for a resident.

Figure 3.5 illustrates a broad distribution of functional capacity. The distribution of the ADL Hierarchy scale in residential care differed from that of the hospital population. In particular, the proportion of totally dependent longer-stay residents was significantly higher in the hospital sector, where 32% of longer-stay residents were totally dependent, compared with 15% in the residential facilities.

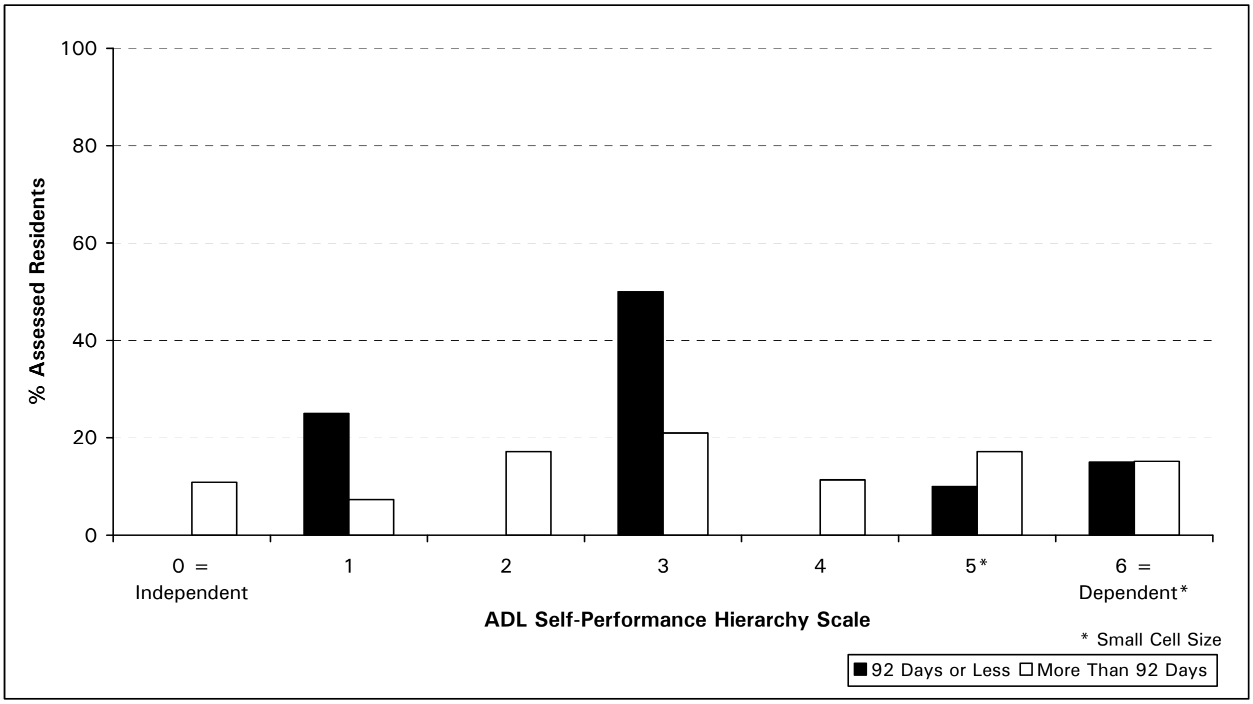

Figure 3.5 ADL Hierarchy Scale Score Distribution, Residential Continuing Care, CCRS 2004–2005

The average ADL score for shorter-stay residents was 3.0 and for longer-stay residents was 3.1 representing a moderate degree of ADL impairment. This suggests a somewhat less dependent population than that found in the hospital sector with average ADL scores of 3.6 and 4.2.

Cognitive Performance Scale (CPS)

The CPS score ranges from 0 to 6. The higher scores on the scale indicate greater levels of impairment in cognitive performance.

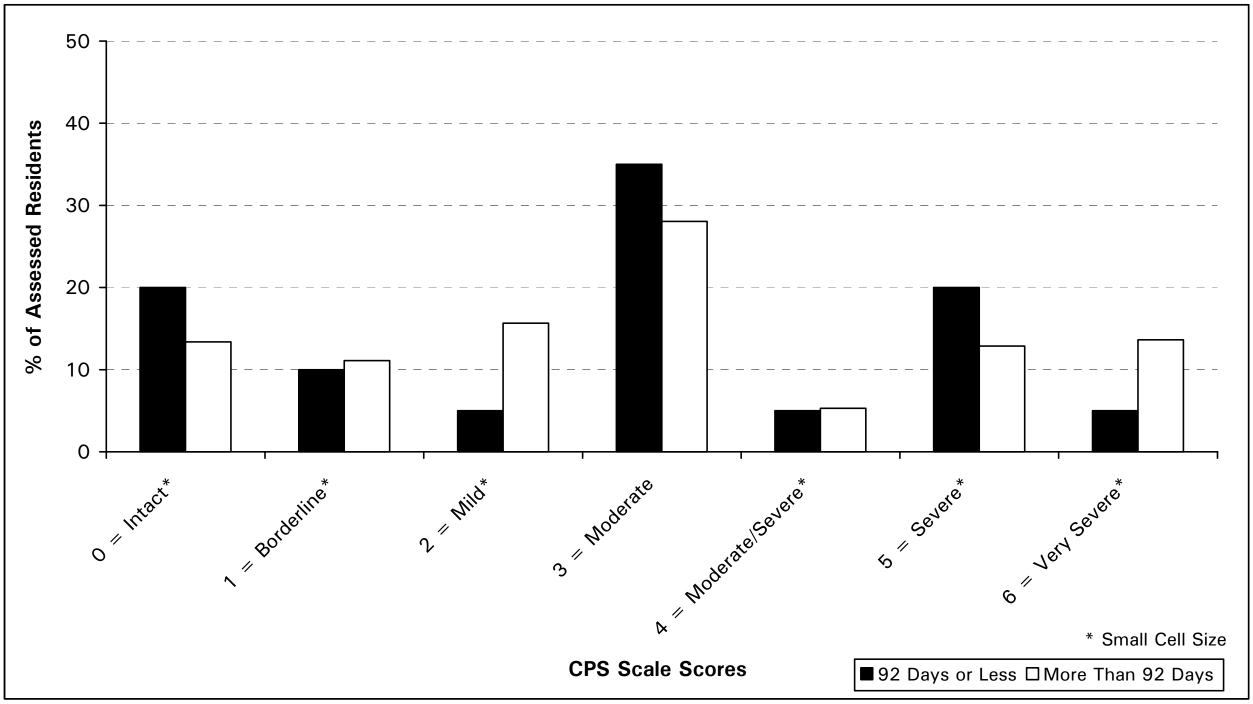

Figure 3.6 Cognitive Performance Scale Score Distribution, Residential Continuing Care, CCRS 2004–2005

Figure 3.6 illustrates a diverse population. This distribution differs from that of the hospital sector, where high proportions of hospital residents scored either 0 (28% of shorter-stay residents) or 6 (23% of longer-stay residents).

The average CPS scores for shorter-stay and longer-stay residents were 2.8 and 3.0, respectively, compared with 2.1 and 3.1 in the hospital setting, indicating greater levels of cognitive impairment in the residential sector and in the longer-stay population in both settings.

Index of Social Engagement (ISE)

The ISE ranges from 0 to 6, where a higher score indicates a greater level of social engagement.

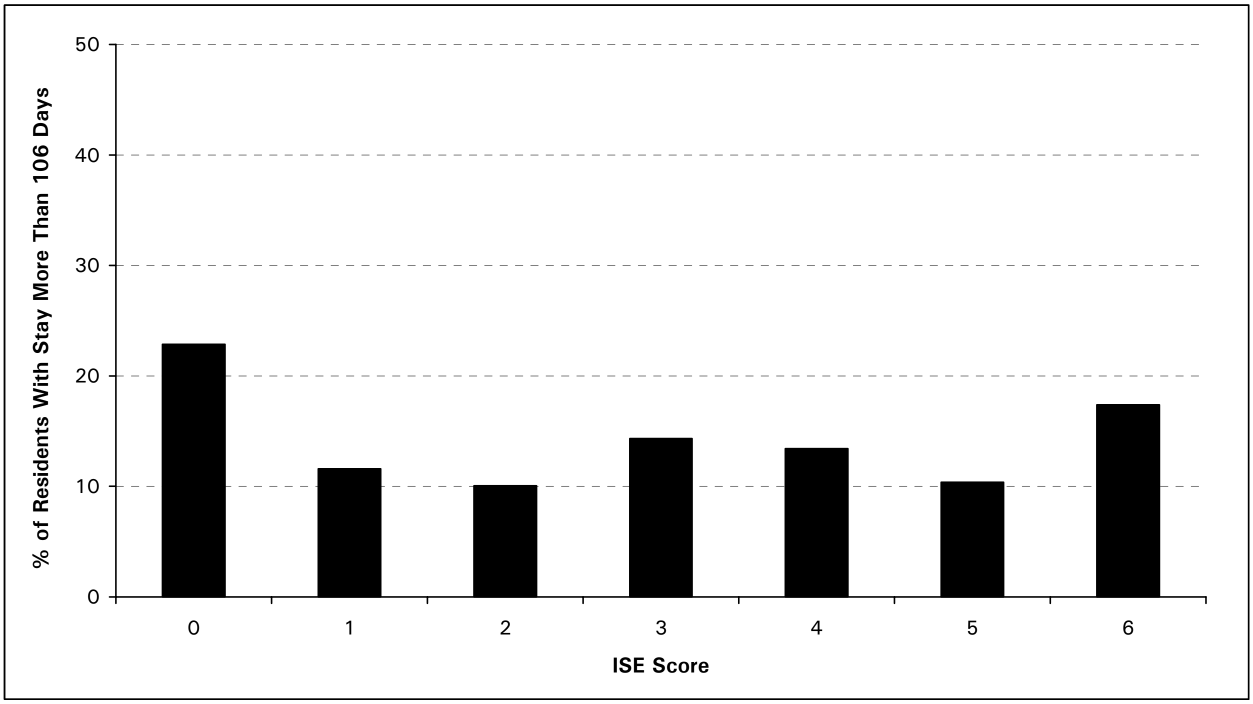

Figure 3.7 Index of Social Engagement Distribution, Residential Continuing Care, CCRS 2004–2005

Similar to the hospital population, there was a broad range of ISE scores. However, there were fewer nursing home residents with limited or no involvement. In the hospital sector, 59% of residents had limited or no involvement (score 0, 1 or 2), compared with 44% in the residential sector, likely reflecting the greater health instability of the hospital population.

The average ISE score in the residential care population was 2.8 compared with 2.2 for the hospital population, suggesting slightly more social engagement in the residential facilities.

Depression Rating Scale (DRS)

DRS scores range from 0 to 14, with a score of 3 or greater indicating the potential presence of a depressive disorder.

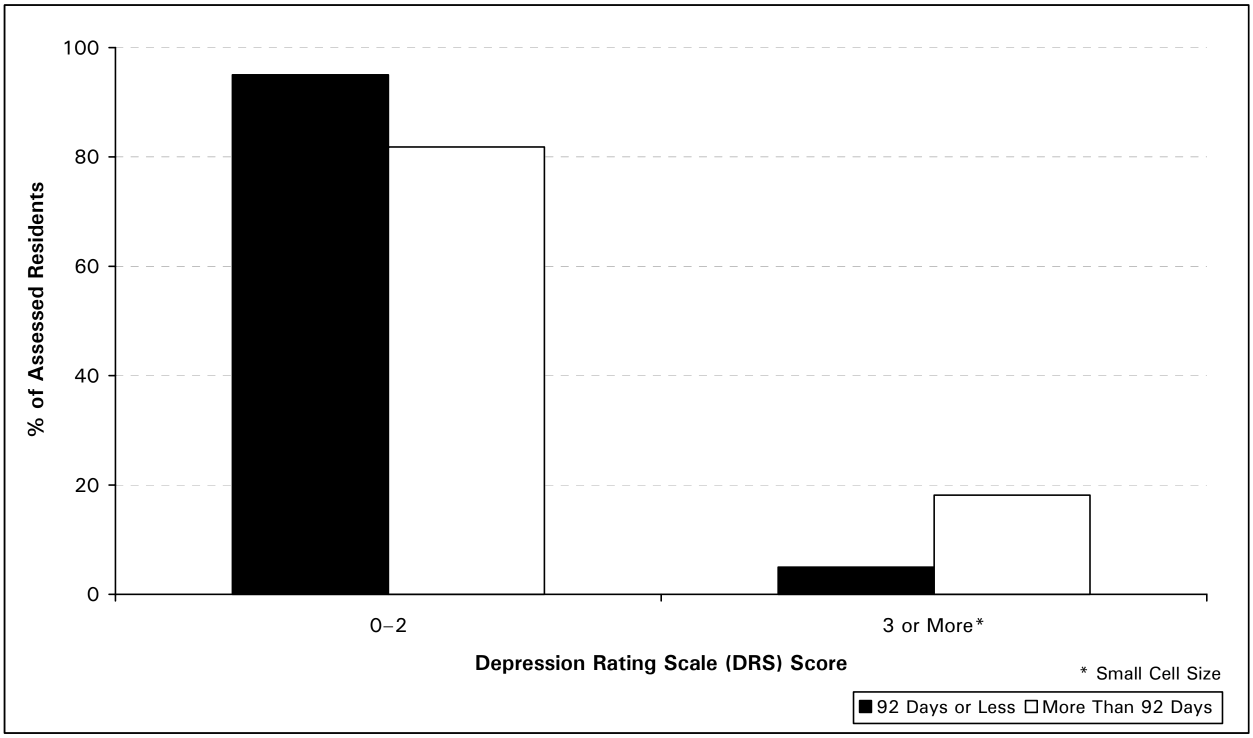

Figure 3.8 Depression Rating Scale Distribution, Residential Continuing Care, CCRS 2004–2005

As illustrated in Figure 3.8, a smaller proportion of both shorter-stay (5%) and longer-stay (18%) residents displayed some signs suggestive of a mood disorder, when compared with hospital-based residents at 21% and 28%, respectively.

Similar to the pattern seen in the hospital sector, shorter-stay residents demonstrated slightly lower DRS scores when compared with longer-stay residents, with average scores of 0.6 and 1.3, respectively.

Pain Scale

Pain Scale scores range from 0 to 3, with a score of 0 indicating no pain, and a score of 3 indicating severe daily pain.

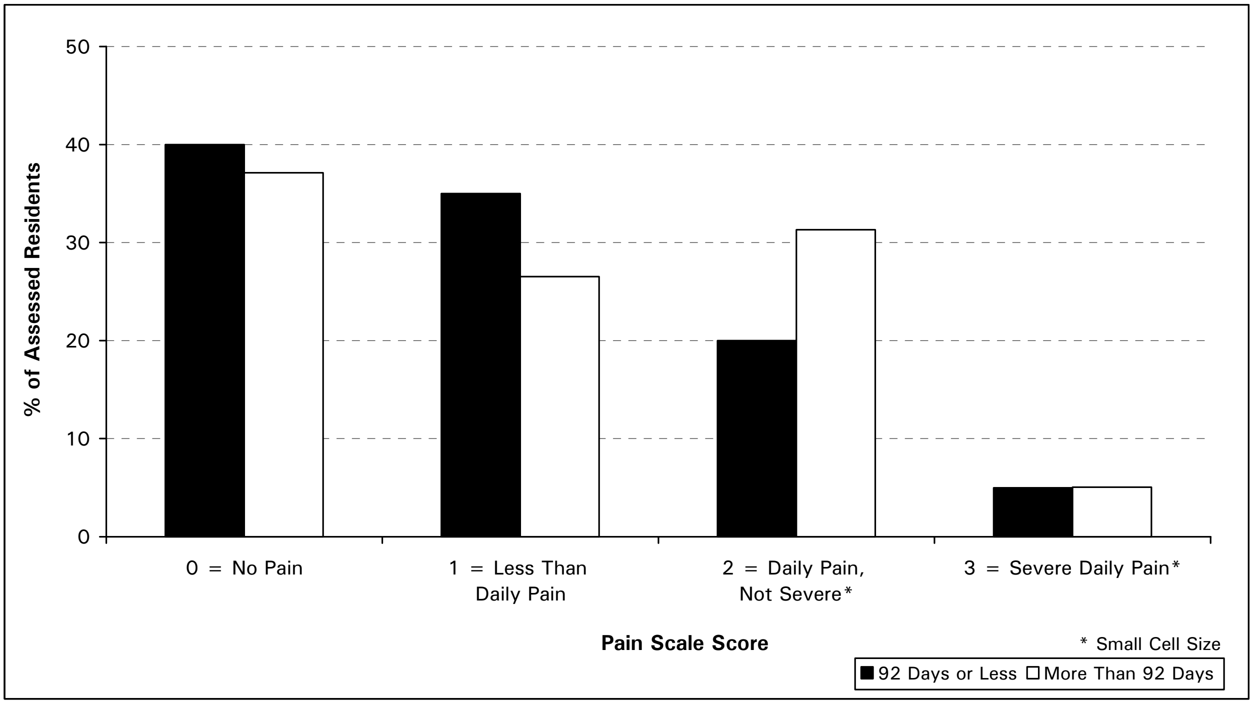

Figure 3.9 **Pain Scale Score Distribution, Residential Continuing Care, CCRS 2004–2005**

More than one third of residents were assessed as having some degree of daily unrelieved pain, with 31% assessed as not severe and 5% assessed as being in severe daily pain. The rates of daily pain in hospitals were slightly higher, with 37% and 10% reporting non-severe and severe pain, respectively.

More residents in residential care were assessed as pain-free than their hospital-based counterparts. Of shorter-stay residents, 40% were assessed as pain-free in residential care, compared with hospital-based residents at 21%. Longer-stay residents were more similar, with 37% and 30% assessed as pain-free in residential care and hospitals, respectively.

In residential care facilities, average pain scores for shorter-stay and longer-stay residents were 0.9 and 1.0, respectively, slightly lower than the averages in the hospital sector (1.4 and 1.2, respectively).

Aggressive Behaviour Scale (ABS)

The ABS score ranges from 0 to 12. A higher score indicates a higher frequency of aggressive behaviours.

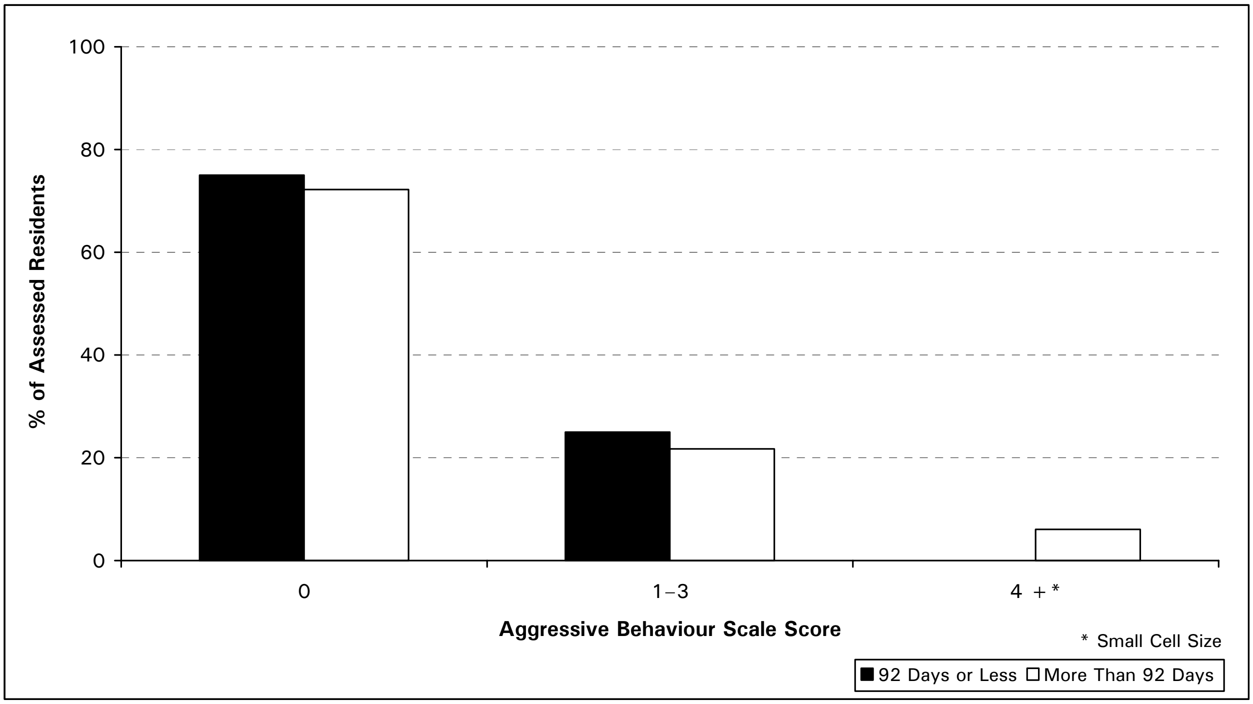

Figure 3.10 Aggressive Behaviour Scale Distribution, Residential Continuing Care, CCRS 2004–2005

The distribution of the ABS in this population, as illustrated in Figure 3.10, was similar to that in the hospital sector. Shorter-stay residents were slightly less likely to demonstrate aggressive behaviours than longer-stay residents, with average ABS scores of 0.5 and 0.8, respectively.

Comparing these average scores with those of the hospital population, there was somewhat less aggressive behaviour recorded overall in the residential care facilities. This finding is of particular interest, given the high prevalence of reported dementia in the residential care population[16, 17], which may contribute to aggressive behaviour.[17, 18]

Resource Utilization Groups, Version III (RUG-III)

A brief overview of the RUG-III methodology may be found in Chapter 2. Further detail is available through the CCRS Web site at www.cihi.ca/casemix.

The RUG-III divides residents into seven major categories, which are further divided into 44 distinct sub-groups. The RUG-III categories in Figure 3.11 are shown from left to right in descending order of the RUG hierarchy. The order of the RUG hierarchy of categories is based on the sub-group in each category with the highest relative per-diem average variable cost of care. In descending order it ranges from the Special Rehabilitation category to the Reduced Physical Function category. Further information on the RUG-III grouper is available through the CCRS Web site at www.cihi.ca/casemix.

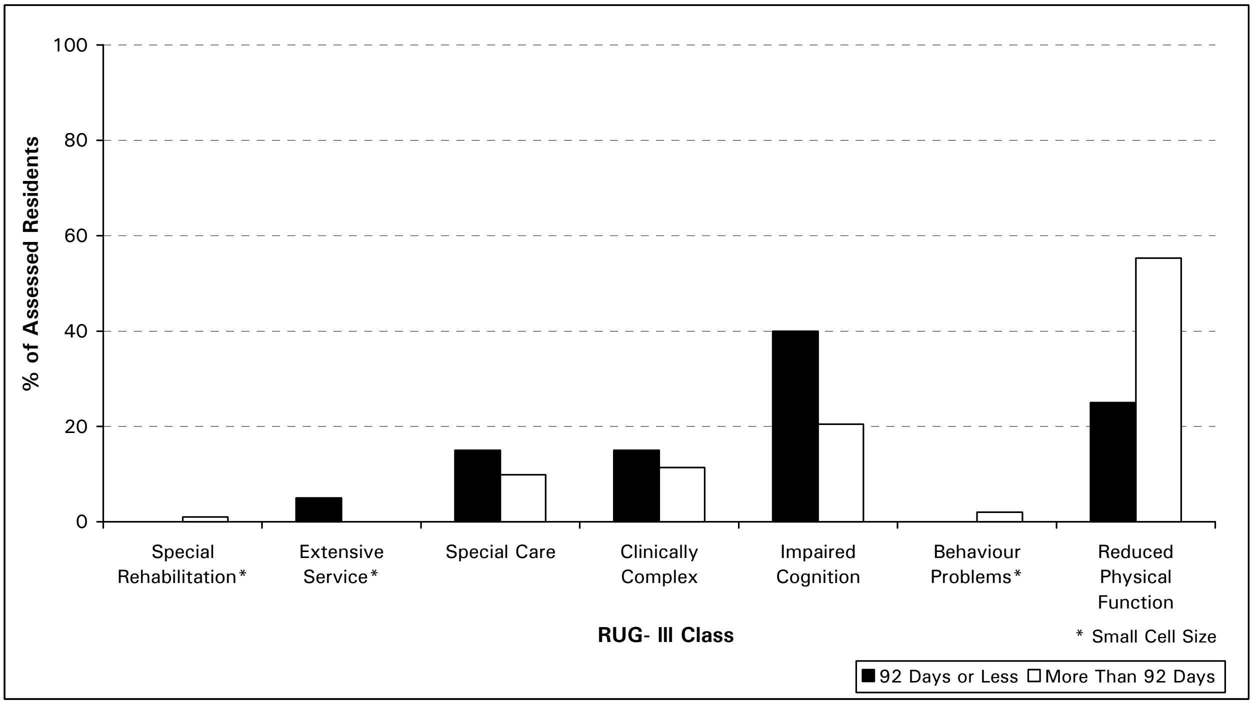

Figure 3.11 RUG-III Distribution, Residential Continuing Care, CCRS 2004–2005

Figure 3.11 illustrates a very different, almost "mirror-image" RUG-III distribution from that documented in the hospital population. Whereas the vast majority (93%) of assessed hospital residents fell into the top four RUG-III categories, 75% of the residential care population was found in the Impaired Cognition and Reduced Physical Function groups, two of the lower resource-intensity groups.

As noted in Chapter 2, RUG-III grouping is strongly driven by the receipt of rehabilitation services. If these are not available in a facility, residents will qualify for a RUG group that is further down the RUG category hierarchy.

Chapter 4. Discussion and Future Directions

The preceding analyses reveal some significant differences between the two types of continuing care facilities currently submitting data to the CCRS and the populations they serve. The emerging portrait is summarized below, followed by a discussion of next steps for CCRS research and reporting.

The Emerging Portrait

Facility Characteristics

Many of the Ontario hospital facilities were co-located with acute care services and more than half were units of fewer than 30 beds within larger multi-purpose hospitals. The largest facility reported 431 hospital-based CCC beds.

By contrast, six of the 7 participating Nova Scotia nursing homes were free-standing, with more than half reporting 60 or more beds. The largest residential care facility reported 152 beds.

Resident Characteristics

The data suggested a substantially higher turnover of residents in the Ontario hospital-based continuing care. Hospitals were conducting more admission assessments, while nursing homes were caring for a more stable population and doing more follow-up assessments.

Hospitals admitted large numbers of new residents who were discharged or died before an assessment could be completed, thus eliminating the possibility of understanding their clinical characteristics and resource utilization. However, the analysis of clinical characteristics for the majority of residents who did receive an assessment supported the emerging profile of the sector.

Additional analysis will be required to further explore the many potential sub-populations of continuing care residents within the continuum. From this initial exploration of the data, we may begin to characterize the shorter- and longer-stay populations. Some of the key findings noted include:

- Longer-stay hospital residents were primarily discharged to other hospitals or residential facilities, or they died in the hospital.
- Shorter-stay residents were more likely to die in the hospital or go home, and less likely to be discharged to other facilities.
- Longer-stay residents in both sectors were, on average, more cognitively impaired, and more likely to show signs of depression or aggressive behaviour, than shorter-stay residents.
- Shorter-stay residents in the hospital sector were primarily found in the Special Rehabilitation RUG-III category.

Table 4.1 highlights the differences observed in hospital and residential continuing care facilities, combining the results for both shorter and longer-stay residents. This summary suggests that the hospital and residential care facilities play different roles and serve different populations within the continuing care sector.

Table 4.1 Selected Characteristics of Continuing Care Populations in Hospital-Based and Residential Facilities, CCRS 2004–2005

	Hospital-Based (Ontario)	Residential Facility–Based (Nova Scotia)
All Residents Active in 2004–2005		
Average Age	76	84
Younger than 65 (%)	18	5
85 and Older (%)	26	55
Female (%)	56	71
Admitted from Hospital[a] (%)	87	61
Discharged to Hospital (%)	13	33
Discharged Home[b] (%)	22	0
Died in Facility[c] (%)	27	12
Stayed 92 days or Less (%)	70	7
Residents with Assessment(s)		
Most Common Diagnosis (%)	Hypertension 42	Dementia 64
Diagnosis of Cancer (%)	26	8
Some Indication of Health Instability[d] (%)	82	38
Total Dependence in ADL[e] (%)	22	15
Moderate/Severe Cognitive Impairment[f] (%)	48	60
Limited or No Social Engagement[g] (%)	59	44
Signs of Depression[h] (%)	24	18
Daily Pain[i] (%)	47	36

a Residents admitted from hospital as % of all residents admitted in 2004–2005.
b Residents discharged home as % of all residents.
c Residents who died in the facility as % of all residents.
d CHESS ≥1
e ADL Hierarchy = 6
f CPS ≥3
g ISE <3
h DRS ≥3
i Pain Scale ≥2

Resource Utilization

Residential care facilities have been defined and contrasted with hospitals offering continuing care services by Statistics Canada for the purpose of the Residential Care Facilities (RCF) Survey, conducted annually since 1974. "Generally, residential care facilities provide a level of care that is below that found in hospitals, although there is some overlap."[19] The preceding analysis of the RUG-III groupings and resident characteristics provide support for this observation.

Specifically, hospital residents were more likely to be found in the more resource-intensive case mix groups, particularly the Special Rehabilitation groups; while those in residential care were generally found in the less resource-intensive groups, such as the Impaired Cognition and Reduced Physical Function groups. There was clearly some overlap, with similar proportions of residents found in the "middle" groups (Special Care and Clinically Complex).

Hospitals and residential care facilities appear to target certain distinctly different resident populations, while also serving some populations with similar clinical characteristics and resource needs.

Future Directions

This report represents an important beginning. Despite the limitations of the data described in Chapter 1, the findings provide solid evidence to support the concept of a continuum within facility-based continuing care. To capture information on the continuing care population being served at home, the CIHI Home Care Reporting System (HCRS), will be launched as a pan-Canadian system in April 2006. For more information, visit www.cihi.ca/homecare.

As more data flow to the CCRS in the coming years, there will be opportunities, not only for further documentation of the structural and population differences across the continuum, but also for exploration of benchmarking of outcomes to allow facilities, regions, provinces and territories to search for best practices. International comparisons will also be possible.

Given its richness as a source of longitudinal clinical, demographic and resource utilization data in the facility-based continuing care sector, CCRS will be increasingly valuable for monitoring the rapidly evolving models of service delivery as health care renewal activities continue across the country. Providers, planners and policy-makers will have further evidence to support their decisions and information to support accountability.

Over the next three years, data are expected to flow to CIHI from British Columbia, Alberta, the Yukon, Saskatchewan and Manitoba, where MDS 2.0 implementations are already well underway. With these data, the emerging portrait will become clearer.

Appendix A: Glossary of Terms and Abbreviations

ABS: Aggressive Behaviour Scale: an outcome scale designed to measure aggressive behaviours as observed by facility staff, including verbal and physical abuse, disruptive behaviour and resistance to care.

ADL: Activities of daily living.

Case Mix: A profile of residents in a given facility, region or province/territory, classified in groups based on clinical characteristics and service/resource utilization. In continuing care, the RUG-III grouping methodology is used for this purpose.

CCC: Complex Continuing Care—hospital-based continuing care beds in Ontario.

CCRS: Continuing Care Reporting System.

CHESS: Changes in Health, End-stage Disease, Signs and Symptoms: an outcome scale derived from the MDS 2.0, designed to predict mortality associated with frailty and to measure instability in health as clinical outcomes.

CPS: Cognitive Performance Scale: an outcome scale derived from the MDS 2.0, designed to measure levels of cognitive impairment.

DRS: Depression Rating Scale: an outcome scale derived from the MDS 2.0, designed to identify, measure and screen for signs and symptoms of depression.

ISE: Index of Social Engagement: an outcome scale derived from the MDS 2.0 that measures interaction, participation, planning etc.

MDS 2.0: Minimum Data Set 2.0—an inter*RAI* assessment used in facility-based continuing care.

RAI: Resident Assessment Instrument: includes the clinical assessment (MDS 2.0) and resident assessment protocols (RAPs) for facility-based continuing care.

RUG-III: Resource Utilization Group, Version III: a grouping methodology to categorize similar continuing care residents in terms of clinical characteristics and resources used in their care.

QI: Quality indicator—generally expressed as a rate or percentage to highlight variation in an important outcome or process of care.

Appendix B: Endnotes

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