

Progression of Disability Benefits: A Barrier to Independence for Persons with Neurological Impairments

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Progression of Disability Benefits (PODB) is defined as the migration of workers with disabilities through a system of economic benefits resulting in their ultimate reliance upon Social Security Disability Income (SSDI). This study tracks the experience of 400 individuals with neurological impairments through the PODB, and compares them with a general disability population on key demographic characteristics. The authors submit that PODB is a clear impediment to independent living and suggest hopeful interventions that may interrupt PODB and by extension, maximize independent living for persons with neurological impairments.

It is a generally accepted principle in rehabilitation that one's prospects for independent living are linked inextricably to both vocational status and independence from economic disability support systems. Extensive research has been conducted regarding the employment of people with neurological impairments, and how employment potential can be both predicted and maximized (Fraser and Clemmons, 1999). Regarding economic support, however, far less is known about how persons with neurological impairments migrate through various systems of income replacement.

Recently, a new construct has been developed that can shed additional light on matters of independence and disability. PODB is defined as the migration of workers with work-limiting disabilities through a system of economic benefits resulting in their ultimate reliance upon SSDI (McMahon, Danczyk-Hawley, Reid, Flynn, Habeck, Kregel, and Owens, 2000). One study demonstrated that when return to work services were not successful following an impairment, the final "intervention of choice" was assisting the individual to acquire SSDI (Hunt, Habeck, Owens, & Vandergoot, 1996). The net effect was a shifting of both costs and responsibility from the private to the public sector. In recent years, enrollment in SSDI has been escalating, while the departure rate from SSDI for return to work has remained less than one percent (Habeck & Hunt, 1999). Thus, nearly all persons with disabilities that enroll in SSDI remain forever dependent on the system. In brief, any reduction in PODB would be desirable in terms of furthering the independent living objectives of community inclusion that often are associated with employment.

The purpose of this study is to expand upon the McMahon et al., (2000) study, by examining how the PODB phenomenon relates to neurological impairments. Specifically, the research questions are:

- How can we describe the movement of claimants with neurological impairments from short-term disability (STD) to long-term disability (LTD) to Social Security Disability Income (SSDI)?
- How does PODB for workers who incur neurological impairments differ from workers with disabilities in general?
- How do workers with various types of neurological impairments differ from each other in regards to age, gender, region, and employer industry?

DESCRIPTION OF THE DATABASE

The database was extracted from the UNUM/Provident Life Insurance Company, a large disability insurer, in April, 1999. Every case of STD filed with UNUM/Provident during calendar years 1994, 1995, and 1996 (known as the filing period) was included in the original data set. This group included 115,438 claims, from which the following were removed: 1,187 due to death; 35,437 due to pregnancy; 771 due to missing ICD-9 codes; and 726 because LTD claims were related to different STD claims prior to the filing period. With these deletions, the final population available for the study included 77,297 claims.

CHARACTERISTICS AND LIMITATIONS OF THE DATA SET

The master data set was compared to national trends during the reporting period and the following differences were noted in the original research (McMahon, et al., 2000) and are presented below. For these reasons, the data itself and the trends indicated by the data are interpreted with caution.

1. The UNUM/Provident data set contained proportionately more females, more services workers, more workers 25-44 years old and more workers from the Northeastern U.S.
2. The Unum/Provident sample had fewer workers in government, transportation and wholesale/retail trades; fewer workers age 15-24; and fewer workers from the Western U.S.
3. In order to minimize variations in the data attributable to claims handling, the sample includes only claimants' insured for both STD and LTD by UNUM/Provident.
4. Most claimants in this sample work for larger employers (i.e., 500 or more workers) that offered integrated benefit programs. These employers are likely to have higher levels of accommodation and Disability Management activity than would be expected of employers in general.
5. No work-related injuries were included in this study as those injuries are addressed through a different disability benefit system (i.e., worker compensation).

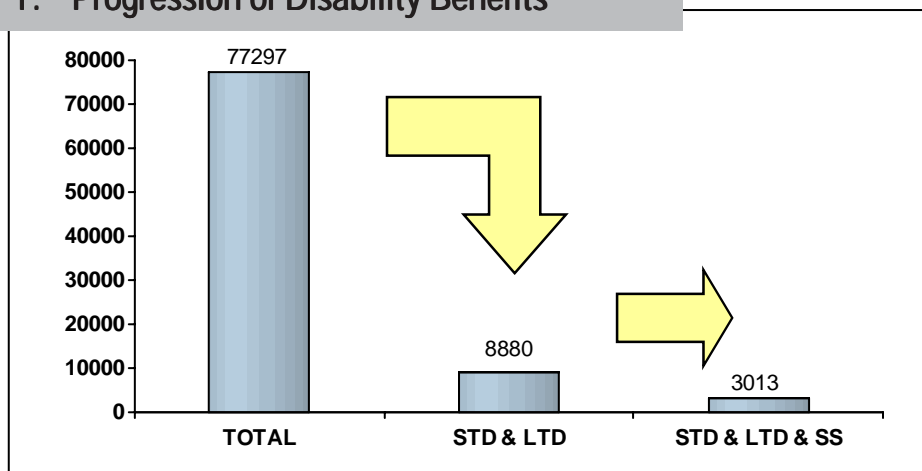
6. Variations in reporting practices and interpretation of disease definitions by medical providers inevitably will result in qualitative and quantitative biases that, in turn, affect the representativeness and completeness of the data set.
7. Impairment severity is not known.
8. At least 99.2% of all claims had sufficient opportunity to “mature” (i.e., reach SSDI status if they were going to do so).

DOCUMENTING AND DESCRIBING THE PROGRESSION OF DISABILITY BENEFITS

The General Disability PODB

The migration of all claimants in the population from STD (N=77,297) to LTD (N=8,880) to SSDI (N=3013) status was documented and is represented below in Figure 1. Of the 77,297 STD claimants who comprised the sample, 8,880 (11.5%) continued on to receive LTD benefits. From this group, 3,013 (33.9% of the LTD group; 3.95% of the STD group) progressed to SSDI disability benefits by the end of the study period. Approximately one in nine STD recipients progressed to LTD status; approximately one in three of these claimants progressed to SSDI status.

FIGURE 1: Progression of Disability Benefits



THE STUDY SAMPLE: EXTRACTION OF NEUROLOGICAL CLAIMS

For purposes of this study, neurological disability is defined as an impairment involving an injury to the brain in the form of an inflammatory condition, cerebrovascular condition, or skull fracture. Neurological impairments of the brain involving hereditary or

degenerative conditions were not included in this study. From the original population of 77,297, the study sample extracted for this study involved precisely 400 claims, each of which included the following information: claimant age, gender, ICD-9 disability code, region of residence, standard industrial code and presence/absence in LTD and SSDI status.

RESULTS

Analyses of these data were focused upon three areas:

- Comparing the PODB of the study sample with neurological impairments versus the PODB of the population with general disabilities;
- Exploring the characteristics of claimants with different types of neurological diagnoses (ICD-9 code); and
- Examining the PODB as it relates to neurological injuries across the variables of age, gender, geographic region, industry type and the neurological injury sub categories.

DIFFERENCES IN NEUROLOGICAL VERSUS GENERAL DISABILITY CLAIMANTS

Table 1 below compares the variables of age, gender, geographic region, and employer industry in the study sample (neurological) versus the population (general disabilities).

Table 1: Neurological vs. General Conditions

Disability Type	N	Mean Age	Percent of Claimants by Gender		Percent of Claimants by Region				Percent of Claimants by Industry				
			Male	Female	NE	S	MW	W	Goods	Gov/Trans	Retail	Finance	Services
<i>Neuro</i>	400	31.2	47.8	52.3	40.5	30	20	9.5	31	7.8	15.5	4	41.8
<i>General</i>	77199	37.1	35.7	64.3	39.2	30.3	20.2	10.3	30.1	5.6	11.9	8.3	44

Demographics

Compared to claimants with general disabilities, claimants with neurological injuries were younger and more likely to be male. In investigating claimants by industry type and impairment, the neurological sample includes more individuals working in the Government/Transportation and Retail industries and fewer working in the Finance and Service Industries. The Goods Producing industry (primarily manufacturing) reflected virtually no difference between groups. In examining claims patterns across geographic regions, there was no statistically significant difference between claimants with neurological versus general disabilities.

The Major Finding: Neurological Versus General PODB

There exists a significant relationship between study sample (i.e., neurological) versus the population (i.e., general disabilities) with respect to the migration of workers along the PODB. Individuals with neurological disabilities were far more likely to move to advanced disability status (i.e., LTD and SSDI) than individuals with general disabilities ($\chi^2(2, N=77297) = 12.10, p < 0.01$). Far more claimants with neurological impairments (11.5%) progressed from STD to LTD (but not SSDI) status versus 7.6% of the claimants with general types of disabilities. Similarly, 5.5% of claimants with neurological injuries progressed from STD to LTD and then to SSDI status compared to 3.9% of claimants with general disabilities. Overall, a total of 17% of claimants with neurological injuries moved to a more advanced disability benefit status (LTD and SSDI) versus 11.5% of claimants with general disabilities. See Table 2 below.

Table 2: Progression of Disability Benefits by Disability Benefit Level

Disability Type	% of Claimants by Advanced Disability Benefit Level		
	STD	LTD	SSA
<i>Neuro</i>	83	11.5	5.5
<i>General</i>	88.5	7.8	3.9

Study Sample Sub-Categories

The next set of analyses compared the 3 types of neurological injuries (Inflammatory, Cerebrovascular, and Skull Fractures) according to frequency of claims, demographic, and industry variables.

NEUROLOGICAL INJURY SUB-CATEGORIES

Data were available for 400 claimants (100%) with respect to type of neurological injury as reported in their ICD-9 code. In its entirety this sample consisted of 18 individual ICD-9 codes grouped into three subcategories: inflammatory conditions, cerebrovascular impairments and fractures to the skull as shown in Table e on the following page. Due to similarity of clinical presentation, the code “specific nonpsychotic mental disorders due to organic brain damage,” was merged with the code “inflammatory diseases of the central nervous system.” For similar reasons, the category “cerebrovascular impairment (CVA)” is limited to claimants 40-years-of-age and younger. As can be seen in Table C, fractures of the skull make up the largest subcategory of neurological disability claims in the study sample (50.3%) - many of these cases are known to involve TBI treatment- followed by inflammatory conditions (25.3%) and cerebrovascular diseases (24.5%).

Table 3: Neurological Injury Sub-Categories

ICD-9 Title	N	Percent of Total	ICD-9 Code	ICD-9 Title	N	Percent of Category
<i>Fractures</i>	201	50.30%	800	<i>Fracture of vault of skull</i>	30	7.50%
			801	<i>Fracture of base of skull</i>	8	2.00%
			802	<i>Fracture of face</i>	142	35.50%
			803	<i>Other and unqualified skull fractures</i>	20	5.00%
			804	<i>Multiple fractures involving skull or face with other bones</i>	1	0.30%
<i>Inflammatory conditions & organic brain damage</i>	101	25.30%	310	<i>Specific nonpsychotic mental disorders due to organic brain damage</i>	76	19.00%
			323	<i>Encephalitis, myelitis, and encephalomyelitis</i>	17	4.30%
			324	<i>Intracranial abscess</i>	6	1.50%
			325	<i>Phelbitis and thrombophlebitis of intracranial venous sinuses</i>	2	0.50%
<i>Cerebrovascular conditions</i>	98	24.50%	430	<i>Subarachnoid hemorrhage</i>	13	3.30%
			431	<i>Intracerebral hemorrhage</i>	7	1.80%
			432	<i>Other and unspecified intracranial hemorrhage</i>	3	0.80%
			433	<i>Occlusion and stenosis of precerebral arteries</i>	4	1.00%
			434	<i>Occlusion of cerebral arteries</i>	5	1.30%
			435	<i>Transient cerebral ischemia</i>	9	2.30%
			436	<i>Acute, but ill-defined cerebrovascular disease</i>	44	11.00%
			437	<i>Other and ill-defined cerebrovascular disease</i>	12	3.00%
			438	<i>Late effects of cerebrovascular disease</i>	1	0.30%

Demographics Differences Among the Sub-Categories

Figures 2 and 3 on the following page detail results regarding the relationship of neurological injury categories and select demographic variables. A small but statistically significant gender difference emerged among subjects in our sample (i.e., overall, there are slightly more female than male claimants with neurological injuries, 52.3% females vs. 47.8% males). Within categories, claimants with inflammatory and cerebrovascular impairments were

more likely to be female. However claimants within the fractures of the skull category were more likely to be male, a demographic finding consistent with TBI national statistics.

FIGURE 2: Development Level of DM Activities

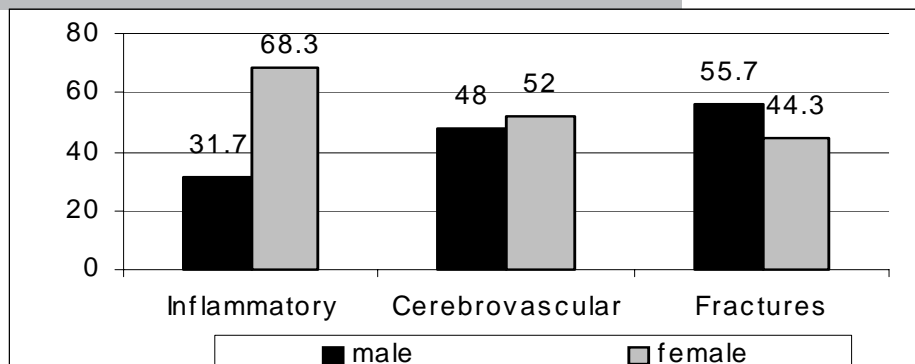


Figure 3 below presents results regarding the relationship of neurological impairment subcategories and age. Once again, a statistically significant relationship emerges for all neurological injury categories, the total number of claims reach their peak frequency within the 25-34 age group and then decrease with each subsequent age category. However, the cerebrovascular and skull fracture categories show a large decrease in representation with an increase in age whereas the inflammatory category shows relatively small decreases until the 55+ age category. Since the cerebrovascular category contains only individuals 40-years-of-age or younger, data are absent from the 45-54 and 55+ age groups. Thus, trend data involving age should be viewed with caution.

FIGURE 3: Percentage of Neurological Disability Sub-categories by Age

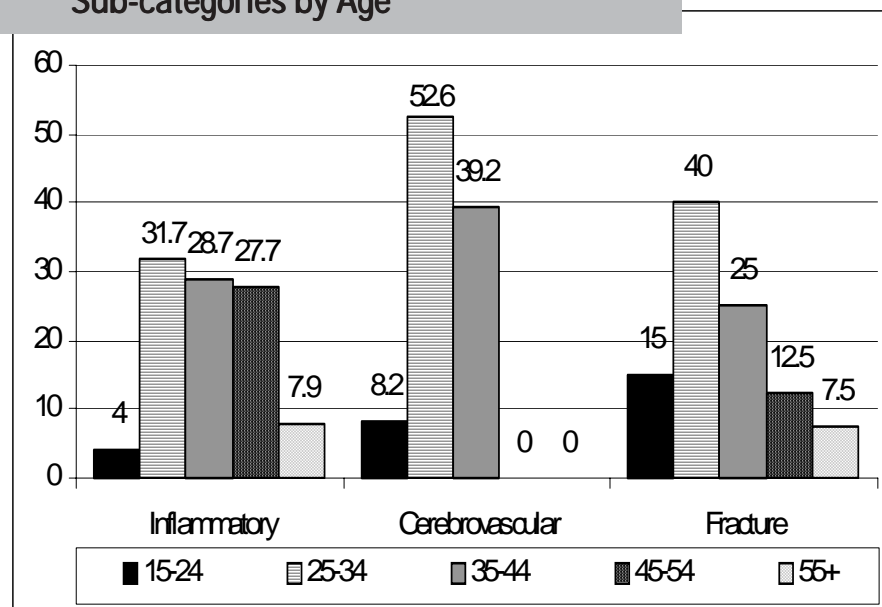


Table 4: Demographic Variables by Neurological Injury Category

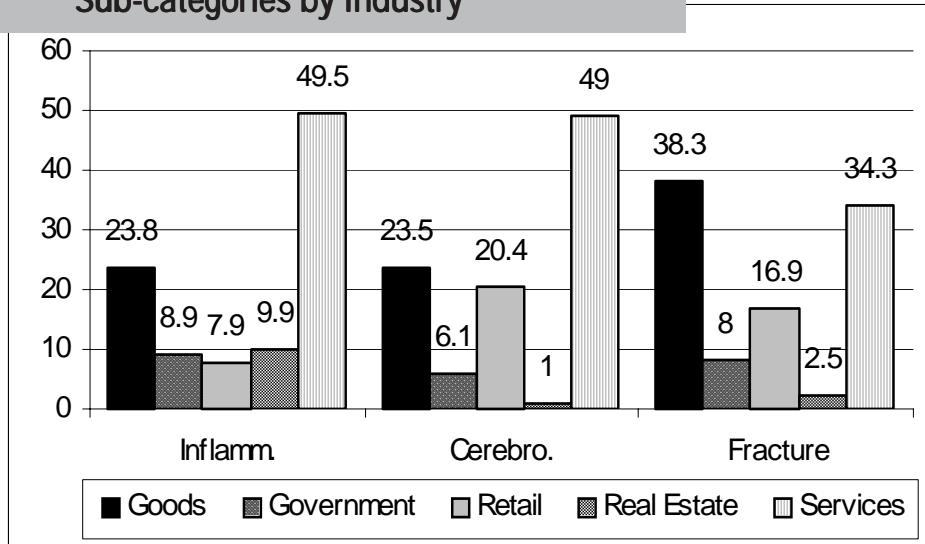
		ICD-9 Title			Total
		Inflammatory	Cerebrovascular	Fracture	
<i>Age - N and percent of Neurological Injury Clusters</i>	15-24	4 4.00%	8 8.20%	30 15.00%	42 10.60%
	25-34	32 31.70%	51 52.60%	80 40.00%	163 41.00%
	35-44	29 28.70%	38 39.20%	50 25.00%	117 29.40%
	45-54	28 27.70%	0 0	25 12.50%	53 13.30%
	55+	8 7.90%	0 0	15 7.50%	23 5.80%
<i>Age - Percent of Age Groups</i>	15-24	9.50%	19.00%	71.40%	100%
	25-34	19.60%	31.30%	49.10%	100%
	35-44	24.80%	32.50%	42.70%	100%
	45-54	52.80%	0	47.20%	100%
	55+	34.80%	0	65.20%	100%
	Total	25.40%	24.40%	50.30%	100%
<i>Gender - N and Percent of Neurological Injury Clusters</i>	Male	32 31.70%	47 48.00%	112 55.70%	191 47.80%
	Female	69 68.30%	51 52.00%	89 44.30%	209 52.30%
<i>Gender - Percent of Age Groups</i>	Male	16.80%	24.60%	58.60%	100%
	Female	33.00%	24.40%	42.60%	100%
	Total	25.30%	24.50%	50.30%	100%

Geographic Region

A Chi-square test of independence revealed that the variables of neurological injury and geographic region are not significantly related ($\chi^2 (6, N= 400) = 4.17, p < 0.65$. Phi equals .102 $p < .654$).

Industry

Assessing the relationship across type of industry and neurological disability subcategories, a chi-square test of independence revealed that these variables were not independent. Data ranged from a low of 6.3% to a high of 62.5%. Across all industries, both the Goods Producing and Service industries had more claimants representing all subcategories. Yet, while claimants with Inflammatory and cerebrovascular conditions primarily are represented in the Service industry (49.5% and 49%), claimants with skull fractures are primarily represented in the Goods Producing industry (38%). See Figure 4 on the following page.

FIGURE 4: Percentage of Neurological Disability Sub-categories by Industry**Table 5: Geographic Region and Industry Type by Neurological Injury Categories**

		Neurological Injury Categories			Total
		Inflammatory	Cerebro-vascular	Fracture	
<i>Geographic Region - N and Percent of Neurological Category</i>	<i>Northeast</i>	45 27.80%	39 24.10%	78 48.10%	162 100%
	<i>South</i>	26 21.70%	34 28.30%	60 50.00%	120 100%
	<i>Midwest</i>	18 22.50%	19 23.80%	43 53.80%	80 100%
	<i>West</i>	12 31.60%	6 15.80%	20 52.60%	38 100%
<i>Industry Type - N and Percent of Neurological Category</i>	<i>Goods</i>	24 19.40%	23 18.50%	77 62.10%	124 100%
	<i>Government</i>	9 29.00%	6 19.40%	16 51.60%	31 100%
	<i>Retail</i>	8 12.90%	20 32.30%	34 54.80%	62 100%
	<i>Real Estate</i>	10 62.50%	1 6.30%	5 31.30%	16 100%
	<i>Services</i>	50 29.90%	48 28.70%	69 41.30%	167 100%

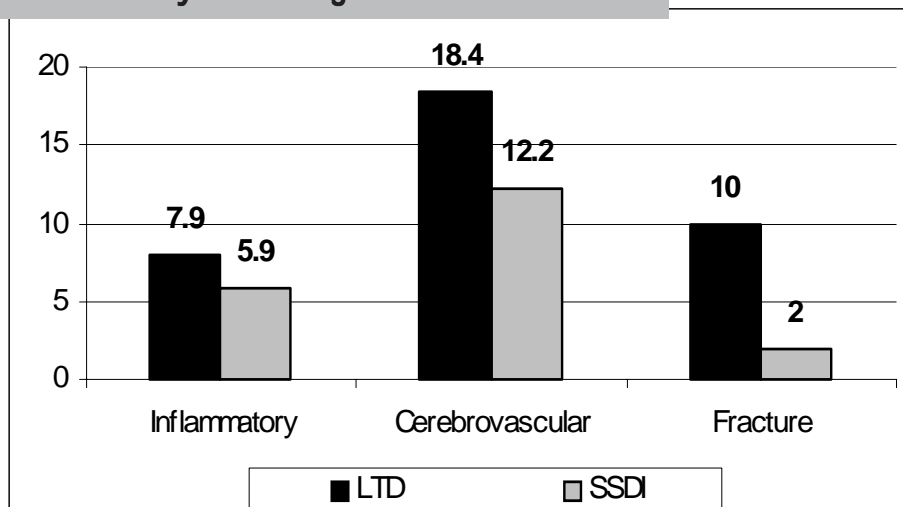
SECOND MAJOR FINDING: SUB-CATEGORY PODB COMPARISONS

PODB and Neurological Injury Sub-categories

Data from claimants with neurological injuries were examined in light of their migration across disability benefit systems (i.e., STD, LTD, and SSDI). A Chi-square test revealed a significant relationship between the neurological impairment sub-categories and migration to more advanced PODB levels. Among the sub-categories, claimants with cerebrovascular impairments were the most likely to advance to LTD and SSDI (30.6%). Claimants with head fractures (traumatic brain injuries) were the second most likely to advance to SSDI (2.0%). Conversely, claimants with inflammatory conditions were the least likely to move on to LTD (7.9%); however, once they did advance to LTD, they were more likely than claimants with head fractures to move on to SSDI (5.9% vs. 2.0%).

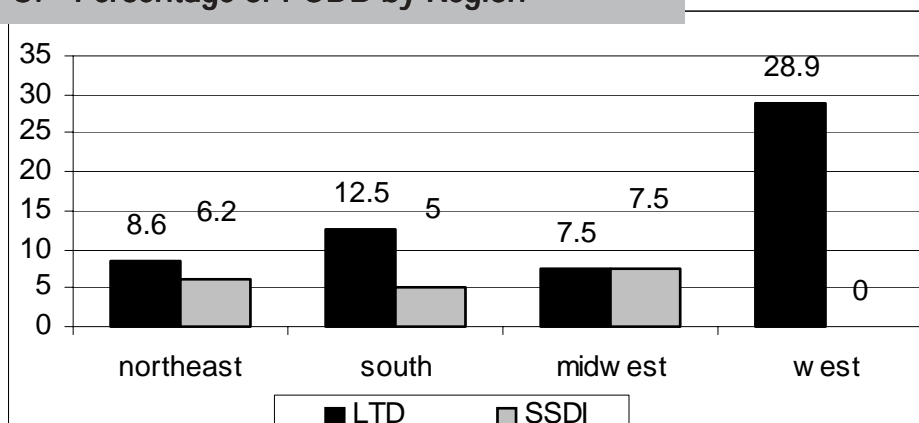
Table 4: Demographic Variables by Neurological Injury Category

		Highest Benefit Level (%)		
		STD	LTD	SSDI
<i>Age</i>	<i>15-24</i>	<i>78.6</i>	<i>16.7</i>	<i>4.8</i>
	<i>25-34</i>	<i>88.3</i>	<i>7.4</i>	<i>4.3</i>
	<i>35-44</i>	<i>81.2</i>	<i>13.7</i>	<i>5.1</i>
	<i>45-54</i>	<i>84.9</i>	<i>11.3</i>	<i>3.8</i>
	<i>55+</i>	<i>60.9</i>	<i>21.7</i>	<i>17.4</i>
<i>Gender</i>	<i>Male</i>	<i>81.2</i>	<i>13.6</i>	<i>5.2</i>
	<i>Female</i>	<i>84.7</i>	<i>9.6</i>	<i>5.7</i>
<i>Geographic Region</i>	<i>Northeast</i>	<i>85.2</i>	<i>8.6</i>	<i>6.2</i>
	<i>South</i>	<i>82.5</i>	<i>12.5</i>	<i>5.0</i>
	<i>Midwest</i>	<i>85.0</i>	<i>7.5</i>	<i>7.5</i>
	<i>West</i>	<i>71.1</i>	<i>28.9</i>	<i>0</i>
<i>Industry Type</i>	<i>Goods</i>	<i>86.3</i>	<i>9.7</i>	<i>4</i>
	<i>Government</i>	<i>67.7</i>	<i>22.6</i>	<i>9.7</i>
	<i>Retail</i>	<i>83.9</i>	<i>9.7</i>	<i>6.5</i>
	<i>Real Estate</i>	<i>93.8</i>	<i>0</i>	<i>6.3</i>
	<i>Services</i>	<i>41.3</i>	<i>45.7</i>	<i>40.9</i>
<i>Neurological Injury Category</i>	<i>Inflammatory/Organic</i>	<i>86.1</i>	<i>7.9</i>	<i>5.9</i>
	<i>Cerebrovascular</i>	<i>69.4</i>	<i>18.4</i>	<i>12.2</i>
	<i>Fractures</i>	<i>88.1</i>	<i>10</i>	<i>2</i>
<i>Total</i>		<i>83</i>	<i>11.5</i>	<i>5.5</i>

FIGURE 5: Percentage of PODB by Neurological Disability Sub-categories

Region

Movement across disability benefits for claimants with neurological impairments is related to the region of claimant residence. A Chi-square analysis of the PODB by region revealed that these two categories are not independent of each other ($\chi^2(6, N = 400) = 16.07, p < 0.013$). Phi is 0.20, $p < 0.013$. The percentage of claimants with neurological injuries progressing to LTD ranges from a low of 7.5% in the Midwest to a high of 28.9% in the West. Those claimants progressing to SSDI ranges from a low of 0% in the West to a high of 7.5% in the Midwest. In addition, while the West had the highest percentage of claimants with neurological injuries in advanced disability benefit status (28.9%), none moved to SSDI (0%). See Figure 6 below.

FIGURE 6: Percentage of PODB by Region

Age, Gender and Industry Variables

Chi-square tests of independence on the relationship between PODB status and claimant age, gender, and industry variables were not significant.

DISCUSSION

The authors investigated and analyzed various relationships among the variables of disability (neurological vs. general), neurological impairment subcategories, age, gender, geographic area, employer industry, and disability benefit status. In the study sample, neurological impairments—defined as conditions involving an injury to the brain in the form of an inflammatory condition, cerebrovascular condition, and skull fracture—account for less than 0.005% of the overall disability benefit claims available in the UNUM/Provident data set. When compared to general disabilities, claimants with neurological disabilities tended to be younger (in part due to preselection for the CVA claims) and male. Claimants with neurological disabilities tended to be better represented in the Goods and Services Industries, than in Government/Transportation and Retail Industries. Most important, neurological claimants also were more likely to progress to advanced disability benefit levels of LTD and SSDI than individuals with general disabilities. Indeed, 17% of claimants with neurological disabilities progressed to advanced disability benefit levels (LTD and SSDI) compared to 11.5% of the general disability population.

When the study sample was further divided into three ICD-9 subcategories, a simple majority had a neurological impairment resulting from a head fracture. Claimants within this sub-category also were more likely to be male. With respect to PODB migration, progression was related clearly to the sub-category of neurological impairment. Specifically, claimants with cerebrovascular impairments were more likely to move forward to advanced disability benefit levels.

IMPLICATIONS

In general, these data suggest that individuals with neurological impairments are more likely to move on to advanced levels of disability benefits. Future research might explore possible reasons for the enhanced PODB problem. For example, it may be attributable to:

1. The unique functional limitations characteristics of persons with neurological injuries (i.e., are these limitations more work-limiting)?
2. Environmental barriers that are unique to neurological impairments (i.e., are these barriers more work-limiting)?
3. Attitudinal barriers that result in discrimination against persons with neurological impairments (i.e., are these attitudes more work-limiting)?

The results of this study provide an initial attempt to document the PODB as it relates to claimants with neurological impairments. Future studies should further analyze the PODB among workers with neurological impairments while accounting for additional workers with workplace factors that may influence the migration. Studying additional information regarding impairment etiology and severity, claimant occupation, employee benefit and compensation programs and employer policies and practices related to neurological impairment would allow us to more fully understand the PODB and interaction with other employee and employer variables.

It is clear that enhanced levels of PODB are in clear opposition to the goals of the independent living movement (i.e., community integration and return to work). Higher than average rates of placement into the SSDI system does not bode well for return to work and the enhanced independence it affords.

The PODB research team is currently exploring the potential for Disability Management (DM) programs to interrupt the progression—which attempt to prevent disability, reduce the cost impact of disability and provide mechanisms to promote maximum functional recovery and return-to-work—to interrupt the PODB migration. Integrated DM refers to those programs that are implemented across all disability plans (e.g., STD, LTD, worker compensation, and salary continuation) in addition to group health plans. In addition to integration, DM programs are characterized by transitional employment (modified work duty), aggressive case management and return-to-work practices; use of independent medical examinations; and the use of behavioral health interventions and/or employee assistance programs. DM programs have exploded in popularity among larger employers. For example, in one recent survey of major employer, 46% reported having integrated DM programs in 1998 compared to just 26% in 1995 (Washington Business Group on Health and Watson Wyatt Worldwide Consulting Group, 1999). To the extent that DM programs continue to proliferate, persons with neurological impairments will experience greater labor force participation and reduced dependence on SSDI.

CONCLUSION

The Ticket to Work and Work Incentives Improvement Act of 1999 (TWWIIA) provides states with new options and flexibility to make it possible for people with disabilities to join the workforce. TWWIIA Title I establishes the “Ticket to Work and Self Sufficiency Program.” This policy will make more service providers available to SSDI beneficiaries seeking vocational rehabilitation and other support services to assist them in obtaining and maintaining employment. Under the Ticket to Work program, tickets will be issued to SSDI beneficiaries, who will have the option purchasing services from providers of their choice (i.e., employment networks). Employment networks also will be able to choose who they serve under the program, which is expected to be available in all states in 2004. TWWIIA Title II permits states to extend the availability of Medicare and Medicaid coverage so SSDI recipients can return to work without fear of losing these valuable benefits. To the extent that TWWIIA is effective, persons with neurological impairments will experience greater labor force participation and reduced dependence on SSDI.

At the root of each type of program (DM and TWWIIA) is the desire to reduce disability income replacement payments. The challenges of vocationally restoring persons with severe neurological impairments to competitive employment have been well-docu-

mented (McMahon and Shaw, 1989; Brooks, McKinlay, & Symington, 1987; Prigatano, Klonoff, & O'Brien, 1994). Indeed, it is possible that no group of persons with disability represents more complex issues. These notwithstanding, aggressive vocational interventions have been successful in as many as 55 to 60% of clients served (Fraser & Clemmons, 1999).

The independent living model is consistent to the goals of most people with disabilities who want to control their lives, and live as independently and productively as possible in their communities. Both disability rights advocates and researchers have argued that the goals and policies of other disability laws and programs, including the Social Security disability programs, need to be made consistent with the independent living goals of the ADA (National Council on Disability, 1986, 1988; DeJong & Batavia, 1990; Batavia, 1998). This growing consensus both within the disability community and among the public at large suggests that there will be growing political support for programs that allow people with disabilities to live and work independently (Batavia, 1998). In the process, interventions with the potential to abort or at least minimize the PODB phenomenon will be viewed as progressive. Conversely, PODB provides an additional tool which progress toward IL can be measured.

In conclusion, the authors believe that results of this study provide an initial attempt to document the PODB as it relates to claimants with neurological impairments. This descriptive study primarily allowed for a basic understanding of the variables that may influence a claimant's advancement in disability benefits. Future studies should further analyze the PODB among workers with neurological impairments while for accounting for additional worker and workplace factors that may influence the migration. Studying additional information regarding disability etiology and severity, claimant occupation, employee benefit and compensation programs, and employer policies and practices related to disability, would allow us to more fully understand the PODB and its interaction with other employee and employer variables.

Batavia, A. Prospects for a National Personal Assistance Services Program: Enhancing Choice for People With Disabilities. *American Rehabilitation*. 24: 2-3. 1998.

Brooks N, McKinlay W, & Symington C. Return to work within the first seven years of severe head injury. *Brain Injury*. 1:5-19. 1987.

DeJong, G., & Batavia, A.I. The Americans with Disabilities Act and the current state of disability policy. *Journal of Disability Policy Studies*. 1: 65-75. 1990.

Fraser, R.T., & Clemmons, D.C. (Eds.): Traumatic brain injury rehabilitation: Practical vocational, neuropsychological, and psychotherapy interventions. Delray Beach, FL: CRC Press, 1999.

Habeck, R.V., & Hunt, H.A. Disability Management Perspectives. *American Rehabilitation*. 25: 21-39. 1999.

Hunt, H.A, Habeck, R.V., Owens, E., & Vandergoot, D. Disability and Work: Lessons form the Private Sector. In: *Disability, Work and Cash Benefits*. J.L. Mashaw, V. Reno, R.V. Burkhauser (Eds.) Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. Pages 223-244, 1996.

McDowell, F.H. Neurorehabilitation. (Neurology: From Basics to Bedside). The *Western Journal of Medicine*. 161: 323- 328. 1994.

McMahon, B.T., Danczyk-Hawley, C.E., Reid, C, Flynn, B.S., Habeck, R., Kregel, J., & Owens, P. The Progression of Disability Benefits. *Journal of Vocational Rehabilitation*. 15: 3-15. 2000.

McMahon, B.T., & Shaw, L.R. (Eds.): Work Worth Doing, Advances in Brain Injury Rehabilitation. Delray Beach, FL: St. Lucie Press, 1991.

National Council on Disability.. *Toward independence*. Washington, DC: National Council on Disability. 1986.

National Council on Disability. *On the threshold of independence*. Washington, DC: National Council on Disability. 1988.

Prigatano GP, Klonoff PS, & O'Brien KP. (1994). Productivity after neuropsychologically oriented milieu rehabilitation. *Journal of Head Trauma Rehabilitation*. 9:91-102. 1994.

United States General Accounting Office: *Pass Program: SSA Work Incentive for Disabled Beneficiaries Poorly Managed*. Report to the Committee on Finance, U.S. Senate, and the Committee on Ways and Means, U.S. House of Representatives, GAO/HEHS-96-51. 1996.

Washington Business Group on Health and Watson Wyatt. *Staying @ Work - Increasing Shareholder Value Through Integrated Disability Management* (Third annual survey report). Washington, DC, 1999.

