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# Annual Report for the Spinal Cord Injury Model Systems



- Currently funded systems
- Sub-Contract funded systems
- Previously funded systems

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Birmingham, Alabama

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# **THE 2008 ANNUAL STATISTICAL REPORT**

**for the**

## **SPINAL CORD INJURY MODEL SYSTEMS**

The National Spinal Cord Injury Statistical Center publishes scheduled statistical reports on the national database. These complete reports are available only to the currently participating Model Systems. To the general public there is limited availability of statistics from these reports, i.e. some pages are omitted in this version.

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The opinions contained in this publication are those of the grantee  
and do not necessarily reflect those of the U.S. Department of Education.

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## Part I

### The National Spinal Cord Injury Statistical Center October 2007 – February 2009

The present National Spinal Cord Injury Statistical Center (NSCISC) grant application was officially approved and funded with a start date of October 1, 2006 and a termination date of September 30, 2011. This progress report focuses on the activities that have occurred since October 2007 and also briefly summarizes the activities which took place during the first year of the new grant cycle.

#### **National SCI Statistical Center**

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In 1983, the University of Alabama at Birmingham's Department of Rehabilitation Medicine received federal grant funds to establish a national SCI data center. The UAB operation succeeded the National Spinal Cord Injury Data Research Center that served the Model SCI Care Systems Project between 1973 and 1981. Today, UAB's National Spinal Cord Injury Statistical Center (NSCISC) supervises and directs the collection, management and analysis of the world's largest spinal cord injury database. Organizationally, UAB's SCI Statistical Center is at the hub of a network of 14 federally-sponsored regional Model Spinal Cord Injury Care Systems located at major medical centers throughout the United States. In each of these settings, SCI Care System personnel collect and submit acute, rehabilitation and follow-up (viz. annual, long-term post-discharge) data on SCI patients who received care in the "System" following injury.

To assure comparability of data acquired by personnel in various centers, rigid scientific criteria have been established for the collection, management and analysis of information entered into the database. Moreover, the NSCISC staff has developed quality control procedures that further enhance the reliability and validity of the database.

#### **Model SCI Systems**

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Presently there are 14 systems and 3 subcontractors sponsored by the National Institute on Disability and Rehabilitation Research, Office of Special Education and Rehabilitative Services, U.S. Department of Education:

##### ***Current Model Systems:***

##### **Alabama**

University of Alabama at Birmingham SCI Care System -- UAB Spain Rehabilitation Center

Birmingham, AL (205) 934-3283

**Colorado**

Rocky Mountain Regional SCI System -- Craig Hospital  
Englewood, CO (303) 789-8220

**Georgia**

Georgia Regional SCI System - Shepherd Center  
Atlanta, GA (404) 352-2020

**Illinois**

Midwest Regional SCI Care System -- Rehabilitation Institute of Chicago  
Chicago, IL (312) 238-0764

**Massachusetts**

New England Regional SCI Center -- Boston University Medical Center  
Boston, MA (866) 607-1804

**Michigan**

University of Michigan SCI Model System -- University of Michigan Medical Center  
Ann Arbor, MI (734) 763-0971

**New Jersey**

Northern New Jersey SCI System -- Kessler Institute for Rehabilitation  
West Orange, NJ (973) 243-6849

**New York**

Mount Sinai SCI Model System -- Mt. Sinai Medical Center  
New York, NY (212) 659-9340

**Ohio**

Northeast Ohio Regional SCI System  
Cleveland, OH (216) 778-7202

**Pennsylvania**

Regional SCI System of Delaware Valley -- Thomas Jefferson University Hospital  
Philadelphia, PA (215) 955-6579

University of Pittsburgh Model System on Spinal Cord Injury - University of Pittsburgh  
Pittsburgh, PA (412) 232-7949

**Texas**

Texas Regional SCI System -- TIRR Memorial Hermann  
Houston, TX (713) 799-5023

**Washington**

Northwest Regional SCI System -- University of Washington  
Seattle, WA (206) 616-2183

**Washington, DC**

National Capital SCI Model System -- National Rehabilitation Hospital  
Washington, D.C. (202) 877-1694

### ***Subcontract Model Systems:***

These three systems are subcontracted to submit follow-up data and are also former model systems.

#### **Arizona**

St. Joseph's Medical Center  
Phoenix, AZ (602) 746-9179

#### **California**

Santa Clara Valley Medical Center  
San Jose, CA (408) 885-2383 or 1-800-352-1956

#### **Virginia**

Medical College of Virginia  
Richmond, VA (804) 628-0277

### ***Former and Non-participating SCI Systems***

Data from currently non-participating SCI systems (Columbus, Ohio; Columbia, Missouri; Detroit, Michigan; Downey, CA; Fishersville, Virginia; Miami, FL; Milwaukee, Wisconsin; New Orleans, Louisiana; NYU, New York; and Rochester, New York) have been included.

For more information:

National Spinal Cord Injury Statistical Center  
<https://www.nscisc.uab.edu>

Spinal Cord Injury Information Network  
[www.spinalcord.uab.edu](http://www.spinalcord.uab.edu)

National Institute on Disability and Rehabilitation Research  
[www.ed.gov/about/offices/list/osers/nidrr](http://www.ed.gov/about/offices/list/osers/nidrr)

## **Research and Dissemination**

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### **NSCISC Web Site**

In spring 2008, the NSCISC webpage <https://www.nscisc.uab.edu> was extensively updated, including webpage design, Frequently Asked Questions, and National SCI Database information, publications, and documents. All of this information is available free of charge to anyone in the world at anytime via the Internet.

### **SCI Facts and Figures at a Glance**

The SCI Facts and Figures at a Glance was last updated in April 2009 and published in volume 31 numbers 1 and 3 of the Journal of Spinal Cord Medicine in 2008. Both of the English and Spanish versions are available for download from the NSCISC web site (<https://www.nscisc.uab.edu>). These reports summarize demographic and high interest variables, such as cause of injury, occupational status, lifetime costs and life expectancy by categorical level of injury. Historic Facts and Figures at a Glance have been archived and are available on the website.

### **Public versions of the NSCISC Annual Reports**

The public versions of the 2004, 2005, 2006, and 2007 NSCISC Annual Statistical Reports are available to the public by request or can be downloaded from the NSCISC web site (<https://www.nscisc.uab.edu>, ANNUAL STATISTICAL REPORTS). Stratifications of the data by Spinal Cord Injury Model System have been removed from this report so that only aggregate information is available.

### **NSCISC Data Collection Information**

The NSCISC objectives, history, data collection forms and syllabus can be found and downloaded from the NSCISC webpage (<https://www.nscisc.uab.edu>, NATIONAL SPINAL CORD INJURY DATABASE) free of charge. Previous versions of the data collection forms and syllabus are also available.

### **Publications**

There have been 4 peer-reviewed journal articles based in whole or in substantial part on the SCIMS database published since October 1, 2006 that were either authored or co-authored by NSCISC personnel. Citations for the first 3 of these appeared in previous NSCISC reports. One new citation is as follows:

1. Richardson EJ, Richards JS. Factor structure of the PHQ-9 screen for depression across time since injury among persons with spinal cord injury. **Rehabil Psychol** 2008;53(1):111-121.

To the knowledge of the NSCISC, there have been 3 published papers using the SCIMS database with non-NSCISC authors since October 1, 2006. Overall, there were 24 of these papers published during the 2000-2006 grant cycle. A list of these papers appears in previous annual and semiannual reports. The NSCISC encourages the use of the database and is willing to provide any assistance necessary to those who conduct research using the SCIMS database. The NSCISC also appreciates being notified of

any ongoing work and publications that involve the use of the NSCISC database. Citations for the most recent published articles are as follows:

1. Graves DE, Bombardier CH. Improving the efficiency of screening for major depression in people with spinal cord injury. **J Spinal Cord Med** 2008;31:177-184.
2. Goodman N, Jette AM, Houlihan B, Williams S. Computer and internet use by persons after traumatic spinal cord injury. **Arch Phys Med Rehabil** 2008;89:1492-1498.
3. Arango JC, Ketchum J, Stevens L, Balcazar F, Wehman P, Forster L, Hsu N. Ethnicity/racial differences in employment outcomes following spinal cord injury. **NeuroRehabil** 2009;24(1):37-46.

<h2 style="margin: 0;">Part II</h2> <h3 style="margin: 0;">Status of the National SCI Database</h3>
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All data submitted to the NSCISC by November 26, 2008 are included in this report. As of November 2008, the National SCI Database contained information on 26,189 Form I patients with 118,134 Form II follow-up records. The combined total of Registry, Form I and Form II records in the National SCI Database is 155,065 records (**Table 1**).

	Registry	Form I	Form II	Total
Total	10,742	26,189	118,134	155,065

<p><b>Table 1. Total forms entered into the National SCI Database as of November 26, 2008.</b> (Three Form I and three Form II records were excluded because they did not pass QC.)</p>
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**Table 2** presents the total number of follow-up records in the database for each post-injury year. Since these totals include the Form II records that are coded “lost to follow-up” (and therefore contain data in only 1 variable), the percentages of the total forms that are coded “lost” are also provided on Table 2.

**Table 2. Number of Form IIs by Post Injury Year.**

	Post Injury Year n(%) *										
	1	2	3	4	5	6	7	8	9	10	11
Total	22,439 (13.2)	15,038 (14.2)	11,102 (14.2)	9,530 (14.7)	12,651 (19.2)	6,986 (15.7)	5,880 (14.3)	4,913 (15.2)	4,083 (15.7)	6,739 (22.3)	2,569 (17.6)

Table 2. Number of Form IIs by Post Injury Year.  
(\* n represents all Form IIs including lost, and % are Form IIs coded lost.)

	Post Injury Year n(%) *											
	12	13	14	15	16	17	18	19	20	21	22	23
Total	1,898 (17.7)	1,364 (17.9)	1,048 (15.6)	4,081 (19.8)	650 (25.1)	407 (15.7)	303 (14.9)	218 (12.8)	3,064 (22.6)	60 (18.3)	25 (12.0)	14 (7.1)

Table 2. Number of Form IIs by Post Injury Year (continued).  
(\* n represents all Form IIs including lost, and % are Form IIs coded lost.)

	Post Injury Year n(%) *											
	24	25	26	27	28	29	30	31	32	33	34	35
Total	33 (42.4)	2,136 (27.8)	10 (40.0)	5 (0.0)	8 (12.5)	12 (25.0)	861 (25.4)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	6 (0.0)

Table 2. Number of Form IIs by Post Injury Year (continued).  
(\* n represents all Form IIs including lost, and % are Form IIs coded lost.)

**RECORDS INCREASE IN THIS FUNDING CYCLE (2006-2011): TABLES 3 - 5**

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**Table 3** reports the increase of records in the database since the last annual report in 2007, the number of Registry participants have increased by 385, Form I increased by 774, and Form II numbers increased by 2,686.

***Table 3. Increase in the number of records in the National SCI Database between October 29, 2007 and November 26, 2008.***

	Registry	Form I	Form II	Total
<b>Total</b>	385	774	2,686	3,845
Table 3. Increase in the number of records in the National SCI Database between October 29, 2007 and November 26, 2008.				

Since the beginning of the 2006-2011 funding cycle, the number of Initial Hospitalization records (Form Is) in the National SCI Database has increased by 1,439, the number of Registry records has increased by 841 cases, and a total of 4,093 Form IIs were added to the database (**Table 4**). Table 4 does not include Form IIs which are 'Lost to Follow-up' (Category of Care = 5).

***Table 4. Number of New Records entered into the National SCI database for 2006-2011 current funding cycle.***

	Registry	Form I	Form II	Total
<b>Total</b>	841	1,439	4,093	6,373
Table 4. Number of New Records entered into the National SCI database for 2006-2011 current funding cycle. (Form II excludes Lost to Follow-up (where Category of Care=5)				



**Table 5** presents the total number of patients who were admitted to the system since October 2006 and the percentage of these patients who were admitted within 24 hours of injury (classified as Day-1s). This information is provided since the new reporting procedures implemented in November 1995 resulted in a substantial number of additional variables to be collected on patients who enter the system within 24 hours of injury.

Nationally, 39.2 percent of patients admitted since 2006 are day-1 admissions. System percentages range from 79.2 percent to 3.5 percent.

***Table 5. Percentage of Day-1 Admissions (Form I Patients Admitted to a System for 2006-2011 current funding cycle).***

	<b>Total Number of Form Is Entered</b>	<b>% Day-1 Admissions</b>
<b>Total</b>	1439	39.2
Table 5. Percentage of Day-1 Admissions (Form I Patients Admitted to a System for 2006-2011 current funding cycle).		

**PATIENTS BY YEAR OF INJURY: TABLES 6 - 8**

The number of patients entered into the National SCI Database by years of injury is depicted in **Tables 6 - 8**. These tables represent Registry, Form I, and Form I Day-1 records.

Since December 1981, funding for the National SCI Data Research Center (NSCIDRC) in Phoenix, AZ was suspended. Its successor, the UAB-SCI Data Management Service, did not initiate formal operations until March 1, 1983. The decline in patients entered into the database in both 1981 and 1982 is undoubtedly the result of this interruption. The decline in patients enrolled in the National SCI Database since 1984 is the result of fewer systems being funded by NIDRR than in previous years.

**Table 6** represents the number of Registry participants enrolled by year of injury. The data reflects historical changes in Model Systems program. In 1987, criteria for enrollment in the National Database were changed by restricting eligibility to patients admitted to the system within 60 days of injury (the previous criterion was 1 year) and more narrowly defining system catchment areas. Because of this restriction, an additional Registry form was created to collect limited demographic data on those patients who no longer meet eligibility requirements for full data collection.

**Table 6. Number of Registry Patients by Year of Injury.**

n(%)	Year of Injury											
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
<b>Total</b>	73 (0.7)	488 (4.5)	437 (4.1)	481 (4.5)	522 (4.9)	508 (4.7)	553 (5.1)	564 (5.3)	561 (5.2)	619 (5.8)	570 (5.3)	585 (5.4)

Table 6. Number of Registry Patients by Year of Injury.

n(%)	Year of Injury											Total
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	610 (5.7)	574 (5.3)	445 (4.1)	508 (4.7)	478 (4.4)	359 (3.3)	374 (3.5)	453 (4.2)	399 (3.7)	415 (3.9)	166 (1.5)	10,742

Table 6. Number of Registry Patients by Year of Injury. (continued)

Variations in Form I patient enrollment is primarily due to three factors: number of funded centers, change in eligibility criteria, and size of funded systems (**Table 7**). The number of funded centers changed in 1985, 1990, 2000, and 2006 (see chart) due to NIDDR's competitive selection of centers. Eligibility criteria changed in 1987, restricting Form I enrollment, then in 2000, the eligibility criteria were changed to reflect pre-1987 requirements. For a detailed list, see Syllabus Table 2 (page 3) for major eligibility criteria changes and Table 1 (page 2) for specific center involvement in data collection.

Years	1985-1990	1990-1995	1995-2000	2000-2006	2006-2011
# of Centers	13	13	18	16	14

**Table 7. Number of Form I Patients by Year of Injury.**

n(%)	Year of Injury												
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Total</b>	223 (0.9)	402 (1.5)	579 (2.2)	684 (2.6)	822 (3.1)	848 (3.2)	1,007 (3.8)	1,130 (4.3)	818 (3.1)	749 (2.9)	1,155 (4.4)	1,098 (4.2)	976 (3.7)

**Table 7. Number of Form I Patients by Year of Injury.** (Enrollment criteria changed in 1987 and 2000.)

n(%)	Year of Injury												
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Total</b>	931 (3.6)	663 (2.5)	628 (2.4)	645 (2.5)	597 (2.3)	705 (2.7)	650 (2.5)	654 (2.5)	689 (2.6)	638 (2.4)	736 (2.8)	754 (2.9)	729 (2.8)

**Table 7. Number of Form I Patients by Year of Injury.** (Enrollment criteria changed in 1987 and 2000.) (continued)

n(%)	Year of Injury											Total
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
<b>Total</b>	767 (2.9)	674 (2.6)	717 (2.7)	723 (2.8)	694 (2.6)	636 (2.4)	657 (2.5)	686 (2.6)	770 (2.9)	355 (1.4)	26,189	

**Table 7. Number of Form I Patients by Year of Injury.** (Enrollment criteria changed in 1987 and 2000.) (continued)

Date of Injury and Date of Admit to System have been collected since 1973. **Table 8** reflects the Form I Day-1 admissions since then. New reporting procedures were implemented in 1995 leading to a substantial number of additional variables collected on patients who entered the system within 24 hours of injury.

**Table 8. Number of Form I Day-1 Admissions by Year of Injury.**

n(%)	Year of Injury												
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Total</b>	73 (0.6)	103 (0.9)	178 (1.6)	196 (1.7)	238 (2.1)	229 (2.0)	294 (2.6)	359 (3.1)	262 (2.3)	221 (1.9)	463 (4.1)	434 (3.8)	330 (2.9)
<b>Table 8. Number of Form I Day-1 Admissions by Year of Injury. (Enrollment criteria changed in 1987 and 2000.)</b>													

n(%)	Year of Injury												
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Total</b>	429 (3.8)	379 (3.3)	348 (3.0)	359 (3.1)	382 (3.3)	412 (3.6)	388 (3.4)	394 (3.5)	376 (3.3)	351 (3.1)	410 (3.6)	400 (3.5)	406 (3.6)
<b>Table 8. Number of Form I Day-1 Admissions by Year of Injury. (Enrollment criteria changed in 1987 and 2000.) (continued)</b>													

n(%)	Year of Injury											Total
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
<b>Total</b>	397 (3.5)	323 (2.8)	357 (3.1)	350 (3.1)	290 (2.5)	267 (2.3)	281 (2.5)	288 (2.5)	274 (2.4)	172 (1.5)	11,413	
<b>Table 8. Number of Form I Day-1 Admissions by Year of Injury (Enrollment criteria changed in 1987 and 2000.) (continued).</b>												

## CAUSE OF DEATH: TABLE 9

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All survival analyses in this report use the Collaborative SCI Survival Study database maintained at the NSCISC. This database contains considerably more patients than the National SCI Database and much longer follow-up on individual patients through use of the Social Security Administration and Equifax. It includes Form I and Registry patients as well as other patients treated at Model Systems who are not in the National SCI Database. This is also the database that was used to produce the chapter on long-term survival and causes of death that was included in the book *Spinal Cord Injury: Clinical Outcomes from the Model Systems*. Therefore, these data represent an update of the 1992 estimates provided in that book chapter as well as an update of the 2007 Annual Report.

Primary cause of death for the 9,526 deceased patients in the Collaborative SCI Survival Study appears in **Table 9**. Only persons injured since 1973 and treated at a Model System within 1 year of injury were included in this analysis. The number of deaths with unknown causes is high because many deaths identified through Equifax computer search and the Social Security Death Index have not been followed-up by acquisition of death certificates. Therefore, 5,205 persons whose primary cause of death was unknown were not included in the calculation of any percentages. The assumption is that unknown causes of death will be distributed the same way as known causes. These deaths of unknown causes are almost always persons who died after discharge. Therefore, causes of death that are more likely to occur after discharge, such as diseases of the genitourinary system, neoplasms, and accidents, suicides and homicides may be somewhat underestimated proportionately.

Diseases of the respiratory system were the leading cause of death (70.1% of these were cases of pneumonia). Other heart disease ranked second; however, these were often unexplained heart attacks (53.1%, ICD9CM code 427.5), that usually do not represent a true underlying cause of death. Rather, they reflect the relatively poor quality of cause of death data and reporting practices on many death certificates of SCI patients. Hence, mortality from other heart disease is probably overestimated.

The third leading cause of death was infective and parasitic diseases. These were virtually always cases of septicemia (94.2%) and were usually associated with decubitus ulcers, urinary tract or respiratory infections.

Hypertensive and ischemic heart disease was the fourth leading cause of death followed by neoplasms. Specific locations of neoplasms included the lung (89 cases, 28.1%); followed by colon/rectum (23 cases, 7.3 %); bladder (23 cases, 7.3%); prostate (18 cases, 5.7%); and digestive system (17 cases, 5.4%).

Unintentional injuries were the sixth leading cause of death followed by diseases of pulmonary circulation (95.9% of which were cases of pulmonary emboli). These deaths usually occurred prior to first definitive discharge. Disease of the digestive system were the eighth leading cause of death, followed by symptoms and ill-defined conditions, diseases of the genitourinary system, suicides and cerebrovascular diseases. It should be noted that the categories of unintentional injuries, suicides, and homicides do not include any persons dying from multiple injuries sustained during the original accident. However, they do include persons involved in fatal events following discharge. If the 115 cases of subsequent trauma of uncertain nature were divided proportionately between unintentional injuries, suicides, and homicides, then an additional 62 unintentional injuries, 41 suicides, and 12 homicides took place, which would still make unintentional injuries the sixth leading cause of death but make suicide the seventh leading cause of death.

Source: National Spinal Cord Injury Statistical Center, University of Alabama at Birmingham, 2008  
Annual Statistical Report, June, 2009

**Table 9. Primary Cause of Death.**

<b>ICD9CM Codes</b>	<b>Primary Cause of Death</b>	<b>n</b>	<b>%</b>
460-519	Diseases of the respiratory system	952	22.0
420-429	Other heart disease	512	11.8
000-139	Infective and parasitic diseases	450	10.4
400-414	Hypertensive and ischemic heart disease	338	7.8
140-239	Neoplasms	317	7.3
E800-E949	Unintentional injuries	245	5.7
415-417	Disease of pulmonary circulation	197	4.6
520-579	Diseases of the digestive system	197	4.6
780-799	Symptoms and ill-defined conditions	188	4.0
580-629	Diseases of the genitourinary system	164	3.8
E950-E959	Suicides	162	3.7
430-438	Cerebrovascular disease	166	3.8
E980-E989	Subsequent trauma of uncertain nature (unintentional/suicide/homicide)	115	2.7
240-279	Endocrine, nutritional, metabolic and immunity disorders (includes AIDS)	75	1.7
320-389	Diseases of the nervous system and sense organs	73	1.7
440-448	Diseases of the arteries, arterioles, and capillaries	62	1.4
E960-E969	Homicides	50	1.2
290-319	Mental disorders	21	0.5
451-459	Diseases of veins, lymphatics, and other diseases of the circulatory system	11	0.3
710-739	Diseases of the musculoskeletal system and connective tissue	11	0.3
280-289	Diseases of blood and blood-forming organs	7	0.2
740-759	Congenital anomalies	6	0.1
Residual	All others	0	0.0
E970-E979	Legal intervention	2	0.1
	<b>Total known causes of death</b>	<b>4,321</b>	
	<b>Total unknown causes of death</b>	<b>5,205</b>	
	<b>Total deaths</b>	<b>9,526</b>	

**Table 9. Primary Cause of Death.**

Source: National Spinal Cord Injury Statistical Center, University of Alabama at Birmingham, 2008  
Annual Statistical Report, June, 2009

**Table 10** presents cumulative survival for the entire National SCI Database. Data for currently non-participating systems are included in the national table. Individual tables for each of the currently funded and sub-contract funded systems would be located in **Table 11** but are excluded for this public version of the report.

Patients were considered Withdrawn Alive: **1.)** if a follow-up form (Form II) for 2007 or later was submitted indicating the patient was known to be alive, **2.)** if the patient's follow-up was discontinued due to neurologic recovery or transfer to another SCI Care System, or **3.)** if Social Security Death Index searches performed in 2009 did not indicate a reported death. The proportion of patients dying in each post-injury year ranged from 4.52 percent in year one to 1.35 percent in year 10. Annual death rates for those who survived the first post-injury year average 2.11 percent and increase over time as the population ages.

The cumulative 20- and 30-year survival rates for patients with spinal cord injury were 69.49 and 54.20 percent, respectively. However, because of the high proportion of losses to follow-up, as well as the known underreporting of spinal cord injury fatalities occurring shortly after injury, this information should be interpreted with caution. It is likely some patients were lost to follow-up because they died. Therefore, these annual mortality rates may be underestimated.

**Table 10. Cumulative Survival – National.**

Years Post Injury	(1) Patients Entered	(2) Withdrawn Alive	(3) Lost	(4) Dead	(5) Effective Number Exposed	(6) Proportion Dead	(7) Proportion Surviving	(8) Cumulative Survival at End of Interval
0 - 1	40,619	1,511	4,149	1,709	37,789.0	0.0452	0.9548	0.9548
1 - 2	33,250	1,054	988	691	32,229.0	0.0214	0.9786	0.9343
2 - 3	30,517	352	423	479	30,129.5	0.0159	0.9841	0.9195
3 - 4	29,263	371	311	463	28,922.0	0.0160	0.9840	0.9047
4 - 5	28,118	588	396	419	27,626.0	0.0152	0.9848	0.8910
5 - 6	26,715	812	601	361	26,008.5	0.0139	0.9861	0.8786
6 - 7	24,941	700	257	397	24,462.5	0.0162	0.9838	0.8644
7 - 8	23,587	522	203	384	23,224.5	0.0165	0.9835	0.8501
8 - 9	22,478	441	140	330	22,187.5	0.0149	0.9851	0.8374
9 - 10	21,567	709	200	286	21,112.5	0.0135	0.9865	0.8261
10 - 11	20,372	805	293	316	19,823.0	0.0159	0.9841	0.8129
11 - 12	18,958	817	133	262	18,483.0	0.0142	0.9858	0.8014
12 - 13	17,746	725	84	288	17,341.5	0.0166	0.9834	0.7881
13 - 14	16,649	696	38	260	16,282.0	0.0160	0.9840	0.7755
14 - 15	15,655	805	79	263	15,213.0	0.0173	0.9827	0.7621
15 - 16	14,508	835	109	221	14,036.0	0.0157	0.9843	0.7501
16 - 17	13,343	733	15	235	12,969.0	0.0181	0.9819	0.7365
17 - 18	12,360	709	7	221	12,002.0	0.0184	0.9816	0.7230
18 - 19	11,423	658	5	219	11,091.5	0.0197	0.9803	0.7087
19 - 20	10,541	633	48	199	10,200.5	0.0195	0.9805	0.6949
20 - 21	9,661	589	59	172	9,337.0	0.0184	0.9816	0.6821
21 - 22	8,841	621	12	169	8,524.5	0.0198	0.9802	0.6685
22 - 23	8,039	571	3	191	7,752.0	0.0246	0.9754	0.6521
23 - 24	7,274	548	1	169	6,999.5	0.0241	0.9759	0.6363
24 - 25	6,556	624	37	136	6,225.5	0.0218	0.9782	0.6224
25 - 26	5,759	684	87	142	5,373.5	0.0264	0.9736	0.6060
26 - 27	4,846	542	5	117	4,572.5	0.0256	0.9744	0.5905
27 - 28	4,182	458	0	107	3,953.0	0.0271	0.9729	0.5745
28 - 29	3,617	640	2	94	3,296.0	0.0285	0.9715	0.5581
29 - 30	2,881	541	34	75	2,593.5	0.0289	0.9711	0.5420
30 - 31	2,231	476	35	55	1,975.5	0.0278	0.9722	0.5269
31 - 32	1,665	480	1	37	1,424.5	0.0260	0.9740	0.5132
32 - 33	1,147	373	0	24	960.5	0.0250	0.9750	0.5004
33 - 34	750	307	0	22	596.5	0.0369	0.9631	0.4819
34 - 35	421	240	0	13	301.0	0.0432	0.9568	0.4611
<b>Total</b>	<b>40,619</b>	<b>22,170</b>	<b>8,755</b>	<b>9,526</b>				

Table 10. Cumulative survival - National.

- (1) Number of individuals alive at start of interval.
- (2) Number of individuals alive at start of interval ineligible for further follow-up due to study termination.
- (3) Number of individuals lost to follow-up (survival status was unknown) during the interval.
- (4) Number of individuals dying during the interval.
- (5) Number of individuals exposed to risk of dying in interval [patients entered - 0.5 \* (withdrawn alive + lost)].
- (6) Conditional probability of death during the interval (dead / effective number exposed).
- (7) Conditional probability of surviving the interval (1 - proportion dead).
- (8) Cumulative survival rate (previous cumulative survival \* proportion surviving present interval).

Source: National Spinal Cord Injury Statistical Center, University of Alabama at Birmingham, 2008  
Annual Statistical Report, June, 2009



## **LIFE EXPECTANCY: TABLES 12 - 13**

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Life expectancies for SCI patients by age at injury (in 5-year intervals) and neurologic level and extent of lesion appear in **Table 12**. All persons who survived at least 24 hours after injury and who were included in the collaborative SCI survival study database were included in this analysis. Comparable figures for persons who survive the first post-injury year, by current age, appear in **Table 13**. For each neurologic category the observed number of deaths was compared to an expected number of deaths based on observed length of follow-up and 1997 age-sex-race-specific mortality rates for the general U.S. population using methods outlined in detail by Smart and Sanders<sup>1</sup>. The year 1997 was chosen because it was roughly the mid-year of follow-up for the SCI population. All follow-up data through 2009 were used.

The purpose of reporting these life expectancies is to document continuing progress attributable in large part to the Model System program. Life expectancies remain substantially below normal, particularly for persons with tetraplegia and ventilator-dependency.

Figures in these tables are generally not appropriate for use in assessing life expectancy of individual persons because they are not specific enough for that task. At minimum, important prognostic factors that should be considered in determining an individual life expectancy include age, exact neurologic level of injury (particularly among persons with tetraplegia), ASIA impairment scale, length of survival that has already occurred post-injury, and to a lesser extent, etiology of injury, gender and race<sup>2</sup>. Significant co-morbidities (cancer, heart disease, diabetes, etc.) should also be considered when present<sup>3</sup>.

Methods for estimating life expectancy that are used by the NSCISC are detailed in two recent articles by Strauss et al. and DeVivo<sup>3,4</sup>.

**Table 12. Life expectancy for SCI persons surviving at least 24 hours post injury.**

Age At Injury	Life Expectancy (Years)					
	No SCI	Not Ventilator Dependent				Ventilator Dependent Any Level
		Motor Functional Any Level	Paraplegia	Tetraplegia		
				C5-C8	C1-C4	
10 years	68.5	62.2	54.2	48.9	44.2	25.2
15 years	63.6	57.3	49.3	44.1	39.5	20.9
20 years	58.8	52.6	44.8	39.8	35.3	18.1
25 years	54.0	47.9	40.5	35.6	31.5	15.8
30 years	49.3	43.3	36.1	31.4	27.5	13.3
35 years	44.5	38.7	31.6	27.2	23.4	10.5
40 years	39.9	34.1	27.3	23.1	19.6	8.0
45 years	35.3	29.7	23.3	19.3	16.1	5.9
50 years	30.9	25.5	19.5	15.9	13.0	4.2
55 years	26.6	21.5	16.0	12.7	10.2	2.9
60 years	22.5	17.7	12.7	9.8	7.6	1.8
65 years	18.7	14.3	9.8	7.4	5.5	0.9
70 years	15.1	11.2	7.3	5.3	3.8	0.3
75 years	11.9	8.4	5.2	3.5	2.4	<0.1
80 years	9.1	6.0	3.4	2.2	1.3	<0.1

**Table 12. Life expectancy for SCI persons surviving at least 24 hours post-injury.**  
 [Values for persons with no SCI are from the 2004 U.S. Life Tables for the general population.]

**Table 13. Life expectancy for SCI persons surviving at least 1 year post injury.**

Current Age	Life Expectancy (Years)					
	No SCI	<u>Not Ventilator Dependent</u>				<u>Ventilator Dependent</u> Any Level
		Motor Functional Any Level	Paraplegia	Tetraplegia C5-C8   C1-C4		
10 years	68.5	62.6	54.9	49.9	45.9	33.0
15 years	63.6	57.7	50.0	45.1	41.1	28.5
20 years	58.8	53.0	45.5	40.8	36.9	25.1
25 years	54.0	48.4	41.1	36.6	32.9	22.0
30 years	49.3	43.7	36.7	32.3	28.8	18.7
35 years	44.5	39.1	32.2	28.0	24.8	15.4
40 years	39.9	34.5	27.9	23.9	20.8	12.2
45 years	35.3	30.1	23.8	20.1	17.2	9.5
50 years	30.9	25.9	20.0	16.6	14.0	7.2
55 years	26.6	21.9	16.4	13.3	11.0	5.3
60 years	22.5	18.1	13.1	10.3	8.4	3.6
65 years	18.7	14.6	10.1	7.8	6.1	2.4
70 years	15.1	11.4	7.6	5.6	4.3	1.4
75 years	11.9	8.6	5.4	3.8	2.8	0.6
80 years	9.1	6.2	3.6	2.4	1.6	<0.1

**Table 13. Life expectancy for SCI persons surviving at least 1 year post-injury.**  
 [Values for persons with no SCI are from the 2004 U.S. Life Tables for the general population.]

**FORM II FOLLOW-UP: TABLES 14 - 16**

Category of follow-up care (**Table 14**) divides data collection into five categories: system appointment, interview only, lost, future follow-up not required, and unknown. Out of 118,134 records, overall system appointment is 52.4 percent. Variations in 'system appointments' between systems is distinct, ranging from 28.5 percent to 75.0 percent. 'Future Follow-up Not Required' is for those patients who achieve Minimal Deficit. Minimal Deficit is defined as no significant motor, bladder or bowel, or neurologic impairment. For these participants, Form II follow-up is not required, but systems may choose to continue interviews.

Reason for Lost variable was added to the database in January 1998 (by the Follow-up Tracking Committee) to document the reasons follow-up data are not obtainable for those patients whose Category of Follow-up Care is "Lost". This variable includes the "Other" category to determine if there will be need to expand the coding categories in the future. The Follow-up Tracking Committee's conditions for the "unable to contact" category are: 1) there should be more than 1 attempt to schedule a patient for a clinic evaluation; 2) there must have been at least 6 attempts (on different days and times of the day) to contact a person by phone after obtaining a current phone number; and, 3) if unable to contact by phone, a survey requesting data should be mailed to the patient. Once a Form II is submitted as Lost, future follow-up is still pursued but no additional Form II coded Lost is required at next follow-up if that patient is still Lost. Therefore, the percentage does not appropriately reflect lost to follow-up rate. It simply indicates how many Form IIs are being coded Lost and does not include data for analyses.

**Table 14. Category of Follow-up Care.**

n (%)	Category of Follow-up Care					Total
	System Appt	Interview Only	Lost	Future Follow-up Not Required	Unknown	
<b>Total</b>	61,853 (52.4)	35,302 (29.9)	19,183 (16.2)	1,482 (1.3)	314 (0.3)	118,134

**Table 14. Category of Follow-up Care.** ('Future Follow-up Not Required' = Form IIs coded 8, (Minimal Deficit or Recovered).

Nationally, “unable to contact” was the reason most patients are coded “Lost” ranging from 66.5 percent in year 2 to 77.6 percent in year 20 (**Table 15**). Most of the patients who withdrew their consent to participate did so in the first and second post injury year. The number of patients withdrawing consent has begun to increase in subsequent post injury years as a consequence of the HIPAA guidelines that require the re-consenting of patients for future follow-up interviews.

**Table 15. Reasons for Lost by Post Injury Year.**

Reason for Lost	Post Injury Year n(%)							
	1	2	5	10	15	20	25	30
Refused/Withdrew Consent	110 (10.9)	33 (12.5)	109 (9.2)	76 (7.8)	56 (8.6)	58 (8.9)	48 (8.1)	9 (4.1)
Incarcerated	27 (2.7)	11 (4.2)	22 (1.9)	12 (1.2)	12 (1.8)	7 (1.1)	4 (0.7)	0 (0.0)
Unable to contact	723 (71.7)	175 (66.5)	905 (76.2)	744 (75.9)	504 (77.1)	507 (77.6)	432 (72.7)	156 (71.2)
Other	95 (9.4)	39 (14.8)	82 (6.9)	76 (7.8)	36 (5.5)	36 (5.5)	27 (4.5)	11 (5.0)
Patient Refusal added in 2007	15 (1.5)	0 (0.0)	27 (2.3)	30 (3.1)	16 (2.4)	14 (2.1)	35 (5.9)	6 (2.7)
Withdrew Consent added in 2007	33 (3.3)	1 (0.4)	39 (3.3)	40 (4.1)	30 (4.6)	28 (4.3)	48 (8.1)	37 (16.9)
Unknown	6 (0.6)	4 (1.5)	4 (0.3)	2 (0.2)	0 (0.0)	3 (0.5)	0 (0.0)	0 (0.0)
<b>Total</b>	<b>1,009</b>	<b>263</b>	<b>1,188</b>	<b>980</b>	<b>654</b>	<b>653</b>	<b>594</b>	<b>219</b>

**Table 15. Reasons for Lost by Post Injury Year.**  
 (Only Form IIs where Category of Care = 5 (Lost).  
 Form IIs entered into the database since January 1, 1998.  
 No Year 35 records were lost.)

**Table 16** presents a system analysis of how interviews were conducted which has been collected since 1996. Nationally, 10.4 percent of all interviews are conducted in person and system percentages ranged from 1.0 percent to 75.8 percent. Of the 24,000 records in which interviews were conducted, 67.6 percent were done by phone with system percentages ranging from 24.2 percent to 89.9 percent. Just over eight percent of the interviews were done by mail with system percentages ranging from 0 percent to 29.1 percent. Nationally, 7.0 percent of all interviews used a combination of the methods (i.e., in-person, by phone and/or by mail) with system percentages ranging from 0.0 percent to 31.3 percent. The interview method was unknown for 2.6 percent for all the interviews conducted.

**Table 16. How was the interview conducted.**

n (%)	How was Interview Conducted						Total
	In Person	By Phone	Self Admin (mail)	Combo	Not Done, N/A	Unknown	
<b>Total</b>	2,491 (10.4)	16,228 (67.6)	2,067 (8.6)	1,679 (7.0)	905 (3.8)	630 (2.6)	24,000

**Table 16. How was the interview conducted.** (Form IIs entered into the database since March 1, 1996.)

## Part III

### Descriptive Analysis of the National SCI Database

#### **Introduction**

The tables presented in this report are based on a descriptive analysis of most of the variables in the National SCI Database. For most of the Form I variables, each system has been provided with tables reflecting its own patient population. The Form II variables, however, are primarily analyzed by anniversary year of follow-up and presented in a national aggregate format. The narrative for each table is restricted to analysis of national aggregate data and intersystem variability within the database.

Since 1995 revised Form II reporting procedures require submission of Form IIs for all patients only in post-injury years 1, 2, 5, 10, and every 5 years thereafter. Beginning in October 2000, Form II data collection was no longer required at year 2 with one exception. That is, if a patient was still hospitalized for his/her initial hospital care during the first anniversary year, the year 2 (but not year 1) follow-up would be required. For this reason, there has been a significant decrease in the numbers of records in all the other post-injury years. Therefore, most of the Form II analyses are restricted only to post-injury years 1, 2, 5, 10, 15, 20, 25, 30, and 35.

#### **Lost and Unknown Categories**

Since differential losses to follow-up may mask time trends within the data, patients who are lost are not included in the tables depicting post-discharge data. The underlying assumption is made that patients who are lost to follow-up will be distributed proportionately across categories in the same way as successfully followed patients.

Data classified as unknown represent those patients who are being followed but for whom that specific information is unavailable. Therefore, a high proportion of unknowns indicate information reflecting unusual data collection difficulties.

#### **Statistical Measures**

Data of a categorical nature are presented as frequency and percentage. For continuous variables, the central tendency is measured by mean or median as appropriate. In some tables, the standard deviation (S.D.) is used to measure the dispersion about the population mean (i.e., how closely individual patient values cluster around the mean). If data are normally distributed, 95 percent of all observed values will fall within 1.96 standard deviations of the mean.

## **AGE AT INJURY: TABLES 17 - 19**

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The cumulative frequency distribution of age at injury is depicted in **Table 17**. Three patients were less than one year old while one was 98 years old. The most common age was 19 years; 29.06 percent of all injuries occurred between the ages of 17 and 23 years, and 51.2 percent of all injuries occurred between the ages of 16 and 30, while 9.2 percent of all injuries occurred at age 60 or older.



**Table 17. Age at Injury: Frequency Distribution.**

Age	N	Percent	Cumulative Percent
<1	3	0.01	0.01
1	12	0.05	0.06
2	9	0.03	0.09
3	17	0.06	0.16
4	21	0.08	0.24
5	14	0.05	0.29
6	20	0.08	0.37
7	16	0.06	0.43
8	18	0.07	0.50
9	19	0.07	0.57
10	30	0.11	0.68
11	15	0.06	0.74
12	34	0.13	0.87
13	99	0.38	1.25
14	204	0.78	2.03
15	376	1.44	3.46
16	732	2.80	6.26
17	1012	3.86	10.12
18	1210	4.62	14.74
19	1246	4.76	19.50
20	1103	4.21	23.71
21	1093	4.17	27.89
22	1012	3.86	31.75
23	937	3.58	35.33
24	890	3.40	38.73
25	821	3.14	41.86
26	750	2.86	44.73
27	694	2.65	47.38
28	663	2.53	49.91
29	658	2.51	52.42
30	592	2.26	54.68
31	572	2.18	56.87
32	565	2.16	59.03
33	461	1.76	60.79
34	401	1.53	62.32

Age	N	Percent	Cumulative Percent
35	467	1.78	64.10
36	448	1.71	65.81
37	413	1.58	67.39
38	422	1.61	69.00
39	359	1.37	70.37
40	361	1.38	71.75
41	363	1.39	73.14
42	329	1.26	74.39
43	337	1.29	75.68
44	331	1.26	76.94
45	328	1.25	78.20
46	282	1.08	79.27
47	292	1.12	80.39
48	305	1.16	81.55
49	274	1.05	82.60
50	253	0.97	83.56
51	214	0.82	84.38
52	242	0.92	85.31
53	225	0.86	86.16
54	222	0.85	87.01
55	209	0.80	87.81
56	219	0.84	88.65
57	212	0.81	89.46
58	193	0.74	90.19
59	172	0.66	90.85
60	177	0.68	91.53
61	181	0.69	92.22
62	154	0.59	92.81
63	141	0.54	93.34
64	133	0.51	93.85
65	117	0.45	94.30
66	134	0.51	94.81
67	139	0.53	95.34
68	112	0.43	95.77
69	100	0.38	96.15

Age	N	Percent	Cumulative Percent
70	79	0.30	96.45
71	93	0.36	96.81
72	76	0.29	97.10
73	87	0.33	97.43
74	73	0.28	97.71
75	84	0.32	98.03
76	70	0.27	98.30
77	74	0.28	98.58
78	51	0.19	98.77
79	56	0.21	98.99
80	43	0.16	99.15
81	35	0.13	99.29
82	34	0.13	99.42
83	34	0.13	99.55
84	22	0.08	99.63
85	23	0.09	99.72
86	20	0.08	99.79
87	13	0.05	99.84
88	13	0.05	99.89
89	10	0.04	99.93
90	6	0.02	99.95
91	4	0.02	99.97
92	3	0.01	99.98
94	2	0.01	99.99
95	1	<0.01	99.99
97	1	<0.01	100.00
98	1	<0.01	100.00

*Two records with unknown age are not included in this table.*

Some descriptive statistics for the age at injury distribution are shown in **Table 18**. Mean age for all patients was 33.5 years (S.D. = 16.2). The mean age for all patients in the database ranged from a low of 29.6 to a high of 47.5 across model systems.

**Table 18. Age at Injury: Descriptive Statistics.**

	Age at Injury				
	N	Mean	Standard Deviation	Min	Max
<b>Total</b>	26,187	33.5	16.2	<1	98
<b>Table 18. Age at Injury: Descriptive Statistics.</b> (Two records are missing age data.)					

**Table 19** reflects a consistent trend toward older age at time of injury. The mean age at injury has increased from 28.7 years between 1973-1979 to 40.2 years in 2005-2008. This trend reflects in large part a similar trend in the average age of the United States population. However, underlying changes in age-specific spinal cord injury incidence rates, changing locations of model systems, and changing referral patterns to model systems may also be contributing to the trend toward older age at injury for persons in the NSCISC database.

**Table 19. Trend in Age by Year of Injury.**

Year of Injury	N	Mean	Standard Deviation	Min	Max
<b>1973-1979</b>	4,564	28.7	14.1	1	88
<b>1980-1984</b>	4,950	30.5	14.6	1	90
<b>1985-1989</b>	3,843	32.3	15.8	<1	92
<b>1990-1994</b>	3,295	33.7	16.0	1	97
<b>1995-1999</b>	3,624	36.4	17.0	<1	98
<b>2000-2004</b>	3,444	37.6	16.7	4	90
<b>2005-2008</b>	2,467	40.2	17.8	1	94
<b>Total</b>	<b>26,187</b>	<b>33.5</b>	<b>16.2</b>	<b>&lt;1</b>	<b>98</b>
<b>Table 19. Trend in Age by Year of Injury.</b> (Two records are missing age data.)					

**SEX: TABLE 20**

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The number of spinal cord injury patients by gender is shown in **Table 20**. Overall, 80.9 percent of all reported spinal cord injuries occurred among males.

There was very little variability among systems with regard to the composition of the patient populations by gender. Among systems, the proportion of male patients ranged from a low of 76.2 percent to a high of 85.8 percent.

**Table 20. Sex of Spinal Cord Injury Patients.**

n (%)	Sex		
	Male	Female	Total
<b>Total</b>	21,174 (80.9)	5,014 (19.1)	26,188

**Table 20. Sex of Spinal Cord Injury Patients.** (One record has unknown sex.)

The number of spinal cord injury patients by race is shown in **Table 21**. There was substantial variability among systems: the proportion of white patients ranges from 39.7 percent to 89.3 percent, while the proportion of African Americans ranged from 3.1 to 53.8 percent. The highest proportion of American Indians 11.7% occurred in one system and the highest proportion of patients of Asian descent, 5.8% occurred in another.

A very significant trend over time was reported in the racial distribution of persons enrolled in the national database between 1973 and 1998<sup>5</sup>. During 1973 through 1979 76.8 percent of persons enrolled in the database were white, 14.2 percent were African American, 1.9 percent were American Indian, and 0.9 percent were Asian. However, after 2005, only 66.1 percent persons enrolled in the database were white, while 27.1 percent were African American, 0.9 percent were Native American, 2.0 percent were Asian, and 2.9 percent were classified as “other” races. This trend is due in very small part to trends in the United States general population. Periodic changes in the identities of participating Model Systems, changes in eligibility criteria for inclusion into the National SCI Database, and changes in referral patterns to Model Systems are also partly responsible for this racial trend. However, the trend is so large that changes in underlying race-specific SCI incidence rates are also likely.

It should not be inferred from these data that the incidence of spinal cord injury was higher among whites than non-whites. On the contrary, most patients were white because whites comprise by far the largest segment of the United States population. In fact, other studies have demonstrated conclusively that the spinal cord injury incidence rate was highest among non-whites<sup>6</sup>.

High percentages of unknowns in the Hispanic Origin variable are due to a database conversion process that occurred in 1995. When this variable was added, all persons coded Spanish in the race variable were converted to “Yes, Hispanic origin” in this variable, and their race was then changed to “Unknown”. For those who were not coded Spanish in the race variable, the “No” code was inserted in this variable and their original race code was retained. This data conversion process resulted in high percentages of records coded “unknown” in this race variable. All but 33, (2.0%) of the persons of unknown race are persons of Hispanic origin.

**Table 21. Racial Group of Spinal Cord Injury Patients.**

n (%)	Racial Group						Total
	Caucasian	African American	Native American	Asian	Other	Unknown	
<b>Total</b>	17,617 (67.3)	5,900 (22.5)	247 (0.9)	421 (1.6)	372 (1.4)	1,632 (6.2)	26,189

**Table 21. Racial Group of Spinal Cord Injury Patients.** (High percentages of unknowns are mainly due to a database conversion process in 1995.)

Overall, 9.3 percent of respondents endorse Hispanic Origin (**Table 22**). By system, it ranges from 0 percent to 20.2 percent.

**Table 22. Hispanic Origin.**

n (%)	Hispanic Origin			
	No	Yes	Unknown	Total
<b>Total</b>	23,519 (89.8)	2,438 (9.3)	232 (0.9)	26,189

**Table 22. Hispanic Origin.**

**Table 23** depicts Hispanic Origin by Race, 5.3 percent of Native Americans, 4.0 percent of Asians, and 2.8 percent of Caucasians endorsed Hispanic Origin.

**Table 23. Hispanic Origin by Race.**

Hispanic Origin n (%)	Racial Group						
	Caucasian	African American	Native American	Asian	Other	Unknown	Total
Not of Hispanic Origin	17,026 (96.7)	5,760 (97.6)	234 (94.7)	400 (95.0)	96 (25.8)	3 (0.2)	23,519
Hispanic Origin	493 (2.8)	57 (1.0)	13 (5.3)	17 (4.0)	274 (73.7)	1,584 (97.0)	2,438
Unknown	98 (0.6)	83 (1.4)	0 (0.0)	4 (1.0)	2 (0.5)	45 (2.8)	232
<b>Total</b>	<b>17,617</b>	<b>5,900</b>	<b>247</b>	<b>421</b>	<b>372</b>	<b>1,632</b>	<b>26,189</b>

**Table 23. Hispanic Origin by Race.** (High percentages of unknown races among people of Hispanic origin are due to a database conversion process in 1995.)

Looking at trends over years in racial groups (**Table 24**); there is an increase in African American (range from 14.2% in 1973-1979 to 29.1% in 1990-1994). Also, there is a slight increase in Asian/Pacific Islander (from 0.9% in 1973-1979 to 2.0% in 2000-2008).

**Table 24. Trend in Racial Group by Year of Injury.**

Racial Group n (%)	Year of Injury							Total
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	
Caucasian	3,507 (76.8)	3,525 (71.2)	2,483 (64.6)	1,803 (54.7)	2,249 (62.1)	2,418 (70.2)	1,632 (66.1)	17,617
African American	648 (14.2)	873 (17.6)	957 (24.9)	958 (29.1)	981 (27.1)	814 (23.6)	669 (27.1)	5,900
Native American	88 (1.9)	65 (1.3)	29 (0.8)	15 (0.5)	17 (0.5)	11 (0.3)	22 (0.9)	247
Asian/Pacific Islander	42 (0.9)	61 (1.2)	55 (1.4)	61 (1.9)	83 (2.3)	70 (2.0)	49 (2.0)	421
Other, Unclassified	16 (0.4)	17 (0.3)	11 (0.3)	47 (1.4)	111 (3.1)	98 (2.8)	72 (2.9)	372
Unknown	264 (5.8)	409 (8.3)	308 (8.0)	411 (12.5)	183 (5.0)	33 (1.0)	24 (1.0)	1,632
<b>Total</b>	<b>4,565</b>	<b>4,950</b>	<b>3,843</b>	<b>3,295</b>	<b>3,624</b>	<b>3,444</b>	<b>2,468</b>	<b>26,189</b>

**Table 24. Trend in Racial Group by Year of Injury.**

Trends in Hispanic Origin by year of injury (**Table 25**), shows a 4.8 percent increase in Hispanic participation starting in 1990.

**Table 25. Trend in Hispanic Origin by Year of Injury.**

Hispanic Origin n (%)	Year of Injury							Total
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	
Not of Hispanic Origin	4,291 (94.0)	4,540 (91.7)	3,535 (92.0)	2,853 (86.6)	3,116 (86.0)	2,986 (86.7)	2,198 (89.1)	23,519
Hispanic Origin	272 (6.0)	408 (8.2)	307 (8.0)	421 (12.8)	398 (11.0)	431 (12.5)	201 (8.1)	2,438
Unknown	2 (0.0)	2 (0.0)	1 (0.0)	21 (0.6)	110 (3.0)	27 (0.8)	69 (2.8)	232
<b>Total</b>	<b>4,565</b>	<b>4,950</b>	<b>3,843</b>	<b>3,295</b>	<b>3,624</b>	<b>3,444</b>	<b>2,468</b>	<b>26,189</b>

**Table 25. Trend in Hispanic Origin by Year of Injury.**

**Table 26** ranks the national causes of injuries, and then separates by sex. For males and females, the three leading causes of spinal cord injury were the same: auto accidents, falls, and gunshot wounds.

Among males, diving accidents ranked fourth followed by motorcycle accidents. However, for females, medical/surgical complications ranked fourth and diving accidents ranked fifth.

Significant gender differences are evident in five etiologies: auto accidents (30.4% for males, 50.2% for females); motorcycle accidents (6.9% males, 2.0% females); diving accidents (7.3% males, 2.7% females); hit by falling objects (3.5% males, 0.6% females) and medical/surgical complications (1.9% male, 4.5% females).

It should be noted that the ATV/ATC category was created in October 1986; before that time, injuries resulting from these vehicles were coded as either Motorcycle or Other Vehicle. While some systems have converted pre-1986 data where possible, this conversion was not mandatory. Therefore, the number of injuries resulting from ATV/ATC accidents is most probably underreported.

**Table 26. Etiology of Spinal Cord Injury by Sex.**

Rank	Etiology	Males n (%)	Females n (%)	Total n (%)
1	Auto accident	6,432 (30.4)	2,516 (50.2)	8,948 (34.2)
2	Fall	4,353 (20.6)	986 (19.7)	5,340 (20.4)
3	Gunshot wound	3,669 (17.3)	513 (10.2)	4,182 (16.0)
4	Diving	1,542 (7.3)	134 (2.7)	1,676 (6.4)
5	Motorcycle accident	1,455 (6.9)	99 (2.0)	1,554 (5.9)
6	Hit by falling/flying object	745 (3.5)	32 (0.6)	777 (3.0)
7	Medical/surgical complication	398 (1.9)	227 (4.5)	625 (2.4)
8	Pedestrian	319 (1.5)	112 (2.2)	431 (1.6)
9	Bicycle	294 (1.4)	34 (0.7)	328 (1.3)
10	Person-to-person contact	198 (0.9)	59 (1.2)	257 (1.0)
11	Other unclassified	218 (1.0)	21 (0.4)	239 (0.9)
12	All other penetrating wounds	184 (0.9)	50 (1.0)	234 (0.9)
13	Other vehicular	147 (0.7)	15 (0.3)	162 (0.6)
14	All-terrain vehicle (ATV) and all-terrain cycle (ATC)	123 (0.6)	20 (0.4)	143 (0.5)
15	Football	136 (0.6)	0 (<0.1)	136 (0.5)
16	Snow skiing	114 (0.5)	13 (0.3)	127 (0.5)
17	Horseback riding	60 (0.3)	61 (1.2)	121 (0.5)
18	Winter sports	90 (0.4)	25 (0.5)	115 (0.4)
19	Surfing: includes body surfing	96 (0.5)	2 (<0.1)	98 (0.4)
20	Other sport	80 (0.4)	16 (0.3)	96 (0.4)
21	Fixed-wing aircraft	63 (0.3)	28 (0.6)	91 (0.3)
22	Wrestling	81 (0.4)	2 (<0.1)	83 (0.3)
23	Trampoline	52 (0.2)	8 (0.2)	60 (0.2)
24	Gymnastics	30 (0.1)	18 (0.4)	48 (0.2)
25	Snowmobile	34 (0.2)	5 (0.1)	39 (0.1)
26	Field sports	37 (0.2)	1 (<0.1)	38 (0.1)
27	Hang gliding	31 (0.1)	2 (<0.1)	33 (0.1)
28	Rotating wing aircraft	28 (0.1)	2 (<0.1)	30 (0.1)
29	Water skiing	29 (0.1)	1 (<0.1)	30 (0.1)
30	Boat	19 (0.1)	8 (0.2)	27 (0.1)
31	Air sports	21 (0.1)	0 (<0.1)	21 (0.1)
32	Baseball/softball	19 (0.1)	0 (<0.1)	19 (0.1)
33	Rodeo	19 (0.1)	0 (<0.1)	19 (0.1)
34	Explosion	13 (0.1)	1 (<0.1)	14 (0.1)
35	Basketball/volleyball	10 (<0.1)	0 (<0.1)	10 (<0.1)
36	Track and field	6 (<0.1)	0 (<0.1)	6 (<0.1)
37	Skateboard	5 (<0.1)	0 (<0.1)	5 (<0.1)
	<b>Total</b>	<b>21,174</b>	<b>5,014</b>	<b>26,188</b>

**Table 26. Etiology of Spinal Cord Injury by Sex. (One record has unknown sex.)**



**Tables 27 – 32** group etiology categories.

- **'Vehicular'** accidents include auto accidents in jeeps, trucks, dune buggies, and buses; Motorcycle accidents in 2-wheeled, motorized vehicles including mopeds and motorized dirt bikes; Boats; Fixed-wing aircraft; Rotating wing aircraft; Snowmobiles; Bicycles (includes tricycles and unicycles); All-terrain vehicles (ATV) and all-terrain cycles (ATC) – includes both 3-wheeled and 4-wheeled vehicles; Other vehicular, unclassified: tractors, bulldozers, go-carts, steamrollers, trains, road graders, forklifts.
- **'Violence'** includes: Gunshot wounds; All other penetrating wounds (stabbing, impalement); Person-to-person contact: being hit with a blunt object, falls as a result of being pushed (as an act of violence); Explosions: bomb, grenade, dynamite, or gasoline.
- **'Sports'** includes: Diving, Football, Trampoline, Snow skiing, Water skiing, Wrestling, Baseball/softball, Basketball, volleyball; Surfing: includes body surfing; Horseback riding; Gymnastics: includes all gymnastic activities other than, trampoline, break-dancing; Rodeo: includes bronco/bull riding; Track and field: pole vault, high jump, etc.; Field sports: field hockey, lacrosse, soccer, and rugby; Hang gliding; Air sports: parachuting, para-sailing; Winter sports: sled, snow tube, toboggan, ice hockey, snow-boarding; Skateboarding; Unclassified: auto racing, glider kite, slide, swimming, bungee jumping, scuba diving, roller-blading, jet-skiing, cheerleading, etc.
- **'Other'** encompasses all other and unclassified injuries including unforeseen medical events.

Grouped etiology appears in **Table 27**. Overall, Vehicular Accidents ranked first in the National SCI Database (43.2%) and first in all but one system; Falls ranked first in that system.

Falls ranked second nationally (20.4%) and second for all systems except five systems. Violence ranked third nationally (17.9%), second in 3 systems and one system had tie for 2<sup>nd</sup> place between Violence & Vehicular at 24.4%.

**Table 27. Grouped Etiology.**

n (%)	Etiology						Total
	Vehicular	Violence	Sports & Recreation	Falls	Other	Unknown	
<b>Total</b>	11,323 (43.2)	4,687 (17.9)	2,741 (10.5)	5,340 (20.4)	2,073 (7.9)	25 (0.1)	26,189

**Table 27. Grouped Etiology.** (Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30. see [Group Etiology Categories](#))

Grouped etiology by age at injury is depicted in **Table 28**. Vehicular Accidents were the leading cause of spinal cord injury up to 60 years of age. After age 60, Falls were the leading cause of SCI. Sports and Violence declined proportionately while Falls increased with advancing age.

**Table 28. Grouped Etiology by Age at Injury.**

Etiology n(%)	Age at Injury						Total
	<15	16-30	31-45	46-60	61-75	76-98	
Vehicular Accidents	337 (37.2)	6,236 (46.5)	2,743 (44.6)	1,354 (38.8)	522 (30.7)	129 (25.0)	11,321
Violence	212 (23.4)	3,124 (23.3)	1,030 (16.7)	268 (7.7)	46 (2.7)	7 (1.4)	4,687
Sports	218 (24.0)	1,937 (14.4)	424 (6.9)	123 (3.5)	36 (2.1)	3 (0.6)	2,741
Falls	73 (8.1)	1,418 (10.6)	1,396 (22.7)	1,293 (37.0)	833 (48.9)	327 (63.4)	5,340
Other	67 (7.4)	689 (5.1)	557 (9.1)	449 (12.9)	264 (15.5)	47 (9.1)	2,073
Unknown	0 (0.0)	9 (0.1)	7 (0.1)	4 (0.1)	2 (0.1)	3 (0.6)	25
<b>Total</b>	<b>907</b>	<b>13,413</b>	<b>6,157</b>	<b>3,491</b>	<b>1,703</b>	<b>518</b>	<b>26,187</b>

**Table 28. Grouped Etiology by Age at Injury.** (Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30. see [Group Etiology Categories](#)) (Two records have unknown age.)

**Table 29** depicts grouped etiology by sex. Vehicular Accidents and Violence and Sports differ across sex. Females are more likely to be injured by a Vehicular Accident (54.4% females, 40.6% males), but Violence and Sports are more likely the cause of male injuries (19.2% and 11.6% for males, 12.4% and 5.6% for females).

**Table 29. Grouped Etiology by Sex.**

Etiology n(%)	Sex		
	Male	Female	Total
Vehicular Accidents	8,596 (40.6)	2,727 (54.4)	11,323
Violence	4,064 (19.2)	623 (12.4)	4,687
Sports	2,458 (11.6)	283 (5.6)	2,741
Falls	4,353 (20.6)	986 (19.7)	5,339
Other	1,681 (7.9)	392 (7.8)	2,073
Unknown	22 (0.1)	3 (0.1)	25
<b>Total</b>	<b>21,174</b>	<b>5,014</b>	<b>26,188</b>

**Table 29. Grouped Etiology by Sex.** (Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30. see [Group Etiology Categories](#)) (One record has unknown age.)

**Table 30** depicts grouped etiology by race. Vehicular Accidents were the leading cause of injuries across races except for African Americans, where Violence was the leading cause. Falls are stable across races, ranging from 17.0 percent to 25.3 percent.

**Table 30. Grouped Etiology by Racial Group.**

Etiology n (%)	Racial Group						
	Caucasian	African American	Native American	Asian	Other	Unknown	Total
Vehicular Accidents	8,694 (49.4)	1,633 (27.7)	150 (60.7)	193 (45.8)	154 (41.4)	499 (30.6)	11,323
Violence	1,205 (6.8)	2,608 (44.2)	28 (11.3)	81 (19.2)	82 (22.0)	683 (41.9)	4,687
Sports	2,409 (13.7)	182 (3.1)	12 (4.9)	23 (5.5)	16 (4.3)	99 (6.1)	2,741
Falls	3,791 (21.5)	1,085 (18.4)	42 (17.0)	88 (20.9)	94 (25.3)	240 (14.7)	5,340
Other	1,502 (8.5)	388 (6.6)	15 (6.1)	35 (8.3)	26 (7.0)	107 (6.6)	2,073
Unknown	16 (0.1)	4 (0.1)	0 (0.0)	1 (0.2)	0 (0.0)	4 (0.3)	25
<b>Total</b>	<b>17,617</b>	<b>5,900</b>	<b>247</b>	<b>421</b>	<b>372</b>	<b>1,632</b>	<b>26,189</b>

**Table 30. Grouped Etiology by Racial Group.** (Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30. see [Group Etiology Categories](#))

**Table 31** shows grouped etiology by Hispanic origin. Vehicular Accidents and Violence share the most common cause of injuries for those with Hispanic origin (35.0%) compared to those with non-Hispanic origin who were injured by Vehicular Accidents (44.2%) versus Violence (16.1%).

**Table 31. Grouped Etiology by Hispanic Origin.**

Etiology n(%)	Hispanic Origin			
	No	Yes	Unknown	Total
Vehicular Accidents	10,390 (44.2)	852 (35.0)	81 (34.9)	11,323
Violence	3,777 (16.1)	852 (35.0)	58 (25.0)	4,687
Sports	2,589 (11.0)	141 (5.8)	11 (4.7)	2,741
Falls	4,857 (20.7)	423 (17.4)	60 (25.9)	5,340
Other	1,886 (8.0)	167 (6.9)	20 (8.6)	2,073
Unknown	20 (0.1)	3 (0.1)	2 (0.9)	25
<b>Total</b>	<b>23,519</b>	<b>2,438</b>	<b>232</b>	<b>26,189</b>

**Table 31. Grouped Etiology by Hispanic Origin.** (Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30. See [Group Etiology Categories](#))

Vehicular Accidents ranked as the leading cause of SCI through all time periods (**Table 32**). Falls ranked second through all time periods except from 1990 to 1994 when Violence ranked second. There was a steady increase in the percentage of SCI due to Violence from 13.3 percent prior to 1980 to 28.9 percent from 1990 to 1994. A concomitant decrease in the percentage of SCI due to Sports-related activities from 14.4 to 7.5 occurred over this same time period. The percentage of SCI due to Vehicular Accidents also decreased from 47.0 percent to 36.4 percent. There has been a significant decline in SCI due to Violence and an increase in injuries due to Vehicular Accidents and Falls since 1994. These trends may be due in part to changing locations of model systems, changing referral patterns to model systems, changes in underlying incidence rates, aging of the population, or a combination of these factors.

**Table 32. Trend in Grouped Etiology by Year of Injury.**

Etiology n (%)	Year of Injury							Total
	1973- 1979	1980- 1984	1985- 1989	1990- 1994	1995- 1999	2000- 2004	2005- 2008	
Vehicular Accidents	2,144 (47.0)	2,237 (45.2)	1,621 (42.2)	1,198 (36.4)	1,450 (40.0)	1,635 (47.5)	1,038 (42.1)	11,323
Violence	605 (13.3)	792 (16.0)	723 (18.8)	952 (28.9)	764 (21.1)	478 (13.9)	373 (15.1)	4,687
Sports	655 (14.3)	705 (14.2)	390 (10.1)	248 (7.5)	254 (7.0)	302 (8.8)	187 (7.6)	2,741
Falls	752 (16.5)	836 (16.9)	796 (20.7)	659 (20.0)	846 (23.3)	792 (23.0)	659 (26.7)	5,340
Other	406 (8.9)	377 (7.6)	311 (8.1)	235 (7.1)	305 (8.4)	232 (6.7)	207 (8.4)	2,073
Unknown	3 (0.1)	3 (0.1)	2 (0.1)	3 (0.1)	5 (0.1)	5 (0.1)	4 (0.2)	25
<b>Total</b>	<b>4,565</b>	<b>4,950</b>	<b>3,843</b>	<b>3,295</b>	<b>3,624</b>	<b>3,444</b>	<b>2,468</b>	<b>26,189</b>

**Table 32. Trend in Grouped Etiology by Year of Injury.** (Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30. See [Group Etiology Categories](#))

**WORK RELATEDNESS: TABLE 33**

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This variable was added to the database in October 2000 and only records entered after January 1, 2001 are included in **Table 33**. Of the 5,681 available records, 10.4 percent did have a work related spinal cord injury.

**Table 33. Work Relatedness.**

n (%)	Injury Related To Work			
	No	Yes	Unknown	Total
<b>Total</b>	5,027 (88.5)	593 (10.4)	61 (1.1)	5,681

**Table 33. Work Relatedness.** (Form Is entered to the database since January 1, 2001.)

**MARITAL STATUS: TABLES 34 - 36**

Marital status at injury is depicted in **Table 34**. It is not surprising, given the young age at which most injuries occur, that over half the patients in the database were single (never married). Substantial intersystem variability was noted. **Table 34** shows the percentage of patients who were single at time of injury ranged from 39.6 percent to 61.3 percent among centers, while the percentage of divorced patients ranged from 4.1 percent to 13.3 percent.

**Table 34. Marital Status at Time of Injury.**

n (%)	Marital Status at Injury							
	Single	Married	Divorced	Separated	Widowed	Other	Unknown	Total
<b>Total</b>	13,700 (52.3)	8,333 (31.8)	2,391 (9.1)	936 (3.6)	644 (2.5)	27 (0.1)	158 (0.6)	<b>26,189</b>

**Table 34. Marital Status at Time of Injury.**

**Table 35** shows a steady increase in Married (from 30.9% in year 1 to 42.2% in year 30) and Divorced (from 10.8% in year 1 to 25.1% in year 30) categories across years. Overall, 46.9 percent are Single, never married (ranging from 50.6% in year 1 to 27.4% in year 30).

**Table 35. Marital Status by Post Injury Year.**

Marital Status n(%)	Post Injury Year									
	1	2	5	10	15	20	25	30	35	All Years
Single (never married)	9,853 (50.6)	6,613 (51.2)	4,759 (46.6)	2,197 (41.9)	1,229 (37.5)	809 (34.1)	480 (31.1)	176 (27.4)	1 (16.7)	26,117 (46.9)
Married	6,014 (30.9)	3,823 (29.6)	3,193 (31.3)	1,708 (32.6)	1,112 (34.0)	847 (35.7)	579 (37.5)	271 (42.2)	4 (66.7)	17,551 (31.5)
Divorced	2,107 (10.8)	1,463 (11.3)	1,557 (15.2)	976 (18.6)	724 (22.1)	577 (24.3)	386 (25.0)	161 (25.1)	1 (16.7)	7,952 (14.3)
Separated	721 (3.7)	494 (3.8)	300 (2.9)	144 (2.7)	79 (2.4)	49 (2.1)	28 (1.8)	7 (1.1)	0 (0.0)	1,822 (3.3)
Widowed	449 (2.3)	269 (2.1)	231 (2.3)	125 (2.4)	75 (2.3)	61 (2.6)	49 (3.2)	21 (3.3)	0 (0.0)	1,280 (2.3)
Other, unclassified	19 (0.1)	8 (0.1)	10 (0.1)	3 (0.1)	2 (0.1)	2 (0.1)	0 (0.0)	1 (0.2)	0 (0.0)	45 (0.1)
Unknown	312 (1.6)	237 (1.8)	167 (1.6)	86 (1.6)	53 (1.6)	28 (1.2)	20 (1.3)	5 (0.8)	0 (0.0)	908 (1.6)
<b>Total</b>	<b>19,475</b>	<b>12,907</b>	<b>10,217</b>	<b>5,239</b>	<b>3,274</b>	<b>2,373</b>	<b>1,542</b>	<b>642</b>	<b>6</b>	<b>55,675</b>

**Table 35. Marital Status by Post Injury Year.**



Change in Marital Status reflects all changes since the last Form II with a known Marital Status. If a year 1 Form II has marital status, and the year 5 Form II is lost, then the year 10 Form II reflects any marital change since the year one Form II (**Table 36**). Separations are ignored. Codes 'Divorced + Married', 'Widowed + Married', 'Divorced + Widowed + Married' may be in any order. 'No Change' was reported in the first year for 92.6 percent of participants. Over all years, 'No Change' was reported 87.1 percent.

**Table 36. Change in Marital Status by Post Injury Year.**

Change in Marital Status	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No Change	3,729 (92.6)	163 (92.6)	2,155 (85.4)	1,525 (85.4)	1,196 (84.3)	1,246 (83.9)	1,133 (82.4)	546 (85.0)	6 (100.0)	11,699 (87.1)
Divorce	94 (2.3)	3 (1.7)	141 (5.6)	79 (4.4)	61 (4.3)	79 (5.3)	60 (4.4)	23 (3.6)	0 (0.0)	540 (4.0)
Married	49 (1.2)	6 (3.4)	113 (4.5)	96 (5.4)	77 (5.4)	77 (5.2)	96 (7.0)	34 (5.3)	0 (0.0)	548 (4.1)
Widowed	14 (0.3)	1 (0.6)	18 (0.7)	17 (1.0)	10 (0.7)	6 (0.4)	14 (1.0)	7 (1.1)	0 (0.0)	87 (0.6)
Divorce + Marriage (any order)	5 (0.1)	1 (0.6)	26 (1.0)	20 (1.1)	30 (2.1)	36 (2.4)	42 (3.1)	19 (3.0)	0 (0.0)	179 (1.3)
Widowed + Marriage (any order)	0 (0.0)	0 (0.0)	5 (0.2)	1 (0.1)	2 (0.1)	3 (0.2)	0 (0.0)	3 (0.5)	0 (0.0)	14 (0.1)
Divorce, Marriage + Widowed (any order)	2 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.1)	2 (0.3)	0 (0.0)	6 (0.0)
Other	22 (0.5)	0 (0.0)	19 (0.8)	11 (0.6)	8 (0.6)	10 (0.7)	7 (0.5)	3 (0.5)	0 (0.0)	80 (0.6)
Unknown	111 (2.8)	2 (1.1)	45 (1.8)	37 (2.1)	35 (2.5)	28 (1.9)	21 (1.5)	5 (0.8)	0 (0.0)	284 (2.1)
<b>Total</b>	<b>4,026</b>	<b>176</b>	<b>2,522</b>	<b>1,786</b>	<b>1,419</b>	<b>1,485</b>	<b>1,375</b>	<b>642</b>	<b>6</b>	<b>13,437</b>

**Table 36. Change in Marital Status by Post Injury Year.** (Form IIs entered into the database since January 1, 2001.)

**LEVEL OF EDUCATION: TABLES 37 - 38**

The highest level of formal education completed at time of injury appears in **Table 37**. Over half (58.9% excluding 'Other') of the patients were at least high school graduates at time of injury, whereas 85.3 percent were at least 19 years of age at injury and would normally be expected to have completed high school. Approximately one-tenth (9.5%) had an eighth grade education or less, whereas only 2.0 percent were less than 15 years of age at injury and would normally be expected to have an eighth grade education or more.

The proportion of patients with an eighth grade education or less ranged from 1.7 percent to 17.1 percent among centers. Overall, the highest level of formal education completed at time of injury was reported as unknown for 6.5 percent of the patients, suggesting many systems are having substantial difficulty collecting this information.

**Table 37. Highest Level of Education at Time of Injury.**

n (%)	Education Level									Total
	8 <sup>th</sup> Grade or Less	9 <sup>th</sup> – 11 <sup>th</sup> Grade	High School or GED	Associate	Bach	Master	Doctorate	Other	Unknown	
<b>Total</b>	2,485 (9.5)	6,407 (24.5)	12,622 (48.2)	542 (2.1)	1,637 (6.3)	363 (1.4)	230 (0.9)	188 (0.7)	1,715 (6.5)	<b>26,189</b>

**Table 37. Highest Level of Education at Time of Injury.**

In **Table 38**, level of education by post injury year is shown. Over the years, 71.9 percent (excluding 'Other') do complete at least a High School education (only 65.5% at year 1 and 90.0% at year 30).

**Table 38. Highest Level of Education Completed by Post Injury Year.**

Education Level	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	Total
8th Grade or Less	1,564 (8.0)	1,055 (8.2)	631 (6.2)	286 (5.5)	118 (3.6)	68 (2.9)	37 (2.4)	26 (4.0)	0 (0.0)	<b>3,785 (6.8)</b>
9th - 11th Grade	4,449 (22.8)	2,721 (21.1)	1,524 (14.9)	697 (13.3)	334 (10.2)	197 (8.3)	102 (6.6)	29 (4.5)	0 (0.0)	<b>10,053 (18.1)</b>
High School or GED	10,300 (52.9)	7,332 (56.8)	5,858 (57.3)	2,693 (51.4)	1,620 (49.5)	1,071 (45.1)	700 (45.4)	269 (41.9)	3 (50.0)	<b>29,846 (53.6)</b>
Associate	530 (2.7)	262 (2.0)	465 (4.6)	355 (6.8)	285 (8.7)	239 (10.1)	155 (10.1)	62 (9.7)	0 (0.0)	<b>2,353 (4.2)</b>
Bachelors	1,402 (7.2)	847 (6.6)	1,076 (10.5)	762 (14.5)	561 (17.1)	471 (19.8)	335 (21.7)	160 (24.9)	3 (50.0)	<b>5,617 (10.1)</b>
Masters	342 (1.8)	200 (1.5)	237 (2.3)	196 (3.7)	180 (5.5)	180 (7.6)	134 (8.7)	63 (9.8)	0 (0.0)	<b>1,532 (2.8)</b>
Doctorate	176 (0.9)	94 (0.7)	106 (1.0)	84 (1.6)	68 (2.1)	74 (3.1)	45 (2.9)	24 (3.7)	0 (0.0)	<b>671 (1.2)</b>
Other	193 (1.0)	68 (0.5)	116 (1.1)	75 (1.4)	51 (1.6)	45 (1.9)	12 (0.8)	2 (0.3)	0 (0.0)	<b>562 (1.0)</b>
Unknown	519 (2.7)	328 (2.5)	204 (2.0)	91 (1.7)	57 (1.7)	28 (1.2)	22 (1.4)	7 (1.1)	0 (0.0)	<b>1,256 (2.3)</b>
<b>Total</b>	<b>19,475</b>	<b>12,907</b>	<b>10,217</b>	<b>5,239</b>	<b>3,274</b>	<b>2,373</b>	<b>1,542</b>	<b>642</b>	<b>6</b>	<b>55,675</b>
<b>Table 38. Highest Level of Education Completed by Post Injury Year.</b>										

**OCCUPATIONAL STATUS & JOB CENSUS CODE: TABLE 39 - 42**

Occupational Status tables review the primary occupational, educational or training status of the patient at the time of injury. Since these sub-categories are not mutually exclusive, the primary occupational, educational or training status is selected on the basis of the injured person’s opinion as to what was primary.

Occupational Status at the time of injury is shown in **Table 39**. Nationally 57.5 percent of patients were reportedly working at the time of injury. Among the centers, this was the most common occupational status reported ranging from 67.1 percent to 44.9 percent.

The national rankings for the other most commonly reported occupational status categories ranked in order as follows: unemployed (15.8%), student (15.4%), and retired (6.3%).

**Table 39. Occupational Status at Time of Injury.**

n (%)	Occupational Status at Injury									Total
	Work	Home Maker	OJT	Work Shop	Retired	Student	Unemployed	Other	Unknown	
<b>Total</b>	15,064 (57.5)	534 (2.0)	81 (0.3)	17 (0.1)	1,638 (6.3)	4,044 (15.4)	4,129 (15.8)	333 (1.3)	349 (1.3)	<b>26,189</b>

**Table 39. Occupational Status at Time of Injury.** (Occupational Status ‘Other’ includes those on disability. OJT = on the job training.)

**Table 40** shows a defined increase in working respondents over the years (from 11.5% in year 1 to 36.5% and 35.8% in years 25 and 30). Other categories with an increase are retired and other (which includes disability), whereas unemployed decreases over the years (from 56.4% in year 1 to 31.3% in year 30).

**Table 40. Occupational Status by Post Injury Year.**

Occupational Status	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
Working	2,238 (11.5)	1,719 (13.3)	2,110 (20.7)	1,477 (28.2)	1,059 (32.3)	840 (35.4)	563 (36.5)	230 (35.8)	1 (16.7)
Homemaker	359 (1.8)	310 (2.4)	230 (2.3)	138 (2.6)	74 (2.3)	38 (1.6)	32 (2.1)	13 (2.0)	1 (16.7)
OJT	30 (0.2)	25 (0.2)	14 (0.1)	7 (0.1)	1 (0.0)	3 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)
Workshop	12 (0.1)	11 (0.1)	4 (0.0)	6 (0.1)	1 (0.0)	0 (0.0)	2 (0.1)	0 (0.0)	0 (0.0)
Retired	1,106 (5.7)	650 (5.0)	691 (6.8)	375 (7.2)	238 (7.3)	178 (7.5)	159 (10.3)	101 (15.7)	0 (0.0)
Student	3,217 (16.5)	2,759 (21.4)	1,751 (17.1)	412 (7.9)	129 (3.9)	63 (2.7)	27 (1.8)	7 (1.1)	0 (0.0)
Unemployed	10,987 (56.4)	6,748 (52.3)	4,777 (46.8)	2,454 (46.8)	1,512 (46.2)	1,040 (43.8)	595 (38.6)	201 (31.3)	0 (0.0)
Other	979 (5.0)	338 (2.6)	401 (3.9)	254 (4.8)	195 (6.0)	177 (7.5)	142 (9.2)	85 (13.2)	4 (66.7)
Unknown	547 (2.8)	347 (2.7)	239 (2.3)	116 (2.2)	65 (2.0)	34 (1.4)	22 (1.4)	5 (0.8)	0 (0.0)
<b>Total</b>	<b>19,475</b>	<b>12,907</b>	<b>10,217</b>	<b>5,239</b>	<b>3,274</b>	<b>2,373</b>	<b>1,542</b>	<b>642</b>	<b>6</b>

**Table 40. Occupational Status by Post Injury Year.** (Occupational Status 'Other' includes those on disability. OJT = on the job training.)

Job Census Code **Tables 41 and 42** reflect data entered into the database since January 1, 2001. At injury, respondents reported 'not working' 38.3 percent. The second most reported category was 'precision, production, craft and repair' at 12.5 percent. There was very little variability across systems. Table 42 shows 'executive' and 'professional' categories increased over years (from 2.8% and 3.6% at year 1 to 9.3% and 15.0% at year 30, respectively).

**Table 41. Job Census Code at Time of Injury.**

		Job Census Code							
n (%)	Executive, Admin, and managerial	Professions	Techs and related support	Sales	Admin support	Private House-hold	Pro- tective services	Service, except protective and house- hold	Farming, and forestry, and fishing
<b>Total</b>	285 (5.0)	444 (7.8)	152 (2.7)	184 (3.2)	185 (3.3)	18 (0.3)	77 (1.4)	336 (5.9)	124 (2.2)

**Table 41. Job Census Code at Time of Injury.** (Form Is entered to the database since January 1, 2001.)

**Table 41. Job Census Code at Time of Injury (continued).**

		Job Census Code							Total
n (%)	Precision production, craft, and repair	Machine operators, assemblers, and inspectors	Transport and material moving	Handlers, equipment cleaners, helpers, and laborers	Military occupations	N/A, Not Working	Unknown		
<b>Total</b>	708 (12.5)	136 (2.4)	219 (3.9)	339 (6.0)	10 (0.2)	2,174 (38.3)	290 (5.1)	<b>5,681</b>	

**Table 41. Job Census Code at Time of Injury.** (continued. Form Is entered to the database since January 1, 2001.)

**Table 42. Job Census Code by Post Injury Year.**

Job Census Code	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
Executive, Administrative, & managerial	113 (2.8)	2 (1.1)	104 (4.1)	88 (4.9)	84 (5.9)	119 (8.0)	114 (8.3)	60 (9.3)	1 (16.7)
Professional specialty	145 (3.6)	7 (4.0)	144 (5.7)	155 (8.7)	155 (10.9)	184 (12.4)	185 (13.5)	96 (15.0)	0 (0.0)
Technicians & related support	33 (0.8)	1 (0.6)	39 (1.5)	36 (2.0)	29 (2.0)	32 (2.2)	34 (2.5)	10 (1.6)	0 (0.0)
Sales	58 (1.4)	3 (1.7)	66 (2.6)	54 (3.0)	43 (3.0)	23 (1.5)	28 (2.0)	12 (1.9)	0 (0.0)
Administrative support including clerical	49 (1.2)	4 (2.3)	73 (2.9)	65 (3.6)	51 (3.6)	67 (4.5)	69 (5.0)	24 (3.7)	0 (0.0)
Private Household	2 (0.0)	0 (0.0)	0 (0.0)	3 (0.2)	1 (0.1)	1 (0.1)	1 (0.1)	0 (0.0)	0 (0.0)
Protective service	5 (0.1)	0 (0.0)	3 (0.1)	4 (0.2)	5 (0.4)	5 (0.3)	4 (0.3)	2 (0.3)	0 (0.0)
Service, except protective and household	23 (0.6)	1 (0.6)	36 (1.4)	26 (1.5)	18 (1.3)	14 (0.9)	6 (0.4)	1 (0.2)	0 (0.0)
Farming, forestry, & fishing	14 (0.3)	0 (0.0)	9 (0.4)	6 (0.3)	11 (0.8)	8 (0.5)	14 (1.0)	4 (0.6)	0 (0.0)
Precision production, craft, & repair	48 (1.2)	3 (1.7)	31 (1.2)	30 (1.7)	26 (1.8)	26 (1.8)	23 (1.7)	12 (1.9)	0 (0.0)
Machine operators, assemblers, and inspectors	13 (0.3)	1 (0.6)	13 (0.5)	6 (0.3)	6 (0.4)	9 (0.6)	5 (0.4)	4 (0.6)	0 (0.0)
Transportation and material moving	10 (0.2)	0 (0.0)	8 (0.3)	4 (0.2)	2 (0.1)	6 (0.4)	5 (0.4)	3 (0.5)	0 (0.0)
Handlers, equipment cleaners, helpers, & laborers	13 (0.3)	0 (0.0)	4 (0.2)	6 (0.3)	3 (0.2)	2 (0.1)	4 (0.3)	1 (0.2)	0 (0.0)
Military occupations	1 (0.0)	0 (0.0)	2 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)
N/A, Not Working	3,350 (83.2)	147 (83.5)	1,918 (76.1)	1,248 (69.9)	937 (66.0)	943 (63.5)	852 (62.0)	407 (63.4)	5 (83.3)
Unknown	149 (3.7)	7 (4.0)	72 (2.9)	55 (3.1)	48 (3.4)	46 (3.1)	30 (2.2)	6 (0.9)	0 (0.0)
<b>Total</b>	<b>4,026</b>	<b>176</b>	<b>2,522</b>	<b>1,786</b>	<b>1,419</b>	<b>1,485</b>	<b>1,375</b>	<b>642</b>	<b>6</b>

**Table 42. Job Census Code by Post Injury Year.** (Form IIs entered to the database since January 1, 2001.)

**VETERAN STATUS & VA HEALTHCARE SERVICES USED: TABLE 43 - 44**

Veteran status analysis was run on Form I records entered after January 1, 2001. This variable documents whether or not the participant is a veteran of the United States military forces (i.e., Air Force, Army, Coast Guard, Marine Corp or Navy). There are several categories ranging from Service Connected SCI (SCI happened while on duty); Service Connected, Not SCI (injured on duty but for a condition other than SCI); or Non-Service Connected (no injury but eligible for benefits). **Table 43** analysis includes records entered since January 1, 2001, when the variable was added. Most Form I participants are not eligible for VA benefits (89.7%).

**Table 43. Veteran Status at Time of Injury.**

n (%)	Veteran Status						Total
	Not a Veteran	Yes, Service Connected SCI	Yes, Service Connected, Not SCI	Yes, Non-Service Connected	Yes, Service Connection Unknown	Unknown	
<b>Total</b>	5,095 (89.7)	145 (2.6)	20 (0.4)	189 (3.3)	72 (1.3)	160 (2.8)	<b>5,681</b>

**Table 43. Veteran Status at Time of Injury.** (Form Is entered to the database since January 1, 2001.)



VA Healthcare Services variable documents up to 5 entries of VA healthcare services received. VA Services are recorded if received since the last Form II with known VA services, so data collection time spans may be longer than 5 years. For a Year 01 Form II, services received since the onset of the spinal cord injury are documented. VA Services are analyzed if entered into the database since October 31, 2000. Percentages may add up to more than 100 because some patients used more than one VA healthcare service. **Table 44** shows that 1,672 individuals were eligible for VA Services, but did not use any services. Those who were not eligible for services (11,023, 81.8%) were included to get a snapshot of totals. The most common VA Service was Pharmacy (337, 2.5%).

**Table 44. VA Healthcare Services used by Post Injury Year.**

VA Healthcare Services Used	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
None	538 (13.3)	19 (10.1)	302 (12.0)	250 (14.0)	176 (12.4)	168 (11.3)	139 (10.1)	80 (12.5)	0 (0.0)	1,672 (12.4)
Pharmacy	77 (1.9)	5 (2.7)	75 (3.0)	33 (1.8)	20 (1.4)	40 (2.7)	57 (4.1)	30 (4.7)	0 (0.0)	337 (2.5)
Prosthetics, orthotics, wheelchairs	33 (0.8)	1 (0.5)	34 (1.3)	19 (1.1)	9 (0.6)	26 (1.7)	33 (2.4)	17 (2.6)	0 (0.0)	172 (1.3)
SCI Center	50 (1.2)	1 (0.5)	40 (1.6)	20 (1.1)	10 (0.7)	29 (2.0)	32 (2.3)	13 (2.0)	0 (0.0)	195 (1.4)
Non-SCI Center	25 (0.6)	1 (0.5)	20 (0.8)	10 (0.6)	8 (0.6)	10 (0.7)	12 (0.9)	4 (0.6)	0 (0.0)	90 (0.7)
SCI Outpatient Clinic	49 (1.2)	3 (1.6)	39 (1.5)	23 (1.3)	11 (0.8)	24 (1.6)	43 (3.1)	22 (3.4)	0 (0.0)	214 (1.6)
N/A, Not a Veteran	3,253 (80.4)	155 (82.4)	2,061 (81.7)	1,459 (81.6)	1,186 (83.5)	1,233 (83.0)	1,146 (83.3)	524 (81.6)	6 (100.0)	11,023 (81.8)
Unknown	131 (3.2)	8 (4.3)	73 (2.9)	38 (2.1)	34 (2.4)	32 (2.2)	19 (1.4)	6 (0.9)	0 (0.0)	341 (2.5)
<b>Total</b>	<b>4,045</b>	<b>188</b>	<b>2,522</b>	<b>1,787</b>	<b>1,421</b>	<b>1,486</b>	<b>1,375</b>	<b>642</b>	<b>6</b>	<b>13,472</b>

**Table 44. VA Healthcare Services used by Post Injury Year.**

(Percentages may total more than 100% because some participants used more than one VA healthcare service. Participants may endorse up to 6 services since last Form II with known response.

Form IIs entered into the database since October 31, 2000.)

**PLACE OF RESIDENCE: TABLE 45 - 46**

Place of residence at discharge is shown in **Table 45**. Most patients (87.8%) were discharged to a private residence. Intersystem variability was not substantial: the proportion of patients discharged to a private residence ranged from 66.7 percent to 95.4 percent.

**Table 45. Place of Residence at Discharge.**

Place of Residence at Discharge											
n (%)	Private	Hospital	Nursing Home	Group Living	Correction Facility	Hotel Motel	Deceased	Other	Homeless	Unknown	All
<b>Total</b>	22,991 (87.8)	405 (1.5)	1,503 (5.7)	388 (1.5)	47 (0.2)	75 (0.3)	674 (2.6)	20 (0.1)	14 (0.1)	72 (0.3)	<b>26,189</b>

**Table 45. Place of Residence at Discharge.**

**Table 46** shows place of residence across years. By far, private residence is most common with an overall 92.9 percent living in a private home (from 91.4% in year 1 to 97.4% in year 30). Nursing home stays decrease from 3.5 percent in year 1 to 1.6 percent in year 30.

**Table 46. Place of Residence by Post Injury Year.**

Residence	Post Injury Year n(%)									All Years
	1	2	5	10	15	20	25	30	35	
Private Residence	17,801 (91.4)	11,788 (91.3)	9,555 (93.5)	5,003 (95.5)	3,147 (96.1)	2,301 (97.0)	1,492 (96.8)	625 (97.4)	6 (100.0)	51,718 (92.9)
Hospital	111 (0.6)	68 (0.5)	22 (0.2)	5 (0.1)	3 (0.1)	1 (0.0)	2 (0.1)	1 (0.2)	0 (0.0)	213 (0.4)
Nursing Home	688 (3.5)	387 (3.0)	268 (2.6)	121 (2.3)	56 (1.7)	39 (1.6)	23 (1.5)	10 (1.6)	0 (0.0)	1,592 (2.9)
Group Living Situation	276 (1.4)	275 (2.1)	162 (1.6)	36 (0.7)	17 (0.5)	4 (0.2)	4 (0.3)	0 (0.0)	0 (0.0)	774 (1.4)
Correctional Facility	33 (0.2)	19 (0.1)	11 (0.1)	5 (0.1)	5 (0.2)	2 (0.1)	1 (0.1)	0 (0.0)	0 (0.0)	76 (0.1)
Hotel/Motel	41 (0.2)	14 (0.1)	5 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	63 (0.1)
Other, Unclassified	15 (0.1)	7 (0.1)	1 (0.0)	1 (0.0)	1 (0.0)	2 (0.1)	0 (0.0)	1 (0.2)	0 (0.0)	28 (0.1)
Homeless	6 (0.0)	4 (0.0)	3 (0.0)	0 (0.0)	1 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	14 (0.0)
Unknown	504 (2.6)	345 (2.7)	190 (1.9)	67 (1.3)	43 (1.3)	23 (1.0)	20 (1.3)	5 (0.8)	0 (0.0)	1,197 (2.1)
<b>Total</b>	<b>19,475</b>	<b>12,907</b>	<b>10,217</b>	<b>5,239</b>	<b>3,274</b>	<b>2,373</b>	<b>1,542</b>	<b>642</b>	<b>6</b>	<b>55,675</b>

**Table 46. Place of Residence by Post Injury Year.**

**DAYS HOSPITALIZED: TABLE 47 - 51**

Median Days hospitalized is grouped by year of injury for days from injury to admit, days spent in acute care, and days spent in rehab. **Table 47** depicts median days from injury to system admission by year of injury. Median days from injury to system admission reached a peak of 20 days in 1973 - 1979 and since that time, have declined steadily. A change in eligibility criteria implemented in January 1987 has resulted in a decrease in median days from injury to system admit. The eligibility criteria allowed only patients admitted to the system within 60 days of injury to be entered into the National SCI Database. In 2000, eligibility criteria resumed the previous standards (allowing injuries within one year of admit). For the current year grouping (2005-2008) one system has the largest median duration from injury to system admit (23.0 days) and 6 systems have a median of 1 day from injury to system admit.

Database revisions in November 1995 resulted in the separation of the single length of stay variable into acute and rehab lengths of stay. Length of stay data in records present at that time were separated based on formulas involving days from injury to rehabilitation and total days hospitalized, with all short-term discharge days applied to rehabilitation.

**Table 47. Median Days Hospitalized from Injury to Admission by Year of Injury.**

	Year of Injury median (n)							
	1973- 1979	1980- 1984	1985- 1989	1990- 1994	1995- 1999	2000- 2004	2005- 2008	All Years
<b>Total</b>	20.0 (4,565)	15.0 (4,950)	2.0 (3,843)	1.0 (3,295)	1.0 (3,624)	5.0 (3,444)	7.0 (2,468)	<b>6.0 (26,189)</b>
<b>Table 47. Median Days Hospitalized from Injury to Admission by Year of Injury.</b> (Eligibility criteria changed in 1987 & 2000.)								

The next four tables include records for those patients who were admitted to the system within 1 day of their injury (Day 1s), therefore, the resulting statistics (Tables 48-51) reflect lengths of stay for patients treated entirely within the respective SCI Care Systems. **Table 48** reflects median days spent in acute care for 10,948 records. The median for all year groupings is 17 days; the current year grouping (2005-2008) is 12.0 with a range from 17.0 to 6.5. **Table 49** shows the median days in rehab for 10,745 records as 59.0 days. The range has shown a steady and significant decline from a high of 98.0 days (1973-1979) to the current low of 37.0 days (2005-2008). For the current year grouping the high within Model Systems is 74.0 days and the low of 22.0 days.

**Table 48. Median Days Hospitalized in the System's Acute Care Unit by Year of Injury. (Day-1s only)**

	Year of Injury median (n)							
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	All Years
<b>Total</b>	24.0 (1,226)	23.0 (1,626)	19.0 (1,748)	15.0 (1,875)	13.0 (1,900)	13.0 (1,578)	12.0 (995)	<b>17.0 (10,948)</b>

**Table 48. Median Days Hospitalized in the System's Acute Care Unit by Year of Injury. (Day-1s only)**

**Table 49. Median Days Hospitalized in the System's Rehab Unit by Year of Injury. (Day-1s only)**

	Year of Injury median (n)							
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	All Years
<b>Total</b>	98.0 (1,199)	86.0 (1,643)	73.0 (1,742)	58.0 (1,838)	44.0 (1,904)	42.0 (1,450)	37.0 (969)	<b>59.0 (10,745)</b>

**Table 49. Median Days Hospitalized in the System's Rehab Unit by Year of Injury. (Day-1s only)**

**Tables 50 and 51** reflect Syllabus changes in October 1987 which separated patients with minimal deficits from patients who were neurologically normal. These categories (Paraplegia, Minimal Deficit and Tetraplegia, Minimal Deficit) normally have few patients; however, the numbers are even smaller due to the fact that it was not mandatory for systems to convert pre-1987 data.

**Table 50** depicts median days hospitalized in the acute care unit where patients with neurologically complete cervical injuries had longer acute stays than patients with neurologically incomplete cervical injuries. Median days hospitalized in the system's acute care unit for persons with neurologically complete tetraplegia ranged from 30 days in (1980-1984) to 24 (1995 - 2008), while for those with neurologically incomplete paraplegia, the comparable range was from 22 days in 1973-1979 to 10 days in 2005-2008.

**Table 50. Median Days Hospitalized in the System's Acute Care Unit by Year of Injury and Neurologic Level and Extent of Injury. (Day-1s only)**

Neurologic Impairment	Year of Injury median (n)							
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	All Years
Paraplegia, incomplete	22.0 (219)	22.0 (324)	18.0 (378)	13.0 (379)	12.0 (362)	10.5 (274)	10.0 (203)	15.0 (2,139)
Paraplegia, complete	23.0 (327)	22.0 (401)	19.0 (408)	16.0 (513)	13.0 (482)	15.0 (355)	14.0 (223)	17.0 (2,709)
Paraplegia, minimal deficit	0.0 (0)	10.0 (7)	13.0 (29)	10.0 (72)	12.0 (39)	11.0 (25)	11.0 (11)	11.0 (183)
Tetraplegia, incomplete	24.0 (324)	22.0 (509)	18.0 (542)	15.0 (485)	10.0 (546)	11.0 (479)	10.0 (342)	15.0 (3,227)
Tetraplegia, complete	27.0 (313)	30.0 (348)	24.0 (319)	26.0 (322)	24.0 (313)	24.0 (262)	24.0 (138)	26.0 (2,015)
Tetraplegia, minimal deficit	23.0 (3)	11.0 (5)	11.5 (42)	9.0 (77)	7.0 (59)	8.5 (38)	8.0 (10)	9.0 (234)
Normal, minimal deficit	19.0 (37)	18.0 (24)	14.0 (17)	10.0 (8)	10.0 (8)	9.0 (18)	14.0 (5)	15.0 (117)
Unknown	15.0 (3)	23.0 (8)	27.0 (13)	18.0 (19)	18.0 (91)	16.0 (127)	11.0 (63)	16.0 (324)
<b>Total</b>	<b>24.0 (1,226)</b>	<b>23.0 (1,626)</b>	<b>19.0 (1,748)</b>	<b>15.0 (1,875)</b>	<b>13.0 (1,900)</b>	<b>13.0 (1,578)</b>	<b>12.0 (995)</b>	<b>17.0 (10,948)</b>

**Table 50. Median Days Hospitalized in the System's Acute Care Unit by Year of Injury and Neurologic Level and Extent of Injury. (Day-1s only)**  
(Para & Tetra minimal deficit categories were added in 1987. Some records prior to 1987 have been converted.)

Likewise, **Table 51** depicts median days hospitalized in the rehab unit where patients with neurologically complete cervical injuries had longer rehab stays than patients with neurologically incomplete cervical injuries. Median days hospitalized in the system's rehab unit for persons with neurologically complete tetraplegia ranged from 142 in 1973-1979 to 59 in 2005-2008 while for those with neurologically incomplete paraplegia, the comparable range was from 68 days in 1973-1979 to 29 days in 2005-2008.

**Table 51. Median Days Hospitalized in the System's Rehab Unit by Year of Injury and Neurologic Level and Extent of Injury. (Day-1s only)**

Neurologic Impairment	Year of Injury median (n)							
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	All Years
Paraplegia, incomplete	68.0 (219)	63.0 (321)	57.0 (394)	43.0 (379)	31.0 (364)	30.0 (270)	29.0 (205)	43.0 (2152)
Paraplegia, complete	84.0 (347)	72.0 (423)	63.0 (429)	52.0 (523)	39.0 (492)	42.0 (339)	42.0 (228)	56.0 (2,781)
Paraplegia, minimal deficit	0.0 (0)	19.0 (7)	33.0 (28)	27.0 (67)	20.0 (41)	19.5 (22)	13.0 (11)	22.0 (176)
Tetraplegia, incomplete	104.0 (334)	95.0 (524)	85.0 (548)	75.0 (467)	51.0 (545)	44.0 (468)	34.0 (340)	65.0 (3,226)
Tetraplegia, complete	142.0 (293)	121.0 (349)	112.0 (293)	99.0 (308)	71.0 (327)	66.0 (243)	59.0 (129)	100.0 (1,942)
Tetraplegia, minimal deficit	0.0 (0)	41.0 (5)	22.0 (41)	25.5 (78)	14.0 (59)	23.5 (30)	17.0 (6)	23.0 (219)
Normal, minimal deficit	38.5 (6)	43.0 (9)	10.0 (5)	12.5 (8)	10.0 (9)	15.0 (11)	22.5 (2)	15.5 (50)
Unknown	0.0 (0)	85.0 (5)	87.5 (4)	33.0 (8)	31.0 (67)	36.0 (67)	33.0 (48)	35.0 (199)
<b>Total</b>	<b>98.0 (1,199)</b>	<b>86.0 (1,643)</b>	<b>73.0 (1,742)</b>	<b>58.0 (1,838)</b>	<b>44.0 (1,904)</b>	<b>42.0 (1,450)</b>	<b>37.0 (969)</b>	<b>59.0 (10,745)</b>

**Table 51. Median Days Hospitalized in the System's Rehab Unit by Year of Injury and Neurologic Level and Extent of Injury. (Day-1s only)** (Para & Tetra minimal deficit categories were added in 1987. Some records prior to 1987 have been converted.)

**NEUROLOGIC LEVELS AT DISCHARGE: TABLES 52 - 55**

These 4 tables separate the level of injury at discharge by cervical, thoracic, lumbar and sacral levels of injury. To determine a single neurologic level of injury, the most rostral (highest) sensory & motor level, left and right at discharge was used. Percentages on all four tables are calculated on total of all levels (cervical, thoracic, lumbar and sacral).

Overall, 53.0 percent of patients had cervical lesions at discharge, 35.6 percent had thoracic lesions, and 10.8 percent had lumbar lesions and 0.4 percent had sacral lesions. Less than half (46.1%) of the patients in the database were discharged with lesions at C5 (15.4%), C4 (14.4%), C6 (10.9%) or C7 (5.4%). The next most common levels of lesion at discharge was L01 (5.1%) and T10 (4.1%).

**Table 52. Neurologic Level at Discharge - Cervical Lesions.**

n (%)	Cervical Neurologic Level									Cervical - Unknown Level	Sub-Total
	C01	C02	C03	C04	C05	C06	C07	C08			
<b>Total</b>	181 (0.7)	395 (1.6)	686 (2.7)	3,593 (14.4)	3,858 (15.4)	2,738 (10.9)	1,339 (5.4)	475 (1.9)	40 (0.2)	<b>13,305 (53.2)</b>	

**Table 52. Neurologic Level at Discharge - Cervical Lesions.**

(To determine a single neurologic level, the most rostral (highest) sensory & motor level, left & right at discharge was used for analysis.

Percentages are calculated on Total of all levels. (Cervical, Thoracic, Lumbar, Sacral))

**Table 53. Neurologic Level at Discharge - Thoracic Lesions.**

n (%)	Thoracic Neurologic Level												Thoracic - Unknown Level	Sub-Total
	T01	T02	T03	T04	T05	T06	T07	T08	T09	T10	T11	T12		
<b>Total</b>	408 (1.6)	295 (1.2)	475 (1.9)	978 (3.9)	677 (2.7)	744 (3.0)	527 (2.1)	703 (2.8)	472 (1.9)	1,018 (4.1)	902 (3.6)	1,681 (6.7)	25 (0.1)	<b>8,905 (35.6)</b>

**Table 53. Neurologic Level at Discharge - Thoracic Lesions.**

(To determine a single neurologic level, the most rostral (highest) sensory & motor level, left & right at discharge was used for analysis.

Percentages are calculated on Total of all levels. (Cervical, Thoracic, Lumbar, Sacral))



**Table 54. Neurologic Level at Discharge - Lumbar Lesions.**

n (%)	Lumbar Neurologic Level						Lumbar - Unknown Level	Sub-Total
	L01	L02	L03	L04	L05			
<b>Total</b>	1,274 (5.1)	604 (2.4)	473 (1.9)	224 (0.9)	109 (0.4)		8 (0.0)	<b>2,692 (10.8)</b>

**Table 54. Neurologic Level at Discharge - Lumbar Lesions.**

(To determine a single neurologic level, the most rostral (highest) sensory & motor level, left & right at discharge was used for analysis.

Percentages are calculated on Total of all levels. (Cervical, Thoracic, Lumbar, Sacral))

**Table 55. Neurologic Level at Discharge– Sacral Lesions.**

n (%)	Sacral Neurologic Level						Sacral - Unknown Level	Subtotal
	S01	S02	S03	S04	S05			
<b>Total</b>	55 (0.2)	29 (0.1)	4 (0.0)	11 (0.0)	10 (0.0)		1 (0.0)	<b>110 (0.4)</b>

**Table 55. Neurologic Level at Discharge – Sacral Lesions.**

(To determine a single neurologic level, the most rostral (highest) sensory & motor level, left & right at discharge was used for analysis.

Percentages are calculated on Total of all levels. (Cervical, Thoracic, Lumbar, Sacral))

**NEUROLOGIC CATEGORIES: TABLE 56 -59**

Neurologic Category at discharge is separated into paraplegia complete and incomplete and minimal deficit, tetraplegia complete and incomplete and minimal deficit. Both minimal deficit groups were added in 1987 and were not required to be retrospectively converted.

**Table 56** shows neurologically incomplete tetraplegia ranked first at time of discharge (30.1%), followed by neurologically complete paraplegia (25.6%), neurologically complete tetraplegia (20.4%), and neurologically incomplete paraplegia (18.5%).

**Table 56. Neurologic Category at Discharge.**

n (%)	Neurologic Category at Discharge								Total
	Para - Incomplete	Para - Complete	Para - MinDef	Tetra - Incomplete	Tetra - Complete	Tetra - MinDef	Normal, MinDef	Unknown	
<b>Total</b>	4,851 (18.5)	6,711 (25.6)	306 (1.2)	7,878 (30.1)	5,333 (20.4)	387 (1.5)	169 (0.6)	554 (2.1)	<b>26,189</b>

**Table 56. Neurologic Category at Discharge.** (Para & Tetra minimal deficit categories were added in 1987. Some records prior to 1987 have been converted. MinDef = Minimal Deficit)

Neurologic categories at discharge by grouped etiology (see page 33) are depicted in **Table 57**. Neurologically incomplete tetraplegia ranked first in all etiologies except Violence and Other. Neurologically complete paraplegia ranked first for spinal cord injuries resulting from Violence. Neurologically incomplete paraplegia ranked first in Other (which includes medical settings). Interestingly, 86.7 percent of all Sports injuries resulted in tetraplegia, while 69.1 percent of all Violence resulted in paraplegia.

**Table 57. Neurologic Category at Discharge by Grouped Etiology.**

Etiology n(%)	Neurologic Category at Discharge								Total
	Para - Incomplete	Para - Complete	Para - Minimal Deficit	Tetra - Incomplete	Tetra - Complete	Tetra - Minimal Deficit	Normal, Minimal Deficit	Unknown	
Vehicular Accidents	1,860 (16.4)	2,873 (25.4)	96 (0.8)	3,558 (31.4)	2,471 (21.8)	175 (1.5)	72 (0.6)	218 (1.9)	11,323
Violence	1,133 (24.2)	2,027 (43.2)	81 (1.7)	619 (13.2)	712 (15.2)	34 (0.7)	10 (0.2)	71 (1.5)	4,687
Sports	150 (5.5)	153 (5.6)	15 (0.5)	1,253 (45.7)	1,082 (39.5)	40 (1.5)	18 (0.6)	30 (1.1)	2,741
Falls	1,067 (20.0)	1,095 (20.5)	87 (1.6)	1,961 (36.7)	796 (14.9)	118 (2.2)	54 (1.0)	162 (3.0)	5,340
Other	638 (30.8)	561 (27.1)	27 (1.3)	477 (23.0)	265 (12.8)	20 (1.0)	15 (0.7)	70 (3.4)	2,073
Unknown	3 (12.0)	2 (8.0)	0 (0.0)	10 (40.0)	7 (28.0)	0 (0.0)	0 (0.0)	3 (12.0)	25
<b>Total</b>	<b>4,851 (18.5)</b>	<b>6,711 (25.6)</b>	<b>306 (1.2)</b>	<b>7,878 (30.1)</b>	<b>5,333 (20.4)</b>	<b>387 (1.5)</b>	<b>169 (0.6)</b>	<b>554 (2.1)</b>	<b>26,189</b>

**Table 57. Neurologic Category at Discharge by Grouped Etiology.**

(Para & Tetra minimal deficit categories were added in 1987. Some records prior to 1987 have been converted.

Vehicular=codes 1-9; Violence=codes 10-15; Sports=codes 20-29, 70-78; Falls=code 30.) See [Group Etiology Categories](#)

The neurological category at discharge by grouped year of injury is depicted in **Table 58**. The number of persons with neurologically incomplete injuries at discharge decreased from 1990-1994, most likely due to the proportionate increase in SCIs that are secondary to gunshot wounds since SCIs due to gunshot wounds are usually neurologically complete. Since 1994, the percentage of incomplete injuries has once again increased as the percentage of injuries due to Violence has declined.

**Table 58. Trend in Neurologic Category at Discharge by Year of Injury.**

Neurologic Category	Year of Injury n(%)							Total
	1973-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2008	
Paraplegia, incomplete	805 (17.6)	948 (19.2)	798 (20.8)	641 (19.5)	637 (17.6)	556 (16.1)	466 (18.9)	4,851
Paraplegia, complete	1,265 (27.7)	1,231 (24.9)	961 (25.0)	947 (28.7)	972 (26.8)	800 (23.2)	535 (21.7)	6,711
Paraplegia, minimal deficit	0 (0.0)	19 (0.4)	50 (1.3)	97 (2.9)	55 (1.5)	52 (1.5)	33 (1.3)	306
Tetraplegia, incomplete	1,282 (28.1)	1,598 (32.3)	1,198 (31.2)	822 (24.9)	1,025 (28.3)	1,123 (32.6)	830 (33.6)	7,878
Tetraplegia, complete	1,156 (25.3)	1,085 (21.9)	733 (19.1)	626 (19.0)	683 (18.8)	639 (18.6)	411 (16.7)	5,333
Tetraplegia, minimal deficit	4 (0.1)	13 (0.3)	62 (1.6)	116 (3.5)	90 (2.5)	63 (1.8)	39 (1.6)	387
Normal	47 (1.0)	37 (0.7)	20 (0.5)	13 (0.4)	19 (0.5)	24 (0.7)	9 (0.4)	169
Unknown	6 (0.1)	19 (0.4)	21 (0.5)	33 (1.0)	143 (3.9)	187 (5.4)	145 (5.9)	554
<b>Total</b>	<b>4,565</b>	<b>4,950</b>	<b>3,843</b>	<b>3,295</b>	<b>3,624</b>	<b>3,444</b>	<b>2,468</b>	<b>26,189</b>

**Table 58. Trend in Neurologic Category at Discharge by Year of Injury.** (Para & Tetra minimal deficit categories were added in 1987. Some records prior to 1987 have been converted.)

**Table 59** shows neurologically incomplete tetraplegia ranked first at first year exam (23.4%), followed by neurologically complete paraplegia (22.0%), neurologically complete tetraplegia (16.2%), and neurologically incomplete paraplegia (15.3%).

**Table 59. Neurologic Category at One Year Post Injury.**

n (%)	Neurologic Category								Total
	Para - Incomplete	Para - Complete	Para - MinDef	Tetra - Incomplete	Tetra - Complete	Tetra - MinDef	Normal, MinDef	Unknown	
<b>Total</b>	2,979 (15.3)	4,279 (22.0)	257 (1.3)	4,555 (23.4)	3,153 (16.2)	279 (1.4)	242 (1.2)	3,731 (19.2)	<b>19,475</b>

**Table 59. Neurologic Category at One Year Post Injury.** (Para & Tetra minimal deficit categories were added in 1987. Some records prior to 1987 have been converted.  
MinDef = Minimal Deficit)

**ASIA IMPAIRMENT SCALE: TABLES 60 - 65**

The ASIA Impairment Scale, formerly known as the Frankel Grade, attempts to quantify the degree of residual neurologic function. These six tables separate ASIA Impairment Scale by admit to rehab and discharge, cervical level, thoracic level, lumbar level, and sacral levels.

**Table 60** depicts ASIA Impairment Scale. Complete (A) injuries at discharge are the largest category (46.0%) and the second largest category is Functional Motor Incomplete (D) (28.2%). Two systems have the highest rates of Complete (A) injuries (57.6% and 55.9%, respectively), whereas, two other systems have the highest rates of Functional Motor Incomplete (D) (44.6% and 44.2%, respectively).

**Table 60. ASIA Impairment Scale at Discharge.**

n (%)	ASIA Impairment Scale						Total
	Complete (A)	Sensory Only (B)	Motor Non-functional (C)	Motor Functional (D)	Recovered (E)	Unknown	
<b>Total</b>	12,047 (46.0)	2,723 (10.4)	3,055 (11.7)	7,389 (28.2)	170 (0.6)	805 (3.1)	<b>26,189</b>

**Table 60. ASIA Impairment Scale at Discharge.**

ASIA Impairment Scale between admit to acute, admit to rehab and discharge from the system appears in **Table 61** (for day-1s only). Admit to rehab neuro data collection began October 31, 2000, so admit to rehab column is from a smaller sample. There was a decline in three out of the four categories (Complete (A), Sensory Complete (B), and Non-functional Motor Incomplete(C)) and an increase in Functional Motor Incomplete (D) (from 17.7% to 30.1%) from acute admit to system discharge.

**Table 61. ASIA Impairment at Admit, Rehab Admit, and System Discharge (Day 1s Only).**

<b>ASIA Impairment Scale n(%)</b>	<b>Admit</b>	<b>Rehab Admit</b>	<b>System Discharge</b>
Complete (A)	5379 (47.1)	982 (39.3)	4986 (43.7)
Sensory Incomplete (B)	1452 (12.7)	307 (12.3)	1114 (9.8)
Non-functional Motor Incomplete (C)	1642 (14.4)	404 (16.2)	1316 (11.5)
Functional Motor Incomplete (D)	2023 (17.7)	557 (22.3)	3432 (30.1)
Recovered (E)	1 (0.0)	1 (0.0)	120 (1.1)
Unknown	916 (8.1)	248 (9.9)	445 (3.9)
<b>Total</b>	<b>11,413</b>	<b>2,499</b>	<b>11,413</b>
<b>Table 61. ASIA Impairment at Admit, Rehab Admit, and System Discharge (Day 1s Only).</b> (Rehab admit data was required after October 31, 2000.)			

ASIA Impairment Scale by neurologic level of lesion at discharge appears in **Tables 62-64**. Among persons with high cervical (C1-C4), low cervical (C5-C8), high thoracic (T1-T6) and low thoracic (T7-T12) lesions, neurologically complete (A) lesions ranked first. Lumbar lesions were more likely to be functional motor incomplete (D).

**Table 62. ASIA Impairment Scale by Neurologic Level at Discharge - Cervical.**

ASIA Impairment Scale n(%)	Cervical Neurologic Level at Discharge									Total
	C01	C02	C03	C04	C05	C06	C07	C08	Unknown Cervical	
Complete (A)	93 (51.4)	180 (45.6)	282 (41.1)	1,493 (41.6)	1,475 (38.2)	1,089 (39.8)	490 (36.6)	145 (30.5)	10 (25.0)	5,257
Sensory Incomplete (B)	8 (4.4)	19 (4.8)	52 (7.6)	381 (10.6)	501 (13.0)	452 (16.5)	208 (15.5)	78 (16.4)	2 (5.0)	1,701
Non-functional Motor Incomplete (C)	19 (10.5)	44 (11.1)	108 (15.7)	546 (15.2)	458 (11.9)	316 (11.5)	155 (11.6)	47 (9.9)	1 (2.5)	1,694
Functional Motor Incomplete (D)	59 (32.6)	147 (37.2)	236 (34.4)	1,152 (32.1)	1,394 (36.1)	859 (31.4)	467 (34.9)	201 (42.3)	17 (42.5)	4,532
Unknown	2 (1.1)	5 (1.3)	8 (1.2)	21 (0.6)	30 (0.8)	22 (0.8)	19 (1.4)	4 (0.8)	10 (25.0)	121
<b>Total</b>	<b>181</b>	<b>395</b>	<b>686</b>	<b>3,593</b>	<b>3,858</b>	<b>2,738</b>	<b>1,339</b>	<b>475</b>	<b>40</b>	<b>13,305</b>

**Table 62. ASIA Impairment Scale by Neurologic Level at Discharge - Cervical.**



**Table 63. ASIA Impairment Scale by Neurologic Level at Discharge - Thoracic.**

ASIA Impairment Scale n(%)	Thoracic Neurologic Level at Discharge												Unknown Thoracic	Total
	T01	T02	T03	T04	T05	T06	T07	T08	T09	T10	T11	T12		
Complete (A)	241 (59.1)	223 (75.6)	380 (80.0)	751 (76.8)	544 (80.4)	558 (75.0)	394 (74.8)	535 (76.1)	376 (79.7)	761 (74.8)	639 (70.8)	739 (44.0)	12 (48.0)	6,153
Sensory Incomplete (B)	50 (12.3)	25 (8.5)	34 (7.2)	73 (7.5)	48 (7.1)	65 (8.7)	45 (8.5)	50 (7.1)	25 (5.3)	47 (4.6)	68 (7.5)	177 (10.5)	1 (4.0)	708
Non-functional Motor Incomplete (C)	40 (9.8)	14 (4.7)	27 (5.7)	64 (6.5)	30 (4.4)	44 (5.9)	28 (5.3)	42 (6.0)	26 (5.5)	75 (7.4)	87 (9.6)	287 (17.1)	1 (4.0)	765
Functional Motor Incomplete (D)	75 (18.4)	32 (10.8)	33 (6.9)	87 (8.9)	52 (7.7)	76 (10.2)	60 (11.4)	72 (10.2)	43 (9.1)	127 (12.5)	101 (11.2)	469 (27.9)	5 (20.0)	1,232
Unknown	2 (0.5)	1 (0.3)	1 (0.2)	3 (0.3)	3 (0.4)	1 (0.1)	0 (0.0)	4 (0.6)	2 (0.4)	8 (0.8)	7 (0.8)	9 (0.5)	6 (24.0)	47
<b>Total</b>	<b>408</b>	<b>295</b>	<b>475</b>	<b>978</b>	<b>677</b>	<b>744</b>	<b>527</b>	<b>703</b>	<b>472</b>	<b>1,018</b>	<b>902</b>	<b>1,681</b>	<b>25</b>	<b>8,905</b>

**Table 63. ASIA Impairment Scale by Neurologic Level at Discharge - Thoracic.**

**Table 64. ASIA Impairment Scale by Neurologic Level at Discharge - Lumbar.**

ASIA Impairment Scale n(%)	Lumbar Neurologic Level at Discharge						Unknown Lumbar	Total
	L01	L02	L03	L04	L05			
Complete (A)	310 (24.3)	73 (12.1)	70 (14.8)	10 (4.5)	10 (9.2)	1 (12.5)	474	
Sensory Incomplete (B)	132 (10.4)	74 (12.3)	45 (9.5)	17 (7.6)	9 (8.3)	0 (0.0)	277	
Non-functional Motor Incomplete (C)	311 (24.4)	101 (16.7)	102 (21.6)	20 (8.9)	9 (8.3)	0 (0.0)	543	
Functional Motor Incomplete (D)	510 (40.0)	351 (58.1)	247 (52.2)	171 (76.3)	81 (74.3)	5 (62.5)	1,365	
Unknown	11 (0.9)	5 (0.8)	9 (1.9)	6 (2.7)	0 (0.0)	2 (25.0)	33	
<b>Total</b>	<b>1,274</b>	<b>604</b>	<b>473</b>	<b>224</b>	<b>109</b>	<b>8</b>	<b>2,692</b>	

**Table 64. ASIA Impairment Scale by Neurologic Level at Discharge - Lumbar.**

**Table 65** depicts ASIA Impairment Scale at the first anniversary from the injury. This data can be collected from 6 months prior to the one year anniversary to six months after the anniversary.

**Table 65. ASIA Impairment at One Year Post Injury.**

n(%)	ASIA Impairment Scale						
	Complete (A)	Sensory Incomplete (B)	Non-functional Motor Incomplete (C)	Functional Motor Incomplete (D)	Recovered (E)	Unknown	Total
<b>Total</b>	<b>7,432 (38.2)</b>	<b>1,556 (8.0)</b>	<b>1,514 (7.8)</b>	<b>4,539 (23.3)</b>	<b>242 (1.2)</b>	<b>4,192 (21.5)</b>	<b>19,475</b>

Table 65. ASIA Impairment at One Year Post Injury.

**ASIA MOTOR INDEX SCORES: TABLES 66 - 67**

The ASIA Motor Index Score is a measure of motor function ranging from 0 to 100 used to document neurologic recovery. The ASIA Motor Index Score was added in 1986 and data collection at admit to rehab was added in 1993.

Mean ASIA Motor Index Scores (Day 1s only) at acute admit, admit to rehab and first definitive system discharge appear in **Table 66**. The mean score increased from 42.2 at system admission to 46.1 at rehab admission and to 53.5 at discharge. A similar trend was observed at all systems.

**Table 66. ASIA Motor Scores Total (Mean) at Acute Admit, Rehab Admit and System Discharge (Day 1s Only).**

Mean (n)	ASIA Motor Score Totals		
	Acute Admit	Rehab Admit	System Discharge
Total	42.2 (4,149)	46.1 (4,539)	53.5 (4,725)
<b>Table 66. ASIA Motor Scores Total (Mean) at Acute Admit, Rehab Admit and System Discharge (Day 1s Only).</b> (Form 1s entered to the database since October 1, 1993.)			

**Table 67** shows the mean ASIA Motor Index Scores (54.8) at one year post injury. This table does include both Day 1s and Non-Day 1s. A system appointment is required to collect this data. There are a total of 4,079 records reported.

**Table 67. ASIA Motor Score Total (Mean) at Year One.**

Mean (n)	ASIA Motor Score Total Year 1
Total	54.8 (4,079)
<b>Table 67. ASIA Motor Score Total (Mean) at Year One.</b> (Form 1Is entered to the database since October 1, 1993.)	

**FUNCTIONAL INDEPENDENCE MEASURE SCORES: TABLES 68 - 70**

Functional status of patients at system discharge and gain in function from rehabilitation admit to system discharge are important measures of the quality of care provided by Model Systems. The instrument chosen by the Model Systems to assess functional status is the Functional Independence Measure (FIM) introduced in 1986 by the Task Force to Develop a Uniform Data System (UDS) for Medical Rehabilitation. Although the complete FIM consists of 18 items, only the motor items are currently documented in the national SCI database. The FIM Total Motor Score has 13 units as the lowest possible score and 91 units as the highest possible score (representing the most independent level of motor function). Items include feeding, grooming, bathing, dressing upper and lower body, toileting, bladder and bowel control, transfer to bed or chair, toilet, tub or shower, locomotion and stair climbing. Prior to inclusion in the national database, a pilot study of inter-rater reliability of Model System FIM data was conducted by Dr. Gale Whiteneck and co-workers at the Rocky Mountain Regional Spinal Cord Injury Care System. The results of the pilot study were presented to the Project Directors who determined that the reliability of the FIM was sufficient to warrant inclusion in the database. Form I required FIM data after October 1988, and Form II required FIM data after February 1996. FIM data is not collected from those less than six years old.

To date, complete FIM data at both rehabilitation admission and system discharge have been reported for over 12,000 patients enrolled in the national SCI database. Mean FIM Total Motor Scores at rehabilitation admission and system discharge are displayed in **Table 68**. Rehab and discharge scores show very little variability between systems. The mean rehab score is 26.1 and the mean discharge score is 56.2.

**Table 68. FIM Motor Score Total (Mean) at Rehab Admit and Rehab Discharge.**

Mean (n)	FIM Score Total	
	Admit Rehab	Discharge Rehab
<b>Total</b>	<b>26.1 (12,616)</b>	<b>56.2 (12,411)</b>

**Table 68. FIM Motor Score Total (Mean) at Rehab Admit and Rehab Discharge.**  
 (Form Is entered to the database since October 1, 1988.  
 FIM Motor Score Total ranges from 13 to 91.)

Mean FIM Total Motor Score by neurologic level and extent of lesion appear in **Table 69**. Mean FIM Total Motor Score at rehabilitation admission ranged from 41.5 units for persons with incomplete paraplegia-minimal deficit to 15.0 units for those with complete tetraplegia. Mean FIM Total Motor Score at system discharge ranged from 78.9 units to 29.2 units for the same neurologic categories.

**Table 69. FIM Motor Score Total (Mean) by Neurologic Category at Discharge.**

Neuro Category at Discharge Mean (n)	FIM Score Total	
	Rehab Admit	Rehab Discharge
Paraplegia, incomplete	35.0 (2,331)	71.0 (2,313)
Paraplegia, complete	30.8 (3,263)	66.1 (3,212)
Paraplegia, minimal deficit	41.5 (227)	78.9 (228)
Tetraplegia, incomplete	21.3 (3,822)	51.6 (3,761)
Tetraplegia, complete	15.0 (2,290)	29.2 (2,253)
Tetraplegia, minimal deficit	36.5 (296)	78.0 (302)
Normal, minimal deficit	47.3 (47)	77.4 (47)
Unknown	26.8 (337)	52.5 (292)
<b>Total</b>	<b>26.1 (12,616)</b>	<b>56.2 (12,411)</b>

**Table 69. FIM Motor Score Total (Mean) by Neurologic Category at Discharge.**  
 (Form 1s entered into the database since October 1, 1988.  
 FIM Motor Score Total ranges from 13 to 91.)

Mean FIM Total Motor Score by year post injury is depicted in **Table 70**. Mean FIM totals are consistent across years. Low sample size in year 35 is the possible reason for the drop in FIM Total Motor Score mean for that year.

**Table 70. FIM Motor Score Total (Mean) by Post Injury Year.**

Mean (n)	Post Injury Year								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>64.1 (5,583)</b>	<b>64.2 (1,924)</b>	<b>65.2 (3,391)</b>	<b>64.5 (2,280)</b>	<b>62.3 (2,143)</b>	<b>62.2 (1,978)</b>	<b>62.2 (1,343)</b>	<b>62.5 (566)</b>	<b>55.2 (5)</b>

**Table 70. FIM Motor Score Total by Post Injury Year.**  
 (Form IIs entered into the database since February 1, 1996.  
 FIM Motor Score Total ranges from 13 to 91.)

## RESPIRATOR USE: TABLES 71 - 72

These tables document the use of mechanical ventilation to sustain respiration. In October 2000, data collection of respirator use during system hospitalization was deleted and the data are now collected at the time of System rehab admit and at the time of system discharge. The database collects three different categories of mechanical ventilator use: **1.** Yes, limited, short-term use for pulmonary complications; **2.** Yes, ventilator-dependent or ventilator use requiring a weaning process; **3.** Yes, phrenic nerve stimulator. These three groups have been combined into the mechanical ventilator required category.

**Tables 71a and 71b** separate paraplegia from tetraplegia level lesions. Of the patients with paraplegia level lesions admitted to the System rehab, 6.9 percent required respirator assistance and most of those were discharged with no respirator use (only 0.7% required respirator use at discharge). Table 71b shows 21.3 percent of the persons with tetraplegia required the use of a mechanical respirator at the time of admission to rehab. Of these patients, only 6.1 percent were discharged requiring a respirator.

Intersystem variability in the proportion of persons with tetraplegia who required the use of a respirator at system rehab admit was substantial, ranging from 0.0 percent to 41.9 percent. The proportion of those with tetraplegia who were discharged respirator dependent also varied considerably, ranging from 0.0 percent to 19.1. This variability may be partly attributed to the fact that some systems do not have the facilities to rehab ventilator patients.

**Table 71a. Respirator Use (Paraplegia only) at Rehab Admit and System Discharge.**

n (%)	Respirator Use at Rehab Admit				Respirator Use at System Discharge			
	No	Yes	Unknown	Total	No	Yes	Unknown	Total
<b>Total</b>	<b>10,018 (86.2)</b>	<b>797 (6.9)</b>	<b>808 (7.0)</b>	<b>11,623</b>	<b>11,753 (99.0)</b>	<b>79 (0.7)</b>	<b>36 (0.3)</b>	<b>11,868</b>

**Table 71a. Respirator Use (Paraplegia only) at Rehab Admit and System Discharge.**

(Admit to Rehab includes only those records with rehab stays.

To determine paraplegia level, Neuro Category at Discharge was used.

Paraplegia group includes complete, incomplete and minimal deficit categories.)

**Table 71b. Respirator Use (Tetraplegia only) at Rehab Admit and System Discharge.**

n (%)	Respirator Use at Rehab Admit				Respirator Use at System Discharge			
	No	Yes	Unknown	Total	No	Yes	Unknown	Total
<b>Total</b>	<b>9,323 (71.4)</b>	<b>2,775 (21.3)</b>	<b>953 (7.3)</b>	<b>13,051</b>	<b>12,673 (93.2)</b>	<b>833 (6.1)</b>	<b>92 (0.7)</b>	<b>13,598</b>

**Table 71b. Respirator Use (Tetraplegia only) at Rehab Admit and System Discharge.**

(To determine Tetraplegia Level, Neuro Category at Discharge was used.

Tetraplegia group includes complete, incomplete and minimal deficit categories.

Admit to Rehab includes only those records with rehab stays.)

**Table 72** shows the proportion of patients who required the use of a mechanical respirator at one year post injury. Only 3.6 percent of tetraplegia group required respirator use and 0.3 percent of the paraplegia group still required the respirator.

**Table 72. Respirator Use (Paraplegia & Tetraplegia) at One Year Post Injury.**

n (%)	Respirator Use - Tetraplegia				Respirator Use - Paraplegia			
	No	Yes	Unknown	Total	No	Yes	Unknown	Total
<b>Total</b>	<b>7,496 (93.9)</b>	<b>285 (3.6)</b>	<b>206 (2.6)</b>	<b>7,987</b>	<b>7,298 (97.1)</b>	<b>20 (0.3)</b>	<b>197 (2.6)</b>	<b>7,515</b>

**Table 72. Respirator Use (Paraplegia & Tetraplegia) at One Year Post Injury.**

(Paraplegia & Tetraplegia groups include complete, incomplete and minimal deficit categories.)

All three codes (plus the conversion code) for 'mechanical vent use' were included in the 'Yes' column (see [Respirator Use](#).)

## **METHOD OF BLADDER MANAGEMENT: TABLES 73 - 76**

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These tables represent the primary method of bladder management being used at discharge and year post injury. In November 1995, new categories (codes 2, 3, 4, 7, 8 and 9) were added and Bladder Management at System Admission was changed to Bladder Management at Admission to Inpatient Rehab. Therefore, the absence of data in those categories is not surprising and as a result, the tables must be interpreted cautiously.

Because of increasingly short rehabilitation lengths of stay, many males have not yet completed the intermittent catheterization program and graduated to the use of condom catheter drainage. This trend is reflected by the decline in intermittent catheterization at first annual with concomitant increase in condom usage. The gradual decrease in normal micturition over time results from these individuals being increasingly less likely to return for follow-up. The high percentages of individuals with suprapubic cystostomies after year 15 is the result of the presence of a high proportion of records from one system in which this is a very common method of management.

**Tables 73 and 74** show Method of Bladder Management at system discharge separated by gender. The most common discharge categories for men were ICP and an external collector (25.7%), normal micturition then ICP only (16.4% and 16.3%, respectively), whereas, most females were discharged with an indwelling catheter (29.0%), ICP – external collector, augmentation or continent diversion unknown and normal micturition (24.3% and 20.0%, respectively).



**Table 73. Method of Bladder Management at Discharge– Male.**

n (%)	Bladder Management at Discharge							
	0-None (Absorbent products, etc.)	1-Indwelling Catheter	2-Indwelling Catheter, stoma*	3-Catheter free with external collector, no sphincterotomy*	4-Catheter free with external collector and sphincterotomy*	5-Catheter free with external collector, sphincterotomy unknown	6- reflex stimulation, crede, external pressure	7- ICP only*
<b>Total</b>	<b>370 (1.7)</b>	<b>2,927 (13.8)</b>	<b>7 (0.0)</b>	<b>163 (0.8)</b>	<b>13 (0.1)</b>	<b>2,794 (13.2)</b>	<b>535 (2.5)</b>	<b>3,456 (16.3)</b>

**Table 73. Method of Bladder Management at Discharge– Male.**

( \* Codes (2, 3, 4, 7, 8, 9) were added November 1995.  
Four records have missing values.)

**Table 73. Method of Bladder Management at Discharge – Male (continued).**

n (%)	Bladder Management at Discharge								
	08 ICP with external collector*	09 ICP after augmentation or continent diversion*	10 ICP - external collector, augmentation or continent diversion unknown	11 Conduit	12 Suprapubic Cystostomy (S/P)	13 Normal Micturition	14 Other	99 Unknown	Total
<b>Total</b>	<b>192 (0.9)</b>	<b>7 (0.0)</b>	<b>5,447 (25.7)</b>	<b>14 (0.1)</b>	<b>1,406 (6.6)</b>	<b>3,478 (16.4)</b>	<b>75 (0.4)</b>	<b>286 (1.4)</b>	<b>21,170</b>

**Table 73. Method of Bladder Management at Discharge – Male (continued).**

( \* Codes (2, 3, 4, 7, 8, 9) were added November 1995.  
Four records have missing values.)

**Table 74. Method of Bladder Management at Discharge – Female.**

n (%)	Bladder Management at Discharge					
	0-None (Absorbent products, etc.)	1-Indwelling Cath	2-Indwelling Cath, stoma	5-Catheter free with external collector, sphincterotomy unknown	6- reflex stim, crede, external pressure	7- ICP only
<b>Total</b>	<b>152 (3.0)</b>	<b>1,453 (29.0)</b>	<b>4 (0.1)</b>	<b>2 (0.0)</b>	<b>153 (3.1)</b>	<b>815 (16.3)</b>

**Table 74. Method of Bladder Management at Discharge – Female.**

('Other' denotes all centers that are not funded for the 2006-2011 funding cycle.  
\* Codes (2, 3, 4, 7, 8, 9) were added November 1995.)

**Table 74. Method of Bladder Management at Discharge – Female (continued).**

n (%)	Bladder Management at Discharge						Total
	10 ICP – external collector, augmentation or continent diversion unknown	11 Conduit	12 Suprapubic Cystostomy (S/P)	13 Normal Micturition	14 Other	99 Unknown	
<b>Total</b>	<b>1,219 (24.3)</b>	<b>2 (0.0)</b>	<b>135 (2.7)</b>	<b>1,001 (20.0)</b>	<b>5 (0.1)</b>	<b>73 (1.5)</b>	<b>5,014</b>

**Table 74. Method of Bladder Management at Discharge – Female (continued).**

('Other' denotes all centers that are not funded for the 2006-2011 funding cycle.  
\* Codes (2, 3, 4, 7, 8, 9) were added November 1995.)

Bladder Management Codes	
<b>0</b> - None (Absorbent products, etc.)	<b>08</b> - ICP with external collector*
<b>1</b> - Indwelling Catheter	<b>09</b> -ICP after augmentation or continent diversion*
<b>2</b> - Indwelling Catheter, stoma*	<b>10</b> - ICP - external collector, augmentation or continent diversion unknown
<b>3</b> - Catheter free with external collector, no sphincterotomy*	<b>11</b> - Conduit
<b>4</b> - Catheter free with external collector and sphincterotomy*	<b>12</b> - Suprapubic Cystostomy (S/P)
<b>5</b> - Catheter free with external collector, sphincterotomy unknown	<b>13</b> - Normal Micturition
<b>6</b> - reflex stimulation, crede, external pressure	<b>14</b> - Other
<b>7</b> - ICP only*	<b>99</b> - Unknown

**Tables 75 and 76** show Bladder Management by year post injury separated by gender. The most common form of Bladder Management at year 1 was normal micturition (males 20.2% and females 25.6%). This is partly due to minimal deficit categories which are no longer required to be followed. Females continue to use indwelling catheter most often (after year one) before year 20, after that, ICP takes first place. In both male and female, there is a migration toward suprapubic cystostomy in later years (from 8.5% in year 1 to 30.7% in year 30 for males, from 4.2% in year 1 to 13.1% in year 30 for females, partly due to high rate of use at one model system.).

**Table 75. Method of Bladder Management by Post Injury Year – Male.**

Bladder Management	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
None	363 (2.3)	226 (2.1)	205 (2.5)	96 (2.3)	45 (1.7)	27 (1.4)	9 (0.7)	1 (0.2)	0 (0.0)
Indwelling Catheter	1,484 (9.4)	899 (8.5)	695 (8.4)	429 (10.1)	244 (9.1)	170 (8.8)	97 (8.0)	50 (9.8)	0 (0.0)
Indwelling Catheter after augmentation*	18 (0.1)	8 (0.1)	24 (0.3)	29 (0.7)	43 (1.6)	25 (1.3)	8 (0.7)	7 (1.4)	0 (0.0)
Catheter Free with external collector, no sphincterotomy*	267 (1.7)	136 (1.3)	249 (3.0)	258 (6.1)	263 (9.8)	241 (12.5)	160 (13.1)	47 (9.2)	0 (0.0)
Catheter Free with external collector, with sphincterotomy*	15 (0.1)	13 (0.1)	46 (0.6)	70 (1.6)	83 (3.1)	84 (4.4)	82 (6.7)	38 (7.4)	0 (0.0)
Catheter Free with external collector, sphincterotomy unknown	2,968 (18.8)	2,829 (26.8)	1,890 (23.0)	780 (18.3)	228 (8.5)	47 (2.4)	16 (1.3)	5 (1.0)	0 (0.0)
Crede, reflex stimulation, external pressure	439 (2.8)	326 (3.1)	201 (2.4)	73 (1.7)	47 (1.8)	34 (1.8)	21 (1.7)	10 (2.0)	0 (0.0)
ICP only*	2,033 (12.9)	729 (6.9)	1,120 (13.6)	654 (15.3)	474 (17.7)	296 (15.3)	163 (13.4)	57 (11.1)	1 (25.0)
ICP with external collector*	242 (1.5)	70 (0.7)	124 (1.5)	68 (1.6)	82 (3.1)	63 (3.3)	43 (3.5)	18 (3.5)	0 (0.0)
ICP after augmentation or continent diversion*	12 (0.1)	5 (0.0)	16 (0.2)	24 (0.6)	27 (1.0)	13 (0.7)	7 (0.6)	2 (0.4)	0 (0.0)
ICP external collector, augmentation or continent diversion unknown	2,858 (18.1)	1,930 (18.3)	870 (10.6)	307 (7.2)	94 (3.5)	15 (0.8)	1 (0.1)	1 (0.2)	0 (0.0)
Conduit	7 (0.0)	9 (0.1)	35 (0.4)	36 (0.8)	22 (0.8)	25 (1.3)	27 (2.2)	12 (2.3)	1 (25.0)
Suprapubic Cystostomy S/P	1,340 (8.5)	1,203 (11.4)	1,213 (14.7)	765 (17.9)	642 (24.0)	592 (30.7)	375 (30.8)	157 (30.7)	1 (25.0)
Normal Micturition	3,192 (20.2)	1,738 (16.5)	1,250 (15.2)	550 (12.9)	305 (11.4)	250 (13.0)	165 (13.6)	86 (16.8)	1 (25.0)
Other	64 (0.4)	48 (0.5)	50 (0.6)	31 (0.7)	20 (0.7)	19 (1.0)	19 (1.6)	14 (2.7)	0 (0.0)
Unknown	489 (3.1)	389 (3.7)	239 (2.9)	93 (2.2)	56 (2.1)	29 (1.5)	24 (2.0)	7 (1.4)	0 (0.0)
<b>Total</b>	<b>15,791</b>	<b>10,558</b>	<b>8,227</b>	<b>4,263</b>	<b>2,675</b>	<b>1,930</b>	<b>1,217</b>	<b>512</b>	<b>4</b>

**Table 75. Method of Bladder Management by Post Injury Year – Male.**

(\* [Codes](#) (2, 3, 4, 7, 8, 9) were added November 1995.)

**Table 76. Method of Bladder Management by Post Injury Year – Female.**

Bladder Management	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
None	145 (3.9)	103 (4.4)	82 (4.1)	41 (4.2)	18 (3.0)	7 (1.6)	7 (2.2)	1 (0.8)	0 (0.0)
Indwelling Catheter	925 (25.1)	707 (30.1)	548 (27.5)	275 (28.2)	168 (28.0)	127 (28.7)	94 (28.9)	32 (24.6)	2 (100.0)
Indwelling Catheter after augmentation*	6 (0.2)	1 (0.0)	9 (0.5)	9 (0.9)	13 (2.2)	3 (0.7)	2 (0.6)	3 (2.3)	0 (0.0)
Crede, reflex stimulation, external pressure	118 (3.2)	98 (4.2)	73 (3.7)	25 (2.6)	15 (2.5)	17 (3.8)	8 (2.5)	4 (3.1)	0 (0.0)
ICP only*	496 (13.5)	167 (7.1)	302 (15.2)	196 (20.1)	148 (24.7)	140 (31.6)	105 (32.3)	39 (30.0)	0 (0.0)
ICP after augmentation or continent diversion*	5 (0.1)	3 (0.1)	17 (0.9)	11 (1.1)	12 (2.0)	6 (1.4)	3 (0.9)	1 (0.8)	0 (0.0)
ICP external collector, augmentation or continent diversion unknown	769 (20.9)	605 (25.8)	297 (14.9)	122 (12.5)	44 (7.3)	7 (1.6)	1 (0.3)	2 (1.5)	0 (0.0)
Conduit	5 (0.1)	7 (0.3)	20 (1.0)	16 (1.6)	12 (2.0)	10 (2.3)	3 (0.9)	5 (3.8)	0 (0.0)
Suprapubic Cystostomy S/P	156 (4.2)	85 (3.6)	150 (7.5)	83 (8.5)	68 (11.4)	50 (11.3)	40 (12.3)	17 (13.1)	0 (0.0)
Normal Micturition	942 (25.6)	484 (20.6)	431 (21.7)	169 (17.3)	82 (13.7)	65 (14.7)	55 (16.9)	18 (13.8)	0 (0.0)
Other	12 (0.3)	12 (0.5)	17 (0.9)	9 (0.9)	11 (1.8)	5 (1.1)	3 (0.9)	5 (3.8)	0 (0.0)
Unknown	105 (2.9)	77 (3.3)	44 (2.2)	20 (2.0)	8 (1.3)	6 (1.4)	4 (1.2)	3 (2.3)	0 (0.0)
<b>Total</b>	<b>3,684</b>	<b>2,349</b>	<b>1,990</b>	<b>976</b>	<b>599</b>	<b>443</b>	<b>325</b>	<b>130</b>	<b>2</b>

**Table 76. Method of Bladder Management by Post Injury Year – Female.**  
 (\* [Codes](#) (2, 7, 9) were added November 1995.)

**RE-HOSPITALIZATIONS: TABLES 77 - 79**

These variables document all rehospitalizations in all hospitals (i.e., system and non-system) that occurred during the previous 12 months with respect to the date of the interview. Cause of rehospitalization was added in 2001.

**Tables 77 and 78** show total number of rehospitalizations and mean total days by post injury year. By far, the majority of patients reported no rehospitalization across all years, percentages range, from lowest to highest, from 59.9 percent in year 2 to 74.8 percent in year 25. Mean total days rehospitalized ranges within systems from year one low of 12.1 days to its high at 33.0 days and year 30 ranges from 4.5 days to 42.0 days.

**Table 77. Patients Rehospitalized by Post Injury Year.**

Total Number of Rehospitalizations	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
0	12,354 (63.4)	7,736 (59.9)	7,028 (68.8)	3,757 (71.7)	2,426 (74.1)	1,751 (73.8)	1,153 (74.8)	458 (71.3)	3 (50.0)
1	4,351 (22.3)	2,851 (22.1)	1,870 (18.3)	898 (17.1)	508 (15.5)	375 (15.8)	236 (15.3)	113 (17.6)	2 (33.3)
2	1,330 (6.8)	984 (7.6)	527 (5.2)	238 (4.5)	144 (4.4)	118 (5.0)	74 (4.8)	35 (5.5)	0 (0.0)
3	427 (2.2)	396 (3.1)	209 (2.0)	88 (1.7)	53 (1.6)	47 (2.0)	26 (1.7)	15 (2.3)	1 (16.7)
4	146 (0.7)	156 (1.2)	79 (0.8)	35 (0.7)	25 (0.8)	26 (1.1)	18 (1.2)	7 (1.1)	0 (0.0)
5	77 (0.4)	79 (0.6)	28 (0.3)	6 (0.1)	10 (0.3)	8 (0.3)	4 (0.3)	1 (0.2)	0 (0.0)
6	26 (0.1)	22 (0.2)	11 (0.1)	15 (0.3)	3 (0.1)	4 (0.2)	3 (0.2)	2 (0.3)	0 (0.0)
>6	21 (0.1)	28 (0.2)	7 (0.1)	5 (0.1)	6 (0.2)	3 (0.1)	0 (0.0)	3 (0.5)	0 (0.0)
Unknown Number of Rehospitalizations	65 (0.3)	64 (0.5)	44 (0.4)	26 (0.5)	15 (0.5)	7 (0.3)	3 (0.2)	1 (0.2)	0 (0.0)
Status Unknown	678 (3.5)	591 (4.6)	414 (4.1)	171 (3.3)	84 (2.6)	34 (1.4)	25 (1.6)	7 (1.1)	0 (0.0)
<b>Total</b>	<b>19,475</b>	<b>12,907</b>	<b>10,217</b>	<b>5,239</b>	<b>3,274</b>	<b>2,373</b>	<b>1,542</b>	<b>642</b>	<b>6</b>

**Table 77. Patients Rehospitalized by Post Injury Year.**

**Table 78. Total Days Rehospitalized (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>25.4</b> <b>(5,951)</b>	<b>27.1</b> <b>(4,224)</b>	<b>22.6</b> <b>(2,537)</b>	<b>22.9</b> <b>(1,187)</b>	<b>22.1</b> <b>(687)</b>	<b>22.6</b> <b>(536)</b>	<b>20.3</b> <b>(336)</b>	<b>20</b> <b>(168)</b>	<b>5</b> <b>(3)</b>

**Table 78. Total Days Rehospitalized (Mean) by Post Injury Year.**

(Unknown number of days rehospitalized and those with no rehospitalizations are excluded.)

Diseases of the genitourinary system were the leading cause of re-hospitalization during all post injury years (ranging within systems from 33.3% to 49.1%). Diseases of the skin, other, respiratory, digestive and musculoskeletal diseases or conditions were also relatively common causes of re-hospitalization (**Table 79**). Relatively high percentages of “other unclassified” causes suggest that additional categories may need to be identified for this variable. Percentages may total more than 100 because some participants had more than one re-hospitalization. Each patient may endorse up to 8 re-hospitalizations and reasons.

**Table 79. Cause of Rehospitalization by Post Injury Year.**

Cause of Rehospitalization	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
Infectious and Parasitic Diseases	71 (6.0)	0 (0.0)	39 (5.6)	32 (6.5)	22 (6.3)	25 (6.5)	12 (3.7)	2 (1.2)	1 (33.3)	204 (5.6)
Cancer	5 (0.4)	0 (0.0)	3 (0.4)	3 (0.6)	6 (1.7)	5 (1.3)	8 (2.5)	1 (0.6)	0 (0.0)	31 (0.8)
Endocrine/Nutrition Diseases	18 (1.5)	1 (1.8)	12 (1.7)	3 (0.6)	3 (0.9)	2 (0.5)	5 (1.6)	4 (2.3)	0 (0.0)	48 (1.3)
Diseases of the Blood	20 (1.7)	0 (0.0)	18 (2.6)	15 (3.0)	5 (1.4)	6 (1.6)	7 (2.2)	2 (1.2)	0 (0.0)	73 (2.0)
Mental Disorders	34 (2.8)	0 (0.0)	12 (1.7)	6 (1.2)	8 (2.3)	3 (0.8)	7 (2.2)	2 (1.2)	0 (0.0)	72 (2.0)
Diseases of the Nervous System	30 (1.6)	0 (0.0)	15 (1.4)	13 (1.6)	1 (0.2)	7 (1.1)	7 (1.4)	4 (1.4)	0 (0.0)	77 (1.3)
Diseases of the Circulatory System	115 (9.6)	5 (8.9)	63 (9.0)	39 (7.9)	31 (8.9)	25 (6.5)	26 (8.1)	13 (7.6)	0 (0.0)	317 (8.6)
Diseases of the Respiratory System	194 (16.3)	9 (16.1)	73 (10.4)	62 (12.6)	15 (4.3)	46 (12.0)	51 (15.9)	33 (19.3)	0 (0.0)	483 (13.2)
Diseases of the Digestive System	105 (8.8)	13 (23.2)	95 (13.6)	72 (14.6)	30 (8.6)	52 (13.6)	46 (14.3)	18 (10.5)	1 (33.3)	432 (11.8)
Diseases of the Genitourinary System	521 (43.7)	27 (48.2)	292 (41.8)	189 (38.3)	149 (42.8)	152 (39.7)	147 (45.8)	84 (49.1)	1 (33.3)	1,562 (42.6)
Childbirth and/or Complications of Childbirth	2 (0.2)	0 (0.0)	13 (1.9)	11 (2.2)	12 (3.4)	4 (1.0)	1 (0.3)	0 (0.0)	0 (0.0)	43 (1.2)
Diseases of the Skin	228 (19.1)	8 (14.3)	164 (23.5)	156 (31.6)	127 (36.5)	161 (42.0)	101 (31.5)	67 (39.2)	0 (0.0)	1,012 (27.6)
Disease of the Musculoskeletal System	117 (9.8)	0 (0.0)	65 (9.3)	53 (10.7)	30 (8.6)	29 (7.6)	33 (10.3)	20 (11.7)	0 (0.0)	347 (9.5)
Congenital anomalies	2 (0.2)	0 (0.0)	0 (0.0)	1 (0.2)	0 (0.0)	1 (0.3)	4 (1.2)	0 (0.0)	0 (0.0)	8 (0.2)
Symptoms and Ill-defined conditions	42 (3.2)	0 (0.0)	25 (3.6)	9 (1.8)	8 (2.3)	4 (1.0)	1 (0.3)	6 (3.5)	1 (33.3)	96 (2.6)
Injuries and Poisonings	59 (4.9)	3 (5.4)	47 (6.7)	43 (8.7)	26 (7.5)	30 (7.8)	25 (7.8)	19 (11.1)	0 (0.0)	252 (6.9)
Other, Unclassified	263 (22.0)	30 (53.6)	119 (17.0)	84 (17.0)	76 (21.8)	68 (17.8)	22 (6.9)	13 (7.6)	1 (33.3)	676 (18.4)
Inpatient Rehab Services	104 (8.7)	4 (7.1)	26 (3.7)	7 (1.4)	5 (1.4)	4 (1.0)	5 (1.6)	2 (1.2)	0 (0.0)	157 (4.3)
<b>Total</b>	<b>1,193</b>	<b>56</b>	<b>699</b>	<b>494</b>	<b>348</b>	<b>383</b>	<b>321</b>	<b>171</b>	<b>3</b>	<b>3,668</b>

**Table 79. Cause of Rehospitalization by Post Injury Year.**

(Percentages may total more than 100% because some participants had more than one rehospitalization. Form IIs entered into the database since March 1, 2001.)

**SELF-PERCEIVED HEALTH STATUS: TABLES 80 - 81**

“In general, would you say that your health is excellent, very good, good, fair or poor?” is question 1 from the Short Form Health Survey (SF-36). It was added to the database in 1995. “Compared to a year ago, how would you rate your health in general now?” is question 2 from the Short Form Health Survey (SF-36). This was added in May 1998. These questions are not collected from patients less than 18 years old.

**Table 80** depicts patient’s perception of their current health by post injury year. At one year post injury, most patients endorsed ‘good’ (30.2%) versus the fewest patients endorsed ‘poor’ (5.0%). ‘Excellent’ and ‘very good’ endorsements increase as the years increase as the percentage of ‘unknown/not done/under 18’ decrease.

**Table 80. Self-Perceived Health Status by Post Injury Year.**

Self-Perceived Health	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
Excellent	693 (10.3)	254 (10.7)	572 (13.7)	375 (13.1)	384 (14.9)	330 (14.5)	219 (14.2)	97 (15.1)	1 (16.7)
Very Good	1,302 (19.4)	381 (16.1)	995 (23.9)	682 (23.8)	608 (23.6)	609 (26.8)	420 (27.2)	192 (29.9)	0 (0.0)
Good	2,021 (30.2)	718 (30.3)	1,317 (31.6)	933 (32.6)	920 (35.8)	785 (34.6)	576 (37.4)	209 (32.6)	2 (33.3)
Fair	1,040 (15.5)	377 (15.9)	616 (14.8)	424 (14.8)	339 (13.2)	320 (14.1)	211 (13.7)	96 (15.0)	2 (33.3)
Poor	337 (5.0)	100 (4.2)	142 (3.4)	90 (3.1)	61 (2.4)	63 (2.8)	35 (2.3)	30 (4.7)	1 (16.7)
Don't Know	17 (0.3)	0 (0.0)	15 (0.4)	4 (0.1)	1 (0.0)	0 (0.0)	1 (0.1)	2 (0.3)	0 (0.0)
Refuses	78 (1.2)	3 (0.1)	33 (0.8)	30 (1.0)	44 (1.7)	16 (0.7)	18 (1.2)	0 (0.0)	0 (0.0)
Unknown/Not Done/Under 18	1,208 (18.0)	538 (22.7)	481 (11.5)	324 (11.3)	215 (8.4)	148 (6.5)	62 (4.0)	16 (2.5)	0 (0.0)
<b>Total</b>	<b>6,696</b>	<b>2,371</b>	<b>4,171</b>	<b>2,862</b>	<b>2,572</b>	<b>2,271</b>	<b>1,542</b>	<b>642</b>	<b>6</b>

**Table 80. Self-Perceived Health Status by Post Injury Year.**  
(Form IIs entered to the database since January 1, 1996.)



Most patients' perception of the improvement of their health is seen as 'much better' or 'somewhat better' at year one (32.9% and 20.9%, respectively) versus year five and after reports 'about the same' most often, ranging from 49.1 percent to 58.7 percent (**Table 81**). As in the previous table, 'unknown/not done/under 18' decrease as the years increase.

**Table 81. 'Compared to one year ago, how would you rate your Health?' by Post Injury Year.**

Rate Health	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
Much Better	1,783 (32.9)	263 (19.6)	383 (11.5)	180 (7.8)	162 (7.7)	149 (7.6)	125 (8.1)	62 (9.7)	0 (0.0)
Somewhat Better	1,132 (20.9)	312 (23.2)	559 (16.8)	296 (12.9)	220 (10.5)	214 (11.0)	175 (11.3)	71 (11.1)	0 (0.0)
About the Same	877 (16.2)	359 (26.8)	1,635 (49.1)	1,261 (54.8)	1,208 (57.5)	1,108 (56.8)	905 (58.7)	365 (56.9)	3 (50.0)
Somewhat Worse	399 (7.4)	100 (7.5)	295 (8.9)	249 (10.8)	248 (11.8)	271 (13.9)	226 (14.7)	115 (17.9)	3 (50.0)
Much Worse	242 (4.5)	22 (1.6)	68 (2.0)	53 (2.3)	38 (1.8)	48 (2.5)	27 (1.8)	15 (2.3)	0 (0.0)
Don't Know	7 (0.1)	1 (0.1)	7 (0.2)	3 (0.1)	4 (0.2)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)
Refused	81 (1.5)	4 (0.3)	31 (0.9)	33 (1.4)	45 (2.1)	21 (1.1)	20 (1.3)	0 (0.0)	0 (0.0)
Unknown/Not Done/Under 18	896 (16.6)	281 (21.0)	352 (10.5)	225 (9.8)	175 (8.3)	139 (7.1)	64 (4.2)	14 (2.2)	0 (0.0)
<b>Total</b>	<b>5,417</b>	<b>1,342</b>	<b>3,330</b>	<b>2,300</b>	<b>2,100</b>	<b>1,951</b>	<b>1,542</b>	<b>642</b>	<b>6</b>

**Table 81. 'Compared to one year ago, how would you rate your Health?' by Post Injury Year.**

(Form IIs entered to database since May 1, 1998.)

**SATISFACTION WITH LIFE: TABLE 82**

This table reflects the mean Total Score which measures the concept of life satisfaction based on the patient's responses to these five statements. "1. *In most ways my life is close to my ideal.* 2. *The conditions of my life are excellent.* 3. *I am satisfied with my life.* 4. *So far I have gotten the important things I want in life.* 5. *If I could live my life over, I would change almost nothing.*" The Total Score was added in 1995 and ranges from 5 to 35.

Only records newly entered into the database after 1995, for patients whose current age was 18 or older, were used in this analysis. Overall, mean life satisfaction total score ranged from 18.1 at post-injury years 1 and 2 to 22.7 at post-injury year 30. There is very little variation between systems or across years.

**Table 82. Satisfaction With Life Scale - Total Score (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>18.1 (4,832)</b>	<b>18.1 (1,628)</b>	<b>20.4 (3,289)</b>	<b>20.7 (2,333)</b>	<b>21.7 (2,146)</b>	<b>22.4 (1,955)</b>	<b>22.5 (1,373)</b>	<b>22.7 (602)</b>	<b>19.7 (6)</b>
<b>Table 82. Satisfaction With Life Scale - Total Score (Mean) by Post Injury Year.</b> (Form IIs entered into the database since January 1, 1996. Total ranges from 5 to 35.)									

**CHART: TABLES 83 - 86**

The Craig Handicap Assessment and Reporting Technique (CHART) is a widely used questionnaire useful in measuring societal participation for persons with disabilities. These tables show the mean score of the sub-totals: physical independence, mobility, occupation status, and social integration. The CHART was added to the national database in 1996. It is administered in the extended data follow-up years (currently years 1, 5, 10, 15, 20, 25, 30, and 35) to individuals whose current age is 18 years or older. From 1996 to October 2000, the version of the CHART that was used in the database consisted of 26 questions and 5 subscales (physical independence, mobility, occupational status, social integration, and economic self-sufficiency). In 2000, the version of the CHART that is included in the database was changed to the short form of the CHART that consists of only 20 questions and includes a sixth subscale (cognitive independence, which is not included in the database). The CHART data collected from 1996 through 2000 were converted to the short form of the CHART by the NSCISC so that all CHART data in the database are currently in the same format. Each subscale score is capped at 100, and scores of less than 100 imply the presence of a handicap.

**Table 83** depicts the mean CHART physical independence score by year post injury for each model system. The mean physical independence score increases over time from 69.8 in the first post injury year to 84.8 and 92.0 in post injury years 30 and 35. However, there is considerable intersystem variability in physical independence scores. For example, in the first post injury year, mean physical independence scores range from 52.8 to 86.1.

**Table 83. CHART Physical Independence Subscale Score (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>69.8</b> (5,575)	<b>72.0</b> (1,929)	<b>76.1</b> (3,711)	<b>77.3</b> (2,561)	<b>80.9</b> (2,352)	<b>84.1</b> (2,131)	<b>83.2</b> (1,475)	<b>84.8</b> (626)	<b>92.0</b> (6)

**Table 83. CHART Physical Independence Subscale Score by Post Injury Year.**  
(Form IIs entered into the database since January 1, 1996.  
CHART subtotal range from 0 to 100.)

**Table 84** depicts the mean CHART mobility score by year post injury. The mean mobility score shows very little intersystem variability or variability across years. For example, in the first post injury year, mean mobility scores range from 67.9 to 79.4.

**Table 84. CHART Mobility Subscale Score (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>73.4</b> (5,552)	<b>76.0</b> (1,932)	<b>78.1</b> (3,700)	<b>80.2</b> (2,547)	<b>80.8</b> (2,346)	<b>80.8</b> (2,126)	<b>80.5</b> (1,466)	<b>78.4</b> (628)	<b>73.2</b> (6)

**Table 84. CHART Mobility Subscale Score by Post Injury Year.**  
(Form IIs entered into the database since January 1, 1996.  
CHART subtotal range from 0 to 100.)

**Table 85** depicts the mean CHART occupational status score by year post injury. The mean occupational status score increases over time from 48.6 in the first post injury year to 69.3, 67.7 and 53.8 in post injury years 25, 30, and 35. However, there is considerable intersystem variability in occupational status scores. For example, in the first post injury year, mean occupational status scores range from 31.8 to 62.1. Although the occupational status subscale includes other activities besides competitive employment, the trend over time in this subscale score is consistent with many previous studies of return to work after spinal cord injury that have shown a gradual increase in the employment rate over time.

**Table 85. CHART Occupational Status Subscale Score (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>48.6</b> <b>(5,426)</b>	<b>50.8</b> <b>(1,868)</b>	<b>59.4</b> <b>(3,631)</b>	<b>61.9</b> <b>(2,527)</b>	<b>64.4</b> <b>(2,311)</b>	<b>66.9</b> <b>(2,111)</b>	<b>69.3</b> <b>(1,455)</b>	<b>67.7</b> <b>(624)</b>	<b>53.8</b> <b>(6)</b>
<b>Table 85. CHART Occupational Status Subscale Score by Post Injury Year.</b> (Form IIs entered into the database since January 1, 1996. CHART subtotal range from 0 to 100.)									

**Table 86** depicts the mean CHART social integration score by year post injury. There is very little intersystem variability or changes across years in social integration scores. For example, in the first post injury year, mean social integration scores range from 80.6 to 92.4. Across years, the range is from 85.4 (year 2) to 94.2 (year 35).

**Table 86. CHART Social Integration Subscale Score (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>86.6</b> <b>(5,379)</b>	<b>85.4</b> <b>(1,852)</b>	<b>86.7</b> <b>(3,590)</b>	<b>87.0</b> <b>(2,525)</b>	<b>88.0</b> <b>(2,314)</b>	<b>88.2</b> <b>(2,095)</b>	<b>88.5</b> <b>(1,444)</b>	<b>88.1</b> <b>(621)</b>	<b>94.2</b> <b>(6)</b>
<b>Table 86. CHART Social Integration Subscale Score by Post Injury Year.</b> (Form IIs entered into the database since January 1, 1996. CHART subtotal range from 0 to 100.)									

**PATIENT HEALTH QUESTIONNAIRE: TABLES 87 - 88**

The PHQ consists of 9 questions reflecting the frequency of problems associated with possible depression of persons plus a tenth question reflecting the overall level of difficulty caused by these problems. Each of the nine questions is scored from 0 (no problem) to 3 (nearly every day). Major depressive syndrome is defined as scoring a 2 or 3 on at least one of the first two questions and scoring at least a 2 on a total of at least 5 of the nine questions. Other depressive syndrome is defined as scoring a 2 or 3 on at least one of the first two questions and scoring a 2 or 3 on two to four of the nine questions. Also the severity of depression score is calculated as the sum of the scores from the nine PHQ questions. The PHQ was required for Form II collection after March 1, 2001.

**Table 87** depicts the frequency and percentage of persons with major and other depressive syndrome by post injury year. Year 35 is not included in the text due to low sample size. The percentage of persons with major depressive syndrome ranges from 11.0 in post injury year 2 to 5.1 in post injury year 20. The percentage of persons with other depressive syndrome ranges from 11.0 in post injury year 2 to 6.7 in post injury year 20. The percentage of persons with no depressive syndrome ranges from 60.7 in post injury year 2 to 80.5 in post injury year 30.

**Table 87. Major Depressive Syndrome by Post Injury Year.**

Major Depressive Syndrome	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
No Depressive syndrome	2,546 (63.3)	105 (60.7)	1,822 (72.2)	1,307 (73.2)	1,055 (74.3)	1,157 (77.9)	1,094 (79.6)	517 (80.5)	5 (83.3)
Major Depressive Syndrome	382 (9.5)	19 (11.0)	205 (8.1)	151 (8.5)	93 (6.6)	76 (5.1)	85 (6.2)	37 (5.8)	0 (0.0)
Other Depressive Syndrome	377 (9.4)	19 (11.0)	201 (8.0)	126 (7.1)	105 (7.4)	100 (6.7)	106 (7.7)	63 (9.8)	1 (16.7)
Unknown/Interview Not Done/Under 18	720 (17.9)	30 (17.3)	294 (11.7)	202 (11.3)	166 (11.7)	152 (10.2)	90 (6.5)	25 (3.9)	0 (0.0)
<b>Total</b>	<b>4,025</b>	<b>173</b>	<b>2,522</b>	<b>1,786</b>	<b>1,419</b>	<b>1,485</b>	<b>1,375</b>	<b>642</b>	<b>6</b>

**Table 87. Major Depressive Syndrome by Post Injury Year.**  
(Form IIs entered into the database since March 1, 2001.)

**Table 88** depicts the mean severity of depression score by post injury years. This year's analysis includes records with scores of zero. Overall, mean depression severity scores decreased slightly over time, ranging from 5.9 in post injury year 2 to 4.0 in post injury year 35.

**Table 88. Severity of Depression Score (Mean) by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>5.4</b> <b>(3,287)</b>	<b>5.9</b> <b>(142)</b>	<b>4.8</b> <b>(2,217)</b>	<b>4.5</b> <b>(1,577)</b>	<b>4.0</b> <b>(1,249)</b>	<b>3.6</b> <b>(1,331)</b>	<b>4.0</b> <b>(1,282)</b>	<b>4.3</b> <b>(616)</b>	<b>4.0</b> <b>(6)</b>

**Table 88. Severity of Depression Score by Post Injury Year.**

(Form IIs entered into the database since March 1, 2001.

Ranges from 0 to 27.)

**ALCOHOL USE: TABLES 89 - 92**

These three items are required after March 1, 2001: *Have you ever drank alcohol (yes/no), During the past month, how many days per week did you drink any alcoholic beverages such as beer, wine, wine coolers or liquor, on the average?(valid range:1 – 7), On the days you drank (during the past month), about how many drinks did you drink, on the average?(valid range: 0- 87); How many times during the past month have you drank more than 5 drinks at any one occasion?* Tables 90, 91, and 92 exclude those who have never drank alcohol.

**Table 89** shows the percentage of persons who reported drinking any alcoholic beverage either currently or in the past ranges from 45.6 in post injury year 1 to 100.0 in post injury year 35. Most persons who were drinkers reported alcohol use less than two days per week throughout all follow-up years (**Table 90**).

**Table 89. Alcohol Use by Post Injury Year.**

Alcohol Use	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
Never Drank	1,571 (39.0)	72 (41.6)	818 (32.4)	560 (31.4)	431 (30.4)	366 (24.6)	298 (21.7)	103 (16.0)	0 (0.0)
Currently drinks or did drink in the past	1,836 (45.6)	80 (46.2)	1,468 (58.2)	1,055 (59.1)	851 (60.0)	991 (66.7)	1,008 (73.3)	503 (78.3)	6 (100.0)
Unknown/Interview Not Done /Under 18	618 (15.4)	21 (12.1)	236 (9.4)	171 (9.6)	137 (9.7)	128 (8.6)	69 (5.0)	36 (5.6)	0 (0.0)
<b>Total</b>	<b>4,025</b>	<b>173</b>	<b>2,522</b>	<b>1,786</b>	<b>1,419</b>	<b>1,485</b>	<b>1,375</b>	<b>642</b>	<b>6</b>

**Table 89. Alcohol Use by Post Injury Year.**  
(Form IIs entered into the database since March 1, 2001.)

**Table 90. Alcohol Use – Number of Days per Week by Post Injury Year.**

Number of Days/Week	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
None or Less than 1 Day per Week	701 (28.6)	22 (21.8)	586 (34.4)	404 (33.0)	329 (33.3)	440 (39.3)	492 (45.7)	284 (52.7)	4 (66.7)
1 day per week	482 (19.6)	26 (25.7)	358 (21.0)	258 (21.0)	183 (18.5)	176 (15.7)	143 (13.3)	60 (11.1)	2 (33.3)
2 days per week	267 (10.9)	13 (12.9)	231 (13.6)	150 (12.2)	115 (11.6)	153 (13.7)	131 (12.2)	47 (8.7)	0 (0.0)
3 days per week	122 (5.0)	5 (5.0)	105 (6.2)	66 (5.4)	77 (7.8)	77 (6.9)	70 (6.5)	34 (6.3)	0 (0.0)
4 days per week	61 (2.5)	4 (4.0)	40 (2.4)	49 (4.0)	44 (4.5)	32 (2.9)	31 (2.9)	16 (3.0)	0 (0.0)
5 days per week	51 (2.1)	2 (2.0)	43 (2.5)	26 (2.1)	22 (2.2)	29 (2.6)	32 (3.0)	23 (4.3)	0 (0.0)
6 days per week	27 (1.1)	2 (2.0)	20 (1.2)	13 (1.1)	7 (0.7)	11 (1.0)	21 (2.0)	4 (0.7)	0 (0.0)
7 days per week	60 (2.4)	2 (2.0)	54 (3.2)	52 (4.2)	51 (5.2)	65 (5.8)	75 (7.0)	50 (9.3)	0 (0.0)
Unknown days per week	78 (3.2)	4 (4.0)	38 (2.2)	40 (3.3)	27 (2.7)	19 (1.7)	13 (1.2)	3 (0.6)	0 (0.0)
Unknown, Not Done, < 18 years of age	605 (24.7)	21 (20.8)	229 (13.4)	168 (13.7)	133 (13.5)	117 (10.5)	69 (6.4)	18 (3.3)	0 (0.0)
<b>Total</b>	<b>2,454</b>	<b>101</b>	<b>1,704</b>	<b>1,226</b>	<b>988</b>	<b>1,119</b>	<b>1,077</b>	<b>539</b>	<b>6</b>

**Table 90. Alcohol Use – Number of Days per Week by Post Injury Year.**

(Excludes those participants reporting 'Never ever drank'.  
Form IIs entered into the database since March 1, 2001.)



When asked the question, 'On the days you drank (during the past month), about how many drinks did you drink, on the average' over 30 percent of respondents replied 'one' or 'two' drinks across all years. There is a trend of increasing endorsement of 'none' across years, ranging from 15.8 percent in year 2 to 50.0 percent in year 35 (Table 91).

**Table 91. Alcohol Use – 'Average number of drinks on the days you drink during the past month' by Post Injury Year.**

Average drinks per days drinking	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
0	600 (24.4)	16 (15.8)	461 (27.1)	317 (25.9)	257 (26.0)	359 (32.1)	389 (36.1)	231 (42.9)	3 (50.0)
1	395 (16.1)	20 (19.8)	294 (17.3)	214 (17.5)	161 (16.3)	181 (16.2)	222 (20.6)	107 (19.9)	1 (16.7)
2	389 (15.9)	14 (13.9)	300 (17.6)	219 (17.9)	190 (19.2)	194 (17.3)	188 (17.5)	93 (17.3)	1 (16.7)
3	162 (6.6)	11 (10.9)	168 (9.9)	112 (9.1)	107 (10.8)	102 (9.1)	84 (7.8)	42 (7.8)	1 (16.7)
4	94 (3.8)	3 (3.0)	94 (5.5)	66 (5.4)	40 (4.0)	52 (4.6)	42 (3.9)	22 (4.1)	0 (0.0)
5	44 (1.8)	4 (4.0)	35 (2.1)	28 (2.3)	17 (1.7)	27 (2.4)	20 (1.9)	9 (1.7)	0 (0.0)
6	49 (2.0)	1 (1.0)	46 (2.7)	45 (3.7)	38 (3.8)	31 (2.8)	22 (2.0)	7 (1.3)	0 (0.0)
7 - 10	47 (1.9)	4 (4.0)	28 (1.6)	23 (1.9)	20 (2.0)	28 (2.5)	13 (1.2)	4 (0.7)	0 (0.0)
11 - 20	15 (0.6)	0 (0.0)	13 (0.8)	9 (0.7)	11 (1.1)	10 (0.9)	5 (0.5)	1 (0.2)	0 (0.0)
21 or more	1 (0.0)	0 (0.0)	1 (0.1)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Drinks, but number of drinks unknown	61 (2.5)	7 (6.9)	35 (2.1)	23 (1.9)	14 (1.4)	18 (1.6)	16 (1.5)	5 (0.9)	0 (0.0)
Unknown/Not Done/ Under Age 18	597 (24.3)	21 (20.8)	229 (13.4)	169 (13.8)	133 (13.5)	117 (10.5)	76 (7.1)	18 (3.3)	0 (0.0)
<b>Total</b>	<b>2,454</b>	<b>101</b>	<b>1,704</b>	<b>1,226</b>	<b>988</b>	<b>1,119</b>	<b>1,077</b>	<b>539</b>	<b>6</b>

**Table 91. Alcohol Use – 'Average number of drinks on the days you drink during the past month' by Post Injury Year.**

(Form IIs entered into the database since March 1, 2001.  
Excludes those participants reporting 'Never ever drank'.)

At year 1, 58.4 percent of respondents did not endorse any time in the past month of having more than 5 drinks at one occasion (**Table 92**). That percentage increases across years to 82.4 and 100 percent in years 30 and 35, respectively.

**Table 92. Alcohol Use – ‘Number of times during the past month having more than 5 drinks’ by Post Injury Year.**

Number of times > 5 drinks	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
0	1,432 (58.4)	56 (55.4)	1,126 (66.1)	814 (66.4)	661 (66.9)	777 (69.4)	818 (76.0)	444 (82.4)	6 (100.0)
1	131 (5.3)	5 (5.0)	129 (7.6)	69 (5.6)	57 (5.8)	59 (5.3)	64 (5.9)	23 (4.3)	0 (0.0)
2	76 (3.1)	8 (7.9)	54 (3.2)	38 (3.1)	31 (3.1)	41 (3.7)	23 (2.1)	17 (3.2)	0 (0.0)
3	29 (1.2)	0 (0.0)	34 (2.0)	17 (1.4)	17 (1.7)	21 (1.9)	20 (1.9)	9 (1.7)	0 (0.0)
4	38 (1.5)	4 (4.0)	39 (2.3)	29 (2.4)	25 (2.5)	36 (3.2)	18 (1.7)	3 (0.6)	0 (0.0)
5	15 (0.6)	0 (0.0)	13 (0.8)	15 (1.2)	8 (0.8)	9 (0.8)	10 (0.9)	3 (0.6)	0 (0.0)
6 - 10	56 (2.3)	1 (1.0)	27 (1.6)	26 (2.1)	19 (1.9)	23 (2.1)	15 (1.4)	9 (1.7)	0 (0.0)
11 - 15	12 (0.5)	0 (0.0)	8 (0.5)	7 (0.6)	7 (0.7)	6 (0.5)	5 (0.5)	1 (0.2)	0 (0.0)
16 - 20	6 (0.2)	1 (1.0)	1 (0.1)	6 (0.5)	9 (0.9)	5 (0.4)	4 (0.4)	3 (0.6)	0 (0.0)
21 or more	6 (0.2)	2 (2.0)	5 (0.3)	10 (0.8)	7 (0.7)	12 (1.1)	10 (0.9)	6 (1.1)	0 (0.0)
Drinks, but number of times unknown	53 (2.2)	3 (3.0)	34 (2.0)	26 (2.1)	14 (1.4)	16 (1.4)	16 (1.5)	3 (0.6)	0 (0.0)
Unknown/Not Done/Under Age 18	600 (24.4)	21 (20.8)	234 (13.7)	169 (13.8)	133 (13.5)	114 (10.2)	74 (6.9)	18 (3.3)	0 (0.0)
<b>Total</b>	<b>2,454</b>	<b>101</b>	<b>1,704</b>	<b>1,226</b>	<b>988</b>	<b>1,119</b>	<b>1,077</b>	<b>539</b>	<b>6</b>

**Table 92. Alcohol Use – ‘Number of times during the past month having more than 5 drinks’ by Post Injury Year.**

(Form IIs entered into the database since March 1, 2001.

Excludes those participants reporting ‘Never ever drank’.)

**PAIN: TABLES 93 - 94**

The severity of pain score is measured on a 0 to 10 scale and looks at the past 4 weeks' usual level of pain. Data is required after March 1, 2001. **Table 93** depicts mean pain severity score. This did not vary meaningfully over time, ranging from 4.0 in post injury year 20 to 5.0 in post injury year 35. There was also not much intersystem variability in the reporting of pain severity scores.

**Table 93. Severity of Pain Score by Post Injury Year.**

	Post Injury Year mean (n)								
	1	2	5	10	15	20	25	30	35
<b>Total</b>	<b>4.2</b> <b>(3,444)</b>	<b>4.5</b> <b>(149)</b>	<b>4.3</b> <b>(2,283)</b>	<b>4.3</b> <b>(1,624)</b>	<b>4.2</b> <b>(1,286)</b>	<b>4.0</b> <b>(1,366)</b>	<b>4.1</b> <b>(1,295)</b>	<b>4.2</b> <b>(626)</b>	<b>5.0</b> <b>(6)</b>

**Table 93. Severity of Pain Score by Post Injury Year.**  
 (Form IIs entered into the database since March 1, 2001.  
 Range is from 0 to 10.)

**Table 94** reflects responses to the question of the degree to which pain interfered with work or usual routine. This is a variable from the SF-12 that was added to the NSCISC database in May 1998. It was retained in the NSCISC database along with the self-reported rating of overall health when the remainder of the SF-12 was dropped from the database in September 2000.

Overall, most persons who reported that they had pain also reported that the pain either did not interfere with work or that it interfered only a little bit. However, a significant percentage of persons reported moderate or more pain interference with work during all post injury years.

**Table 94. Pain Interfering with Work by Post Injury Year.**

Pain Interference	Post Injury Year n(%)								
	1	2	5	10	15	20	25	30	35
Not at All	1,046 (19.3)	323 (24.0)	744 (22.3)	596 (25.9)	618 (29.4)	597 (30.6)	506 (32.8)	206 (32.1)	2 (33.3)
A little bit	1,056 (19.5)	229 (17.0)	681 (20.5)	433 (18.8)	395 (18.8)	369 (18.9)	266 (17.3)	103 (16.0)	1 (16.7)
Moderately	659 (12.2)	190 (14.1)	432 (13.0)	278 (12.1)	265 (12.6)	266 (13.6)	202 (13.1)	94 (14.6)	2 (33.3)
Quite a bit	659 (12.2)	179 (13.3)	380 (11.4)	258 (11.2)	237 (11.3)	202 (10.4)	177 (11.5)	83 (12.9)	0 (0.0)
Extremely	353 (6.5)	101 (7.5)	254 (7.6)	132 (5.7)	99 (4.7)	81 (4.2)	71 (4.6)	27 (4.2)	1 (16.7)
Don't Know	10 (0.2)	2 (0.1)	4 (0.1)	2 (0.1)	0 (0.0)	3 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)
Refuses	71 (1.3)	4 (0.3)	30 (0.9)	29 (1.3)	44 (2.1)	18 (0.9)	18 (1.2)	0 (0.0)	0 (0.0)
N/A, No Pain	666 (12.3)	52 (3.9)	414 (12.4)	316 (13.7)	246 (11.7)	254 (13.0)	235 (15.2)	114 (17.8)	0 (0.0)
Unknown/Not Done/Under 18	897 (16.5)	264 (19.7)	391 (11.7)	256 (11.1)	196 (9.3)	161 (8.3)	67 (4.3)	15 (2.3)	0 (0.0)
<b>Total</b>	<b>5,417</b>	<b>1,344</b>	<b>3,330</b>	<b>2,300</b>	<b>2,100</b>	<b>1,951</b>	<b>1,542</b>	<b>642</b>	<b>6</b>

**Table 94. Pain Interfering with Work by Post Injury Year.**  
(Form IIs entered into the database since May 1, 1998.)

**AMBULATION: TABLES 95 - 98**

These three tables were added May 1, 2004 and reflect the yes/no responses of these three questions: *Are you able to walk (with or without mobility aid) for 150 feet in your home? Are you able to walk (with or without mobility aid) for one street block outside? Are you able to walk (with or without mobility aid) up one flight of steps?*

**Table 95** reflects ambulation ability by year post injury. Overall, there is an increasing trend for participants to report that they cannot walk 150 feet at home, ranging from 52.5 percent in year 1 to 79.4 percent in year 30. The pattern of responses was similar for **Tables 96 and 97**, the questions of walking one street block outside the home, and up one flight of stairs. In both cases, negative responses increase as years post injury increase.

**Table 95. Ambulation Ability-Walk for 150 feet by Post Injury Year.**

Walk 150 feet	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	1,290 (52.5)	40 (63.5)	951 (59.9)	734 (66.9)	626 (71.5)	637 (73.9)	695 (77.9)	502 (79.4)	4 (66.7)	5,479 (64.7)
Yes	773 (31.4)	16 (25.4)	489 (30.8)	286 (26.1)	164 (18.7)	143 (16.6)	140 (15.7)	109 (17.2)	2 (33.3)	2,122 (25.1)
Unknown/ Not Done	395 (16.1)	7 (11.1)	147 (9.3)	77 (7.0)	85 (9.7)	82 (9.5)	57 (6.4)	21 (3.3)	0 (0.0)	871 (10.3)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 95. Ambulation Ability-Walk for 150 feet by Post Injury Year.**  
(Form IIs entered into the database since May 1, 2004.)

**Table 96. Ambulation Ability-Walk for 1 street block by Post Injury Year.**

Walk 1 street block	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	1,390 (56.6)	43 (68.3)	1,019 (64.2)	767 (69.9)	642 (73.4)	653 (75.8)	707 (79.3)	514 (81.3)	5 (83.3)	5,740 (67.8)
Yes	671 (27.3)	13 (20.6)	418 (26.3)	252 (23.0)	145 (16.6)	126 (14.6)	127 (14.2)	97 (15.3)	1 (16.7)	1,850 (21.8)
Unknown/ Not Done	397 (16.2)	7 (11.1)	150 (9.5)	78 (7.1)	88 (10.1)	83 (9.6)	58 (6.5)	21 (3.3)	0 (0.0)	882 (10.4)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 96. Ambulation Ability-Walk for 1 street block by Post Injury Year.**  
(Form IIs entered into the database since May 1, 2004.)

**Table 97. Ambulation Ability-Walk up 1 flight of stairs by Post Injury Year.**

Walk 1 flight	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	1,403 (57.1)	43 (68.3)	1,002 (63.1)	754 (68.7)	633 (72.3)	649 (75.3)	698 (78.3)	504 (79.7)	5 (83.3)	5,691 (67.2)
Yes	658 (26.8)	13 (20.6)	436 (27.5)	266 (24.2)	154 (17.6)	130 (15.1)	137 (15.4)	107 (16.9)	1 (16.7)	1,902 (22.5)
Unknown/ Not Done	397 (16.2)	7 (11.1)	149 (9.4)	77 (7.0)	88 (10.1)	83 (9.6)	57 (6.4)	21 (3.3)	0 (0.0)	879 (10.4)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 97. Ambulation Ability-Walk up 1 flight of stairs by Post Injury Year.**  
(Form IIs entered into the database since May 1, 2004.)

**Table 98** reflects the types of mobility aids most often used by patients by years post injury. Percentages may equal more than 100 because some participants used more than one mobility aid (up to five entries possible). Overall, 63.5 percent of responses were coded as not applicable, that is the case for those who are non-ambulatory and respond negatively to all three questions in tables 95 - 97. No mobility aid was reported by 9.4 percent of patients, while a straight cane was the most commonly used aid, being reported by 7.5 percent of patients. Only 0.9 percent of patients reported use of an “other” aid, suggesting that the categories already established for this variable are adequate.

**Table 98. Type of Mobility Aid by Post Injury Year.**

Type of Mobility Aid	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
None	299 (21.1)	8 (12.1)	195 (12.2)	111 (10.1)	55 (6.2)	42 (4.9)	49 (5.5)	39 (6.2)	0 (0.0)	798 (9.4)
Straight Cane	222 (9.0)	2 (3.0)	120 (7.5)	114 (10.3)	49 (5.6)	43 (5.0)	52 (5.8)	33 (5.2)	1 (16.7)	636 (7.5)
Quad Cane	62 (2.5)	0 (0.0)	25 (1.6)	8 (0.7)	7 (0.8)	5 (0.6)	1 (0.1)	2 (0.3)	0 (0.0)	110 (1.3)
Walker	208 (8.4)	5 (7.6)	108 (6.8)	44 (4.0)	26 (2.9)	16 (1.9)	11 (1.2)	12 (1.9)	0 (0.0)	430 (5.1)
Crutches	74 (3.0)	2 (3.0)	58 (3.6)	30 (2.7)	24 (2.7)	35 (4.1)	30 (3.4)	28 (4.4)	1 (16.7)	282 (3.3)
Ankle-Foot Orthotic	76 (3.1)	0 (0.0)	47 (3.0)	31 (2.8)	31 (3.5)	21 (2.4)	14 (1.6)	13 (2.1)	0 (0.0)	233 (2.7)
Knee-Ankle-Foot Orthotic	39 (1.6)	1 (1.5)	34 (2.1)	15 (1.4)	12 (1.4)	15 (1.7)	14 (1.6)	9 (1.4)	0 (0.0)	139 (1.6)
Other	28 (1.1)	0 (0.0)	19 (1.2)	12 (1.1)	8 (0.9)	6 (0.7)	4 (0.4)	3 (0.5)	0 (0.0)	80 (0.9)
N/A, Patient Not Ambulatory	1,270 (51.6)	40 (60.6)	933 (58.6)	720 (65.3)	615 (69.7)	632 (73.1)	688 (77.0)	493 (78.0)	4 (66.7)	5,395 (63.5)
Unknown/Not Done	397 (16.1)	10 (15.2)	150 (9.4)	84 (7.6)	93 (10.5)	83 (9.6)	61 (6.8)	23 (3.6)	0 (0.0)	901 (10.6)
<b>Total</b>	<b>2,463</b>	<b>66</b>	<b>1,592</b>	<b>1,103</b>	<b>882</b>	<b>864</b>	<b>894</b>	<b>632</b>	<b>6</b>	<b>8,502</b>

**Table 98. Type of Mobility Aid by Post Injury Year.**

(Percentages may total more than 100% because some participants used more than one mobility aid. Form IIs entered into the database since April 1, 2004.)

**WHEELCHAIR USE: TABLES 99 - 100**

**Table 99 and 100** were added in May 2004. Table 99 reflects the participants who use wheelchairs or scooters over 40 hours per week by year post injury. There is a trend for use of wheelchairs to increase over the years, from 54.9 percent in year 1 to 80.5 percent in year 30. The most common type of wheelchair is 'manual' in all years (except year 35 with a small sample size) at 40.0 percent, but power chairs do increase over the years from 19.6 percent in year 1 to 33.7 percent in year 30.

**Table 99. Wheelchair or Scooter Use by Post Injury Year.**

Wheelchair or Scooter Use	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	710 (28.9)	13 (20.6)	432 (27.2)	262 (23.9)	152 (17.4)	132 (15.3)	145 (16.3)	103 (16.3)	2 (33.3)	1,951 (23.0)
Yes	1,350 (54.9)	43 (68.3)	1,011 (63.7)	758 (69.1)	637 (72.8)	651 (75.5)	691 (77.5)	509 (80.5)	4 (66.7)	5,654 (66.7)
Unknown/Not Done	398 (16.2)	7 (11.1)	144 (9.1)	77 (7.0)	86 (9.8)	79 (9.2)	56 (6.3)	20 (3.2)	0 (0.0)	867 (10.2)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 99. Wheelchair or Scooter Use by Post Injury Year.**  
(Form IIs entered into the database since May 1, 2004.)

**Table 100. Type of Wheelchair or Scooter Used Most Often by Post Injury Year.**

Type Wheelchair Used Most	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
Manual Wheelchair	823 (33.5)	27 (42.9)	570 (35.9)	448 (40.8)	412 (47.1)	413 (47.9)	408 (45.7)	286 (45.3)	1 (16.7)	3,388 (40.0)
Power Wheelchair	481 (19.6)	16 (25.4)	414 (26.1)	284 (25.9)	216 (24.7)	223 (25.9)	266 (29.8)	213 (33.7)	3 (50.0)	2,116 (25.0)
Power-Assist Wheelchair	27 (1.1)	0 (0.0)	16 (1.0)	9 (0.8)	6 (0.7)	4 (0.5)	7 (0.8)	4 (0.6)	0 (0.0)	73 (0.9)
Scooter	2 (0.1)	0 (0.0)	6 (0.4)	9 (0.8)	2 (0.2)	8 (0.9)	9 (1.0)	5 (0.8)	0 (0.0)	41 (0.5)
Other	2 (0.1)	0 (0.0)	1 (0.1)	1 (0.1)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	5 (0.1)
Non-user	710 (28.9)	13 (20.6)	432 (27.2)	262 (23.9)	152 (17.4)	132 (15.3)	145 (16.3)	103 (16.3)	2 (33.3)	1,951 (23.0)
Unknown/Not Done	413 (16.8)	7 (11.1)	148 (9.4)	84 (7.7)	87 (9.9)	81 (9.4)	57 (6.4)	21 (3.3)	0 (0.0)	894 (10.6)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 100. Type of Wheelchair or Scooter Used Most Often by Post Injury Year.**  
(Form IIs entered into the database since May 1, 2004.)



## Technology Use: Tables 101 – 105

These next five tables are required after May 1, 2004.

**Table 101** reflects computer use by patients by post injury year. Overall, 40.0 percent of respondents use a computer only at home, 3.3 percent only use a computer outside the home, 20.6 percent use a computer both at home and away, and 25.6 percent do not use a computer.

**Table 101. Computer Use by Post Injury Year.**

Computer Use	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	721 (29.3)	16 (25.4)	377 (23.8)	277 (25.3)	203 (23.2)	200 (23.2)	224 (25.1)	148 (23.4)	1 (16.7)	2,167 (25.6)
Home Only	907 (36.9)	23 (36.5)	671 (42.3)	449 (40.9)	366 (41.8)	349 (40.5)	355 (39.8)	260 (41.1)	5 (83.3)	3,385 (40.0)
Outside Home Only	71 (2.9)	6 (9.5)	51 (3.2)	43 (3.9)	32 (3.7)	29 (3.4)	25 (2.8)	21 (3.3)	0 (0.0)	278 (3.3)
Both	340 (13.8)	11 (17.5)	338 (21.3)	247 (22.5)	189 (21.6)	206 (23.9)	230 (25.8)	183 (29.0)	0 (0.0)	1,744 (20.6)
Unknown/ Not Done	419 (17.0)	7 (11.1)	150 (9.5)	81 (7.4)	85 (9.7)	78 (9.0)	58 (6.5)	20 (3.2)	0 (0.0)	898 (10.6)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 101. Computer Use by Post Injury Year.** (Form IIs entered into the database since May 1, 2004.)

**Table 102** reflects internet or email usage by patients by post injury year, this includes electronic devices that access the internet. Overall, 46.7 percent of respondents use the internet or email daily, 28.9 percent do not own or have access to use a computer.

**Table 102. Internet or Email Usage by Post Injury Year.**

Internet/Email Use	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
Owns Computer Only	73 (3.0)	1 (1.6)	51 (3.2)	36 (3.3)	25 (2.9)	36 (4.2)	30 (3.4)	18 (2.8)	0 (0.0)	270 (3.2)
Daily	883 (35.9)	24 (38.1)	764 (48.1)	523 (47.7)	449 (51.3)	451 (52.3)	477 (53.5)	380 (60.1)	4 (66.7)	3,955 (46.7)
Weekly	243 (9.9)	10 (15.9)	173 (10.9)	128 (11.7)	80 (9.1)	72 (8.4)	75 (8.4)	41 (6.5)	1 (16.7)	823 (9.7)
Monthly	112 (4.6)	5 (7.9)	72 (4.5)	47 (4.3)	31 (3.5)	25 (2.9)	28 (3.1)	25 (4.0)	0 (0.0)	345 (4.1)
N/A, Doesn't own Computer	723 (29.4)	16 (25.4)	377 (23.8)	281 (25.6)	205 (23.4)	200 (23.2)	224 (25.1)	148 (23.4)	1 (16.7)	2,175 (25.7)
Unknown/Not Done	424 (17.2)	7 (11.1)	150 (9.5)	82 (7.5)	85 (9.7)	78 (9.0)	58 (6.5)	20 (3.2)	0 (0.0)	904 (10.7)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 102. Internet or Email Usage by Post Injury Year.** (Form IIs entered into the database since May 1, 2004)

The most common type of modified vehicle owned by participants or their families is a van (**Table 103**) used by 27.6 percent. The second most frequent vehicle is the car (12.3%). Overall, 43.3 percent do not own a modified vehicle. There is a trend for that percentage to drop across years, from 58.5 percent in year 1 to 29.7 percent in year 30.

**Table 103. Type of Modified Vehicle by Post Injury Year.**

Type Modified Vehicle	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
Does Not Own	1,437 (58.5)	28 (44.4)	725 (45.7)	474 (43.2)	302 (34.5)	258 (29.9)	255 (28.6)	188 (29.7)	1 (16.7)	3,668 (43.3)
Car	168 (6.8)	6 (9.5)	184 (11.6)	142 (12.9)	148 (16.9)	133 (15.4)	151 (16.9)	105 (16.6)	1 (16.7)	1,038 (12.3)
Van	379 (15.4)	18 (28.6)	409 (25.8)	332 (30.3)	266 (30.4)	311 (36.1)	357 (40.0)	263 (41.6)	4 (66.7)	2,339 (27.6)
Other	55 (2.2)	2 (3.2)	108 (6.8)	58 (5.3)	60 (6.9)	75 (8.7)	60 (6.7)	43 (6.8)	0 (0.0)	461 (5.4)
Combination	1 (0.0)	1 (1.6)	10 (0.6)	8 (0.7)	13 (1.5)	6 (0.7)	10 (1.1)	13 (2.1)	0 (0.0)	62 (0.7)
Unknown/Not Done	418 (17.0)	8 (12.7)	151 (9.5)	83 (7.6)	86 (9.8)	79 (9.2)	59 (6.6)	20 (3.2)	0 (0.0)	904 (10.7)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 103. Type of Modified Vehicle by Post Injury Year.** (Form IIs entered into the database since May 1, 2004.)

**Table 104** includes participants with no vehicle. Almost one quarter (23.4%) of the respondents transfer into their vehicle to drive. Another 7.2 percent drive from their wheelchairs, and 15.4 percent do not drive.

**Table 104. Driving Modified Vehicle by Post Injury Year.**

Drive Modified Vehicle?	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	349 (14.2)	19 (30.2)	257 (16.2)	184 (16.8)	122 (13.9)	130 (15.1)	144 (16.1)	96 (15.2)	1 (16.7)	1,302 (15.4)
Yes, From Wheelchair	38 (1.5)	2 (3.2)	77 (4.9)	98 (8.9)	75 (8.6)	91 (10.6)	127 (14.2)	100 (15.8)	1 (16.7)	609 (7.2)
Yes, Not from wheelchair	213 (8.7)	6 (9.5)	377 (23.8)	258 (23.5)	288 (32.9)	304 (35.3)	306 (34.3)	228 (36.1)	3 (50.0)	1,983 (23.4)
N/A, Doesn't Own	1,437 (58.5)	28 (44.4)	725 (45.7)	474 (43.2)	302 (34.5)	258 (29.9)	255 (28.6)	188 (29.7)	1 (16.7)	3,668 (43.3)
Unknown/Not Done	421 (17.1)	8 (12.7)	151 (9.5)	83 (7.6)	88 (10.1)	79 (9.2)	60 (6.7)	20 (3.2)	0 (0.0)	910 (10.7)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 104. Driving Modified Vehicle by Post Injury Year.** (Form IIs entered into the database since May 1, 2004.)

**Table 105** reflects cell phone usage by post injury year. Overall, 25.3 percent endorsed 'no' cell phone and 64.0 percent did use a cell phone.

**Table 105. Cell Phone Usage by Post Injury Year.**

Cell Phone	Post Injury Year n(%)									
	1	2	5	10	15	20	25	30	35	All Years
No	559 (22.7)	14 (22.2)	403 (25.4)	302 (27.5)	215 (24.6)	234 (27.1)	249 (27.9)	165 (26.1)	0 (0.0)	2,141 (25.3)
Yes	1,477 (60.1)	41 (65.1)	1,034 (65.2)	708 (64.5)	571 (65.3)	549 (63.7)	585 (65.6)	447 (70.7)	6 (100.0)	5,418 (64.0)
Unknown/Not Done	422 (17.2)	8 (12.7)	150 (9.5)	87 (7.9)	89 (10.2)	79 (9.2)	58 (6.5)	20 (3.2)	0 (0.0)	913 (10.8)
<b>Total</b>	<b>2,458</b>	<b>63</b>	<b>1,587</b>	<b>1,097</b>	<b>875</b>	<b>862</b>	<b>892</b>	<b>632</b>	<b>6</b>	<b>8,472</b>

**Table 105. Cell Phone Usage by Post Injury Year.**  
(Form IIs entered into the database since May 1, 2004.)

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