NRS
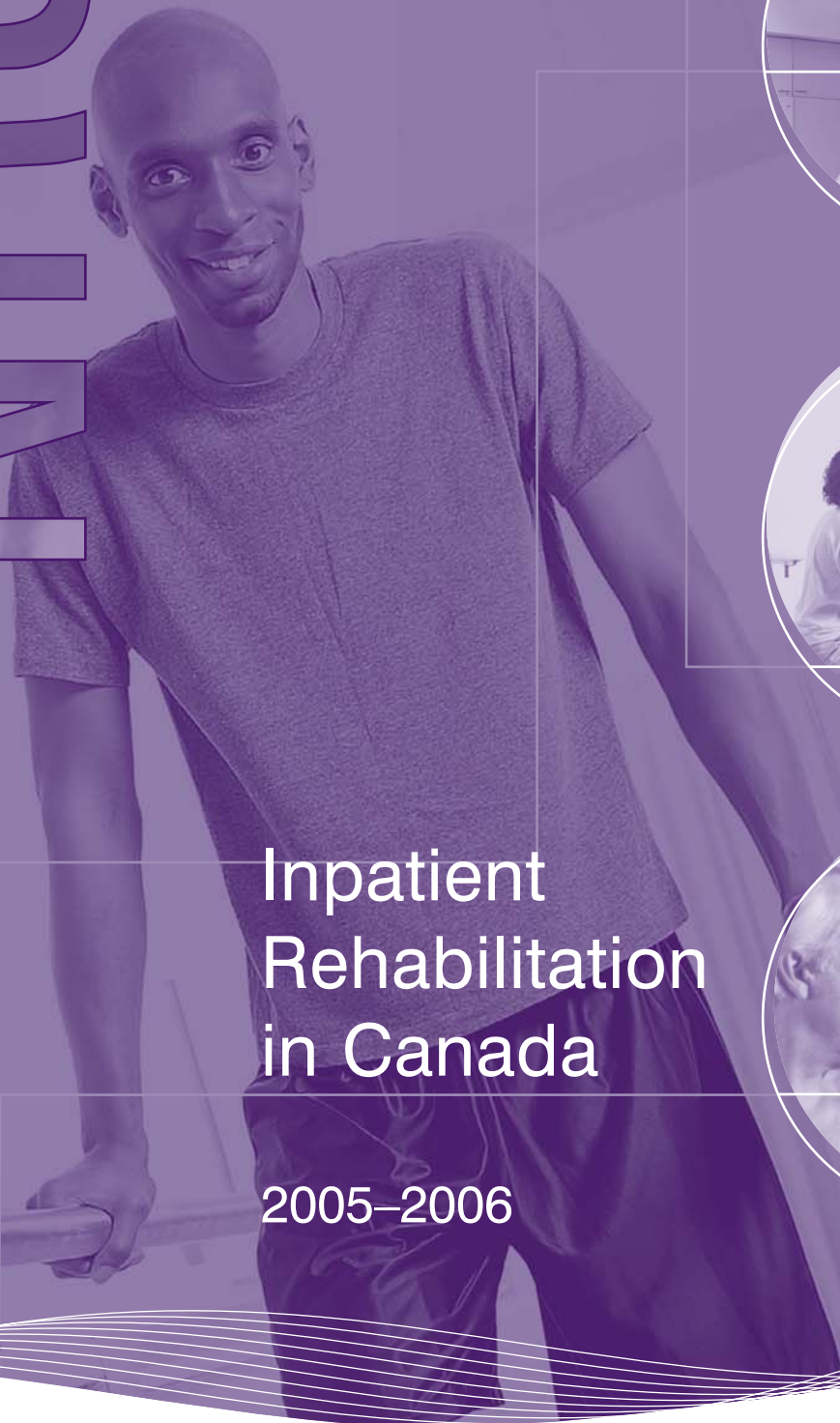
Inpatient Rehabilitation in Canada

2005–2006

National Rehabilitation Reporting System

Canadian Institute
for Health Information

Institut canadien
d'information sur la santé

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Inpatient Rehabilitation in Canada, 2005−2006

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Acknowledgements

Highlights

- *Inpatient Rehabilitation in Canada, 2005–2006* is the fourth public report based on data from the National Rehabilitation Reporting System (NRS).

- Analyses contained within the report are based on data for 33,408 clients who were discharged from 91 participating hospitals in seven provinces during 2005–2006.

- A total of 892,340 inpatient rehabilitation days were reported to the NRS for 2005–2006.

- In 2005–2006, most clients (92%) admitted to inpatient rehabilitation in participating NRS facilities were referred from inpatient acute care units.

- Among clients for whom a date ready for admission to rehabilitation was known during 2005–2006, 55% were admitted to inpatient rehabilitation the same day they were deemed clinically ready.

- The average age of clients receiving inpatient rehabilitation services in 2005–2006 was 71, equivalent to the average age in the previous year.

- The dominant health condition in inpatient rehabilitation was orthopaedics, representing 49% of all episodes reported to the NRS for 2005–2006.

- Clients receiving rehabilitation following a stroke were the second largest group reported to the NRS for 2005–2006, at 16% of all submitted records.

- Median length of stay in inpatient rehabilitation in 2005–2006 was 17 days, down from 19 days in 2004–2005.

- Clients receiving rehabilitation for arthritis had the shortest median length of stay at 14 days during 2005–2006, while burn clients had the longest median length of stay at 50 days.

- Following rehabilitation in 2005–2006, 83% of clients who had been living in a private dwelling (e.g. house or apartment) prior to admission were able to return to that type of living setting.

- Eight percent of clients living in a private dwelling prior to admission were discharged to a residential care facility upon completing rehabilitation in 2005–2006.

- Orthopaedic clients had the highest rate of return to a private dwelling of all client groups at 89% during 2005–2006, while stroke and burn clients had the lowest rate at 72%.

- The majority of clients were referred for some type of service through a facility or agency following their discharge from rehabilitation in 2005–2006. Thirty-seven percent of clients were referred to home care agencies and 13% were referred to ambulatory care services.

- Nine out of every ten clients (91%) were determined to have sufficiently met their service goals at discharge from inpatient rehabilitation during 2005–2006.

- Among clients who reported experiencing pain at the time of admission and who were able to rate their level of pain at discharge in 2005–2006, over two-thirds (68%) reported an improvement in pain levels and/or fewer activity limitations due to pain by the end of their stay in rehabilitation.

- During 2005–2006, more males were admitted to inpatient rehabilitation for traumatic brain dysfunction, traumatic spinal cord dysfunction and major multiple trauma then females in the same age categories.

- Data used to produce the charts and graphs in this report, are available at www.cihi.ca on the "Quick Stats" page. Throughout this report, references to the relevant tables can be found at the end of each paragraph or section.

Chapter 1. Introduction and Background

Objectives of the Report

Inpatient Rehabilitation in Canada, 2005–2006 is the fourth public report based on data from the National Rehabilitation Reporting System (NRS). The Canadian Institute for Health Information (CIHI) developed the NRS to support inpatient rehabilitation service planning and policy development. Data are available for inpatient rehabilitation episodes from fiscal year 2000–2001 onwards.

This year's report provides information on inpatient physical rehabilitation services that occurred between April 1, 2005, and March 31, 2006, in participating rehabilitation facilities. This report was developed to provide information for people involved with or interested in the provision of inpatient rehabilitation services, including clinicians, hospital managers, system managers and policy makers.

The overall goal of the report is to enhance knowledge about inpatient rehabilitation services in participating facilities across the country. In doing so, CIHI hopes to facilitate discussion on the current state of hospital-based rehabilitation and on future challenges and opportunities facing the sector.

Specific objectives for this report are:

- To provide background information on the NRS;

- To present aggregate 2005–2006 data from the NRS;

- To stimulate discussion on the information needs for the inpatient rehabilitation sector and further enhancement of the NRS.

Organization of the Report

Inpatient Rehabilitation in Canada, 2005–2006 contains four chapters. These chapters are presented in largely the same format as the first three chapters and the conclusion chapter in the previous iterations of *Inpatient Rehabilitation in Canada*, to allow comparisons. While there may be few changes in patterns of rehabilitation services in a single year, data received since NRS inception make trending analyses valuable.

Chapter 1 provides an introduction to the report, including a brief history of the NRS as well as its current status. An overview of the methodology used in the analyses and reporting is provided. This chapter examines the role of the NRS in facilitating information collection, analysis and dissemination. Some contextual information on the facilities participating in the NRS is provided to support an enhanced understanding of the inpatient rehabilitation sector. No facilities that have submitted data to the NRS are identified by name in this report.

Chapter 2 provides an overview of the socio-demographic characteristics of the clients who were discharged from participating facilities following rehabilitation during fiscal year 2005−2006. Summary statistics, such as living arrangements, informal support and age/sex distribution, are presented in order to provide a snapshot of the rehabilitation population. Administrative information, such as length of stay and referral patterns, is also presented.

Chapter 3 presents data on the Rehabilitation Client Groups (RCG)[i] reported in the NRS. Clients are grouped into RCGs based on the diagnosis or functional impairment that led to the rehabilitation admission. Indicators are presented for the various groups, including days waiting for admission to rehabilitation and reasons for discharge. This chapter also introduces analyses on clinical outcomes assessed during inpatient rehabilitation. Clinicians, managers and policy makers may be interested in this section, which presents some high-level outcomes and the potential factors affecting these outcomes.

Chapter 4 summarizes and includes a discussion on some of the findings from the 2005−2006 report, including potential directions and future NRS analytical activities.

While many readers may be familiar with the concepts used within this report, others may be encountering NRS data for the first time. A glossary of terms (Appendix A) is included at the end of the report. Appendix B contains a brief description of each Rehabilitation Client Group (RCG). The appendices will assist readers in understanding the terms and definitions commonly used in the NRS.

The Canadian Institute for Health Information (CIHI)

CIHI collects and analyzes information on health and health care in Canada and makes it publicly available. Canada's federal, provincial and territorial governments created CIHI as a not-for-profit, independent organization dedicated to forging a common approach to Canadian health information. CIHI's goal: to provide timely, accurate and comparable information. CIHI's data and reports inform health policies, support the effective delivery of health services and raise awareness among Canadians of the factors that contribute to good health.

For more information, visit the CIHI website at www.cihi.ca.

The National Rehabilitation Reporting System

Hospital-based inpatient rehabilitation is an important component of the continuum of health services in Canada. By facilitating the collection of standardized information on rehabilitation clients, the NRS provides an opportunity to enhance the knowledge surrounding inpatient rehabilitation services across the country.

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i. Rehabilitation Client Groups (RCGs) adapted with permission from the UDS$_{MR}$ impairment codes. Copyright © 1997 Uniform Data System for Medical Rehabilitation, a division of U B Foundation Activities, Inc., all rights reserved.

The NRS was developed to support data collection by facilities providing services to adult inpatient rehabilitation clients. These rehabilitation services are provided in specialized rehabilitation facilities, or in general hospitals with rehabilitation units, programs or designated beds.

Inpatient rehabilitation clients receive services provided by health professionals such as nurses, physiotherapists, occupational therapists and physicians specializing in physical medicine and rehabilitation. These professionals assist clients in maximizing their physical and cognitive function through training and education, and prepare them to return to the community following illness or injury. Clients reported in the NRS include only those with a primary health condition that is physical in nature. As such, the term "rehabilitation" in the context of NRS reporting does not include rehabilitation services provided for a mental health condition or for drug or alcohol addiction.

A cornerstone of the NRS is the concept of human function and the focus of rehabilitation in assisting individuals to achieve maximum independence in daily living, be it at home or in an assisted-living facility. The NRS indicators and reports provide a source of information for defining and describing functional outcomes for individuals who have received rehabilitation services. For greater comparability, this information is grouped according to the nature of the illness or injury. These groups form the basis for NRS reporting and are known as Rehabilitation Client Groups (RCG). There are seventeen major RCGs, including conditions such as stroke, limb amputation and brain injury. (A complete list is in Appendix B.)

National Rehabilitation Reporting System: Development and Implementation

CIHI has been promoting health information standards for hospital-based inpatient rehabilitation services since 1995, when the organization initiated a national pilot study to develop and evaluate indicators, a minimum data set, and related case-mix grouping methodology. The CIHI pilot study, involving more than 2,000 adult rehabilitation clients, collected information on the characteristics and effectiveness of rehabilitation services in six provinces.

A national prototype reporting system for inpatient rehabilitation services was implemented in April 2000. The development was a component of the Health Information Roadmap Initiative, a collaborative effort between CIHI, Statistics Canada, Health Canada, provincial/ territorial health departments and many others.

Following the launch of the NRS, CIHI began producing comparative reports for facilities in February 2001, focusing on key indicators that were developed during the original CIHI pilot study. These comparative reports provide facilities with information to assess client outcomes, to examine access to inpatient rehabilitation and to evaluate programs and services.

By facilitating the collection of standard information, the NRS provides an opportunity to enhance the knowledge surrounding inpatient rehabilitation services across the country. As a result of its partly voluntary nature, the NRS does not have comprehensive coverage of all inpatient rehabilitation services at this time. Therefore, information derived from the NRS may not reflect the full picture of hospital-based inpatient rehabilitation in Canada.

More information on the NRS is available at www.cihi.ca\nrs or by contacting rehab@cihi.ca.

The National Rehabilitation Reporting System Data Set

The NRS data set consists of 75 data elements grouped into the following major categories:

- **Client Identifiers:** These are data elements used to identify individual records. Client names are never collected for the NRS database.

- **Socio-demographics:** Information such as birth date, sex, living arrangements and vocational status are collected to describe the types of clients admitted to rehabilitation programs.

- **Administrative:** Data are collected on wait times for admission and discharge, service interruptions, and provider types, in order to better understand accessibility to rehabilitation, factors influencing length of stay and resource utilization.

- **Health Characteristics:** Diagnoses and related co-morbidities at admission provide information on conditions most often seen in a rehabilitation setting, and conditions that may affect a client's ability to progress in the rehabilitation program.

- **Activities and Participation:** This is the largest section of the NRS data set and contains clinical assessments of motor and cognitive functional abilities of rehabilitation clients. The data are collected using the 18-item FIM™ instrument and six additional elements developed at CIHI that provide further information on cognitive abilities. More details on the items assessed with the FIM™ instrument, a standardized assessment tool developed by the Uniform Data System for Medical Rehabilitation (UDS$_{MR}$), are available in Appendix C.

Facilities collect the data when clients are admitted to, and when they are discharged from, the inpatient rehabilitation program. Facilities can also choose to complete an optional follow-up assessment on their clients between three and six months following discharge from the program. Collection of this follow-up information provides an opportunity to assess sustainability of functional outcomes that were gained during rehabilitation, as well as the level of client re-integration into the community.

The FIM™ Instrument

The FIM™ instrument is a standardized assessment tool developed by Uniform Data System for Medical Rehabilitation (USDmr) used in the NRS to measure functional independence at admission and discharge. It is composed of 18 items (13 motor items and 5 cognitive items) that are rated on a seven-level scale representing gradations from independent (7) to dependent (1) function, for an overall maximum score of 126 (18 items x 7), called the Total Function Score.[ii] The FIM™ instrument is a measure of disability, and looks at the caregiver burden associated with the level of disability. The Total Function Score can be broken down into motor and cognitive function scores, to provide more specific detail on areas of functional performance.

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ii. Total Function Scores referenced in this document are based on data collected using the FIM™ instrument. The 18-item FIM™ instrument referenced herein is the property of Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

Methodological Notes

The following information is presented in order to provide readers with an understanding of the general methodology used to calculate the indicators in this report. More detailed notes on specific methodologies are presented throughout the text, when appropriate.

Records Included in this Report

There were 36,237 records representing clients discharged from inpatient rehabilitation in 2005–2006. A total 2,829 of those records are for clients with a LOS of less than 4 days. These 2,829 records, whether Planned or Unplanned Discharges, are excluded because a limited amount of information is collected for these clients due to the short length of stay. The FIM™ instrument admission assessment, for example, can take up to three days to complete. As such, Function Scores are generally not available for clients staying three days or less in the rehabilitation program.

The majority of analyses in this report are based primarily on the remaining 33,408 pairs of complete NRS admission and discharge records for 2005–2006, and represent clients who stayed in inpatient rehabilitation for more than three days. These records may have admission dates either in 2005–2006 or in earlier fiscal years. Admission records with no corresponding discharge record in the NRS database as of May 15, 2006, the deadline for 2005–2006 data submission, are excluded from all analyses.

The majority of analyses conducted with data collected using the FIM™ instrument include only records with complete admission and discharge FIM™ instrument assessments. In cases where the client is transferred unexpectedly and does not return, there may not be an opportunity to complete a discharge FIM™ instrument assessment. Of the 33,408 complete NRS records discussed in this report, 32,114 have complete admission and discharge FIM™ instrument assessments. The remaining 1,294 records do not have completed discharge FIM™ instrument assessments.

While the unit of analysis throughout most of this report is the episode of care, it should be mentioned that it is possible for an inpatient rehabilitation client to have more than one episode of care per fiscal period. Table 1.1 shows that in the 2005–2006 fiscal year, over six percent of rehabilitation clients had more than one episode of care reported in NRS data.

Table 1.1.   NRS Clients with Multiple Episodes of Care, 2005–2006

Number of Episodes	Total Number of Clients	
	#	%
1	29,201	93.5
2	1,921	6.1
3	106	0.3
4 or More	11	<0.1
Total Clients	31,239	100.0

Source: NRS, CIHI 2005–2006.

To Summarize:

- Figures related only to admission Function Scores, are based on the 33,408 records submitted that include complete admission FIM™ instrument assessments.

- Figures that include analysis of both admission and discharge Function Scores are based on the 32,114 complete pairs of admission and discharge FIM™ instrument assessments submitted.

- The population of reference is included in all figures. Where the population differs from the numbers presented above, additional information is provided on the records included.

Scope of Participation in the National Rehabilitation Reporting System

As of May 2006, 95 inpatient rehabilitation facilities in Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta and British Columbia have submitted data to the NRS. The information in this report is based on data received from the 91 inpatient rehabilitation facilities in these seven provinces that submitted NRS data for the April 2005 to March 2006 reporting period.

Effective October 2002, the Ontario Ministry of Health and Long-Term Care mandated submission of NRS data for all facilities with designated adult inpatient rehabilitation beds in the province. No other provincial ministry of health or regional health authority had mandated NRS participation during the 2005–2006 period. Due to the mandate in Ontario and the size of that province's population most of the records in the NRS relate to inpatient rehabilitation activity in Ontario.

As a result of its partly voluntary nature, the NRS does not have comprehensive coverage of all inpatient rehabilitation services within Canada. Therefore, the information presented in this report does not necessarily reflect the full picture of hospital-based inpatient rehabilitation in Canada. However, the information from the NRS provides a valuable and growing opportunity to enhance the knowledge about inpatient rehabilitation services across the country and to assist planning and management activities in this sector.

Tables and Statistics for this Report

For readers who would like to access the aggregate data used to produce the figures presented in the NRS report, source tables are available at www.cihi.ca\nrs under "Quick Stats". Throughout this report, references to the Quick Stats tables can be found at the end of relevant paragraphs or sections. For a complete list of tables in this report, refer to Appendix D.

Data Suppression
This report adheres to CIHI's policies governing the publication and release of health information, developed to safeguard the privacy and confidentiality of data entrusted to CIHI. In compliance with these guidelines, cell counts between one and four within data tables are combined with other cells where appropriate. Three RCGs with small numbers of records have been aggregated into an "Other RCGs" category. The RCGs that were aggregated in this manner are: Developmental Disabilities, Other Disabling Impairments and Congenital Deformities. The intent of cell suppression and aggregation is to ensure anonymity and reduce the potential for disclosure of personal and identifiable information.

Computations
Statistics within this report and in the web-based tables are generally presented to one decimal place. As a result of rounding, percentages may add to between 99% and 101%. The report also presents mean values of certain characteristics at admission, discharge and the mean change between admission and discharge. Again, due to rounding, the difference between the mean admission and discharge values and the mean change presented may range from -1 to +1.

This report uses two statistical measures of central tendency: the median and the mean. The *median* is the point in a distribution that splits the distribution into two equal parts: half of the values lie below this point and half lie above it. The *mean*, or average, is calculated by summing all the values of the distribution and dividing that sum by the number of values presented. A mean can be affected by extreme values; therefore, for highly skewed distributions, the median is usually used, as it is less affected by such values. Throughout the report, the mean is referred to as the "average" and median is referred to as itself.

Data Quality and the National Rehabilitation Reporting System

CIHI has incorporated five dimensions of data quality into its corporate *Data Quality Framework*, first implemented during the fiscal year 2000–2001. When used as a conceptual framework, these dimensions facilitate the assessment of data quality in many types of system-level data holdings.

The framework implementation is part of the larger data quality cycle at CIHI in which issues are identified, addressed, documented and reviewed on a regular basis. It also standardizes information on data quality for users and helps to identify priority issues, which in turn is intended to trigger continuous improvements.

The five dimensions of data quality assessed at CIHI are:

1. **Accuracy:** that measures how well information within a database reflects what was supposed to be collected;

2. **Comparability:** that measures the extent to which a database can be properly integrated within broader health information systems;

3. **Timeliness:** that measures whether the data are available for user needs within a reasonable time period;

4. **Usability:** that measures how easily the storage and documentation of data allows users to utilize the data intelligently; and

5. **Relevance:** that measures incorporation of all of the above dimensions to some degree, but focuses specifically on value and adaptability.

CIHI conducts regular data quality assessments on the NRS with respect to coding guidelines, data collection software specifications and other validation procedures in order to identify areas of strength and weakness. The five dimensions stated above are used to drive the ongoing evaluation. Areas needing improvement are flagged for further action. CIHI uses this information both internally for data quality improvement, and externally, to respond to stakeholder inquiries.

Chapter 2. Characteristics of Inpatient Rehabilitation Clients

This chapter provides information on all inpatient rehabilitation activity reported to the National Rehabilitation Reporting System (NRS) in the April 1, 2005 to March 31, 2006 reporting period. All of the information is drawn from data in the NRS database at the Canadian Institute for Health Information (CIHI). As of the 2005–2006 fiscal year submission deadline (May 2006), 91 facilities from Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta and British Columbia had submitted data to CIHI. Approximately 87% of the data used for this report were submitted by participating NRS facilities in Ontario.

Participating facilities submit data that are collected when rehabilitation clients are admitted to the facility and again just prior to discharge. As mentioned in Chapter 1, the analyses in this report were primarily based on information from the 33,408 clients who were discharged from participating facilities during 2005–2006 and for whom complete admission and discharge assessments were submitted to and accepted by CIHI.

Facility Type

Facilities participating in the NRS are classified as either *General* or *Specialty*. This classification is specific to the NRS and is intended to facilitate comparative reporting; it is not necessarily consistent with facility classification methods used in various provinces or regions. According to the NRS definition, a General rehabilitation facility is a rehabilitation unit or collection of beds designated for rehabilitation purposes that is part of a general hospital offering multiple levels or types of care. A Specialty rehabilitation facility is one that provides more extensive and specialized inpatient rehabilitation services and is commonly a freestanding facility or a specialized unit within a hospital. The rehabilitation team at the facility decides which profile most closely represents their rehabilitation program(s) and categorizes itself as General or Specialty when beginning submissions to the NRS. Table 2.1 shows that 71% of facilities that submitted data to the NRS in 2005–2006 classified themselves as General facilities, and the remaining 29% were classified as Specialty facilities. About two-thirds (65%) of all clients were admitted to General rehabilitation facilities in 2005–2006 and a third (35%) were admitted to Specialty rehabilitation facilities.

Table 2.1.   Facility Types in the NRS, 2005–2006

	General Facilities		Specialty Facilities		All Facilities	
	#	%	#	%	#	%
Facilities Submitting to NRS in 2005–2006	65	71.4	26	28.6	91	100.0
Clients*	21,591	64.6	11,817	35.4	33,408	100.0

*Note: Refers to clients discharged in 2005–2006 with complete admission and discharge assessments.

Source: NRS, CIHI 2005–2006.

Admission Class

Figure 2.1 shows that 86% of clients discharged from inpatient rehabilitation programs during 2005–2006 were classified as *initial rehabilitation* clients, which refers to a first inpatient rehabilitation stay for that particular health condition. Eleven percent of clients met requirements for a *short stay* classification—primarily defined as an admission lasting between four and ten days. Two percent of clients were classified as *readmissions*—indicating that they received rehabilitation services relating to a condition for which they had previously received inpatient rehabilitation. Less than one percent of clients were transferred directly to a rehabilitation facility from another inpatient rehabilitation unit or program for ongoing treatment of the existing illness or injury, referred to as *continuing rehabilitation*.

The remaining admission class in the NRS is referred to as *(Un)planned discharge*. This refers to clients with an admission stay, planned or unplanned, that lasts three days or less. In 2005–2006, 2,845 records classified as (Un)planned discharge were submitted to the NRS. Due to the short admission time frame, the data collected on these clients is minimal, and a separate discharge assessment is not completed. The majority of analyses in this report include only those 33,408 clients for who complete admission and discharge assessments were submitted, and therefore do not include clients in the (Un)planned discharge admission class.

Figure 2.1 also shows that General facilities had a lower proportion of initial rehabilitation clients: 81% compared with 94% in Specialty facilities. Conversely, 99% of clients categorized as short stay were admitted to General facilities, accounting for over 17% of all admissions to General facilities in the NRS. Seventy-six percent of NRS clients classified as readmission or continuing rehabilitation were admitted to Specialty facilities, and together these two admission classes accounted for slightly more than 5% of all admissions to Specialty facilities. *(Quick Stats, Table 2.1)*
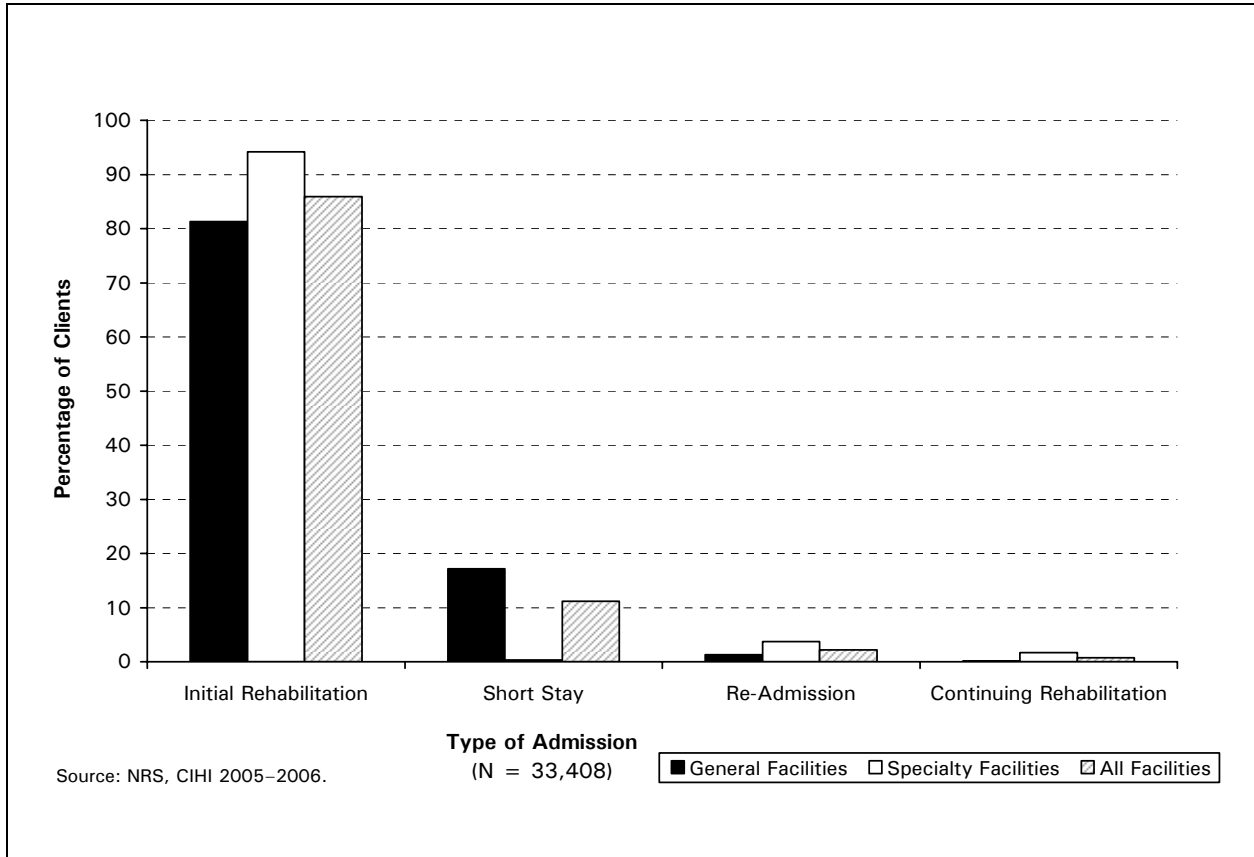
Figure 2.1. Type of Admission to Inpatient Rehabilitation by Facility Type, 2005–2006

As mentioned, clients admitted under the short stay category were almost exclusively admitted to General facilities. A review of the predominant rehabilitation client groups (RCGs) in the short stay admission class showed that the orthopaedic RCG accounted for 82% of short stays in General facilities. Of this group, 56% were knee replacement clients and 26% were hip replacement clients.

Source of Referral to Rehabilitation

The referral source in the NRS is the facility, agency or individual that initiated the referral of the client for admission to rehabilitation. More than nine out of every ten clients (92%) admitted to an inpatient rehabilitation unit were referred by an inpatient acute care unit, either in the same facility (47%) or from a different facility (45%). Clients referred by a private healthcare practitioner (such as a family doctor or physiotherapist) accounted for only 2% of admitted rehabilitation clients, while those referred from facility-based ambulatory care services (e.g. dialysis or geriatric day programs) accounted for 1% of all clients. The remaining 5% of clients were referred by a variety of different sources, such as: rehabilitation units in different facilities, residential care facilities (e.g. nursing homes, long-term or continuing care facilities), a family member or the client initiated the referral themselves.

As Figure 2.2 shows, there were some differences among the referral sources of clients admitted to General and to Specialty rehabilitation facilities. Sixty-eight percent of NRS clients admitted to General facilities were referred from an inpatient acute unit of the same facility and 27% were referred from an inpatient acute care unit of a different facility. In contrast, only 9% of clients admitted to Specialty facilities were referred from an inpatient acute unit within the same facility, while 77% were referred from inpatient acute care at a different facility. This is consistent with the commonly used definition of a Specialty facility as being a freestanding building with a focus on rehabilitation services rather than on acute care services, and therefore receiving the majority of their clients from other facilities. *(Quick Stats, Table 2.2)*
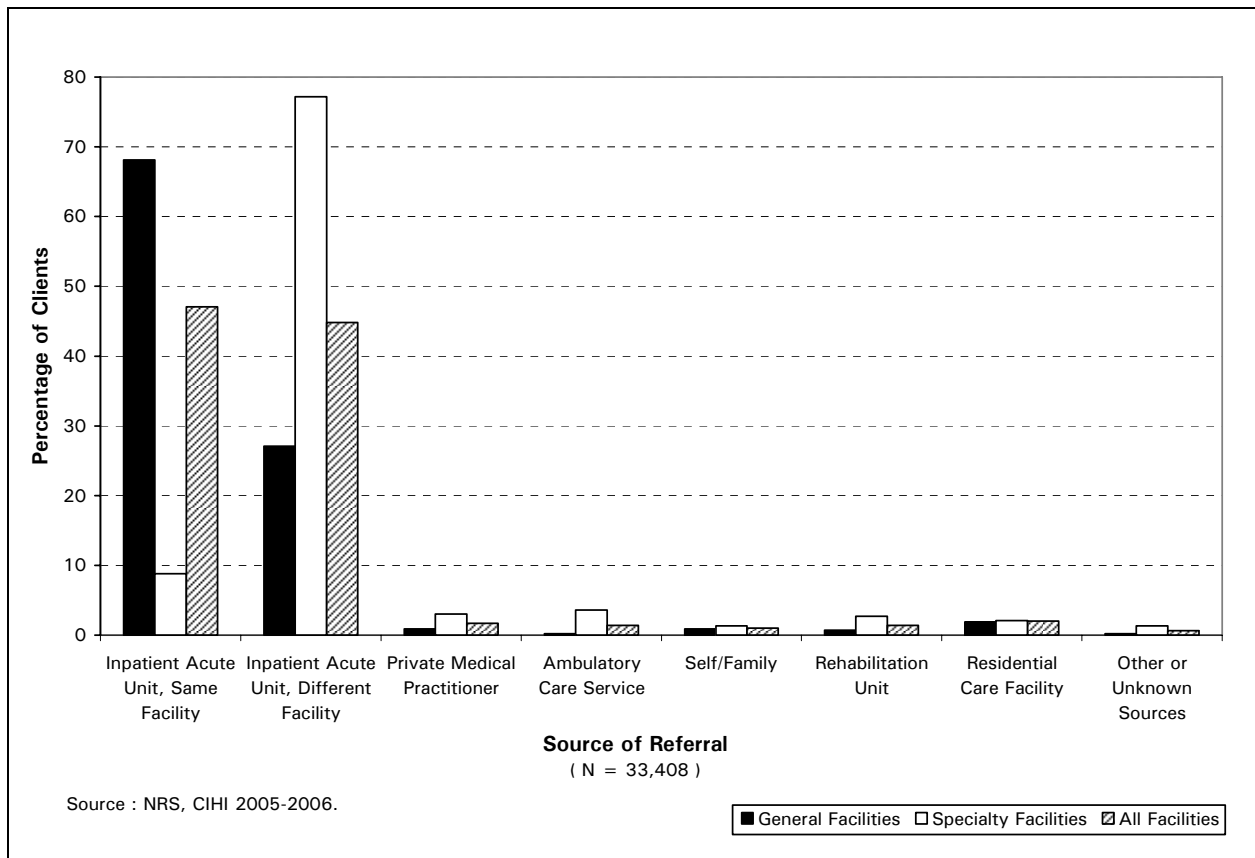
Figure 2.2. Source of Referral to Inpatient Rehabilitation by Facility Type, 2005–2006

The NRS data also show that of the 473 clients that were referred by a facility-based ambulatory clinic, 89% were admitted to Specialty rehabilitation facilities, while 54% of the 344 clients whose referral to inpatient rehabilitation was initiated by themselves or by family members were admitted to General facilities. (*Quick Stats, Table 2.2*)

Days Waiting for Admission

The *Days Waiting for Admission* indicator in the NRS refers to the number of days from the date a client is deemed ready for inpatient rehabilitation to the date they were actually admitted. The date ready for admission refers to the date that the client was clinically ready to start a rehabilitation program and met the criteria for admission to the rehabilitation facility. It does not refer to the date the client was put on a waiting list if this was done prior to when the client was clinically ready for rehabilitation. The date ready for admission is determined by the rehabilitation program accepting the client or by the referring facility, depending on the admission process at a particular facility.

The NRS makes an allowance for the fact that the date ready for admission to rehabilitation is not always easily ascertained. Where this is the case, facilities may indicate on the admission assessment that the date ready for admission was not known. During 2005–2006, the date ready for admission was not known for almost one fifth (18%) of clients who were discharged during the fiscal year. Records where the date ready for admission was not known are excluded from the analyses for this section. Percentages given in the following paragraphs are based on the 27,283 records where the date ready for admission was known. As part of its ongoing data quality monitoring activities, CIHI has identified this as a potential issue and has initiated further investigation and action to address coding "unknown" for this data element.

Figure 2.3 shows that 55% of the clients for whom a date ready for admission was available were admitted to inpatient rehabilitation the same day they were deemed clinically ready and a further 17% waited only one day. Seven percent of clients waited more than a week before they were admitted, and 1% waited more than 30 days. *(Quick Stats, Table 2.3)*

Figure 2.3 also compares the days waiting for admission to inpatient rehabilitation by facility type. As the figure shows, a larger proportion of clients admitted to General facilities appear to have been admitted for rehabilitation on the same day they were deemed ready: 69% of clients admitted to General facilities compared with 33% admitted to Specialty facilities. This appears to be consistent with the finding that the majority of clients admitted to General facilities were referred by the inpatient acute unit of that same facility, whereas Specialty facilities often receive their clients from another facility. The admission process in Specialty facilities may necessitate a more detailed application for rehabilitation and an inter-facility transfer—processes that might contribute to the variation suggested by the NRS data.
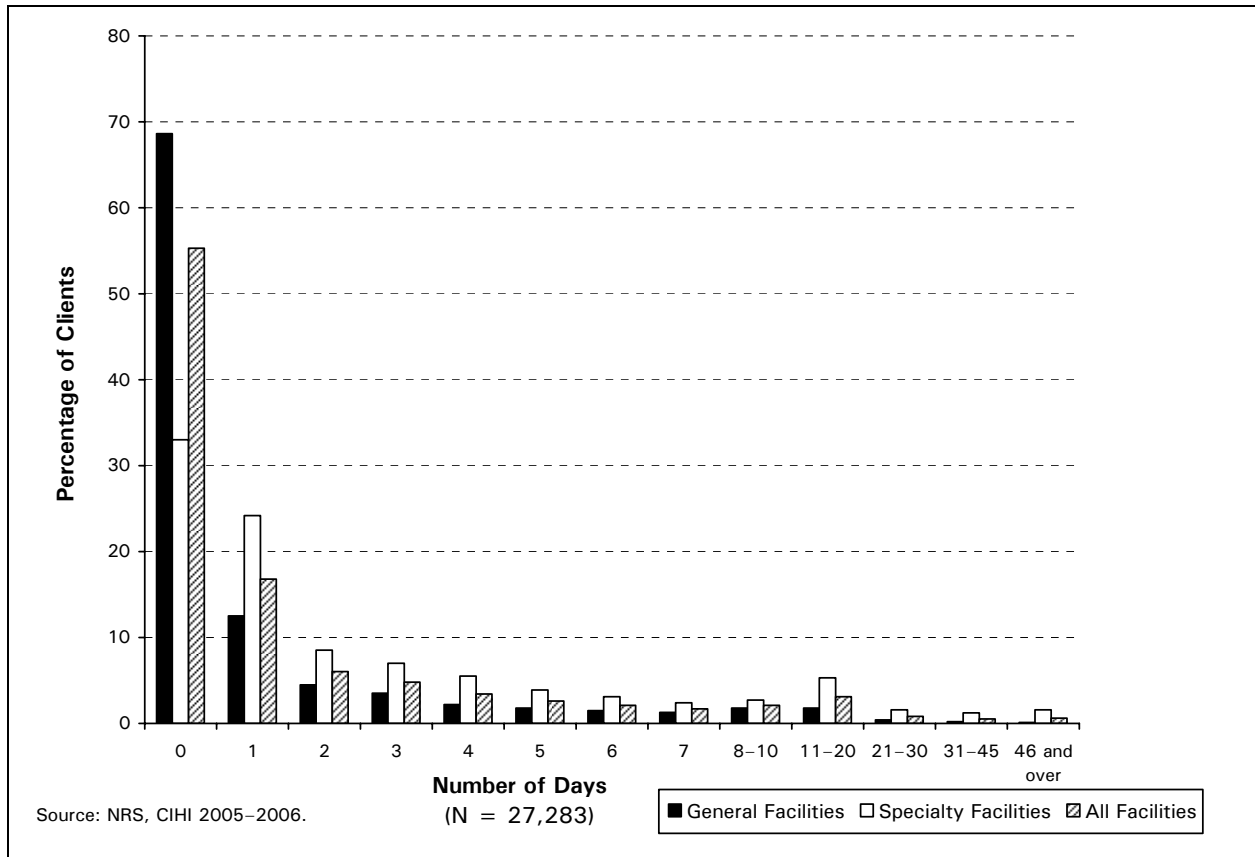
Figure 2.3. Distribution of Days Waiting for Admission to Inpatient Rehabilitation, 2005–2006

The median number of days that clients with a known date ready for admission had to wait for admission to the rehabilitation facility was zero days (i.e. at least half of the clients were admitted on the same day as they were deemed ready for admission). The median rather than the mean is used in this report to describe the days waiting for admission, as the distribution of values is skewed, with the majority of clients waiting less than a week for admission to a rehabilitation facility.

Figure 2.4 shows the median number of days clients waited for admission according to the referral source, for all facilities. Data in this figure are based on the 27,283 records where the data element *Date Ready for Admission* was populated. The figure shows that clients referred to rehabilitation by an acute inpatient unit in the same facility, by a residential care facility,[iii] by a rehabilitation unit from the same or a different facility all had a median wait of zero days. In other words, at least half of these clients were admitted to the rehabilitation unit from these sources on the same day they were deemed ready for admission.

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iii. Refer to the "Computations" section in Chapter 1 for more details on the calculation of median and mean.
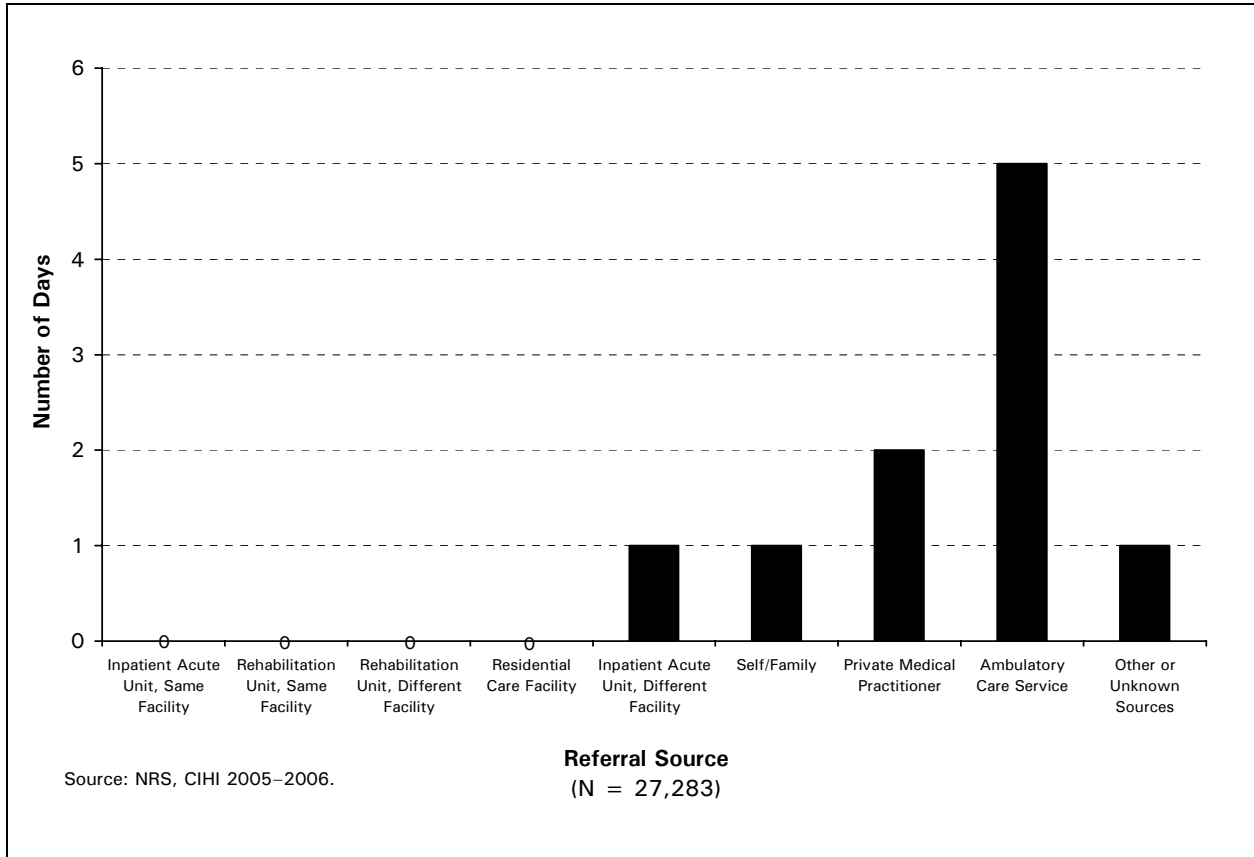
Figure 2.4. Median Days Waiting for Admission to Inpatient Rehabilitation by Source of Referral, 2005–2006

Clients referred from an inpatient acute care unit of a different facility (47% of clients for whom a date ready for admission was known), or a self-referral (1% of clients) had a median wait of one day before they were admitted. The remaining referral sources had longer median wait times: private medical practitioner (two days); and ambulatory care services (five days). However, these two referral sources together accounted for only 3% of all NRS client records for 2005–2006. *(Quick Stats, Table 2.4)*

While many clients reported in the NRS appear to be waiting less than a week for admission to rehabilitation, Chapter 3 will show that some client groups waited longer than others, on average, for admission to rehabilitation. Implications for delays in waiting for admission to rehabilitation can have many facets; they may be financial, in cases where the client is occupying a bed in a more expensive level of care, or psychological, where the client is not coping well in the community and is relying heavily on family support while awaiting admission, as examples.

Demographic Characteristics

Figure 2.5 shows that the largest age group represented in the NRS in 2005–2006 was the 75 to 84 age group, at 34% of all NRS clients. A quarter (24%) of all clients admitted for inpatient rehabilitation in 2005–2006 were aged between 65 and 74 years. This percentage is only slightly lower than the percentage of clients in all of the 18 to 64 age groups combined (28%). The remaining 15% of clients were 85 years of age and over. The average age of inpatient rehabilitation clients with their admission reported to the NRS was 71 years. *(Quick Stats, Table 2.5)*
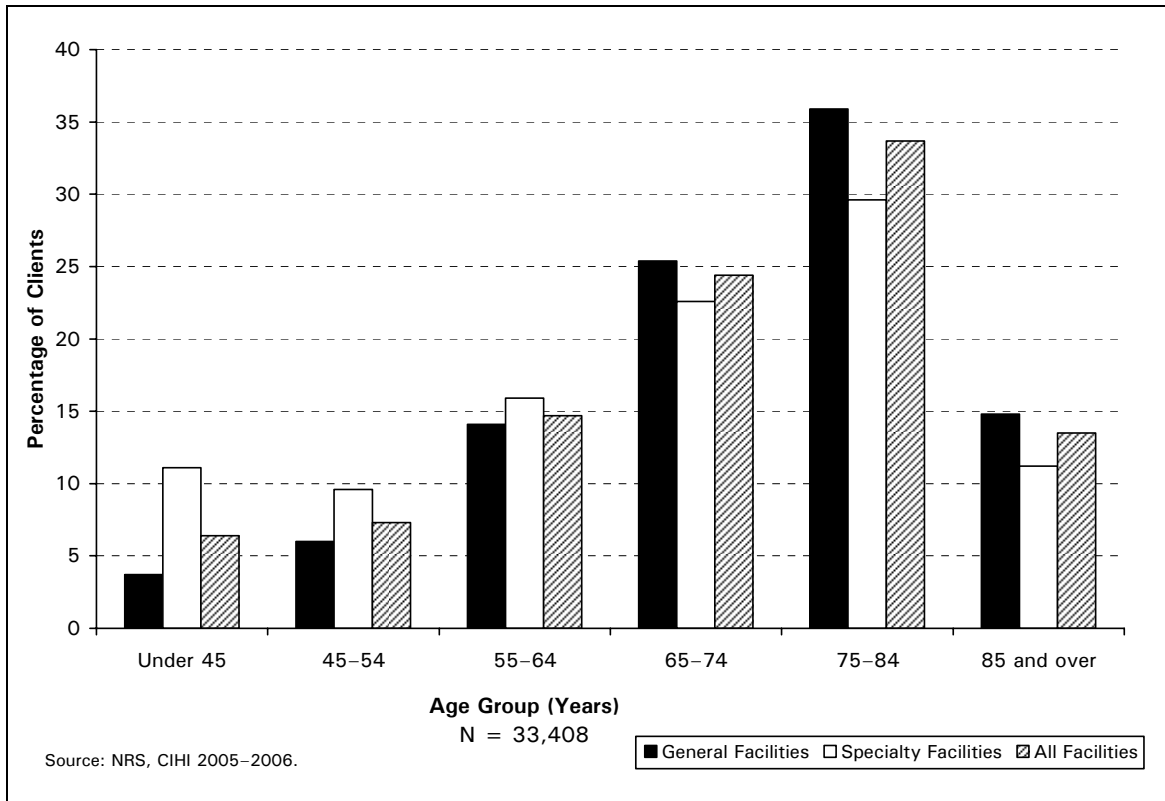
Figure 2.5. Age at Admission to Inpatient Rehabilitation by Facility Type, 2005–2006

The NRS data also show that clients who were admitted to General facilities tended to be older than those admitted to Specialty facilities. The average age of clients admitted to General facilities in 2005–2006 was 73 years compared with 68 years for those admitted to Specialty facilities. Over three-quarters (77%) of the clients admitted to General rehabilitation facilities were aged 65 years and over compared with 64% admitted to Specialty rehabilitation facilities. Chapter 3 will show that clients in the younger age groups (under the age of 45) are more frequently admitted for rehabilitation of acute traumatic conditions such as spinal cord or head injuries, rather than for chronic or non-traumatic conditions. Rehabilitation for these types of acute injuries tends to be provided more frequently in freestanding facilities that have specialized programs oriented towards this clientele, consistent with NRS data suggesting a lower average age of clients admitted to Specialty facilities.

Table 2.2 below compares the Canadian population in 2005 to the age groups in the NRS for 2005–2006. Note that clients with multiple inpatient rehabilitation episodes of care during 2005–2006 are each represented only once in this table, for a total NRS population count of 31,239. The percentages indicate that older people are disproportionately represented in rehabilitation programs, compared to the general population. This is especially the case for those aged 75 and older, which account for only 6% of the general population but represent nearly half (47%) of the inpatient rehabilitation population.

Table 2.2.   Canadian Population for 2005 and NRS Inpatient Rehabilitation Clients by Age Group for 2005–2006

Age Group	Canadian Population 2005		NRS 2005–2006	
	# (thousands)	Percent	Total	Percent
Under 45	19,605.4	60.8	2,003	6.4
45–54	4,921.2	15.2	2,268	7.3
55–64	3,526.2	10.9	4,591	14.7
65–74	2,236.1	6.9	7,567	24.2
75–84	1,489.5	4.6	10,555	33.8
85 +	492.1	1.5	4,255	13.6
Total	32,270.5	100.0	31,239	100.0

Source: Statistics Canada, 2005; NRS, CIHI 2005–2006.

Table 2.3 provides similar population comparison data as in the previous table, but shows how the proportions differ between the two populations by sex. Note that in the Canadian population, the proportion of females to males is almost equal for those under the age of 64. Females begin to significantly outnumber males in the population after age 65. In the inpatient rehabilitation population, males tend to be the larger group for those under the age of 55. Among clients 55 years of age and older, there are more females than males.

Table 2.3.   Canadian Population for 2005 and NRS Inpatient Rehabilitation Clients by Age Group and Sex for 2005–2006

Age Group	Canadian Population 2005			Representation in the NRS		
	# (thousands)	Males (%)	Females (%)	Total Clients (%)	Males (%)	Females (%)
Under 45	19,605.4	50.8	49.2	2,003	58.8	41.2
45–54	4,921.2	49.7	50.3	2,268	51.7	48.3
55–64	3,526.2	49.3	50.7	4,591	45.3	54.7
65–74	2,236.1	47.5	52.5	7,567	42.7	57.3
75–84	1,489.5	41.6	58.4	10,555	36.8	63.2
85 +	492.1	30.8	69.2	4,255	28.7	71.3
Total	32,270.5	49.5	50.5	31,239	40.9	59.1

Source: Statistics Canada, 2005; NRS, CIHI 2005–2006.

Figure 2.6 shows that, in general, the ratio of female to male clients admitted to participating NRS facilities increased with age during 2005–2006. The youngest age group (those aged under 45 years) had the largest proportion of male clients and smallest proportion of female clients (58% male to 42% female). Males and females accounted for approximately equal proportions of clients in the 45 to 54 age group (52% vs. 48%). For each subsequent age group, starting with the 55 to 64 age group, the proportion of female clients to male clients is higher than for the previous age bracket. This trend continues through the remaining age brackets, to where the 85 and over age group is 29% male and 71% female. These differences are consistent with the average age of male and female clients in the NRS: 68 years and 73 years, respectively. *(Quick Stats, Table 2.6)*

The distribution of sexes also varied between General and Specialty facilities (figure not shown). In General facilities, 62% of clients were female and 38% were males, while in Specialty facilities, the proportions of female and male clients were approximately equal at 55% and 45%, respectively.
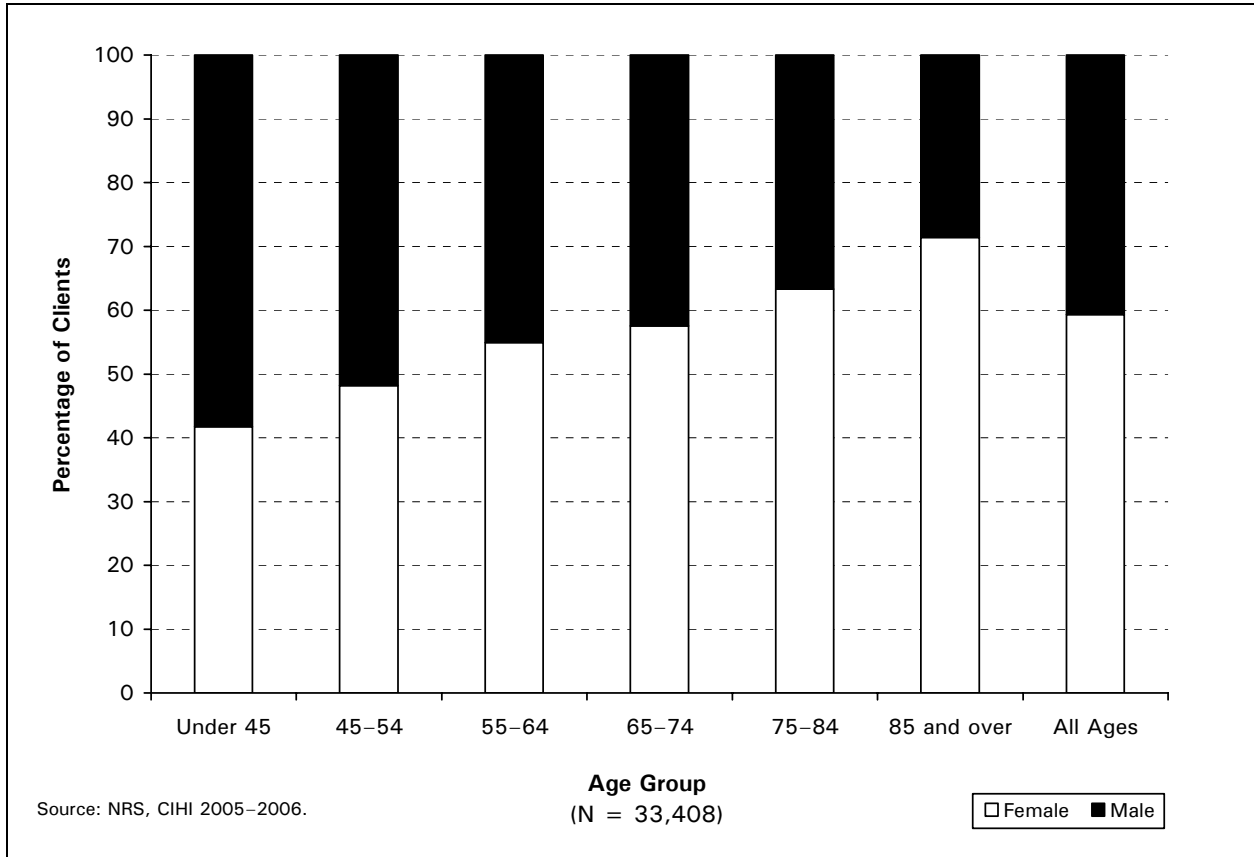
Figure 2.6   Proportion of Male and Female Inpatient Rehabilitation Clients by Age, 2005–2006

General population trends such as longer life expectancy in women is likely contributing to a disproportionate number of older female clients for whom information is contained in the NRS. Table 2.4 presents other data that may partially account for the proportion of females in the higher age groups in the NRS. The table presents the age-sex distribution of clients undergoing hip and knee replacements from Canadian facilities that submitted data to CIHI's Canadian Joint Replacement Registry (CJRR) for 2004–2005. NRS data show that clients receiving inpatient rehabilitation following either hip or knee replacements accounted for 32% of all NRS clients for 2005–2006. The data in Table 2.4 show that older female clients undergo these procedures more often than their older male counterparts. These data, coupled with the prevalence of hip and knee replacement clients in the NRS, help to account for the higher number of older female clients with data in the NRS.

Table 2.4.   Age-Sex Distributions of Hip Replacement and Knee Replacement Clients in the Canadian Joint Replacement Registry, 2004–2005

Age Group	Total Hip Replacements					Total Knee Replacements				
	Males		Females		Total	Males		Females		Total
	#	%	#	%	#	#	%	#	%	#
<45	640	55.2	519	44.8	1,159	156	41.8	217	58.2	373
45–54	1,452	54.5	1,212	45.5	2,664	905	35.8	1,624	64.2	2,529
55–64	2,471	48.8	2,595	51.2	5,066	3,238	40.5	4,751	59.5	7,989
65–74	3,346	43.5	4,350	56.5	7,696	5,259	42.1	7,229	57.9	12,488
75–84	2,448	34.8	4,591	65.2	7,039	3,506	37.7	5,786	62.3	9,292
85+	410	27.3	1090	72.7	1,500	323	35.1	596	64.9	919
Total	**10,767**	**42.9**	**14,357**	**57.1**	**25,124**	**13,387**	**39.9**	**20,203**	**60.1**	**33,590**

Source: Canadian Joint Replacement Registry, CIHI, 2004–2005.

Pre-Admission Living Setting

In the NRS, living setting refers to the physical environment in which the client is living, such as an apartment or a long-term care facility. At admission, information is collected on the type of living setting the client was residing in just prior to admission to an inpatient setting. On discharge, living setting information is collected based on the planned living setting destination following the rehabilitation program.

Figure 2.7 shows that in 2005–2006, 92% of clients admitted for inpatient rehabilitation lived in a private house or apartment prior to their admission (with or without receiving paid health services). Four percent of clients lived in assisted living accommodations, such as group or retirement homes or supervised living settings, and 2% of clients lived in residential care (for example, long-term care facilities or nursing homes) prior to their admission. Note that the "Other/Unknown" category denotes clients living in other types of accommodations (e.g. boarding house or shelter) or whose living setting was not known at the time of admission. *(Quick Stats, Table 2.6)*
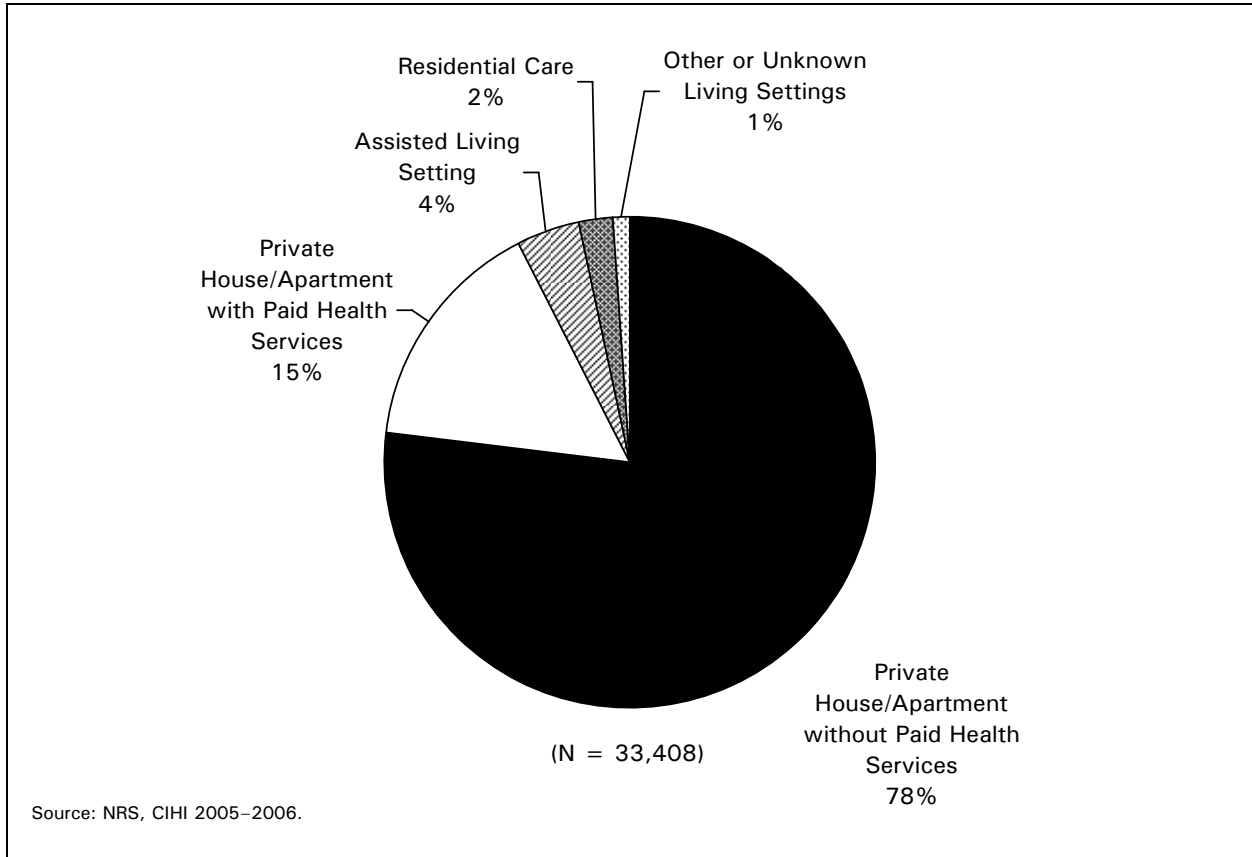
Figure 2.7.   Pre-Admission Living Settings, 2005−2006

If a client lives in a private dwelling, information is also collected on whether or not he or she received paid health services prior to admission. Paid health services refers to health care services that are paid for either privately through a third party or out-of-pocket, or publicly through provincial healthcare and are received in the client's home. These services can include meals on wheels, home care, hospital equipment at home, and may or may not be related to the condition for which the client was admitted. Seventeen percent of clients living in a private house or apartment received some kind of paid health services prior to admission. Among those clients who lived in a private house or apartment prior to their admission, 68% lived with their spouse, family or friends, while 32% lived alone.

Informal Support Received Prior to Admission

Many people living at home prior to admission to rehabilitation may receive varying degrees of informal support to carry out their daily routines. This is the network of family members, friends and neighbours who assist the client on an unpaid basis with tasks related to their daily living. Often, this assistance allows the client to remain in the community and manage without any formal assistance from organizations or health-related groups. These tasks can range from simply checking in on the client to performing household tasks such as cleaning, cooking and running errands. This network may have responsibilities that require a certain skill level (such as medication supervision) or time commitment (e.g. grocery shopping for the client weekly).

The NRS includes data elements to assess whether or not informal needs exist for a client and, if so, whether they are entirely, partially or not at all met. Note that the qualifier "entirely", "partially" or "not at all" is determined by the clinical team through interviews with the client and/or family and friends. The information is collected at admission based on the seven days prior to the day of admission to the hospital, at discharge based on the expected needs and informal resources available at that time.

More than a third (36%) of clients did not require any informal support, either because the clients were able to care for themselves or because they received all their required support from formal service providers. Figure 2.8 shows that in 2005–2006, almost half (49%) of clients indicated they were receiving all of the informal support they required prior to their admission. A further 12% of clients received only some of the support that was required. Two percent reported receiving no informal support at all, even though they reported a need. *(Quick Stats, Table 2.7)*
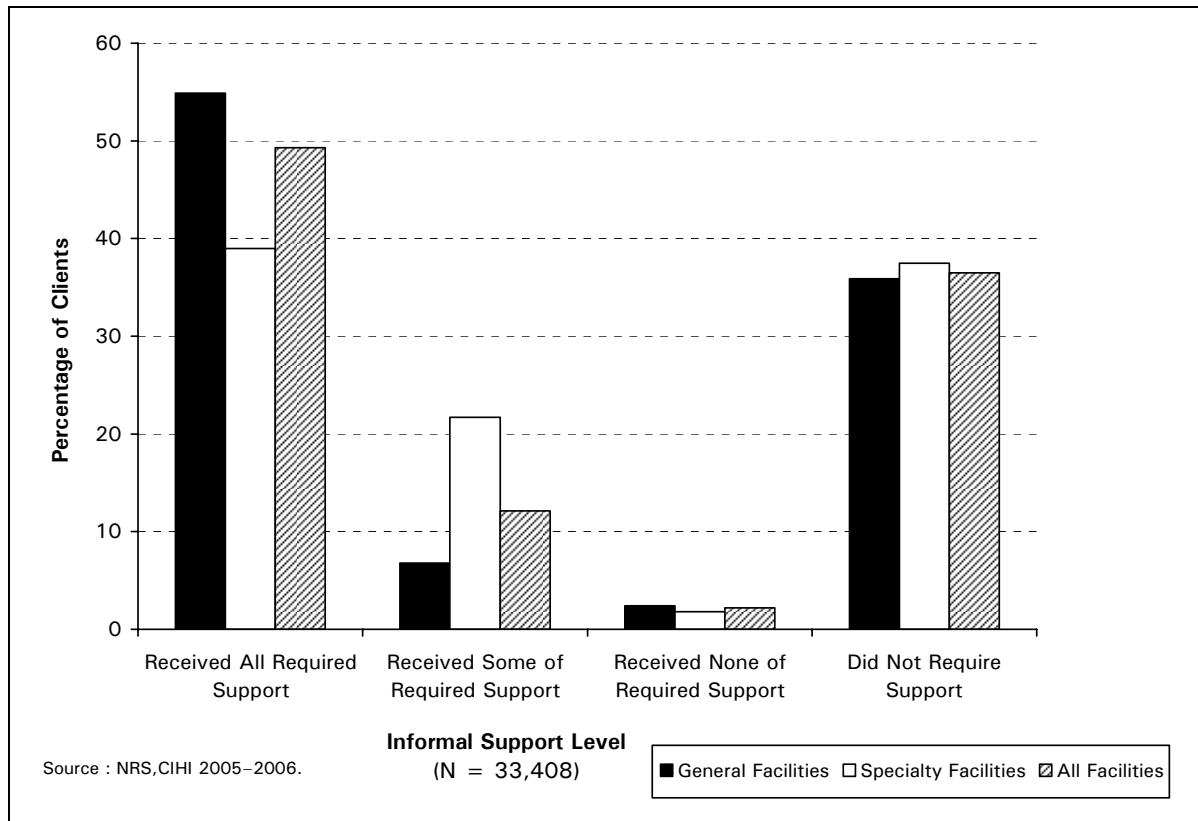
Figure 2.8.   Inpatient Rehabilitation Clients Requiring and Receiving Informal Support Prior to Admission by Facility Type, 2005–2006

Figure 2.8 also shows some variation in the amount of required informal support received according to the type of facility to which the client was admitted. A smaller proportion of clients admitted to Specialty facilities received all of the informal support required prior to admission (39% compared with 55% for those admitted to General facilities), and a larger proportion of clients in Specialty facilities received only some of the help required (22% compared with 7% in General facilities).

This information on informal support is one mechanism to assess the level of unpaid, non-professional support that exists for clients in the community. Although the NRS data provide a glimpse into the requirements for and availability of informal support for this inpatient rehabilitation population, they do not provide information on the types of support required and received, or the reasons why informal needs that may be required are not being met.

Length of Stay

Length of stay (LOS) for the purposes of the NRS is calculated as the number of days between a client's admission to and discharge from the rehabilitation facility, excluding any service interruptions. Service interruptions are recorded when rehabilitation services are temporarily suspended due to a change in the client's health status. These interruptions are excluded from LOS calculations in order to obtain a more accurate count of the number of days that clients were able to participate in the rehabilitation program. In 2005–2006, 3% of clients had service interruptions reported for some point during their rehabilitation stay. Service interruptions did not affect the median length of stay for NRS clients, which was 15 days including or excluding service interruptions.

Figure 2.9 shows the distribution of client length of stay in inpatient rehabilitation. The figure also presents the lower and upper quartiles as well as the median of the LOS values. The median LOS for 2005–2006 was fifteen days. This means that half the episodes in the NRS for 2005–2006 were for clients who stayed in inpatient rehabilitation for fourteen days or less. Twenty-five percent of clients stayed under seven days and fourteen percent had a stay of between fifteen and twenty-one days. Slightly less than one third (30%) of all NRS clients stayed in the rehabilitation facility for more than four weeks. Note that for this analysis, the 2,829 records classified as (Un)planned discharge have been included. Recall that clients in the (Un)planned discharge admission class, by definition, have a length of stay of between one and three days. *(Quick Stats, Table 2.9)*
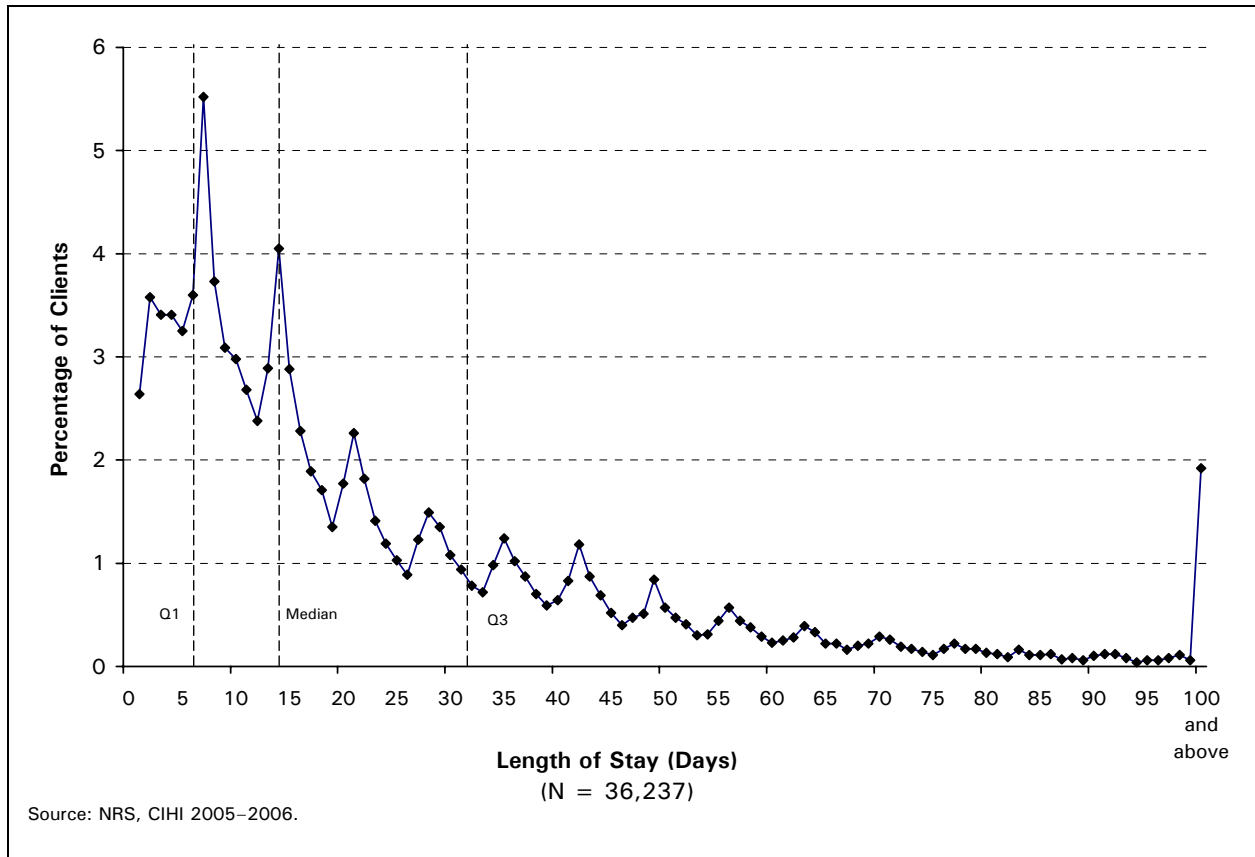
Figure 2.9.   Distribution of Length of Stay in Inpatient Rehabilitation, 2005–2006

Excluding those clients classified as (Un)planned discharge (for whom minimal data is collected), clients classified as short stay admissions had the shortest median length of stay (six days). This is consistent with the definition of this admission class as describing clients with a length of stay between four and ten days. Those classified as initial rehabilitation clients had a median stay of twenty days. Clients admitted as readmissions had a median length of stay of twenty-six days, and continuing rehabilitation clients had the longest median length of stay at forty-three days. *(Quick Stats, Table 2.9)*

The median length of stay for clients admitted to Specialty facilities was longer than that for clients admitted to General facilities (thirty days and fourteen days, respectively). The median lengths of stay for some admission types also varied according to the facility type. For example, clients classified as initial rehabilitation admissions had a median length of stay of thirty days if they were admitted to a Specialty facility, compared to sixteen days for those initial rehabilitation clients admitted to a General facility. Chapter 3 includes information on variations in length of stay between the different Rehabilitation Client Groups (RCGs). Over half of the clients with a LOS of 100 days or more were included in the following three RCG categories: Stroke, Brain dysfunction, and Spinal cord dysfunction.

Reasons for Discharge

The NRS contains information on the reason for a client's discharge from a participating rehabilitation facility. These data provide information on whether or not a client's rehabilitation goals (determined collaboratively by the rehabilitation team and the client and documented on admission) were met or not met, and whether the client was discharged into the community or was transferred/referred to another unit or facility. Other reasons for discharge include the withdrawal of the client from rehabilitation services against professional advice, or the death of the client.

Note that a return to the community does not imply that the client returned back to their home, if that was their pre-admission living environment. Community living can include living environments such as a retirement community or other type of assisted living, or returning to live with a family member. A transfer to another facility generally implies that the client is still residing in the healthcare system. These living environments can include long-term care facilities, alternate level-of-care beds, or a transfer back to acute care for further treatment.

Nine out of every ten clients (91%) were determined to have sufficiently met their service goals at discharge; 80% of all clients met their goals and returned to live in the community (a private house or apartment, boarding house or assisted living setting), while 11% of all clients met their goals but were referred or transferred to other units within the same facility or to other facilities. Eight percent of all clients were reported as not having met their service goals, and were either discharged to the community or transferred to another unit or facility. *(Quick Stats, Table 2.10)*
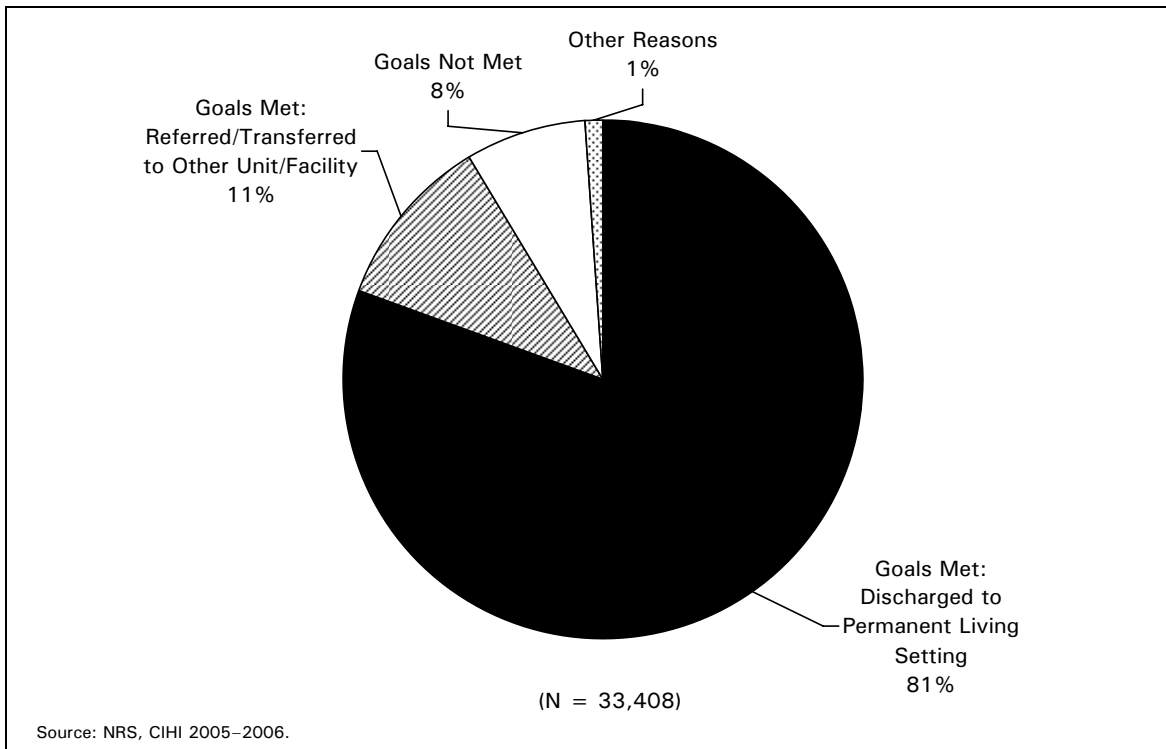
Figure 2.10. Reasons for Discharge from Inpatient Rehabilitation, 2005–2006

Achieving rehabilitation goals does not necessarily imply a return to pre-injury/illness functional status. Goals set by the rehabilitation team and the client are intended to maximize a client's functional independence under existing circumstances. It is the level of independence achieved that most often plays a large role in determining the type of living setting on discharge. For example, at admission, it may be clear that a client with a severe stroke will not be able to recover enough function to return to living alone, but a reasonable rehabilitation goal might include being able to get into and out of bed with the help of just one person. Whether or not the client achieves this goal may help determine which type of living setting can adequately provide for this client's needs. All clients who have sufficiently met their goals through rehabilitation are considered to have had a "successful" course of rehabilitation for the purposes of the NRS data element "service goals met," regardless of whether or not the client has returned to their previous level of function.

Services Referred to at Discharge

Whereas the previous section described the various reasons for clients being discharged from a rehabilitation program, this section will examine the types of services or care that these clients were most often referred to upon discharge. These services include home, community, and ambulatory care services for clients discharged into the community, and residential care or inpatient care for those who continue to reside in the health care system following a stay in rehabilitation.

During 2005–2006, almost nine out of ten (89%) NRS clients were referred for services or transferred to other facilities upon discharge from rehabilitation. NRS data suggest that the remaining 11% of clients were either not referred or transferred for any services, or the information was not collected for other reasons, such as the client's withdrawal from the rehabilitation program.

Among those clients referred for services after discharge, 37% were referred to home care agencies; 13% were referred to facility-based ambulatory care services; and 12% were referred to a private healthcare practitioner, such as a family doctor or physiotherapist. Four percent of clients were referred for some type of community service on discharge (includes transportation arrangements, public health referrals). Other clients were transferred for various types of facility-based care. For example, 8% were referred to a residential care facility, 6% were referred to inpatient acute care units, and 3% were referred to another inpatient rehabilitation facility. *(Quick Stats, Table 2.11)*
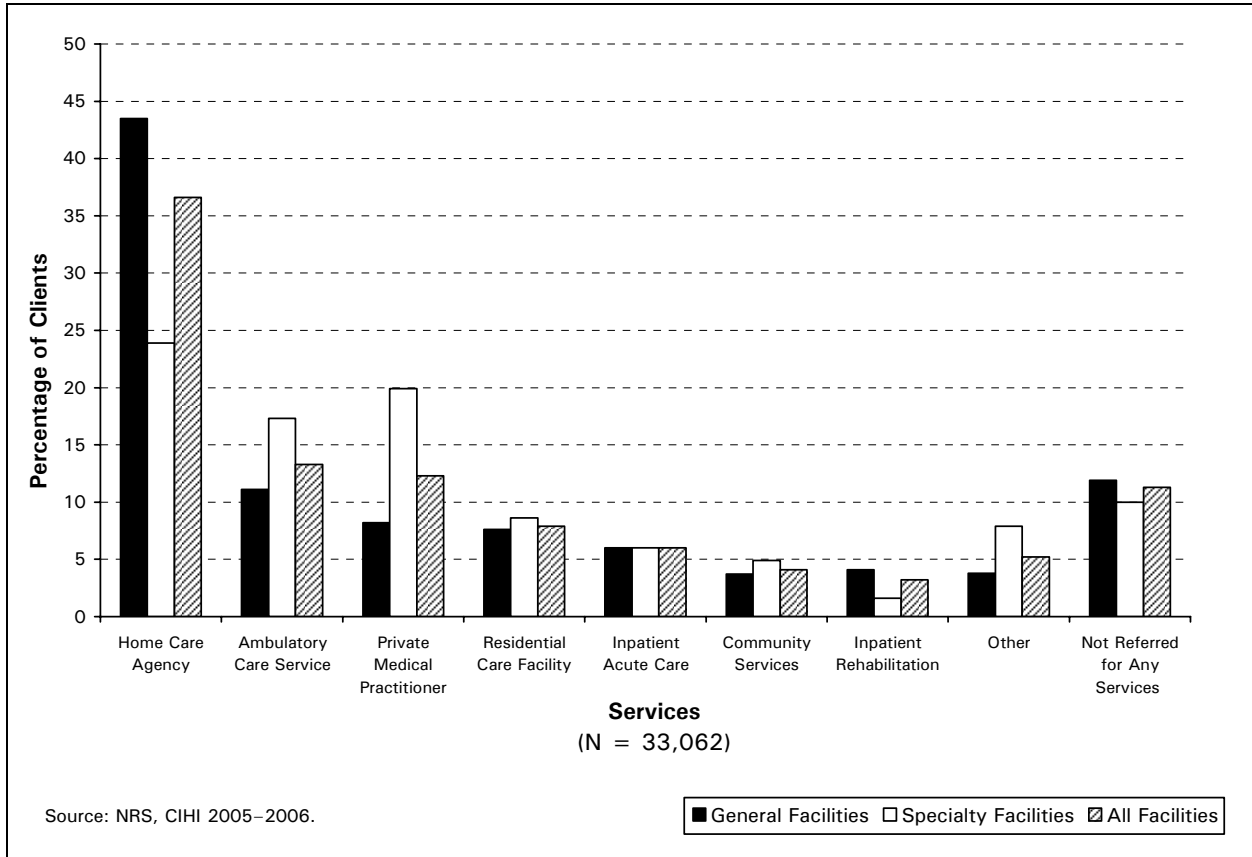
Figure 2.11.   Services Referred to After Discharge From Inpatient Rehabilitation, 2005–2006

Figure 2.11 also shows that there was some variation in the services to which clients were referred upon discharge according to the type of facility from which they had been discharged. Clients discharged from General facilities were more likely to be referred to home care agencies than those discharged from Specialty facilities (44% versus 24%). The reverse was true for clients referred to ambulatory care services or private medical practitioners. Among clients discharged from Specialty facilities, almost one in five (17%) were referred to ambulatory care services and another 20% were referred to private medical practitioners. In contrast, only one in ten clients (11%) discharged from General facilities were referred to ambulatory care service and less than one in ten (8%) were referred to a private healthcare practitioner. Referrals to residential care were similar for both rehabilitation types: 9% for clients discharged from Specialty facilities and 8% for clients discharged from General facilities.

Clients over the age of 75 were much more likely to be referred to home care services while their younger counterparts were more likely to be referred to ambulatory care services or a private practitioner. These data are consistent with the finding that older clients (referred more often for home care) are more frequently admitted to General facilities, while younger clients (referred more often for ambulatory care and private practice) are more frequently admitted to Specialty facilities.

Pre-Admission and Post-Discharge Living Setting

Client living setting prior to admission to inpatient rehabilitation was examined earlier in this chapter. This section of the report discusses the various types of living settings to which clients were discharged in 2005–2006 following completion of the rehabilitation program. Additional resources (both human and financial) may often be involved in finding new living environments for clients unable to return to their pre-admission environment. This NRS indicator provides information on the rates at which clients return to the community following rehabilitation or require relocation to a facility that provides care services, such as an assisted living or residential care facility.

Figure 2.12 shows the post-discharge living setting of clients classified according to their pre-admission living setting. The figure shows that most clients returned to their pre-admission living setting following discharge from the rehabilitation facility, suggesting that they were at least able to return to a baseline level of function appropriate for that setting. For example, of clients who were living in an assisted living environment prior to their entry into the health care system, 61% returned to that environment after their stay in rehabilitation, while 15% were placed in a residential care setting. Note that for this figure, the number of records is provided for each pre-admission living setting. *(Quick Stats, Table 2.12)*

Source: NRS, CIHI 2005–2006 .

N = 25,714

* Legend Refers to Post-Discharge Living Settings

Legend:
- ■ Private House/Apartment Without Paid Health Services
- □ Private House/Apartment With Paid Health Services
- ▨ Assisted Living Setting
- ▨ Residential Care
- ▨ Other or Unknown Living Settings
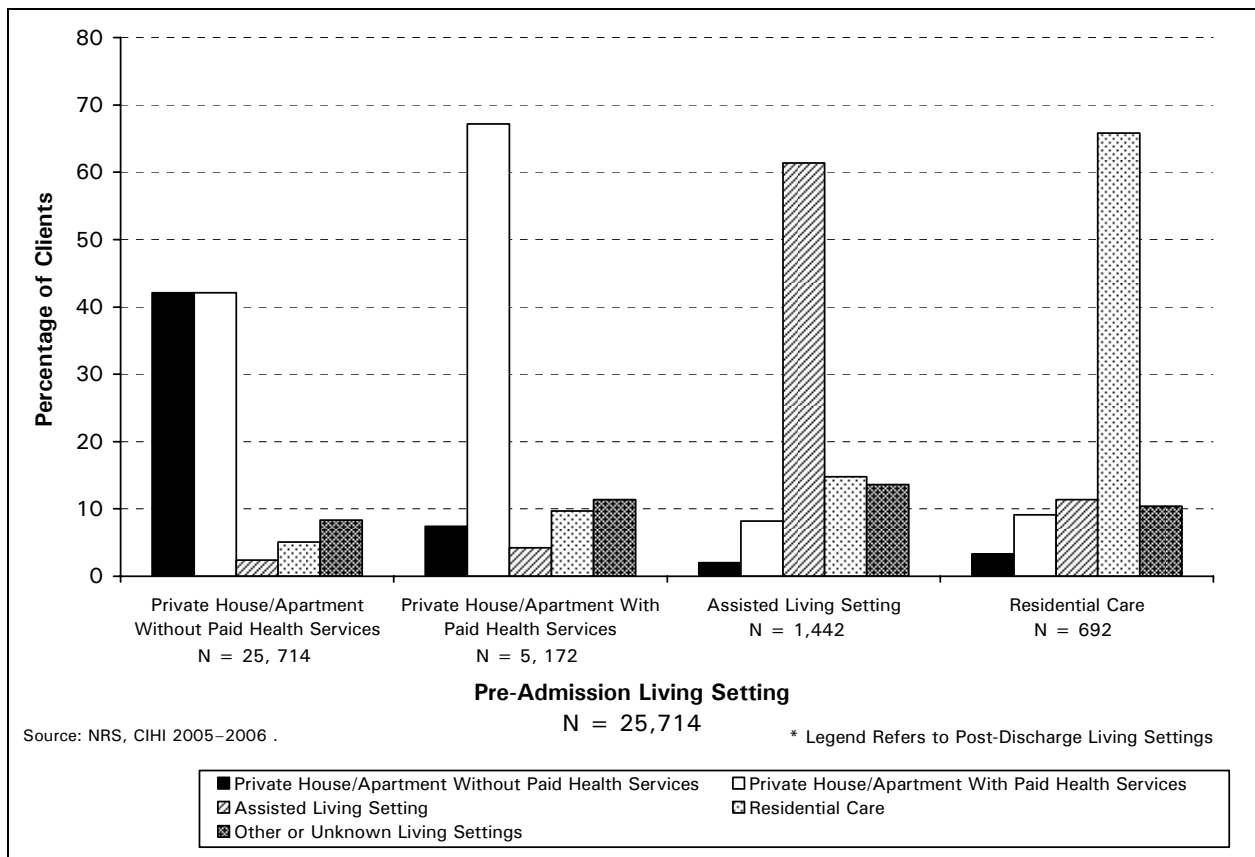
Figure 2.12.   Pre-Admission and Post-Discharge Living Setting of Inpatient Rehabilitation Clients, 2005–2006

Clients who had not received paid health services prior to their admission were slightly more likely to return home on discharge, compared to those who had received paid services prior to admission. For example, 83% of clients who lived at home but had not received paid health services prior to admission returned home on discharge from rehabilitation (with or without paid services), while 8% moved into an assisted living environment or to a residential care facility. In comparison, 75% of clients who *had* received paid health services prior to admission returned to a private house or apartment upon discharge, while 14% moved into either an assisted living environment or to a residential care facility.

Summary

This chapter highlights several characteristics of the clients, facilities and rehabilitation episodes that are reflected in the NRS 2005–2006 data. Some noteworthy differences across facility types, demographic characteristics and referral patterns are presented in order to provide a broad summary of the inpatient rehabilitation services in participating facilities across Canada. The data presented this year are, in many ways, very similar to what was presented in *Inpatient Rehabilitation in Canada, 2003–2004 and 2004–2005*. The similarities between data from previous years and this most recent year suggest that the rehabilitation population and services reported to the NRS have been relatively stable for that time period.

Key Findings

- In 2005–2006, the average age of inpatient rehabilitation clients was 71 years.

- More than nine out of every ten clients were referred for inpatient rehabilitation services by acute care facilities.

- Among clients for whom a date ready for admission was known, 55% were admitted to inpatient rehabilitation the same day they were deemed clinically ready to participate in rehabilitation. One percent of clients had to wait over 30 days for admission.

- Sixty-three percent of clients reported requiring some level of informal support to manage their activities of daily living prior to admission for rehabilitation services.

- Most clients living in a particular living setting prior to admission to inpatient rehabilitation were able to return to the same or similar type of living setting on discharge from rehabilitation.

- The majority of clients were referred for some type of service through a facility or agency following their discharge from rehabilitation. Thirty-seven percent of clients were referred to home care agencies and 13% were referred to ambulatory care services.

Chapter 3. Rehabilitation Client Groups

Clients are admitted to rehabilitation programs to improve functional levels that may have declined due to injury or illness, or following surgery. Health conditions such as stroke, arthritis and spinal cord injury, for example, that result in the need for rehabilitation can vary significantly in terms of health resource requirements and rehabilitation approach. Grouping clients according to specific conditions and comparing the data within and across these groups provides information towards understanding variation in client outcomes and rehabilitation service provision.

Within the National Rehabilitation Reporting System (NRS), a client is categorized into one of 17 health condition groups, known as Rehabilitation Client Groups (RCG). The RCG selected for a particular client is based on the condition that best describes the primary reason for the client's admission to the inpatient rehabilitation unit or facility—for example, stroke or limb amputation. Some RCGs are further sub-divided in order to facilitate more specific analysis of groups that contain large numbers of rehabilitation clients. The limb amputation RCG, for example, is further subdivided into groups that denote which limb was amputated and at what level the amputation occurred. A full list of RCGs used in the NRS can be found in Appendix B. For the purposes of this report, only the 17 main groups and selected sub-divisions of RCGs are discussed. Where the term "Other RCGs" appears in a figure or table, two or more RCGs have been grouped together due to small numbers of individuals in those groups.

Overall Distribution of Rehabilitation Client Groups

Two RCGs, orthopaedic conditions and stroke, accounted for two-thirds (65%) of all inpatient rehabilitation clients discharged from participating NRS facilities in 2005–2006. Figure 3.1 shows that almost half (49%) of all clients reported in the NRS received rehabilitation relating to orthopaedic conditions, such as hip fracture, hip replacement or knee replacement, while an additional 16% of clients received rehabilitation services following a stroke.

The remaining RCGs were seen relatively less frequently: medically complex conditions— 8% of all clients; brain dysfunction, limb amputation, and debility—each with 4% of clients. A further 3% of NRS clients received rehabilitation services following spinal cord dysfunction, which includes non-traumatic or traumatic paraplegia and quadriplegia, as well as other traumatic spinal cord injuries. The remaining 12% of clients received inpatient rehabilitation for other conditions, each representing less than 3% of episodes, such as arthritis, cardiac disease, major multiple trauma, pain syndromes, and pulmonary disease. *(Quick Stats, Table 3.1)*
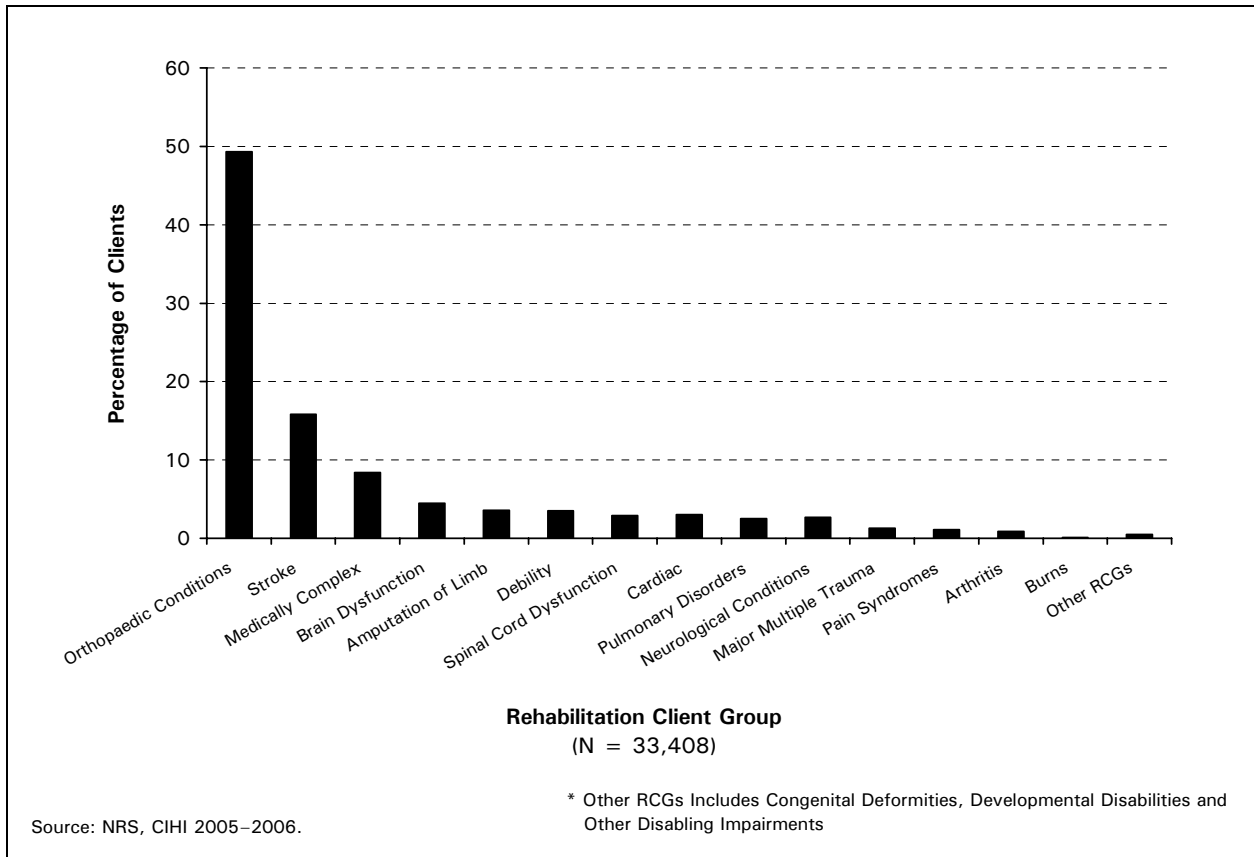
Figure 3.1.   Distribution of Inpatient Rehabilitation Clients by Rehabilitation Client Group, 2005–2006

Rehabilitation Client Group by Type of Facility

Although orthopaedic and stroke clients were the largest groups in both General and Specialty rehabilitation facilities during 2005–2006, there were some differences in the distribution of clients across RCGs within the two facility types.

General facilities had a relatively higher proportion of admissions for orthopaedic, medically complex and debility clients. For example, 55% of clients admitted to General facilities received services for orthopaedic conditions compared to 38% of clients admitted to Specialty facilities. Conversely, Specialty facilities had a relatively higher proportion of admissions for brain dysfunction, spinal cord dysfunction, limb amputations and major multiple trauma. For example, brain dysfunction admissions accounted for only 2% of all admissions to General facilities, compared to over 8% of all admissions to Specialty facilities. General and Specialty facilities had similar proportions of clients admitted for inpatient rehabilitation following a stroke (14% and 18% respectively). *(Quick Stats, Table 3.1)*
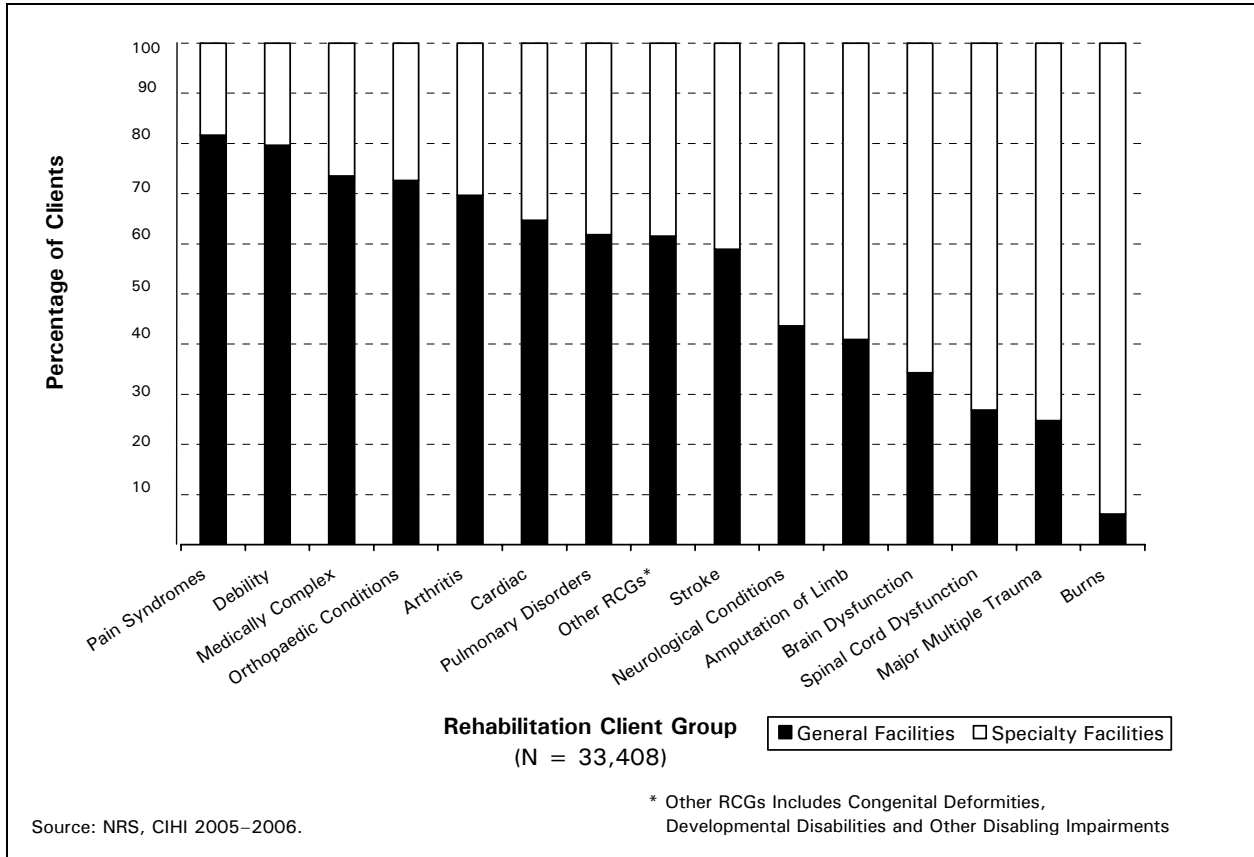
Figure 3.2.   Distribution of Rehabilitation Client Groups by Facility Type, 2005–2006

Figure 3.2 is a graphical representation of the proportion of RCG admissions by facility type. The orthopaedic, debility, medically complex and pain syndrome RCG clients were admitted in much larger proportions to General facilities than to Specialty facilities. For example, of all NRS clients in the orthopaedic RCG, 73% were admitted to General facilities while only 27% went to Specialty facilities. These data are consistent with the demographic data from Chapter 2 that showed older NRS clients were admitted more frequently to General facilities. Data in subsequent sections of this chapter will show that older clients were more typically admitted to rehabilitation for conditions relating to the orthopaedic, debility and medically complex RCGs—client groups that are admitted more frequently to General facilities. Brain dysfunction, neurological conditions, limb amputations, spinal cord dysfunction and major multiple trauma RCGs—conditions seen more frequently in younger clientele—accounted for larger proportions of clients admitted to Specialty facilities. For example, close to three quarters (73%) of all spinal cord dysfunction clients were admitted to Specialty facilities compared to a quarter (27%) who were admitted to General facilities. *(Quick Stats, Table 3.2)*

Days Waiting for Admission

As mentioned in the previous chapter, the date that the client was ready for admission to rehabilitation was not known for almost one fifth (18%) of clients discharged in 2005–2006. These clients were therefore not included in the following analysis. This should be considered when interpreting the following data on days waiting for admission to inpatient rehabilitation.

Overall, clients reported in the NRS for whom a date ready for admission was known had a median wait of zero days for admission to inpatient rehabilitation (i.e. half of these clients were admitted the same day they were deemed eligible). As Figure 3.3 shows, orthopaedic, medically complex, debility, pain syndrome, arthritis and pulmonary disorders were the RCGs that had the shortest median wait at zero days. All other RCGs except for neurological conditions had a median wait time of one day. Clients in the neurological conditions RCG had the longest median wait time of two days. As discussed in Chapter 2, median is used rather than mean due to the skewed nature of the values reported for days waiting for admission. *(Quick Stats, Table 3.3)*
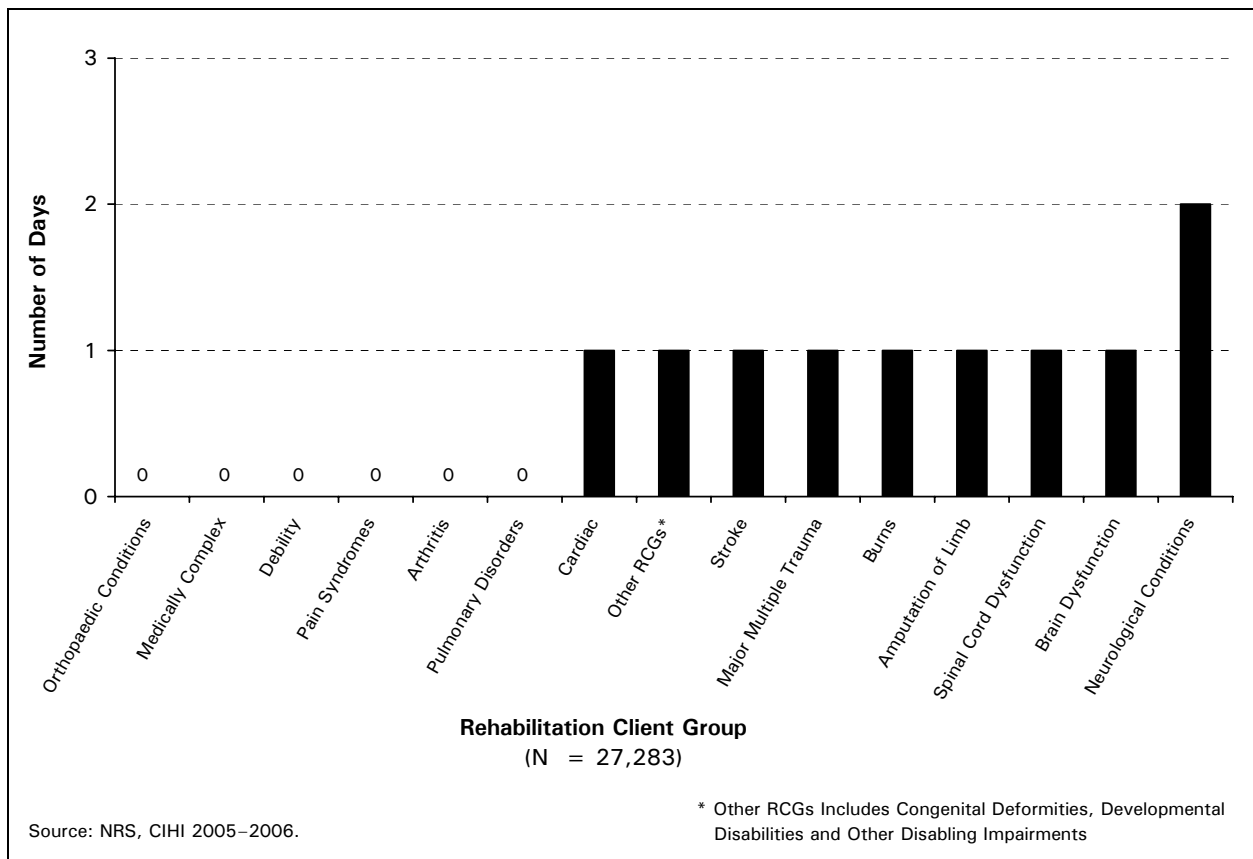
Figure 3.3. Median Days Waiting for Admission to Rehabilitation by Rehabilitation Client Group, 2005–2006

Demographic Characteristics

Chapter 2 described the age and sex distributions of clients who received inpatient rehabilitation from participating NRS facilities in 2005–2006. In this chapter, the age and sex characteristics are presented for each specific RCG. The data indicate that the demographic characteristics can vary widely among client groups.

Figure 3.4 shows that the arthritis, orthopaedic and pain syndromes RCGs had the highest proportion of female clients in 2005–2006, with more than 69% of the clients in each of these RCGs reported as female. The neurological conditions, major multiple trauma and stroke RCGs had almost equal proportions of female and male clients. In contrast, the brain dysfunction, spinal cord dysfunction, amputation of limb, and burn clients were much more likely to be male; the proportions of male clients in these RCGs ranged from 61% to 70%. *(Quick Stats, Table 3.4)*
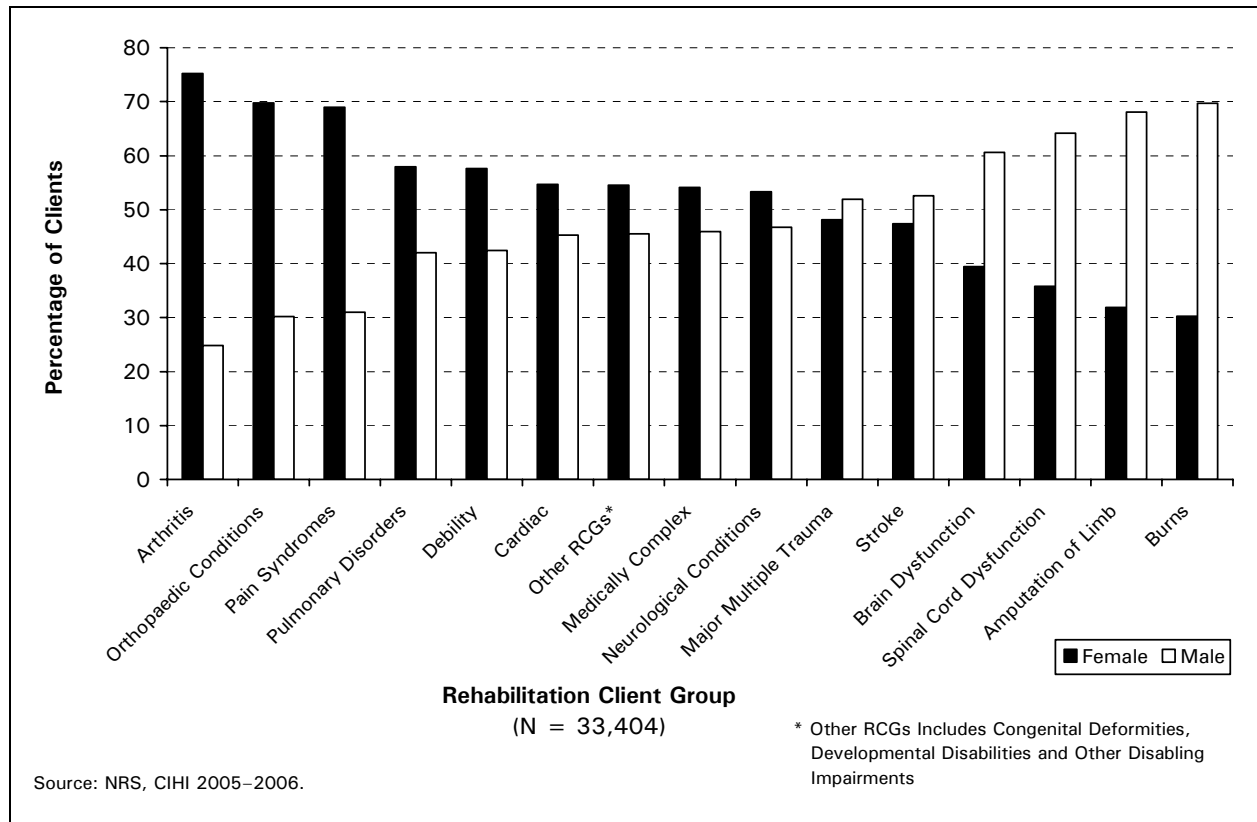
Figure 3.4. Male/Female Distribution of Inpatient Rehabilitation Clients by Rehabilitation Client Group, 2005–2006

Although many RCGs contain a higher proportion of one sex over the other, Figure 3.5 demonstrates some similarities in the age distributions for these client groups. For many RCGs, there appears to be a higher incidence of admissions to rehabilitation with increasing age. The orthopaedic, stroke, medically complex, debility, cardiac, pulmonary and pain syndromes RCGs demonstrate this trend, with the 75 to 84 age group having the largest representation. However, the proportion of admissions for these RCGs decreases in the 85 and over age category, probably due to survival effect. The brain dysfunction, spinal cord dysfunction, and major multiple trauma client groups, on the other hand, demonstrate a decreasing proportion of admissions with increasing age. *(Quick Stats, Table 3.5)*
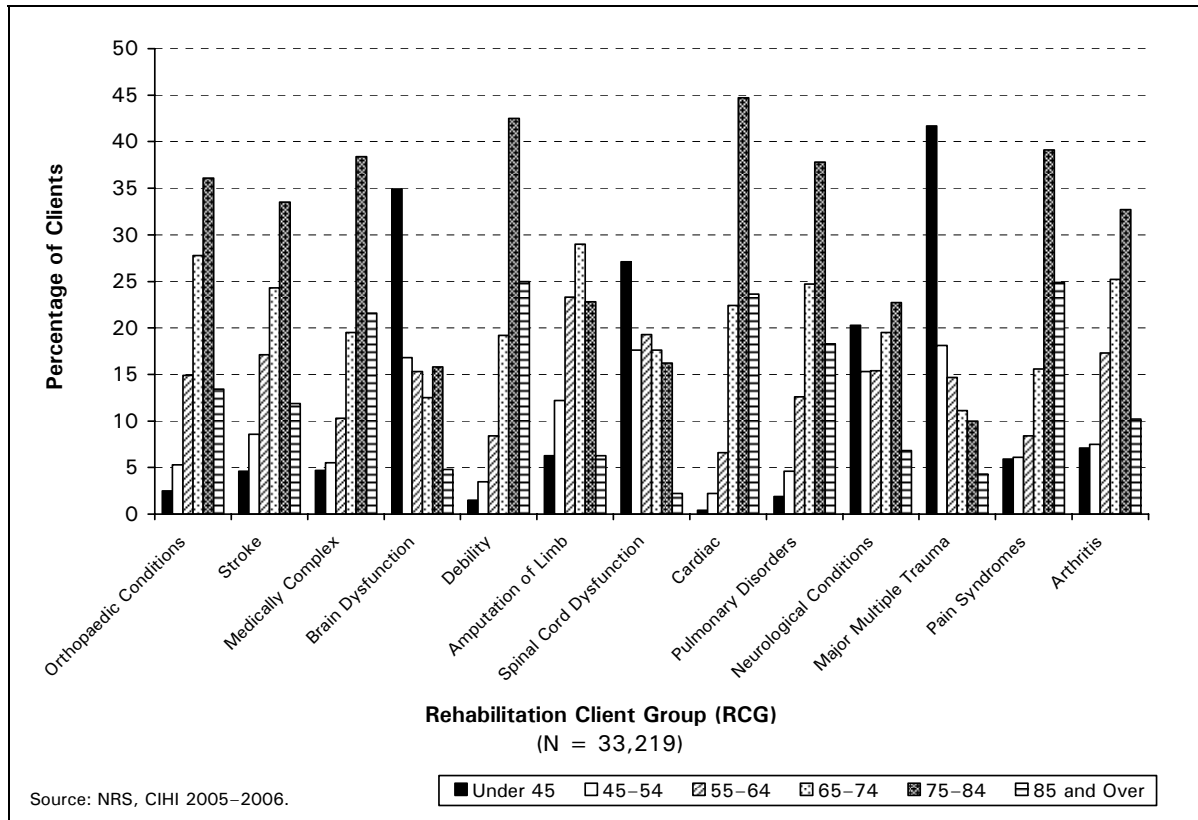
Figure 3.5.   Age at Admission of Inpatient Rehabilitation Clients by Rehabilitation Client Group, 2005–2006

At the aggregate level, the distribution of clients by age group in the neurological conditions RCG shows much less variation when compared to other RCGs. Further analysis examining the different conditions included in this RCG would likely suggest some variation with age. For example, multiple sclerosis (MS) and Parkinson's disease are diagnoses included in the neurological RCG. However, clients with MS tend to be younger, whereas Parkinson's is seen more frequently in the older population.

Also, for this analysis, the brain dysfunction and spinal cord dysfunction RCGs include clients with both traumatic and non-traumatic etiologies. When the brain dysfunction and spinal cord dysfunction client groups are further disaggregated, specific trends are noted with regards to traumatic and non-traumatic as well as male/female distributions.

Analyzing age groups by sex of clients within each RCG showed that for some client groups, a substantial segment of clients within the individual RCGs consisted of either male or female clients in one or two age groups. Figure 3.6 looks at the age-sex distribution for the seven most frequently coded RCGs in the NRS in 2005–2006. The figure shows that orthopaedic clients tended to be older women; 44% of orthopaedic clients were females in the 65 to 74 and 75 to 84 age groups, while males of the same age group accounted for only 19% of orthopaedic clients. Similarly, debility clients also tended to be women aged 75 years and older, accounting for 41% of all clients in that RCG. In contrast, among limb amputation clients, males in the 65 to 74 and 75 to 84 age groups accounted for 36% of all limb amputation clients in the NRS. Females of the same age groups accounted for only 16% of clients in this RCG. Males under 45 years of age were the most predominant group in both brain dysfunction and spinal cord dysfunction RCGs and accounted for 25% and 19% of these RCGs, respectively.
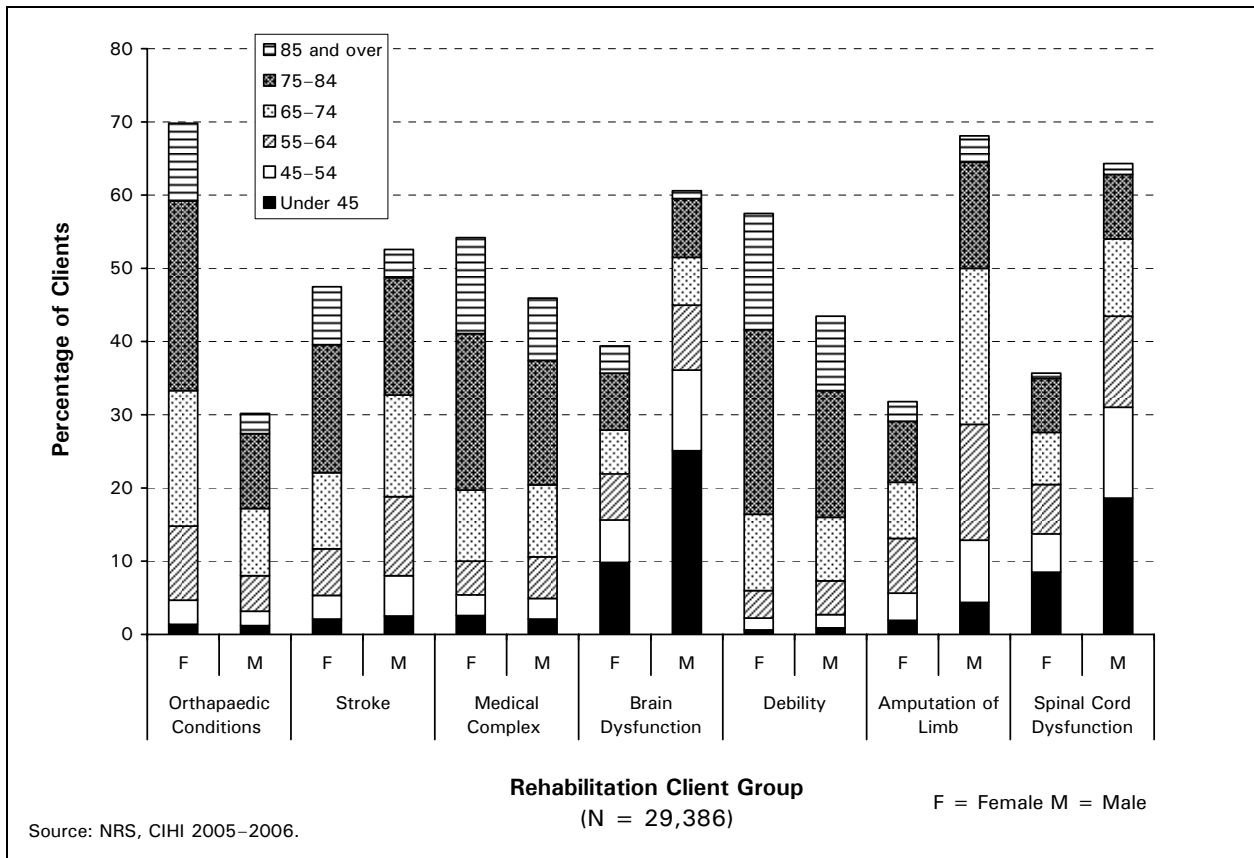
Figure 3.6.   Age and Sex of Inpatient Rehabilitation Clients by Rehabilitation Client Group, 2005–2006

While the stroke RCG shows overall proportions of males and females that are approximately equal, males outnumber females in all younger age groups, up until the 75 to 84 and 85 and over age groups, where female clients outnumber male clients. *(Quick Stats, Table 3.6)*

Pre-Admission Living Setting

During 2005–2006, almost all inpatient rehabilitation clients (92%) were living in a private house or apartment prior to their admission to hospital. This proportion ranged from 54% of clients in the amputation of limbs RCG to 97% of clients in the burns RCG.

For the NRS, if a client lives in a private dwelling, information is also collected on whether or not he or she received paid health services in the home prior to admission. Paid health services refer to health-related services that are paid for either privately through a third party or out-of-pocket, or publicly through provincial healthcare, and are received in the client's home. These services can include meals on wheels, home care, and hospital equipment at home, as examples, and may or may not be related to the condition for which the client was admitted. Figure 3.7 shows that the proportion of clients who lived in a private house or apartment *and* received paid health services varied across the RCGs. This proportion was largest among the amputation of limbs (38%), debility (30%) and neurological conditions (25%) and was smallest among the clients in the major multiple trauma and burns RCGs (both at 3%). *(Quick Stats, Table 3.7)*

Source: NRS, CIHI 2005–2006.

* Other RCGs Includes Congenital Deformities, Developmental Disabilities and Other Disabling Impairments

Legend:
- ▨ Other or Unknown Living Settings
- ☐ Private House/Apartment with Paid Health Services
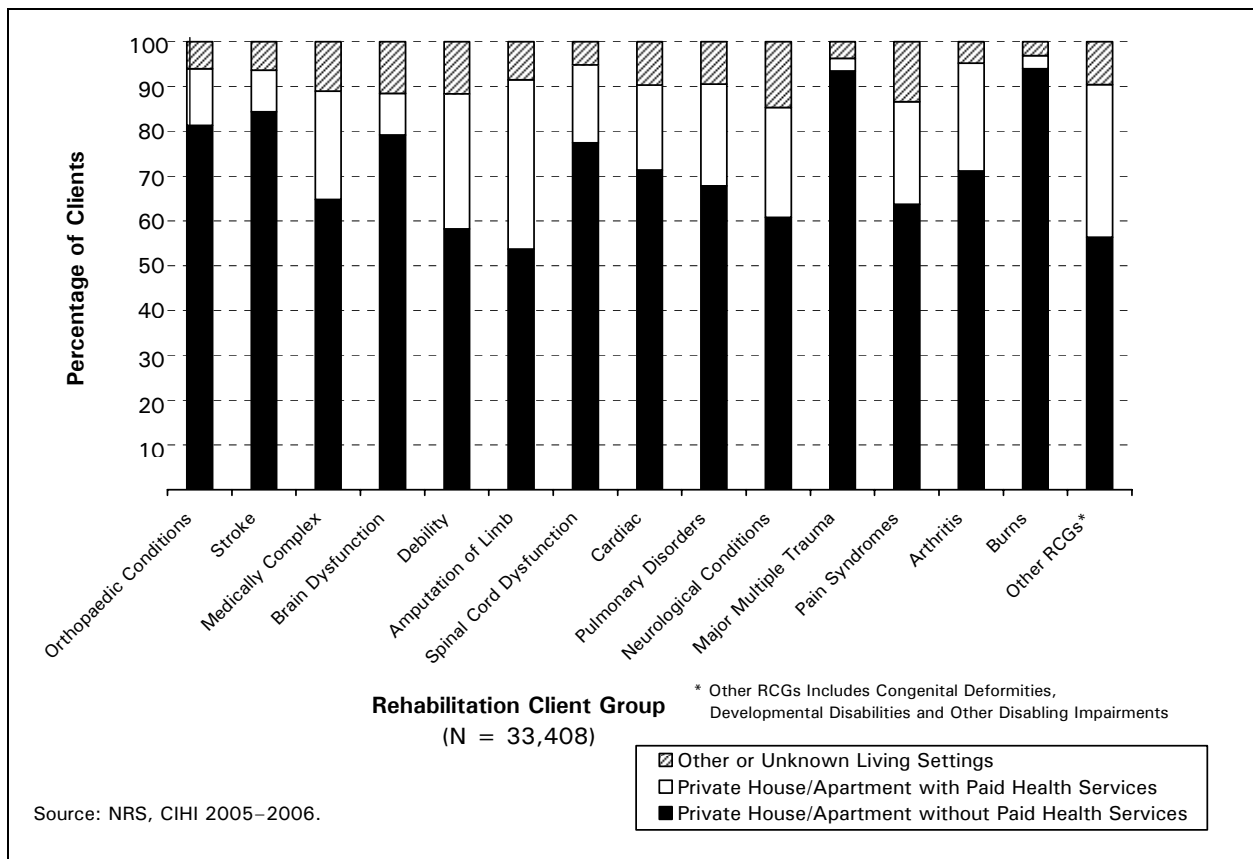- ■ Private House/Apartment without Paid Health Services

Figure 3.7. Pre-Admission Living Setting of Inpatient Rehabilitation Clients by Rehabilitation Client Group, 2005–2006

Total Function Scores

When clients are admitted to a participating NRS facility, their motor and cognitive functional abilities are assessed within 72 hours of admission using the FIM™ instrument, developed by the Uniform Data System for Medical Rehabilitation (UDS_{MR}). A similar assessment is carried out when the client is discharged from the facility. The FIM™ instrument contains 18 elements: 13 of these elements assess components of motor function, such as eating and walking (referred to as the motor subscale), and five elements assess cognitive abilities such as communication and social interaction (referred to as the cognitive subscale). A full list of the elements can be found in Appendix C of this report. Each of the 18 FIM™ instrument elements is rated on a scale from one to seven, with a higher score indicating that the client has a greater level of independence in performing the task involved with that element. The scores for the 18 elements can be added together to obtain a Total Function Score which provides a summary measure of the clients' overall functional ability. The Total Function Score ranges from 18 to 126, with a higher score indicating a relatively higher overall level of function and independence. Analysis of admission and discharge Total Function Scores provides some information about the variations in functional abilities of clients in the different RCGs. This chapter makes reference only to the Total Function Score for each RCG. Average Total Function Scores are presented to one decimal place.

Not all inpatient rehabilitation clients are able to have a full functional assessment at discharge due to reasons such as unexpected transfer out of the rehabilitation bed. Among the clients discharged in 2005–2006, just under 4% of clients did not have a full FIM™ instrument assessment on discharge and therefore did not have a submitted discharge Total Function Score. The proportion of clients without a discharge Total Function Score varied across RCGs from 2% of clients in the major multiple trauma and arthritis RCGs to 8% of clients in the cardiac and debility RCGs. Figures in this report that include analysis of both admission and discharge scores derived from the FIM™ instrument are based on the 32,114 complete pairs of admission and discharge FIM™ instrument assessments that were submitted for discharges in 2005–2006. Figures that include only analyses of admission scores are based on the 33,408 records submitted with complete admission scores for those clients discharged in 2005–2006.

Total Function Scores at Admission

Figure 3.8 shows the distribution of the admission Total Function Scores for all clients in participating NRS rehabilitation facilities who were discharged during 2005–2006 and for whom a complete admission Total Function Score was available. The distribution of admission Total Function Scores suggests that relatively fewer clients had very low or very high admission scores. The average (mean) and median admission Total Function Scores were 85.4 and 89.0, respectively. This figure presents the range of function scores, as measured by the FIM™ instrument that clients exhibit on admission to rehabilitation.
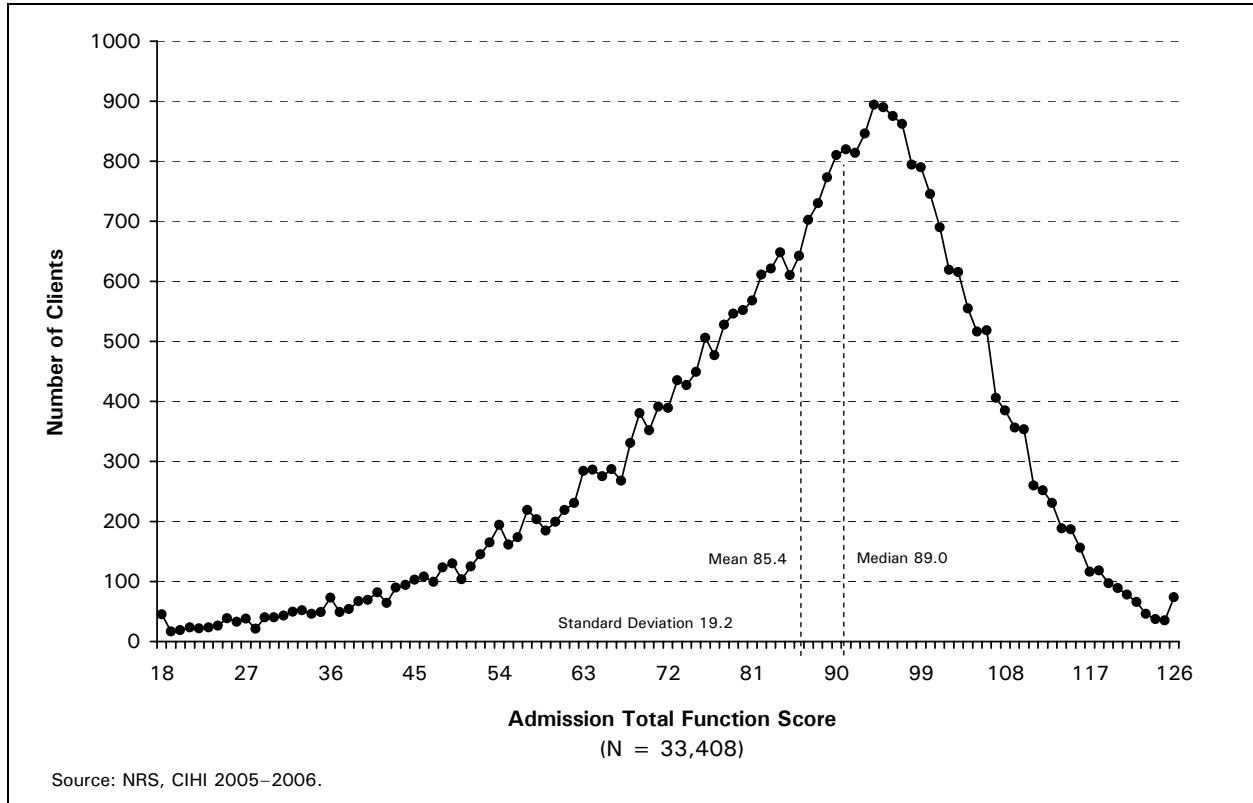
Figure 3.8. Distribution of Admission Total Function Scores of Inpatient Rehabilitation Clients, 2005–2006

Investigation of rehabilitation clients' Total Function Scores on admission and their pre-admission living setting (see previous section) suggests that those who lived in a private house or apartment without paid health services prior to admission appear to have had, on average, higher functional abilities on admission compared to clients who received paid health services at home prior to admission. The average admission Total Function Scores of clients who did not receive paid health services prior to admission was 87.1 compared to 82.1 for clients who had received paid health services. Clients who had received paid health services at home, in turn, had a higher average admission Total Function Score compared to clients who lived in other living settings such as assisted living and residential care facilities prior to admission, where average admission Total Function Scores were 76.5 and 68.6, respectively.

Change in Total Function Scores from Admission to Discharge

Improvement in client function, both physical and cognitive, is a key underlying goal of rehabilitation. Whether or not a client returns to his or her pre-injury/illness level of ability, the objective of the clinical team is to maximize function gain so that the client can live as independently as possible. Comparisons between client groups based on the *change* in Total Function Scores from admission to discharge shed some light on the degree of improvements in motor and cognitive function that occurred during inpatient rehabilitation stays. A larger increase in Total Function Score from admission to discharge suggests that a greater level of functional improvement (relative to admission) has been achieved. Overall, the average Total Function Score change for all clients during 2005–2006 was 19.6, from an average score of 85.9 at admission to 105.5 at discharge. This section analyzes the average change in Total Function Score from admission to discharge for the various NRS RCGs.
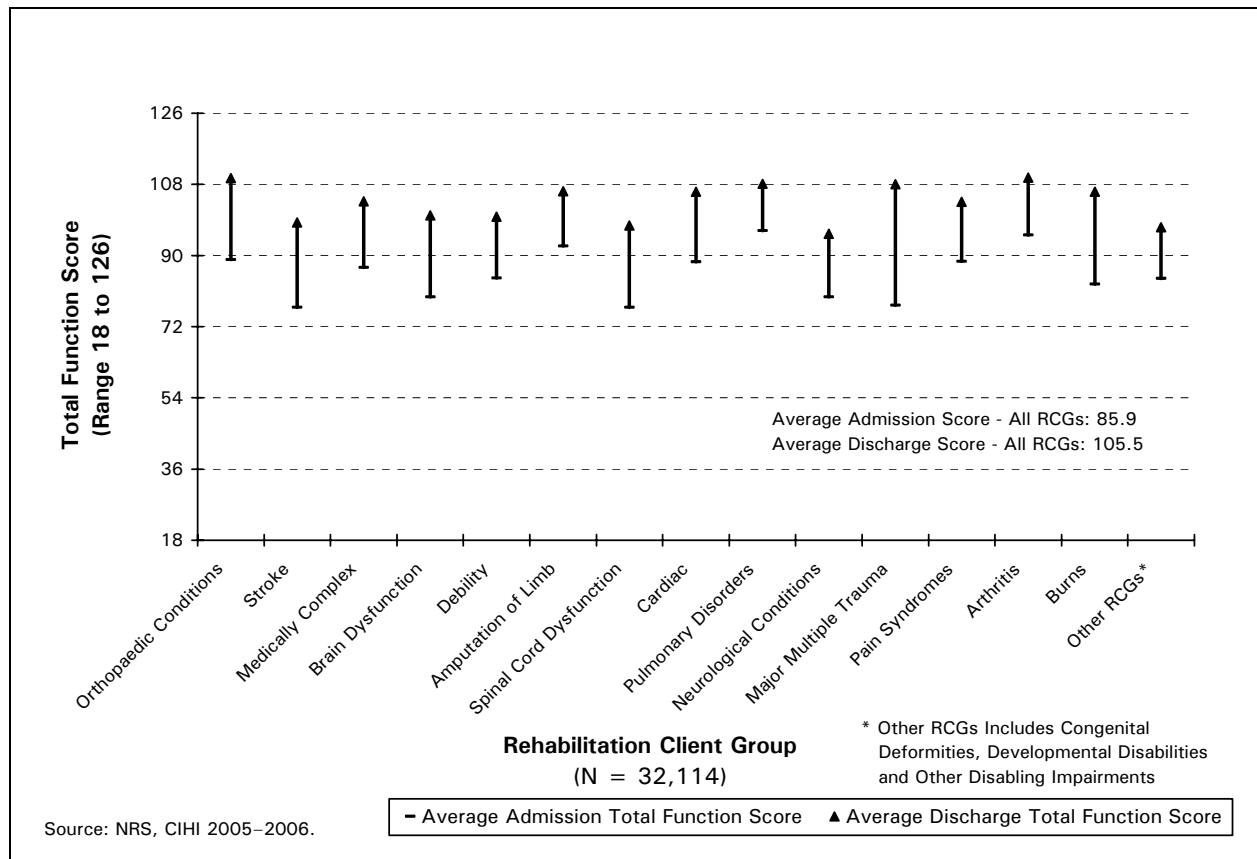
Figure 3.9. Admission and Discharge Total Function Scores by Rehabilitation Client Group, 2005–2006

Figure 3.9 presents the average change between admission and discharge Total Function Scores for each individual RCG, so that comparisons can be made across NRS client groups. The graph shows that some client groups are typically admitted to inpatient rehabilitation with higher average admission Total Function Scores (limb amputation, pulmonary, arthritis) than others (stroke, brain and spinal cord dysfunction, neurological conditions, major multiple trauma and burns). In addition, the figure shows that some client groups show a greater gain

in Total Function Score, on average, from admission to discharge. For example, the major multiple trauma client group showed an average score increase of 30.6, and burn clients had an average score increase of 23.4. Other client groups had relatively smaller gains in function, as measured by the FIM™ instrument, during the course of the rehabilitation stay. The pulmonary group, for example, saw an average score increase of 11.9.

When assessing improvements in Total Function Score, it is important to consider the "starting point", or admission Total Function Score. Client groups with higher average function scores on admission have smaller potential gains to be made as measured by the FIM™ instrument. Some groups showed similar changes in Total Function Score but had very different admission scores. The arthritis and neurological client groups had similar function score changes of 14.6 and 16.0 respectively, but the arthritis group had an average admission score of 95.1, whereas the average admission score for the neurological group was lower at 79.5. Conversely, the neurological and burn client groups had similar average admission scores of 79.5 and 82.8 respectively, but the burn group showed more improvement on average from admission to discharge than the neurological group (23.4 versus 16.0, respectively). *(Quick Stats, Table 3.9)*

Analyzing change in Total Function Score by RCG may provide information to assist in identifying variations in functional improvement in clients with different health conditions. Variations in functional improvement of clients in the different RCGs may be related to factors such as age, pre-injury/illness functional status, and length of rehabilitation stay, among other things. Further research is required to investigate possible links between these factors and the potential for change in Total Function Score for the various client groups.

The admission Total Function Scores of clients who were assessed at both admission and discharge were higher, on average, than those clients who were assessed only at admission (i.e. did not have a discharge Total Function Score). The average admission Total Function Score among clients who were assessed at both admission and discharge was 85.9 compared with 74.1 for those who were assessed only at admission. Further investigation is required to assess potential explanatory factors for this variation. However, it may be that clients who were not able to be assessed at discharge due to reasons such as unexpected transfer or death may have had more health problems and may have been less functional on admission than those clients who were able to complete their rehabilitation stay and were able to be assessed at discharge.

Length of Stay

Length of stay in a rehabilitation program can potentially be influenced by many factors; such as the presence of co-morbid conditions, the number of beds in a facility, staffing, and the availability of needed post-discharge care resources. As such, caution should be used when interpreting values for rehabilitation lengths of stay. However, it may be of interest to note some of the differences in lengths of stay across various client groups.

Figure 3.10 shows the median length of stay, excluding service interruptions, for clients in each RCG. The overall median length of stay was 17 days. Clients in the burns and spinal cord dysfunction RCGs had the longest median lengths of stay (50 and 41 days, respectively) while clients in the orthopaedic conditions RCG had the shortest median length of stay at 12 days. Cardiac and arthritis clients also had relatively shorter median lengths of stay of 15 and 14 days, respectively. Some of these variations may be attributable, in part, to the different levels of care required for these client groups. Spinal cord dysfunction clients frequently require specialized rehabilitation training, often taking longer to make functional gains due to the degree of disability associated with spinal cord injury. Conversely, orthopaedic and cardiac clients are more likely to have undergone a standard, elective procedure such as a joint replacement or a coronary artery bypass graft, and may show functional improvement in a shorter period of time. *(Quick Stats, Table 3.10)*
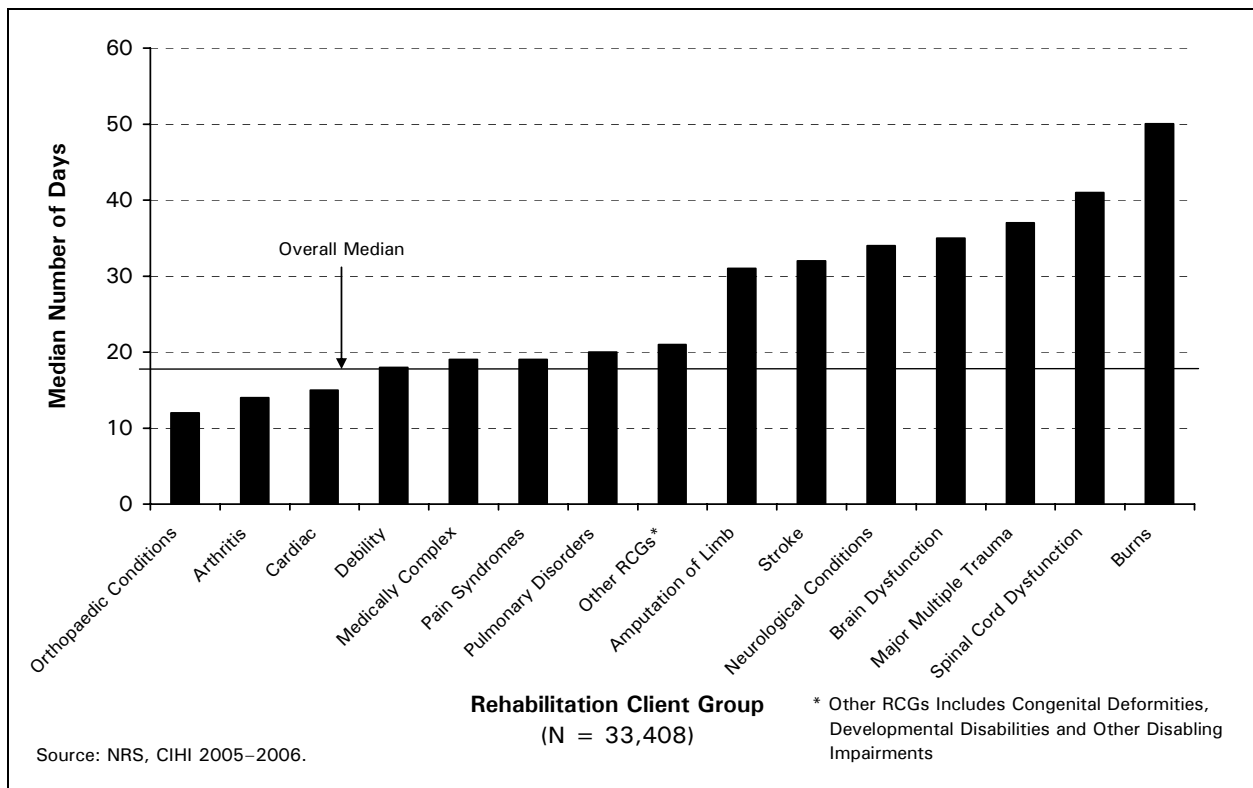

Figure 3.10. Median Length of Stay in Inpatient Rehabilitation Clients by Rehabilitation Client Group, 2005–2006

Length of Stay Efficiency

For the NRS, the Length of Stay Efficiency indicator measures the functional progress made by clients in relation to how long they stayed in rehabilitation. Average length of stay efficiency is calculated by dividing change in Total Function Score by length of stay for each individual client, and then taking the average of the individual values. It demonstrates the change in Total Function Score (as measured using the FIM™ instrument) per day of client rehabilitation. In general, a higher value for length of stay efficiency suggests that client functional status improved to a greater degree in a shorter period of time. As with length of stay, service interruption days are not included in this calculation.

The average length of stay efficiency for all clients discharged from participating rehabilitation facilities in 2005–2006 was 1.4. In other words, for each day that a client participated in an inpatient rehabilitation program, their Total Function Score increased, on average, more than one point. The average length of stay efficiency ranged from 0.5 for amputation of limb clients to 1.9 for orthopaedic clients. *(Quick Stats, Table 3.10)*

Care should be exercised when examining length of stay efficiency values. As mentioned earlier, change in Total Function Score and length of stay—both of which are used in the calculation of length of stay efficiency—can be influenced by multiple factors. This indicator is not intended to be used in isolation but rather may be used alongside other information such as resource availability, age distribution and admission Total Function Scores for the various Rehabilitation Client Groups in order to provide more insight into the reasons for the variations in length of stay efficiency between the RCGs.

Admission Total Function Score and Length of Stay

As discussed earlier in this chapter, many factors can influence a client's length of stay in rehabilitation. Considering that a key goal of rehabilitation is to improve functional levels, it might be reasonable to observe that, keeping all other things constant, a lower level of functional ability on admission might lead, on average, to a longer length of stay in rehabilitation. Conversely, a higher level of functional ability on admission might result in a typically shorter stay. Figure 3.11 depicts average Total Function Scores on admission (solid line) and median length of stay (dashed line) across all RCGs. *(Quick Stats, Table 3.11)*
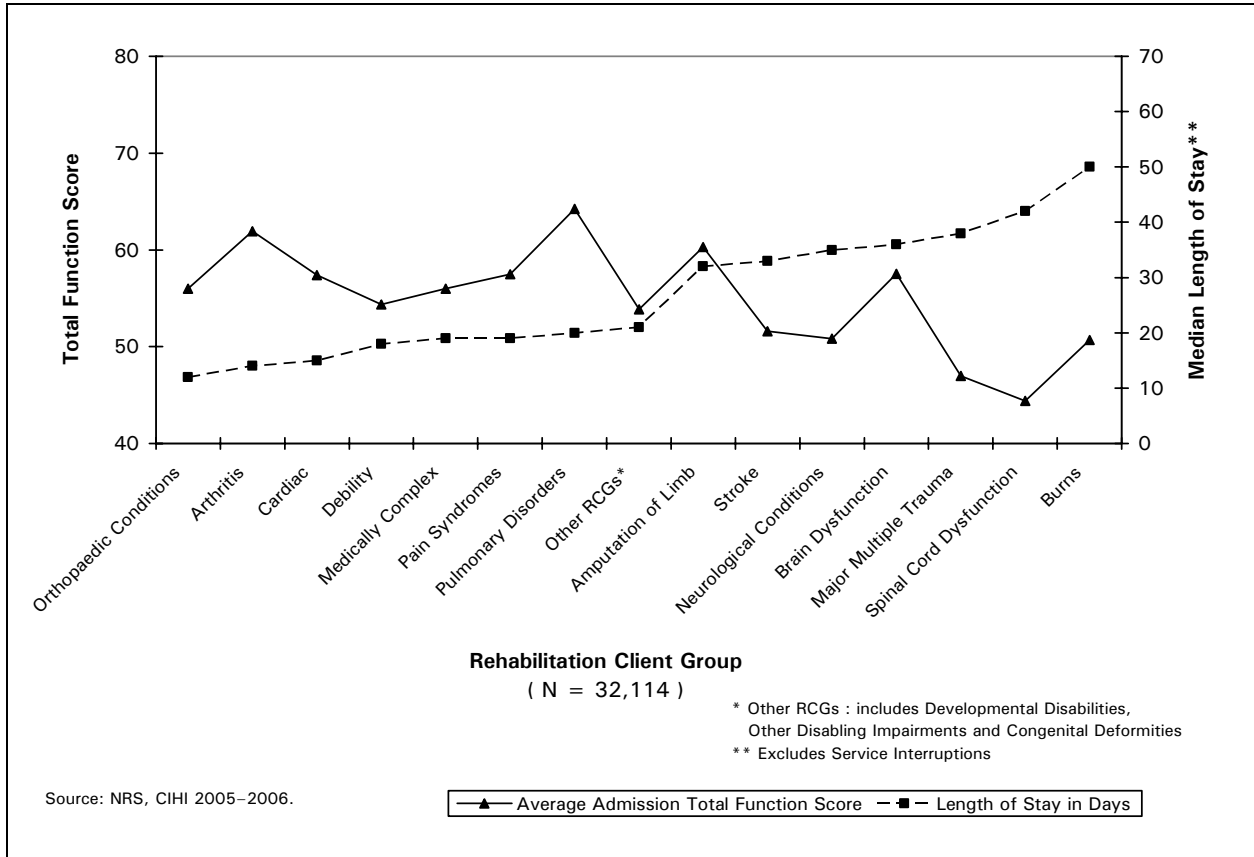
Figure 3.11.   Average Admission Total Function Score and Median Length of Stay by Rehabilitation Client Group, 2005−2006

This analysis is not intended to conclusively show that a causal relationship exists between admission Total Function Score and length of stay, but it is interesting to note that across nearly all RCGs, lower admission scores tend to be associated with longer lengths of stay, and higher admission scores tend to be associated with shorter lengths of stay. There is a statistically significant inverse correlation ($r = -0.37$, $p < 0.0001$) between admission Total Function Score and length of stay in the NRS. It is important to note that this figure does not control for other factors such as client age, or the presence of co-morbidities (other health conditions that may be present in addition to the main rehabilitation health condition).

Clients Reporting Pain

The presence of pain can impede the ability to make progress in rehabilitation. For the NRS, clients are asked at admission and again at discharge to report whether or not they are currently experiencing pain. This pain may or may not be related to the condition that led the client to inpatient rehabilitation. This is one of the two data elements collected in the NRS that is based on *client* reporting, rather than on what the clinician observes. On admission to rehabilitation in 2005−2006, two thirds of clients (66%) reported they had some degree of pain at admission, 29% reported no pain, and the remaining 5% of clients were unable to respond.

Figure 3.12 shows some variation in the proportion of clients who reported pain across the different RCGs. The RCGs with the largest proportion of clients reporting pain at admission were pain syndromes (87%), arthritis (87%), orthopaedic conditions (81%), and major multiple trauma (79%). The RCGs with the lowest proportion of clients reporting pain at admission were stroke (38%), pulmonary disorders (44%), and brain dysfunction (46%). The burn RCG had the highest proportion of clients who were unable to answer (12%). *(Quick Stats, Table 3.12)*

* Other RCGs Includes Congenital Deformities, Developmental Disabilities and Other Disabling Impairments

Source: NRS, CIHI 2005–2006.

Rehabilitation Client Group
(N = 22,162)
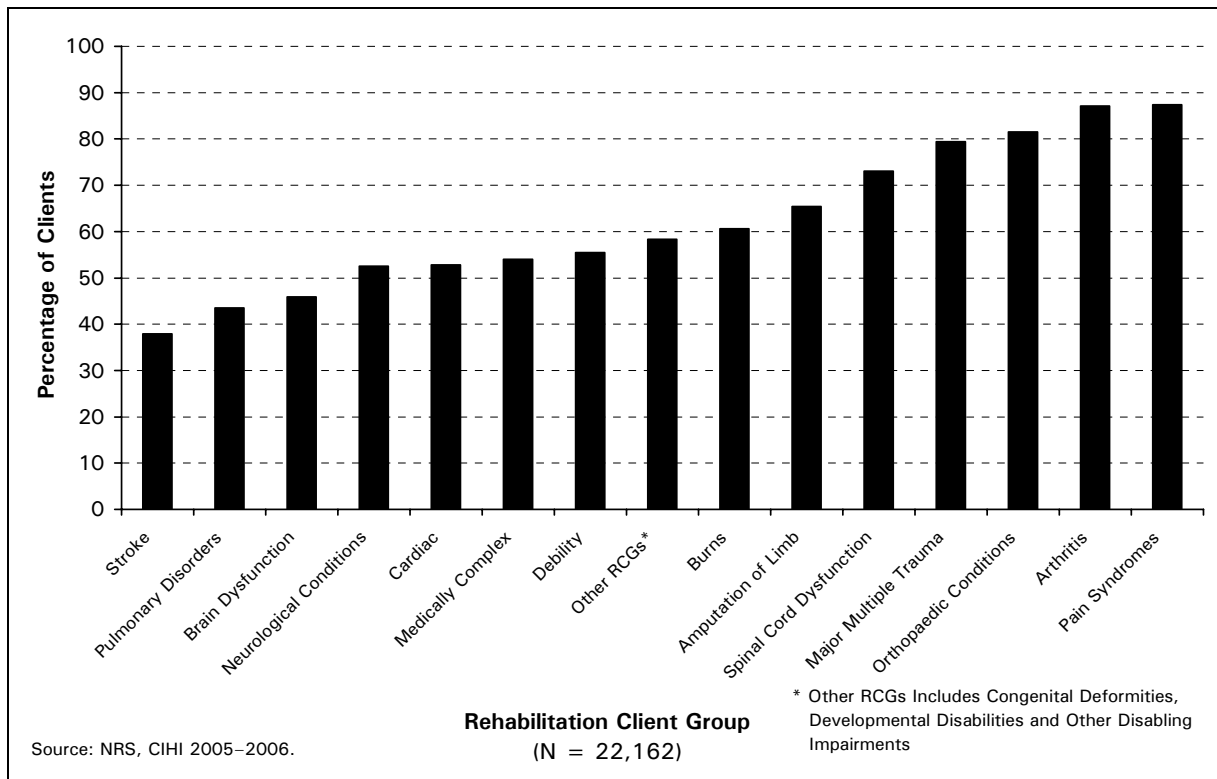
Figure 3.12.   Inpatient Rehabilitation Clients Reporting Pain at Admission by Rehabilitation Client Group, 2005–2006

Clients that reported pain were also asked to rate the intensity of the pain (mild, moderate or severe) and the number of activities that were impacted by the pain (none, a few, some or most). Clients were identified as having an improvement in pain levels if they had less pain and/or fewer activity limitations due to pain at discharge than they had at admission, or if they no longer had any pain on discharge.

During 2005–2006, among clients who reported experiencing pain at the time of admission and who were able to rate their level of pain at discharge, over two-thirds (68%) reported an improvement in pain levels and/or fewer activity limitations due to pain by the end of their stay in rehabilitation. Figure 3.13 displays the proportion of clients reporting improvement in pain by RCG. The proportion of clients reporting improvement in their level of pain ranged from a low of 59% among burn clients to a high of 70% among orthopaedic clients. For most client groups, between 61% and 66% of clients reported an improvement in pain levels on discharge. *(Quick Stats, Table 3.13)*
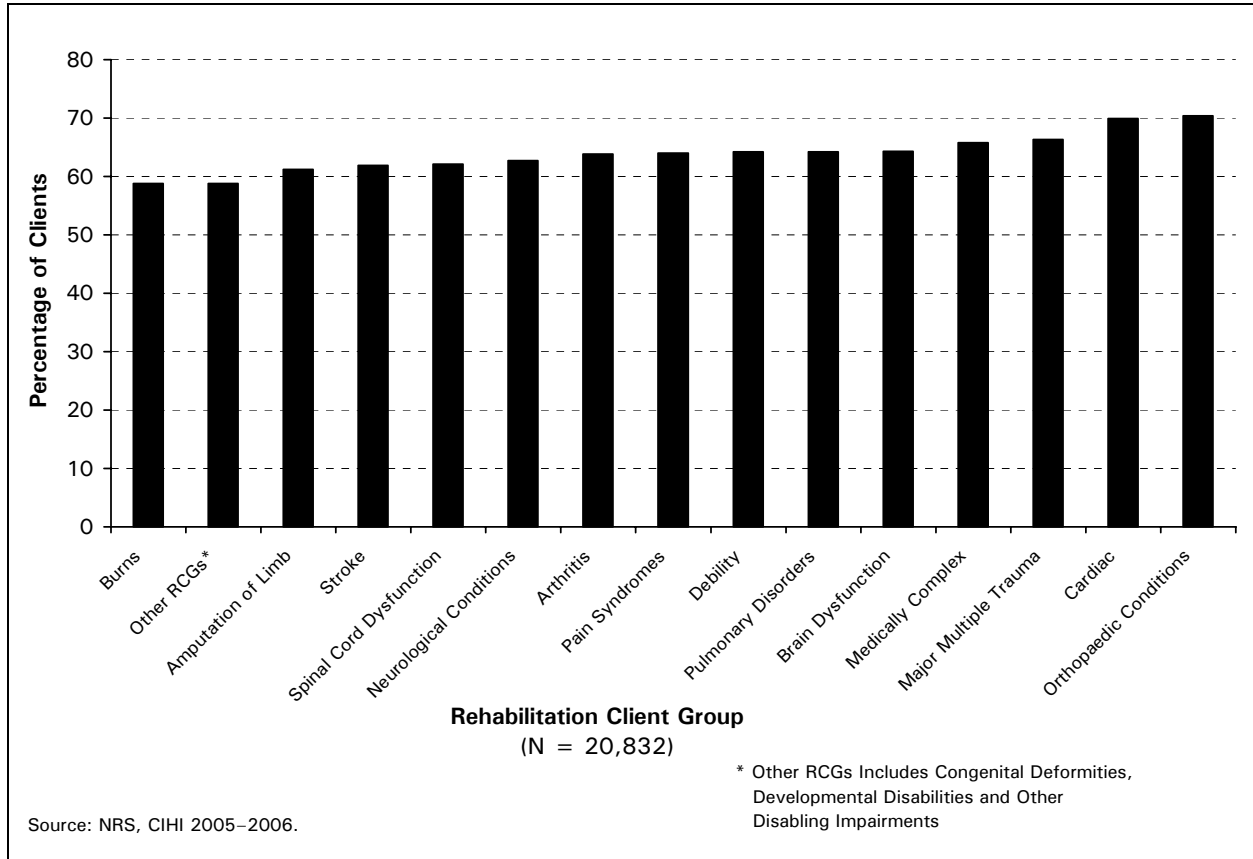
Figure 3.13. Inpatient Rehabilitation Clients Reporting an Improvement in Pain at Discharge by Rehabilitation Client Group, 2005−2006

Reasons for Discharge

Upon discharge from rehabilitation, clients are identified as to whether or not their rehabilitation goals were met and, for those that have met their goals, whether they are being discharged into the community or transferred to another facility or unit. Other reasons for discharge can include the client withdrawing from the program, or the death of the client. Note that a return to the community does not necessarily imply that the client returned back to their home, if that was their pre-admission living environment. Community living can include living environments such as a retirement community or other type of assisted living, or returning to live with a family member. A transfer to another facility generally implies that the client is still in the healthcare system. These living environments can include long-term care facilities, alternate level-of-care beds, or a transfer back to acute care for further treatment. Recall that Chapter 2 highlighted that, in 2005−2006, 80% of all NRS clients met their rehabilitation goals as determined at admission and returned to live in the community. Eleven percent met their goals but were transferred to another facility or unit. Another 8% were reported as not having met their service goals upon discharge, regardless of discharge destination. In this section, similar information is presented by individual RCG.
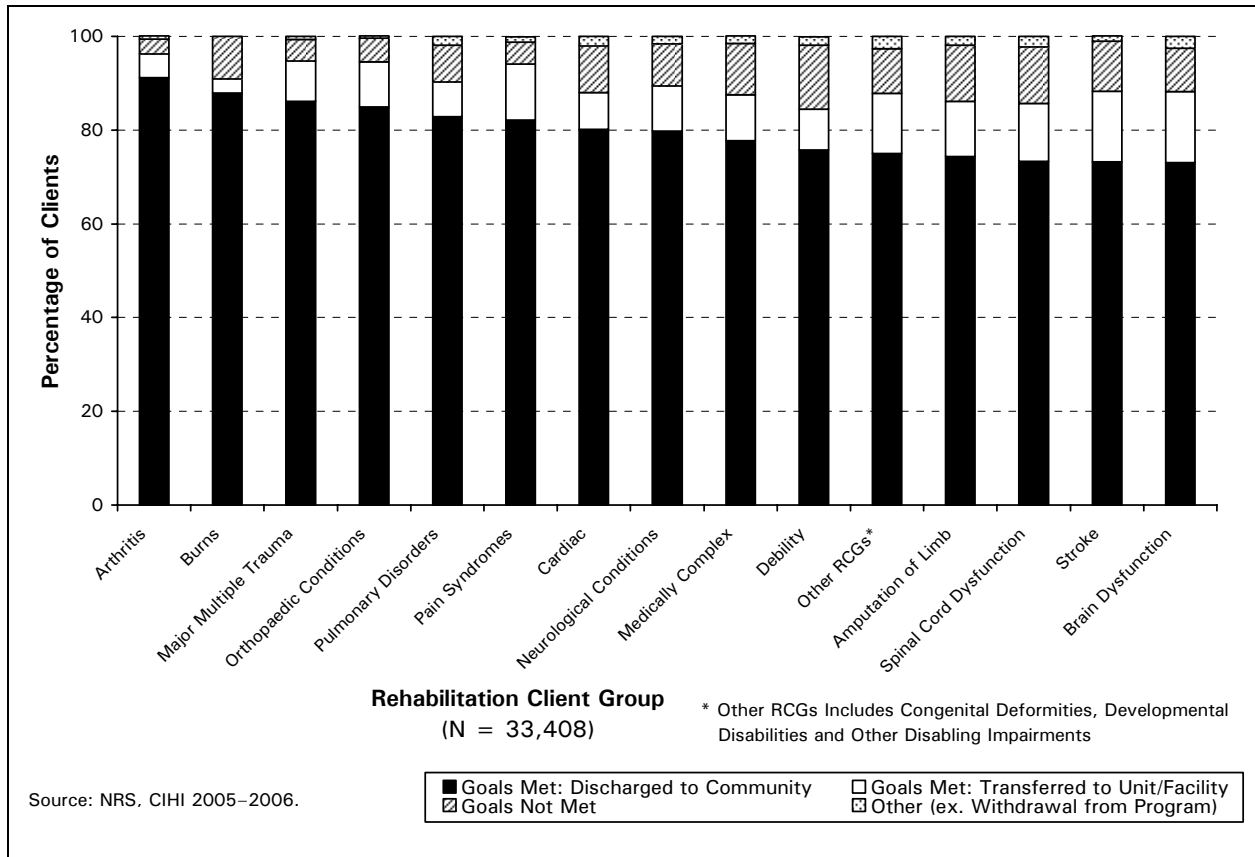
Figure 3.14.   Reasons for Discharge from Inpatient Rehabilitation by Rehabilitation Client Group, 2005–2006

Figure 3.14 shows that reasons for discharge varied somewhat by RCG. Although most clients within each RCG met their service goals and returned to living in the community, the proportion doing so ranged from an average low of 73% for brain dysfunction, stroke and spinal cord dysfunction clients to a high of 91% for clients admitted with arthritis. Other RCGs with higher proportions of clients meeting their goals and returning to the community were burns (88%) and major multiple trauma (86%).

Brain dysfunction and stroke RCGs had relatively higher proportions of clients who met their service goals but were referred or transferred to another unit or facility at the time of discharge (both 15%). Client groups with the highest reported proportion of not achieving service goals include the debility (14%) and spinal cord dysfunction (12%) client groups. *(Quick Stats, Table 3.14)*

Pre-Admission and Post-Discharge Living Setting

The NRS data indicate that during 2005–2006, 83% of all clients who were living in a private house or apartment prior to their admission to an inpatient facility returned to this environment following discharge; however, this proportion varied across the RCGs. Eighty-nine percent of orthopaedic and arthritis clients returned to their private house or apartment upon discharge, while the stroke and burns RCGs had lower rates with 72% of clients in each case returning home upon discharge.
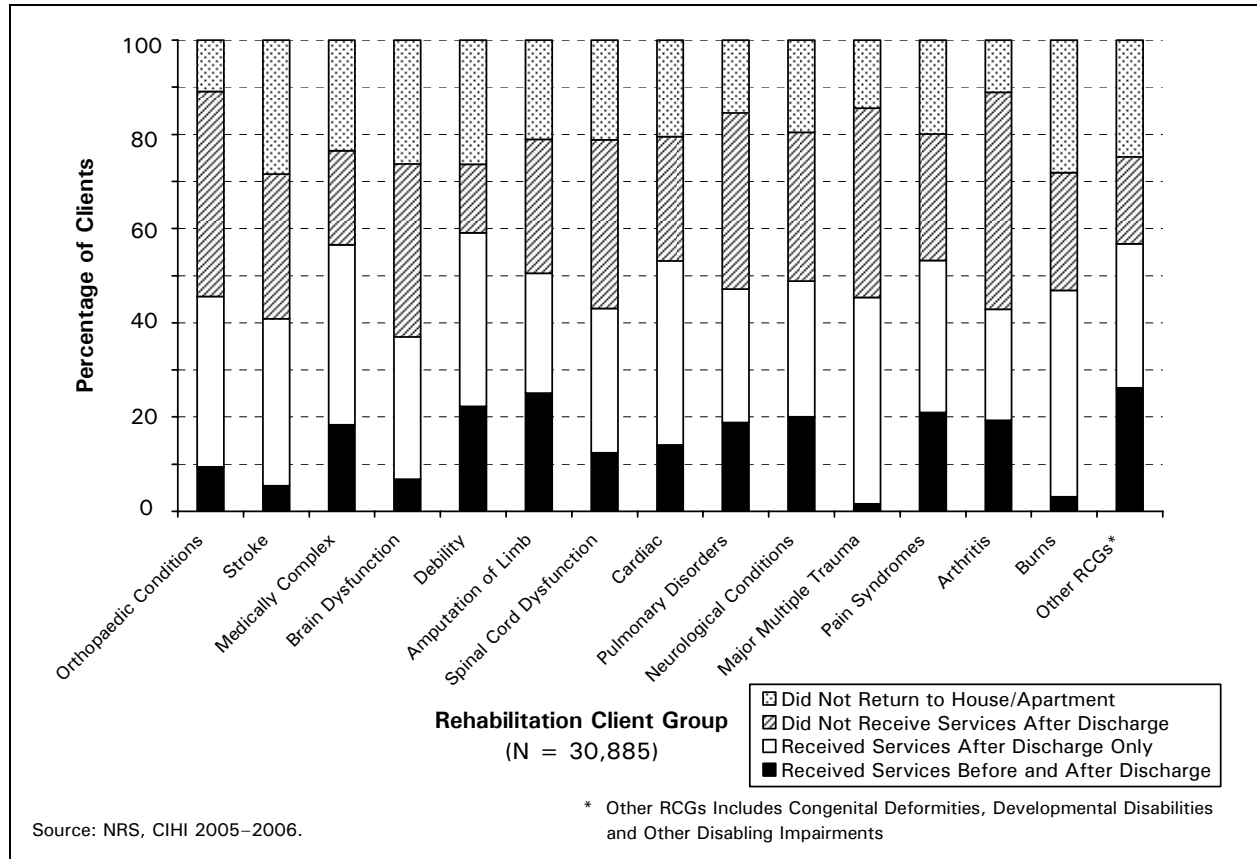
Figure 3.15.   Receipt of Paid Health Services in the Home After Discharge for Clients Who Were Living at Home Prior to Admission by Rehabilitation Client Group, 2005–2006

Figure 3.15 presents data relating to rehabilitation clients who were living at home prior to admission. The top section of the individual RCG bars shows the proportion of clients in each RCG that were unable to return home following discharge. Twenty-eight percent of stroke and burn clients who were living at home prior to admission were unable to return home immediately after being discharged from rehabilitation. More than a quarter of all debility and brain dysfunction clients were also unable to return home following their rehabilitation stay. Conversely, only 11% of clients in the orthopaedic and arthritis groups were unable to return home. The average discharge Total Function Score for clients not returning home was 87.1 as compared to an average discharge Total Function Score of 109.9 for clients who returned to live in a house or apartment (with or without paid services).

Of those clients that did return home following rehabilitation, some required paid health services on discharge and some did not. The figure shows these proportions also varied across client groups. In the orthopaedic and arthritis groups, 50% of clients in both groups returned home without requiring paid health services, either because the client was able to perform these services themselves, or the needs were met on an unpaid basis. The average discharge Total Function Score for clients returning home but not requiring paid services was 114.1.

Data for clients requiring paid health services upon return home were analyzed into two groups: those who received paid health services at home only at discharge, and those who received paid health services at home both prior to admission *and* after discharge. Relatively fewer major multiple trauma, burn, stroke and brain dysfunction clients were receiving paid health services prior to admission, but proportions of these groups requiring paid services on discharge ranged from 30% to 44%. RCGs that had higher proportions of clients requiring paid services both before admission *and* after discharge included the debility and limb amputation client groups. The average discharge Total Function Scores for clients requiring paid services only after discharge was 104.4, while the average discharge score for clients requiring paid services both before admission and after discharge was 102.8. *(Quick Stats, Table 3.15)*

Summary

Separating rehabilitation clients into groups according to the principle diagnosis/condition that led to the inpatient rehabilitation stay assists in making the aggregate NRS data more meaningful, particularly for clinicians who predominately see only certain groups of clients. Chapter 3 describes similar information as presented in Chapter 2 but presents it by individual RCGs. Consequently, certain variations and patterns appear that may help to highlight the characteristics of clients in the various groups.

Key Findings:

- Orthopaedic and stroke clients continue to make up the largest component of inpatient rehabilitation records submitted to the NRS. In 2005–2006, these clients accounted for two-thirds of all inpatient rehabilitation clients discharged from participating facilities.

- Orthopaedic clients tend to be older females, while traumatic brain dysfunction, spinal cord dysfunction and major multiple trauma clients tend to be younger males.

- Three-quarters of orthopaedic clients were admitted to General facilities, while the same proportion of spinal cord dysfunction clients were admitted to Specialty facilities.

- There appears to be an inverse relationship between admission Total Function Score and median length of stay.

- Median length of stay varied considerably across RCGs, from a low of 12 days for orthopaedic clients, to a high of 50 days for burn clients.

- On average, clients in all RCGs demonstrated improvements in function during rehabilitation. Average gain in Total Function Score per day of rehabilitation ranged from 0.5 for limb amputation clients to 1.9 for orthopaedic clients.

- Most clients within each RCG met their service goals and returned to live in the community following rehabilitation, ranging from 73% of brain dysfunction, stroke and spinal cord dysfunction clients to 91% of clients in the arthritis RCG.

- The stroke RCG accounted for one-fifth of all records in the NRS during 2005–2006, and was among RCGs with the lowest proportion of clients returning to their private home or apartment on discharge.

Chapter 4. Future Directions

Inpatient Rehabilitation in Canada, 2005–2006 is the fourth public report based on data from the National Rehabilitation Reporting System (NRS), developed and maintained by the Canadian Institute for Health Information (CIHI).

The report provides information on hospital-based physical rehabilitation services that occurred between April 2005 and March 2006 in participating rehabilitation units or freestanding rehabilitation facilities in Canada.

The goal of this fourth report is to examine the scope and outcomes of inpatient rehabilitation services across the country, both for the overall rehabilitation population and, more specifically, for the individual client groups identified in the NRS. This report is based on data from 91 participating facilities across Canada that reported to the NRS from April 2005 to March 2006, and provides a snapshot of rehabilitation activity from which further exploration can continue. By facilitating the standard collection of data regarding inpatient rehabilitation services and the people who receive them, the information available from the NRS provides an opportunity for discussion and further analysis in the field of rehabilitation.

For participating rehabilitation facilities, this report provides a summary of information that is contained in the comparative reports, already received by NRS facilities from CIHI, relating to activity between April 2005 and March 2006. The comparative reports, which are produced four times a year, provide hospital-specific and peer group information to facilitate planning and management decisions.

For provincial and territorial health departments and regional health authorities across the country, this report provides an overview of participating facilities' characteristics and selected outcomes. Although inpatient rehabilitation is only one component of the continuum of the physical rehabilitation sector, the report may provide another resource when considering future policy, funding or planning directions.

Inpatient Rehabilitation in Canada, 2005–2006 is one of the only publications that describes characteristics of hospital-based rehabilitation services and clients in Canada. This allows people who have participated in rehabilitation programs themselves, or who know of family or friends who have, to gain a better understanding of how rehabilitation services information can support decisions and insight in this area of health care.

Measuring Function and Outcomes in Rehabilitation

A cornerstone of the NRS is the concept of human function, evidenced by the fact that much of the information collected in the NRS relates to functional performance of tasks related to daily living. As a reporting system, the NRS focuses on the role of rehabilitation in assisting individuals to achieve maximum independence in daily living and maintain that independence following discharge from the rehabilitation setting. Successful rehabilitation programs and effective service delivery require more than just a thorough understanding of medical diagnoses and their consequences; clinical and outcome-related data across the continuum of care is vital. The assessment of function at admission and discharge (and optionally at follow-up), as measured with the FIM™ instrument, provides clinicians with a quantitative measure of areas of functional limitation and changes in a client's functional independence following a rehabilitation stay. For individual clients, this can mean interventions tailored to their specific needs and goals. For rehabilitation managers and coordinators, aggregate data on client outcomes provide part of the information required for resource planning and implementing successful service delivery programs.

For the NRS, data related to functional levels are primarily collected using the 18-item FIM™ instrument, which is a standardized assessment tool developed in the United States by the Uniform Data System for Medical Rehabilitation (UDS$_{MR}$) and is recognized across Canada and internationally.

As familiarity with the NRS in hospitals and other organizations across the country grows, CIHI continues to explore new analytical themes and methods to present more specific information on functional status for the range of client groups seen in this reporting system. Where sufficient volumes of records exist in the NRS, further questions about functional status and related outcomes can be explored, in Analyses in Brief, special studies or through participating facilities making use of NRS data for further research in the rehabilitation community, for example:

- Whether specific surgical procedures provided in acute care impact on functional status and other outcome measures in the NRS;

- How NRS data can be used to incorporate "best practices" in various rehabilitation settings;

- Whether trends or variation in functional status and clinical outcomes across several years are evident in the NRS data.

Towards Comprehensive Reporting

As a result of its partly voluntary nature, the NRS does not have complete coverage of all inpatient rehabilitation services in Canada. Therefore, the information presented in this report is limited in the extent to which the characteristics, indicators and outcomes can be assumed to be representative of all inpatient rehabilitation services in Canada.

In the future, as more hospitals implement the NRS to support their management and quality improvement activities, and as more provinces, territories and regions begin to use NRS data for planning and policy making, the level of understanding about rehabilitation services may become clearer. A vision for the NRS is to have comprehensive reporting for all inpatient physical rehabilitation services across Canada. Achieving this objective will contribute to the findings released through the various NRS reporting activities.

By enhancing the information contained in the NRS through consultation with various hospital and government partners and through further development, future analytical reports released by CIHI may address additional topics of interest to rehabilitation stakeholders. As well, incorporating additional sources of information, such as published research and recognized data sources, numerous other questions can facilitate exploration, including:

- What is the impact of clinical and demographic characteristics of inpatient rehabilitation clients on discharge destination?

- How will inpatient rehabilitation services be affected by Canada's aging population?

- How do hip and knee replacement patient characteristics and surgical techniques affect inpatient rehabilitation outcomes?

- What is the profile of inpatient rehabilitation clients who have experienced a sports-related traumatic injury?

Conclusion

As a reporting system, the NRS will continue to provide an opportunity for hospital staff, policy-makers and other stakeholders to measure activity, to monitor outcomes and to respond to evolving demands and opportunities in Canada's health care system. As one component of the rehabilitation reporting activities at CIHI, subsequent annual versions of *Inpatient Rehabilitation in Canada* will continue to provide relevant and important information about hospital-based physical rehabilitation.

For more information, contact rehab@cihi.ca or visit the website of the National Rehabilitation Reporting System www.cihi.ca/nrs.

Appendix A: NRS Glossary

Terms related to the National Rehabilitation Reporting System are taken from the Rehabilitation Minimum Data Set Manual, which is maintained and distributed by the Canadian Institute for Health Information. Refer to this manual for context-specific information relating to these terms.

The 18-item FIM™ instrument assessment, and the Rehabilitation Client Groups referenced herein are the property of Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

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A

Activities of Daily Living (ADL)—Basic daily activities such as eating, grooming, bathing, transferring and dressing.

Adaptive Devices—Items used during the performance of everyday activities that improve function and compensate for physical, sensory or cognitive limitations.

Admission FIM™ instrument Assessment—The baseline functional assessment that is done using the FIM™ instrument at the time of admission to the rehabilitation program. The FIM™ instrument should be administered within 72 hours of admission.

Average—For the purposes of the NRS, defined as the value obtained by adding all of the individual values (e.g. FIM™ instrument scores, days waiting for admission) in a group and dividing that sum by the number of values in the group. Describes the arithmetic mean of a set of values.

B

Bathing (FIM™ instrument)—Includes bathing (washing, rinsing and drying) the body from the neck down (excluding the neck and back); may be either a tub, shower or sponge/bed bath.

Bladder Management (FIM™ instrument)—Includes intentional control of the urinary bladder and, if necessary, use of equipment or agents for bladder control. The functional goal of bladder management is to open the urinary sphincter only when that is needed and to keep it closed the rest of the time. This may require devices, drugs or assistance in some individuals.

Bowel Management (FIM™ instrument)—Includes intentional control of bowel movements and, if necessary, use of equipment or agents for bowel control. The functional goal of bowel management is to open the anal sphincter only when that is needed and to keep it closed the rest of the time.

C

Cognitive Function Score (FIM™ instrument)—The sum of the scores for the five cognitive elements on the FIM™ instrument. A higher Cognitive Function Score suggests a higher level of independent functioning in cognitive activities. See *Cognitive Subscale* below. Can be calculated on admission and on discharge.

Cognitive Subscale (FIM™ instrument)—The five items of the FIM™ instrument related to cognitive function: Comprehension, Expression, Social Interaction, Problem Solving and Memory.

Communication Domain (FIM™ instrument)—Includes the FIM™ instrument cognitive items that assess communication skills: Comprehension, Expression.

Complete Independence—Referred to when performing the FIM™ instrument assessment. Refers to a situation where all of the tasks making up a particular activity on the FIM™ instrument are performed safely and without a helper. The activity is performed without modification, assistive devices, or aids, and within a reasonable amount of time. Results in a score of "7" on the FIM™ instrument for that activity.

Comprehension (FIM™ instrument)—Includes understanding of either auditory and/or visual communication (e.g., writing, sign language, gestures). Communication can involve simple and/or complex messages, with the scores reflected accordingly.

Continuing Rehabilitation—One of the available options for coding Admission Class in the NRS. This is part of a rehabilitation inpatient stay that began in another rehabilitation unit or facility. The client was admitted directly from a rehabilitation program in another unit or facility—with the *same* RCG (see *Rehabilitation Client Group*). Includes transfers to a rehabilitation unit within the same facility.

D

Date of Onset—The calendar date of onset of the main rehabilitation condition coded under Rehabilitation Client Group (see *Rehabilitation Client Group*) that precipitated the admission into rehabilitation. For acute conditions, the date of onset is the date of injury or surgery. For chronic condition (e.g. COPD), the date of onset is the date of the most recent exacerbation or functional loss that resulted in the admission to the inpatient rehabilitation unit.

Date Ready for Admission—The date on which the client meets criteria for admission to the rehabilitation facility and is considered ready to start a rehabilitation program. It does not refer to the date the client is put on a waiting list if this is done prior to when the client is clinically ready for rehabilitation.

Date Ready for Discharge—The calendar date that the client is considered ready for discharge from the rehabilitation program. On this date the client meets criteria for discharge according to the rehabilitation team and has met all or most of the rehabilitation goals set for them.

Days Waiting for Admission—One of the NRS indicators relating to accessibility. Defined as the number of days between the Date Ready for Admission and the Date of Admission to rehabilitation.

Discharge FIM™ instrument Assessment—The assessment of the client's functional ability using the FIM™ instrument at discharge. The FIM™ instrument should be administered within 72 hours before discharge from the rehabilitation program.

Dressing—Lower Body (FIM™ instrument)—Includes dressing and undressing below the waist, as well as applying and removing a prosthesis or orthosis when applicable. Includes all items of clothing that are typically worn. The client must use clothing that is appropriate to wear in public. Assessment starts in front of the closet or dresser drawers and includes reaching for items of clothing.

Dressing—Upper Body (FIM™ instrument)—Includes dressing and undressing above the waist, as well as applying and removing a prosthesis or orthosis when applicable. Includes all items of clothing that are typically worn. The client must use clothing that is appropriate to wear in public. Assessment starts in front of the closet or dresser drawers and includes reaching for items of clothing.

E

Eating (FIM™ instrument)—Includes using suitable utensils to scoop and bring food to the mouth, as well as chewing and swallowing, once the meal is presented in the customary manner on a table or tray. Includes all intake of nutrition over a 24-hour period, including tube feeding.

Episode—For the purposes of the NRS, an episode consists of a complete Admission and a Discharge record, and encompasses the entire stay in inpatient rehabilitation. The analyses in the NRS reports are primarily based on rehabilitation episodes. *Exception:* Clients recorded as having an Unplanned Discharge are still considered to have had a rehabilitation episode in the NRS (see *Unplanned Discharge*).

Expression (FIM™ instrument)—Includes clear vocal and/or non-vocal expression of language. This item includes either intelligible speech or clear expression of language using writing or a communication device. Expression of intent can involve simple and/or complex ideas, with scores reflected accordingly.

F

Facility—Refers to the site where the rehabilitation beds are grouped and represents the level at which hospitals submit data for the NRS. Often, "facility" is synonymous with "hospital". For hospitals with more than one site or location, there may be more than one NRS facility within a hospital corporation.

Follow-up FIM™ instrument Assessment—The assessment of the client's functional ability using the FIM™ instrument that is collected between 80 and 180 days after discharge from the rehabilitation program.

Functional Independence Measure (FIM™ instrument)—The functional assessment instrument included in the Uniform Data Set for Medical Rehabilitation (UDS$_{MR}$). It is composed of 18 items (13 motor items and 5 cognitive items) that are rated on a seven-level scale representing gradations from independent (7) to dependent (1) function. The FIM™ instrument is a measure of disability, and looks at the caregiver burden associated with the level of disability.

G

General Rehabilitation Facility—A facility that provides inpatient rehabilitation services in designated units, programs or beds within a general hospital that has multiple levels of care (i.e. rehabilitation, acute care, chronic care, emergency). Rehabilitation clients receive multi-dimensional (physical, cognitive, psycho-social) diagnostic, assessment, treatment and service planning interventions.

Grooming (FIM™ instrument)—Includes a minimum of four activities: (1) oral care; (2) hair grooming (combing or brushing hair); (3) washing the hands; (4) washing the face, and may include a fifth activity, either shaving the face or applying make-up, where applicable. Washing includes rinsing and drying.

H

Informal Support—Describes the *unpaid* assistance provided to the client from any individual including family, friends or neighbours. Informal support *excludes* formal paid services or formal referred service providers such as volunteers.

Initial Rehabilitation — One of the available options for coding Admission Class in the NRS. Describes a client's first admission to an inpatient rehabilitation facility for a particular rehabilitation condition (see *Rehabilitation Client Group*).

Impact of Pain—A self-report item describing the impact of pain on a client's daily activities. This is one of two self-report data elements collected for the NRS.

J

K

L

Length of Stay (LOS)—The number of days between the date on which the client is admitted to the rehabilitation facility and the date on which the client is discharged from the rehabilitation facility. Any days on which the client could not participate in the rehabilitation program due to a health reason are excluded from the calculation (see *Service Interruption*).

Length of Stay Efficiency—The change in Total Function Score (see *Total Function Score*) per day of client participation in the rehabilitation program. Calculated as change in Total Function Score from admission to discharge divided by length of stay (see *Length of Stay*).

Locomotion Domain (FIM™ instrument)—Includes the FIM™ instrument motor items that assess locomotion: Walk/Wheelchair and Stairs

Locomotion: Stairs (FIM™ instrument)—includes going up and down 12–14 stairs (one flight) indoors.

Locomotion: Walk/Wheelchair (FIM™ instrument)—Includes walking, once in a standing position, or if using a wheelchair, moving forward once in a seated position and on a level surface.

M

Maximal Assistance—Referred to when performing the FIM™ instrument assessment. Measure of level of assistance required by a client in carrying out physical or cognitive activities as measured in the FIM™ instrument. The subject expends between 25% and 49% of the effort to perform an activity assessed by the FIM™ instrument (with the remainder being performed by the caregiver) resulting in a score of "2" for that activity.

Median—The middle value in a group when the values are arranged in an increasing order. If there is an even number of values, the median is the average of the middle two values. Results in an upper and lower half for the set of values. For example, in the series 2,5,7,9,12; the value "7" is the median. Not the same as Average (see *Average*).

Memory (FIM™ instrument)—Memory in this context includes the ability to store and retrieve information, particularly verbal and visual. The functional evidence of memory includes: (1) recognizing people frequently encountered, (2) remembering daily routines and (3) executing requests without being reminded.

Minimal Contact Assistance—Referred to when performing the FIM™ instrument assessment. Measure of level of assistance required by a client in carrying out physical or cognitive activities as measured in the FIM™ instrument. The subject requires no more help than is provided by a light touch, and expends 75% or more of the effort to perform an activity assessed by the FIM™ instrument, resulting in a score of "4" for that activity.

Mode—Referred to when performing the FIM™ instrument assessment. Refers to the specific method used to carry out a particular activity. The three elements of the FIM™ instrument that require specifying a mode are: Locomotion—mode can be Walk or Wheelchair or Both; Comprehension—mode can be Auditory or Visual or Both; and Expression—mode can be Vocal or Non-Vocal or Both.

Moderate Assistance—Referred to when performing the FIM™ instrument assessment. Measure of level of assistance required by a client in carrying out physical or cognitive activities as measured in the FIM™ instrument. The subject requires more help than touching, or expends half (50%) or more (but less than 75%) of the effort to perform an activity assessed by the FIM™ instrument (with the remainder being performed by the caregiver), resulting in a score of "3" for that activity.

Modified Independence—Referred to when performing the FIM™ instrument assessment. Measure of level of assistance required by a client in carrying out physical or cognitive activities as measured in the FIM™ instrument. In the performance of an activity assessed by the FIM™ instrument, the activity requires an assistive device; OR the activity takes more than reasonable time; OR there are safety (risk) considerations. This level is scored a "6".

Most Responsible Health Condition—The primary etiological diagnosis that describes the most significant condition leading to the client's rehabilitation stay. Where multiple conditions exist, it is the one health condition that is most related to the Rehabilitation Client Group and the condition that most of the resources are directed towards (see *Rehabilitation Client Group*).

Motor Function Score (FIM™ instrument)—The sum of the scores for the 13 motor elements on the FIM™ instrument. A higher Motor Function Score suggests a higher level of independent functioning in motor activities (see *Motor Subscale)*. This can be calculated on admission and on discharge (where applicable).

Motor Subscale (FIM™ instrument)—The 13 motor items of the FIM™ instrument: Eating; Grooming; Bathing; Dressing—Upper Body; Dressing—Lower Body; Toileting; Bladder Management; Bowel Management; Transfers: Bed, Chair, Wheelchair; Transfers: Toilet; Transfers: Tub or Shower; Locomotion: Walk, Wheelchair; and Locomotion: Stairs.

N

National Rehabilitation Reporting System (NRS)—A national health information system for adult inpatient rehabilitation services. The province of Ontario has mandated its use for all designated rehabilitation beds in that province. The NRS contains client data collected from participating adult inpatient rehabilitation facilities and programs across Canada. The NRS data elements contain information related to socio-demographic information, administrative data, health characteristics, activities and participation and therapeutic interventions. These elements are used to estimate a variety of indicators including wait times and client outcomes.

O

P

Pre-Hospital Living Setting—Physical environment the client was living in prior to his/her admission to hospital for rehabilitation. For example, a private home, or a residential care facility.

Provider Type(s)—Refers to the professional service provider(s) involved in delivering rehabilitation services to the client (see *Rehabilitation Intervention*).

Post-Hospital Living Setting—Physical environment the client will be living in following discharge from the rehabilitation program.

Private Practitioner—An independent professional to whom the client may be referred at time of discharge for related services following the rehabilitation episode; for example, a physician or a physiotherapist in a private clinic.

Problem Solving (FIM™ instrument)—Includes skills related to solving problems of daily living and generally involves five steps: (1) recognizing that a problem is present; (2) making appropriate decisions; (3) initiating steps and readjusting to changing circumstances; (4) carrying out a sequence of events and; (5) evaluating the solution.

Q

R

Readmission—One of the available options for coding Admission Class in the NRS. The code used for a client admitted to an inpatient rehabilitation facility or unit where the current admission is related to a prior admission for the *same* rehabilitation condition (see Rehabilitation Client Group). There is no time limit for length of time since the previous admission.

Record—For the purposes of the NRS, a record consists of the complete information collected on Admission (Admission Record), Discharge (Discharge Record) or Follow-up (Follow-up Record). A completed Admission and Discharge record for a client constitutes a rehabilitation episode in the NRS (see *Episode*).

Rehabilitation Client Group (RCG)—The condition that best describes the primary reason for the client's admission to the rehabilitation program. The rehabilitation team determines the RCG at the time of admission.

Rehabilitation Goals—The functional objectives set by the client in partnership with the rehabilitation team. These are determined shortly after admission to the rehabilitation facility and generally form the basis for activities that will be included in the rehabilitation program.

Rehabilitation Interventions—A set of activities that are provided to a client aimed at improving/maintaining the client's health status and minimizing the impact of impairments and disabilities on the client's quality of life.

S

Self-Care Domain (FIM™ instrument)—Includes the FIM™ instrument motor items that assess basic activities necessary for daily personal care*:* Eating, Grooming, Bathing, Dressing Upper Body, Dressing Lower Body and Toileting.

Service Interruption—Occurs when a client is unable to participate in the rehabilitation program due to a health condition that may or may not result in a transfer out of the rehabilitation bed or unit. Service Interruptions are generally coded only when the client misses more than one day of active rehabilitation and the condition is felt to impact on the client's progress in rehabilitation. This does not include weekend passes to visit family at home or temporary bed closures.

Set up—Referred to when performing the FIM™ instrument assessment. Assistance with related preparation prior the subject performing an activity, or removal and disposal of equipment/materials after the subject performs an activity. Clients requiring set up to complete a FIM™ instrument item cannot score higher than a "5" for that item.

Short Stay—One of the available options for coding Admission Class in the NRS. Refers to an inpatient rehabilitation stay lasting between four and ten days.

Social Cognitive Domain (FIM™ instrument)—Includes the FIM™ instrument cognitive items that assess social and cognitive skills: Social Interaction, Problem Solving and Memory.

Social Interaction (FIM™ instrument)—Includes skills related to participating and co-operating with others in therapeutic and social situations. It represents how one deals with one's own needs together with the needs of others. Participation includes socializing with others or becoming involved in group activities. Co-operation includes working or collaborating with others and following cueing, coaxing and/or directions.

Specialty Rehabilitation Facility—A facility that provides comprehensive inpatient rehabilitation services or specialized rehabilitation programs. This is often a freestanding hospital, but can be a specialized unit within a larger acute or chronic-care facility. In addition to interventions provided in a General Rehabilitation Facility, clients in a Specialty Facility also have access to more comprehensive services such as surgical specialists, orthotics, prosthetics, etc.

Sphincter Domain (FIM™ instrument)—Includes the FIM™ instrument motor items that assess sphincter control: Bladder Management, Bowel Management

Supervision—Referred to when performing the FIM™ instrument assessment. Measure of level of assistance required by the clients in their physical or cognitive activities. The caregiver must monitor, or provide cueing/coaxing to a subject during the performance of an activity for safety reasons. Supervision may be standby (close) or distant, but there is NO physical contact with the client. Clients requiring supervision or coaxing to complete a FIM™ instrument item cannot score higher than a "5" for that item.

T

Toileting (FIM™ instrument)—includes three main tasks: (1) adjusting clothing before using toilet, commode or bedpan; (2) maintaining perineal hygiene; and (3) adjusting clothing after using toilet, commode or bedpan.

Total Assistance—Referred to when performing the FIM™ instrument assessment. Measure of level of assistance required by the clients in their physical or cognitive activities. The subject expends less than 25% of the effort to perform an activity assessed by the FIM™ instrument, resulting in a score of "1".

Total Function Score (FIM™ instrument)—The sum of the scores for all 18 elements on the FIM™ instrument; ranging from 18 to 126. A higher Total Function Score suggests a higher level of independent functioning in activities of daily living and communication.

Transfer Domain (FIM™ instrument)—Includes the FIM™ instrument motor items that assess ability to transfer from one surface to another: Bed to Chair/Wheelchair Transfer, Toilet Transfer and Tub/Shower Transfer.

Transfers: Bed, Chair/Wheelchair (FIM™ instrument)—Includes all aspects of transferring to and from a bed, chair, and wheelchair (if client uses a wheelchair), or coming to or from a standing position (if walking is the typical mode of locomotion). Client moves from a supine to a standing position on the bed and vice versa.

Transfers: Toilet (FIM™ instrument)—Includes getting on and off a toilet.

Transfers: Tub or Shower (FIM™ instrument)—Includes getting into and out of a tub or shower stall. Includes positioning, standing, pivot, sitting or sliding transfer, and for tub transfers, also includes lifting legs over threshold of tub.

U

Unplanned Discharge—One of the available options for coding Admission Class in the NRS. Refers to an inpatient rehabilitation stay lasting three days or less, including the day of admission. Includes planned and unplanned discharges. In these cases, the Admission FIM™ instrument is typically not completed, but can be included in the NRS record if complete.

V

Visual Cue Any visible gesture, posture and/or facial expression that is used to aid in the performance of a task.

WXYZ

Appendix B: Rehabilitation Client Groups (RCG)

The RCGs and selected definitions as referenced in this report are provided below, in descending order of volume (i.e. number of records) in the National Rehabilitation Reporting System (NRS). This is not an exhaustive list of RCG definitions available for coding in the NRS.

Definition of Rehabilitation Client Group (RCG)
The health condition that best describes the primary reason for admission to the rehabilitation program. The appropriate Rehabilitation Client Group is determined at the time of admission by the rehabilitation team and can be modified at discharge if necessary.

Orthopaedic Conditions: Includes cases in which the major disorder is post-fracture of bone, post-arthroplasty (joint replacement) or other pathology relating to bone (excludes conditions related to arthritis). Sub-groups of the orthopaedic RCG highlighted in this report include hip fracture, hip replacement and knee replacement, as well as "other" (any orthopaedic condition which does not fall into the first three groups).

Stroke: Includes cases with the diagnosis of cerebral ischemia due to vascular thrombosis, embolism, or haemorrhage. Cerebral impairment related to non-vascular causes such as trauma, inflammation, tumour, or degenerative changes are excluded. Sub-groups of the stroke RCG highlighted in this reports are left-sided stroke (right-brain), right-sided stroke (left-brain), and "other" stroke (e.g. bilateral).

Brain Dysfunction: The non-traumatic brain dysfunction RCG includes cases with such etiologies as neoplasm, metastases, encephalitis, inflammation, anoxia, metabolic toxicity, or degenerative processes. The traumatic brain dysfunction RCG includes cases with motor or cognitive disorders secondary to trauma.

Amputation of Limb: Includes cases in which the major deficit is absence of a limb. Cases for which limb amputation is the major deficit are included even if the need for treatment is principally related to wound care or a stump infection.

Spinal Cord Dysfunction: Includes cases with various forms of quadriplegia/paresis and paraplegia/paresis. The non-traumatic spinal cord dysfunction sub-group includes cases secondary to non-traumatic cause, including post-operative change. The traumatic spinal cord dysfunction sub-group includes cases secondary to traumatic cause. Cases for which spinal cord dysfunction is the major deficit are included even if the need for treatment is principally related to the urinary tract or skin ulceration.

Medically Complex: Includes cases with multiple medical and functional problems and complications prolonging the recuperation period. Medically complex cases require medical management of a principal condition and monitoring of co-morbidities and potential complications. Rehabilitation treatments are *secondary* to the management of the medical conditions. The Medically Complex RCG groups clients by the program/treatment focus rather than the etiology.

Debility: Includes cases where clients are generally de-conditioned and there may not be a specific etiology associated with the decline in function. Includes only clients who are debilitated for reasons other than cardiac or pulmonary conditions.

Cardiac Disorders: Includes cases in which the major disorder is poor activity tolerance secondary to cardiac insufficiency or general deconditioning due to a cardiac disorder.

Neurological Conditions: Includes cases with a variety of neurological, muscular dysfunctions and etiologies such as multiple sclerosis, Guillain-Barré Syndrome and Parkinsonism.

Pulmonary Disorders: Includes cases in which the major disorder is poor activity tolerance secondary to pulmonary insufficiency. Underlying etiologies include chronic obstructive lung disease, chronic bronchitis, etc.

Arthritis: Includes cases in which the major disorder is arthritis of all etiologies. The arthritis RCG is used for clients entering the rehabilitation program without an immediately preceding orthopaedic arthroplastic procedure.

Major Multiple Trauma: Includes cases with more complex management due to involvement of multiple systems or sites following trauma.

Pain Syndromes: Includes cases in which the major disorder is pain, usually chronic and benign, of various etiologies.

Burns: Includes cases in which the major disorder is thermal injury to major areas of the skin and or underlying tissue.

Congenital Deformities*

Developmental Disabilities*

Other Disabling Impairments*

* Due to small numbers of records in the NRS, these three RCGs are grouped together and referred to as "Other RCGs" within this report where indicated.

Rehabilitation Client Groups adapted with permission from the UDS^{MR} impairment codes. Copyright $^{©}$ 1997 Uniform Data System for Medical Rehabilitation, a division of U B Foundation Activities, Inc., all rights reserved.

Appendix C: FIM™ Instrument Subscales and Domains

A definition of each FIM^{TM} instrument item, as well as the subscales and domains can be found in the NRS Glossary (Appendix A)

Subscale	Domain	FIM^{TM} Instrument Items	Score Range
Motor	Self Care	Eating Grooming Bathing Dressing—Upper Body Dressing—Lower Body Toileting	7 to 42
	Sphincter Control	Bladder Management Bowel Management	2 to 14
	Transfers	Bed, Chair, Wheelchair Toilet Tub or Shower	3 to 21
	Locomotion	Walk/Wheelchair Stairs	2 to 14
		Motor Function Score Range	**13 to 91**
Cognitive	Communication	Comprehension Expression	2 to 14
	Social Cognitive	Social Interaction Problem Solving Memory	3 to 21
		Cognitive Function Score Range	**5 to 35**

Appendix D: List of Quick Stats Tables

The source tables for this report are available on the CIHI website at www.cihi.ca under "Quick Stats". These tables can be found under "Inpatient Rehabilitation" when searching by "Topic" or under "National Rehabilitation Reporting System (NRS)" when searching by "Source".

Chapter 2

Table 2.1   Type of Admission to Inpatient Rehabilitation by Facility Type, 2005–2006

Table 2.2   Source of Referral to Inpatient Rehabilitation by Facility Type, 2005–2006

Table 2.3   Distribution of Days Waiting for Admission to Inpatient Rehabilitation, 2005–2006

Table 2.4   Average and Median Days Waiting for Admission to Inpatient Rehabilitation by Source of Referral, 2005–2006

Table 2.5   Demographic Characteristics of Inpatient Rehabilitation Clients by Facility Type, 2005–2006

Table 2.6   Pre-Admission Living Setting of Inpatient Rehabilitation Clients, 2005–2006

Table 2.7   Inpatient Rehabilitation Clients Receiving Informal Support Prior to Admission by Facility Type, 2005–2006

Table 2.8   Distribution of Length of Stay in Inpatient Rehabilitation, 2005–2006

Table 2.9   Median Length of Stay in Inpatient Rehabilitation by Facility Type and Type of Admission, 2005–2006

Table 2.10   Reasons for Discharge from Inpatient Rehabilitation, 2005–2006

Table 2.11   Services Referred to after Discharge from Inpatient Rehabilitation, 2005–2006

Table 2.12   Pre-Admission and Post-Discharge Living Settings of Inpatient Rehabilitation Clients, 2005–2006

Chapter 3

***Note:** There is no Quick Stats Table 3.8.