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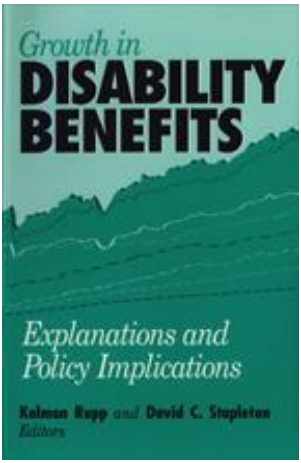

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4 Determinants of Duration on the Disability Rolls and Program Trends

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Discussions of factors causing the increases in social security disability caseloads usually feature rises in the number of awards. Changes in the number of new awardees, however, do not directly translate into caseloads; duration is the essential link. Those who stay on the rolls for a long time contribute disproportionately to caseloads, and therefore to program cost. A better understanding of factors affecting duration on the disability rolls should contribute to improvements in our ability to project future caseloads, to assess the effects of policy alternatives on caseloads, and to identify promising interventions designed to contain caseload growth. Duration on the rolls can be seen both as a function of factors affecting selection into the Supplemental Security Income (SSI) and Social Security Disability Insurance (DI) programs and as the result of factors directly affecting program exits and reentry. Selection into the SSI and DI disability programs is affected by the disability and economic criteria of eligibility. SSI and DI share the disability selection criteria. The severity of disability criteria exerts two contrasting effects on duration: the relatively high mortality risk reduces expected duration, while low recovery associated with severely disabling conditions increases it.

SSI and DI differ in terms of economic eligibility. DI requires that the person meet an insured status based on recent work activity. It is important that, while the DI-insured status is a precondition of entry, it does not affect exits from the rolls. In contrast, SSI is means-tested, and therefore financial eligibility factors (changes in income and assets) form a potential source of exits and reentry. Some people qualify for both SSI and DI benefits. Over the years, the disability and eco-

nomic eligibility criteria of DI and SSI interact with largely exogenous demographic and economic factors to influence duration.

Programmatic variables also directly affect duration by influencing exits and reentry. Such variables include work incentive provisions, continuing disability reviews, vocational rehabilitation, and various rules concerning suspensions, terminations and return to the rolls. Some of these variables directly affect program eligibility (e.g., Continuous Disability Reviews [CDRs]), while others are expected to affect duration on the rolls through altering behavior (e.g., vocational rehabilitation). All of these variables affect the generosity of the benefits and therefore may have indirect effects through altering application behavior.

The purpose of this paper is to provide an overview of the factors affecting duration on the DI and SSI disability rolls based on previous studies and original research by the authors, and to analyze implications for caseload growth, projections, and policies. Several previous studies analyzed duration on the SSI and DI rolls on the basis of micro data from the Social Security Administration's administrative records systems. Most described the experiences of a single annual cohort of awardees using a fixed (e.g., two- or four-year) follow-up window (e.g., Treitel 1979; Bye, Riley, and Lubitz 1987; Scott 1989; Bye et al. 1991). Hennessey and Dykacz (1992, 1993) compared two annual cohorts on the basis of a four-year follow-up window. With the single exception of Scott (1989) focusing on SSI disability stays, the above studies analyzed duration on the DI rolls among DI awardees, some of whom may have had concurrent unobserved SSI disability benefit receipt experience. Two studies (Hennessey and Dykacz 1989; Rupp and Scott 1995) utilized a much longer follow-up observation period (nine years and ten years, respectively), and used statistical methods to adjust for the lack of complete data on the completion of first DI spells (right censoring) and on first spell and total duration (including multiple spells) data for the SSI disability program. These are the only two previous studies that presented mean duration statistics that are adjusted for censoring bias. Hennessey and Dykacz (1989) based their estimates on the experience of a single (1972) annual cohort of DI awardees, while Rupp and Scott (1995) utilized a data file containing multiple annual cohorts of SSI disability awardees and based their estimates of mean duration on the experience of persons first awarded pay-

ments during 1974–1982. They also conducted comparisons of duration patterns in DI, SSI, and Aid to Families with Dependent Children. Other relevant previous studies looked at terminations (Schmulowitz 1973), analyzed the postrecovery experience of DI beneficiaries (Dykacz and Hennessey 1989), and compared the health and earnings of DI beneficiaries with the experience of rejected disability applicants (Bound 1989). Treitel (1979) analyzed the outcomes of appeals by initial DI denials and presented six-year follow-up data on death rates among rejected applicants. Only one previous study focused on the implications of trends in the composition of disability awardees on duration (Chirikos and Rupp 1992; Chirikos 1993). The study was based on aggregate data on awardees and a secondary analysis of micro data on duration, but was limited to DI.

AWARDEE CHARACTERISTICS AND DURATION

In this section we describe the effects of key awardee characteristic variables on duration and analyze the effect of the changing mix of awardees along these dimensions on trends in expected duration on the DI and SSI disability rolls. We will focus on the effects of age, gender, and diagnosis.

- Age is expected to affect duration because of its negative effect on the length of exposure to potential program participation, the positive relationship between age and mortality risk, and the negative relationship between age and the probability of return to work. The first two factors suggest a negative relationship between age at award and duration, while the third one is expected to affect duration in the opposite direction.
- Gender may affect duration because of the lower mortality risk of females in the general population, although this may be clouded by selectivity in the award process. Also, work-related suspensions may be affected by gender differences, since men and women differ in work histories and work-related incomes.

- Diagnosis fundamentally affects mortality risk, as well as the nature and severity of functional limitations and work disabilities affecting the opportunity costs of return to work.

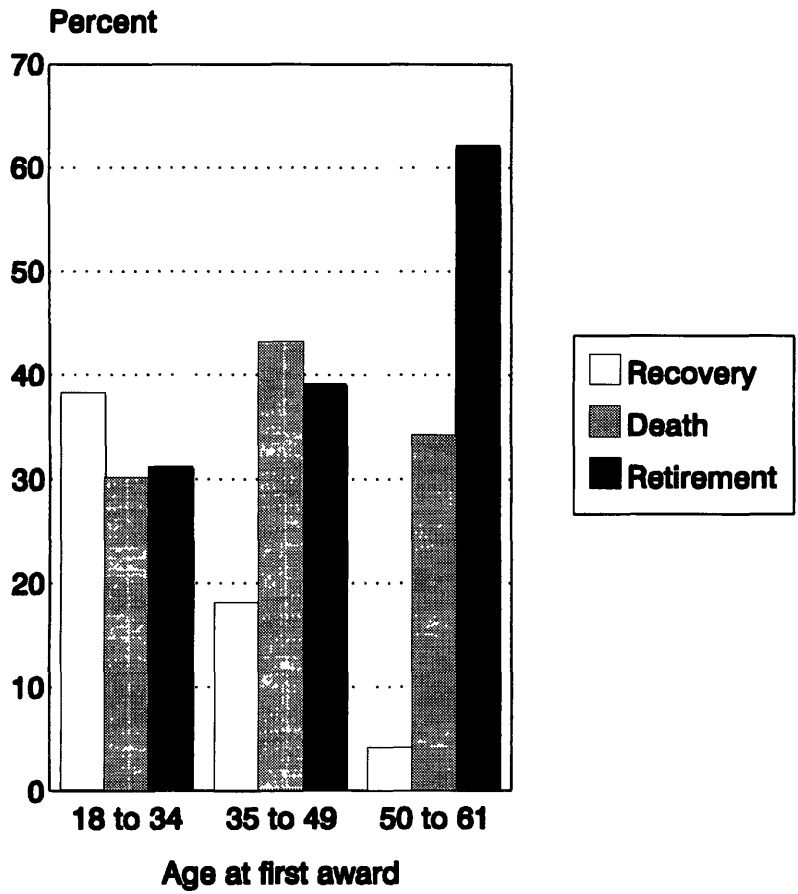
We will analyze duration on the DI and SSI disability rolls separately due to the current lack of comprehensive event history data for both programs within a unified framework. In the first half of this section we will focus on DI awardees, some of whom received SSI benefits for many years, while others, particularly those applying for both programs, received them for a short period of time. According to our previous estimates (Rupp and Scott 1995), approximately 75 percent of awardees applying for both DI and SSI benefits complete their first SSI payment eligibility spell for reasons of excess income, presumably largely as a result of the start of DI payments. We can infer that the bulk of the disability payment experience of these concurrent awardees consists of duration on the DI rolls. Since concurrent awardees are implicitly reflected in the DI duration data, and because of the predominance of early SSI exits for this group, the second half of this section focuses on nonconcurrent SSI awardees, i.e., persons initially eligible for SSI but not DI payments.

Duration on DI: Characteristics and Trends

There are three principal reasons for the suspension or termination of DI benefits: medical or work-related recovery, death, and retirement (conversion to the old-age component of social security at age 65). Overall, more than half of first DI disability spells end with retirement, more than a third are terminated due to death, and only 11 percent recover. Gender differences are dominated by the lower mortality risk of females. There is a strong negative relationship between age and the probability of recovery (Chart 4.1).

As age at award increases the probability of death increases, but the numbers also indicate that the competing outcome of conversion to the retirement program overtakes as the main reason for termination at the older age groups. Diagnostic differences are also marked, particularly among younger awardees. We note that changes in program rules, to be discussed later in more detail, play an important role in a beneficiary's recovery. In particular, changed work incentives, such as the introduction of the extended period of eligibility, changes in the number of

Chart 4.1 Reason for First DI Exit



CDRs, and the introduction of the medical improvement standards might have substantially altered the probability of recovery during the last two decades.

The net effect of age on expected duration is negative (Table 4.1). While overall expected length of first spells varies substantially by diagnosis—ranging from the low of 3.4 years for neoplasms to the high of 15.6 years for mental disorders, age differences are also important, especially for mental illness and nervous system disorders, where the expected duration of first spells is around 25 years in the youngest age group.

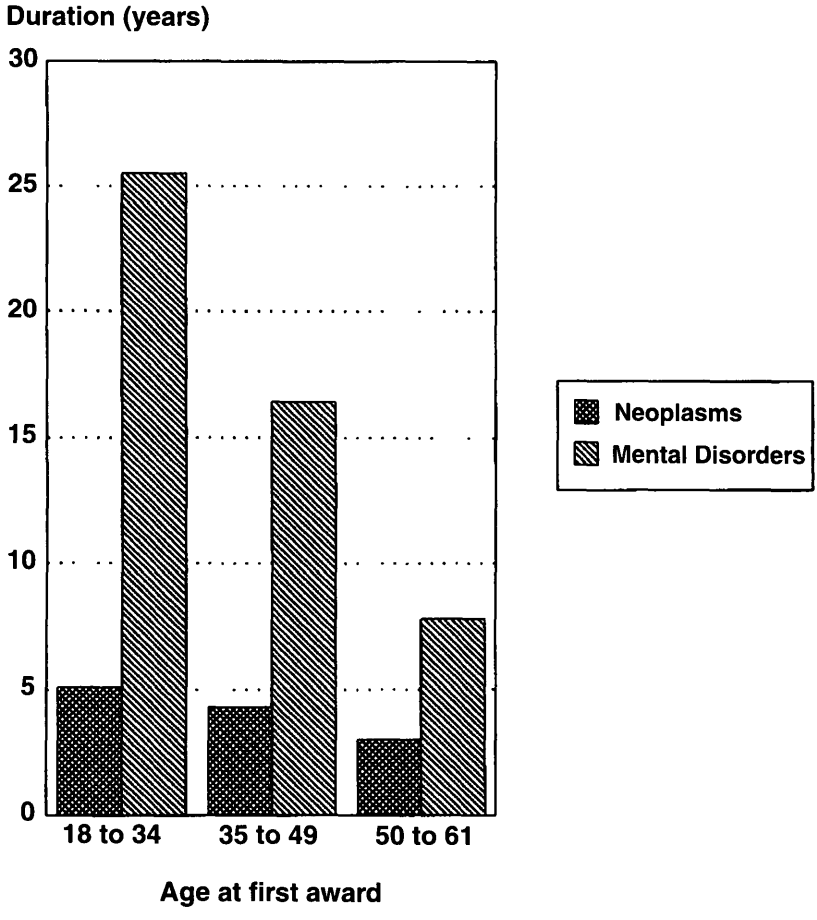
As expected, diagnostic differences are strongest in the youngest group and least pronounced among 50- to 61-year-olds (Chart 4.2). The lengths of stay shown in Table 4.1 represent the first uninterrupted

Table 4.1 Estimated Average Length of First DI Spells by Age and Diagnosis, 1972 Awardees (in years)

Diagnosis	Age group			All ages
	18–34	35–49	50–61	
Infective	7.4	8.8	6.7	7.6
Neoplasms	5.1	4.3	3.0	3.4
Endocrine	11.1	11.7	6.9	8.3
Mental disorders	25.5	16.4	7.8	15.6
Nervous system	23.4	16.2	7.4	12.5
Circulatory	16.7	11.6	6.4	7.5
Respiratory	15.9	12.4	6.3	7.3
Digestive	9.0	8.9	5.8	7.0
Geritourinary	9.5	9.6	5.4	7.5
Musculoskeletal	15.4	14.7	7.6	10.0
Congenital abnormalies	21.8	15.0	6.9	13.5
Accidents	11.8	11.2	7.4	9.9
Other	24.2	14.5	7.2	12.0
All diagnoses	**18.4**	**12.5**	**6.5**	**9.3**

SOURCE Hennessey and Dykacz (1989, pp. 10, 12).

Chart 4.2 Average Length of First DI Spells



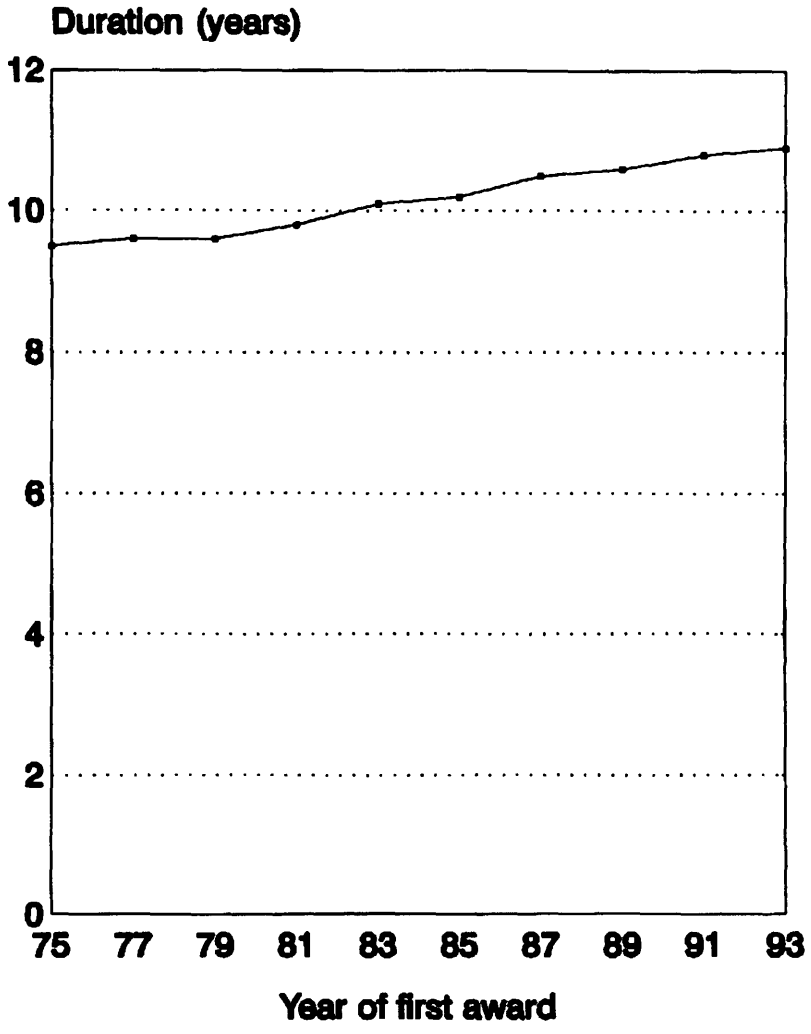
stay on the DI rolls. We do not currently have good data on expected total duration on the DI disability rolls that would account for multiple spells. Accounting for multiple spells is potentially important, because some beneficiaries who leave the rolls may subsequently return. Based on data by Dykacz and Hennessey (1989), the authors estimated that accounting for multiple spells may result in an increase in mean duration of as little as a 0.4 years, from the 9.3 years average presented in Table 4.1 to 9.7 years in the aggregate (Rupp and Scott 1995).

Given the obvious importance of age and diagnosis in affecting duration, it is natural to ask whether changes in the mix of awardees along these characteristics through time resulted in marked changes in the expected duration of successive cohorts of DI awardees. The proportion of younger awardees (aged 34 years or less) has increased from 13.5 percent in 1975 to 19.3 percent in 1993. The data also show some marked shifts in the mix of awardees by diagnosis. The proportion of awardees with a primary diagnosis of mental disorders has increased from 11.5 percent in 1975 to 26.1 percent in 1993, while the proportion of awardees in the circulatory disorders category decreased from about 30 percent in 1975 to 14 percent in 1993.

By combining information on the changing mix of awardees by age with disaggregated data on spell length for subgroups identified by age, it is possible to simulate mean spell length over time. Our estimates reflect the effect of changes in the age mix of new awardees on the expected mean length of first spells. Changes in the age mix of awardees produce a slow upward trend in expected duration from about 9 years in 1960 to about 11 years in 1992; most of the estimated increase occurred since the early 1980s (Chart 4.3).

We did some additional work to see if the addition of diagnostic detail would change the results of the simulation substantially. We tested this hypothesis by conducting an alternative simulation using information on mean duration of first spells by age and diagnosis and data on the joint distribution of awardees by age and diagnosis for 1975 and 1993. The results of the two simulations were virtually identical, suggesting that using age-specific information for the simulation produces robust results with respect to diagnosis. This is an important finding with respect to projection methodology highlighting the primary importance of the age distribution of new awardees for expected duration. We also compared our results with those of Chirikos (1993),

Chart 4.3 Simulated Average Length of First DI Spells



who used a different methodology but arrived at results consistent with ours. This provides further evidence concerning the paramount importance of the age mix of new awardees.

Changes in the age mix of new awardees reflect a variety of forces, including changes in demographics (e.g., aging of the baby boom generation), epidemiological trends in the incidence of various disabling conditions with various age distributions of onset, and changes in the Social Security Administration (SSA) regulations (e.g., mental impairment regulations). Thus the results reflected in Chart 4.3 cannot simply be attributed to demographics alone. In order to better understand the role of demographics in explaining our results, we conducted an analysis of the effect of changes in the age mix of the DI-insured population on duration. Changes in the age mix of the DI-insured population between 1975 and 1993 reflects largely, though not exclusively, the aging of the baby boom generation and therefore are indicative of demographic shifts in the U.S. population. In order to estimate the effect of changes in the age mix of the DI-insured population, we analyzed the effect of year-to-year changes in the age mix of the DI-insured population on duration, assuming unchanged incidence rates between successive years and using the age-specific duration estimates used in the previous analysis that produced Chart 4.3. In our simulation we updated the incidence rate assumptions annually.

Actuarial data show that the proportion of younger (18 to 34 years old) DI-insured workers peaked during the early 1980s, while the proportion of older insured workers declined until fairly recently. Much of the overall decline in the average age of DI-insured workers between 1975 and 1993 is attributable to an increase in the proportion of middle-aged (35 to 49 years old) DI-insured workers at the expense of older (50 to 61 years old) DI-insured workers.

Our analysis shows that a substantial portion of the increase in the mean duration of first DI spells we attributed to changes in the age mix of DI awardees can be explained by demographics, but other factors contributed almost as much. We estimate that about half (0.8 years) of the 1975–1993 increase in expected duration (1.4 years) is attributable to changes in the mix of the DI-insured population. The rest (0.6 years) is attributable to other factors contributing to the lowering of the age at entry among new awardees. For example, if the incidence of awards for conditions with a relatively early onset (e.g., mental retardation and

psychiatric conditions) disproportionately increases, average age at award may decline, even if no demographic factors are at play.

The data also suggest that the trend of increasing duration of new awardees has magnified the implied effects of the rapid rise in the number of new awards during the last decade on eventual caseloads. While the number of DI awards (aged 62 or less) has increased from about 250,000 in 1982 to about 580,000 in 1993, expected duration also increased by about 1 year (about 10 percent). Together, the influx of awardees and the increase in stay length substantially affect caseloads. This effect can be seen by multiplying the two factors (first two columns in Table 4.2). Expected benefit years rose from 2.5 million for the 1982 entry cohort to about 6.3 million for the 1993 cohort. The 1982–1993 increase in benefit years was primarily the result of increased awards; the increase in expected duration had a relatively small contribution to the overall change. However, if we take a longer view by looking at changes between 1975 and 1992, the previous and most recent peak in DI awards, duration becomes the key factor; an increase in expected duration from 9.5 to 11 years is a major contributor to the increase in simulated benefit years.

Finally, we note that our simulations reflect only the effect of changes in the mix of awardees (by age, and probably diagnosis as well) and do not capture changes affecting mean duration either for selected subgroups or across the board. For example, changes in work incentives, such as the introduction of the extended period of eligibility, might have increased mean duration, particularly for younger groups of awardees. In this case, due to such cohort effects, mean expected duration may have increased during recent decades more than our simulations seem to suggest.

Duration on the SSI Disability Rolls

In this section we focus on duration on the SSI disability rolls among nonconcurrent awardees prior to reaching their 65th birthday. In contrast to the discussion of DI, our analysis here also covers children, who form an important, rapidly increasing, and controversial part of the SSI disability program. We will, however, present some information for working-age SSI awardees separately that will be of use in comparisons with DI. The main difference between the DI and SSI dis-

Table 4.2 Simulated Expected Mean Length of First DI Spells and Expected Total Benefit Years by Annual Cohort of Awardees

Year	Total awardees under 62	Simulated mean length	Simulated benefit years
1960	158,497	8.9	1,405,721
1965	219,236	8.8	1,939,064
1970	288,813	9.4	2,708,524
1975	494,662	9.5	4,720,422
1976	455,037	9.5	4,341,190
1977	471,708	9.6	4,526,983
1978	388,888	9.6	3,747,513
1979	349,781	9.6	3,363,795
1980	335,901	9.7	3,258,407
1981	302,231	9.8	2,952,807
1982	254,921	9.8	2,500,992
1983	267,851	10.1	2,709,214
1984	313,259	10.2	3,194,568
1985	364,325	10.2	3,700,105
1986	370,500	10.6	3,922,681
1987	366,865	10.5	3,838,548
1988	373,483	10.4	3,878,463
1989	372,024	10.6	3,925,845
1990	423,777	10.8	4,558,993
1991	468,238	10.8	5,071,412
1992	583,507	11.0	6,394,946
1993	580,038	10.9	6,306,206

ability programs affecting duration is the fact that DI is conditioned on prior work history, while SSI is means-tested. SSI recipients might lose payment eligibility as a result of changes in their family income or assets. It is to be noted, however, that DI beneficiaries are more at a risk of losing payment eligibility for work-related reasons, even after the liberalization of work incentive provisions during the 1980s. The differences in program design between the two programs need to be considered in comparing the SSI results, to be presented below, with the analysis of DI duration.

Overall, the SSI means test is the most important reason for first suspensions during the first ten post-award years (Table 4.3). Death and reaching age 65 are clearly much less important reasons for first exits than in DI, even accounting for the fact that the eventual first suspension of many of the approximately one-quarter of awardees who did not exit during the first ten post-award years will be one of these two categories. The data show marked differences in the reason for first exits by age, diagnosis, and to a lesser extent by gender, generally in directions consistent with the DI findings.

The SSI stays of the 1974–1982 cohorts (Table 4.4) were corrected for the right-censoring of observations (Rupp and Scott 1995). Projections were made not only for first spells but also for total years expected on the rolls. Not surprisingly, the data show that the mean duration of first spells is substantially lower for working-age SSI awardees when compared to DI awardees. Moreover, subgroup differences are less marked in SSI, particularly by age group. These program differences appear to be driven by the effect of the SSI means test on the dynamics of first spells. Early suspensions due to the failure to continue to qualify for the means test affects SSI awardees largely independently of age and diagnosis.

When multiple stays are accounted for (Chart 4.4), the overall picture dramatically changes, however. Overall, the mean SSI stay almost doubles from 6.9 years for first stays to 13.2 years for all spells for nonconcurrent adults and children combined. This brings the mean SSI stay to a level clearly higher than the mean DI duration, even accounting for the lack of precise data on DI total duration. The difference between the two programs appears largely attributable to the inclusion of children in the SSI disability program, although the data do not allow for a precise comparison. We note that the DI first spell and SSI

Table 4.3 Reason of Completion of First SSI Disability Spell during First 10 Post-award Years for Persons First Awarded SSI Disability Benefits during 1974–1982, Nonconcurrent Adults and Children

Age, diagnosis, and gender	All persons	Total (%)	Reason for first suspension (%)						
			No exit during 10 post-award years	Excess income	Death	Public instit.	Excess resources	Reached age 65	Other
Total	22,747	100	23.3	32.7	11.7	4.1	2.9	12.9	12.5
Age									
0 to 17 years	3,922	100	35.9	34.9	6.7	3.4	3.5	0.0	15.5
18 to 34 years	5,566	100	33.2	33.7	6.3	8.6	3.0	0.0	15.3
35 to 49 years	3,911	100	32.9	28.5	16.1	4.8	3.0	0.0	14.7
50 to 61 years	7,411	100	10.1	36.3	17.5	1.6	2.8	22.0	9.6
62 years and over	1,937	100	0.0	20.4	6.0	0.6	1.2	66.8	5.0
Diagnosis									
Missing	5,663	100	26.6	29.8	11.7	3.6	2.8	15.7	9.9
Infectious and parasitic	199	100	17.6	33.7	16.1	1.5	4.0	12.6	14.6
Neoplasms	936	100	3.5	28.5	53.4	0.6	0.5	4.4	9.0
Endocrine	738	100	16.9	32.7	18.2	0.5	2.0	17.3	12.3

Psychiatric	2,793	100	25.4	26.6	6.5	14.4	3.1	8.0	16.0
Mental retardation	3,606	100	40.2	31.1	3.5	5.7	3.9	2.6	13.0
Central nervous system	2,047	100	23.5	42.5	6.7	1.3	3.8	7.6	14.6
Circulatory	2,295	100	11.3	34.4	15.3	0.6	1.8	25.4	11.1
Respiratory	678	100	12.4	32.3	17.7	1.0	2.4	22.4	11.8
Digestive	288	100	10.1	28.1	34.0	1.7	0.7	11.5	13.9
Genitourinary	164	100	12.2	36.6	22.0	1.2	1.8	12.2	14.0
Musculoskeletal	1,743	100	14.1	39.4	6.7	0.8	3.0	23.9	12.0
Congenital	416	100	27.4	42.5	8.9	1.7	4.3	2.4	12.7
Injury	577	100	19.2	35.9	9.4	3.1	1.6	12.5	18.4
Other	604	100	14.9	36.8	12.6	2.6	3.6	14.4	15.1
Gender									
Female	13,226	100	23.2	31.9	11.3	2.8	3.1	15.9	11.7
Male	9,521	100	23.3	33.8	12.3	5.9	2.6	8.6	13.5

SOURCE: Authors' longitudinal study file of 22,747 persons first awarded SSI benefits during 1974–1982

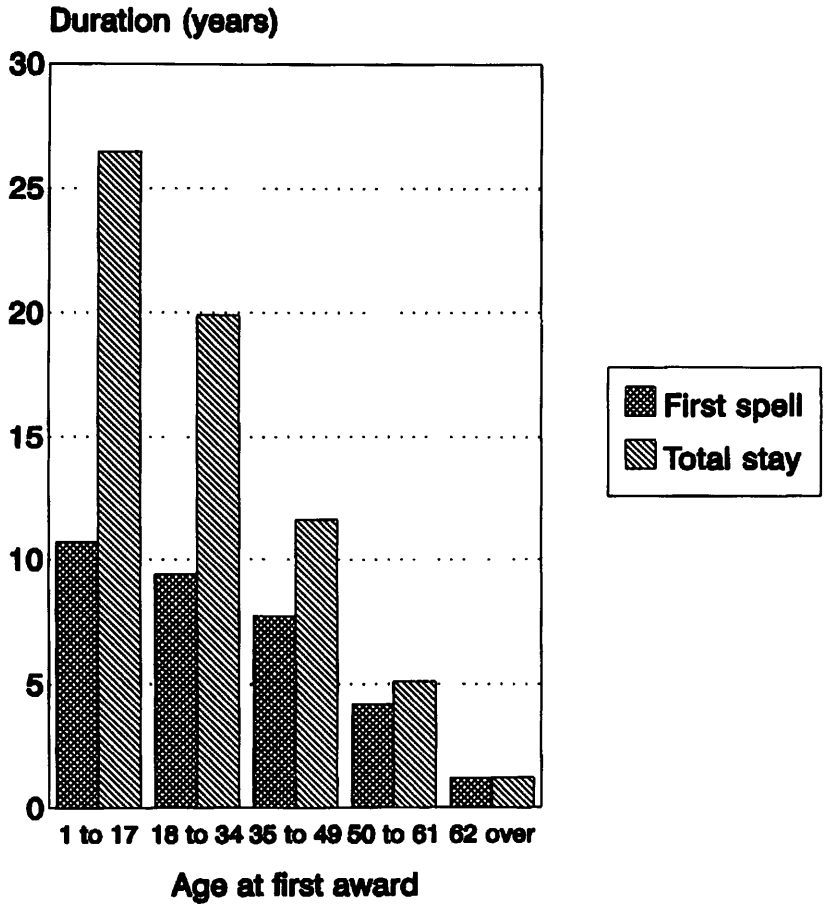
Table 4.4 Estimated Mean Duration of First SSI Disability Spells and Total Preretirement-Age Duration on the SSI Disability Rolls by Age and Diagnosis, Nonconcurrent Adults and Children (years)

Diagnosis	0 to 17 years	18 to 34 years	35 to 49 years	50 to 61 years	62 years and over	All ages
First spell						
Infectious and parasitic	10.1	9.8	6.8	3.8	1.0	6.0
Neoplasms	3.4	2.6	2.0	1.5	0.8	1.8
Endocrine	4.3	6.2	9.0	4.3	1.2	5.2
Psychiatric	9.1	7.3	8.7	4.8	1.2	6.9
Mental retardation	11.9	12.2	9.5	5.8	1.3	11.3
Central nervous system	8.6	8.2	7.4	4.3	1.3	7.2
Circulatory	4.9	8.9	6.4	3.9	1.1	4.1
Respiratory	6.6	5.3	8.0	4.0	1.2	4.4
Digestive	7.1	4.2	5.0	2.8	1.2	3.6
Genitourinary	3.6	4.5	5.9	3.9	1.0	4.2
Musculoskeletal	5.8	7.0	7.4	4.4	1.3	4.7
Congenital	8.7	8.0	8.8	4.8	1.1	8.1
Injury	7.4	7.6	6.8	4.0	1.3	5.8
Other	8.9	6.8	5.3	3.4	1.0	5.0
Missing	13.1	10.4	8.8	4.6	1.3	7.8
All diagnoses	**10.7**	**9.4**	**7.7**	**4.2**	**1.2**	**6.9**

Total disability stays						
Infectious and parasitic	32.3	17.2	8.3	4.9	1.2	9.6
Neoplasms	11.2	6.8	2.8	1.7	0.8	3.2
Endocrine	25.3	14.2	12.1	5.5	1.2	8.2
Psychiatric	25.8	19.6	13.5	6.0	1.2	14.4
Mental retardation	28.1	23.3	14.8	7.2	1.3	23.3
Central nervous system	26.1	18.8	11.9	5.3	1.3	17.0
Circulatory	17.3	13.7	10.1	4.8	1.1	5.6
Respiratory	26.0	11.3	11.1	4.8	1.2	6.6
Digestive	17.9	14.8	7.2	3.3	1.3	5.7
Genitourinary	15.6	12.9	9.6	5.1	1.1	9.4
Musculoskeletal	23.7	15.7	11.8	5.4	1.3	7.2
Congenital	27.0	20.0	13.3	6.9	1.3	22.1
Injury	23.6	16.1	10.8	5.0	1.3	11.2
Other	25.8	14.9	9.5	4.3	1.0	10.2
Missing	26.7	20.4	12.4	5.4	1.3	13.3
All diagnoses	**26.5**	**19.9**	**11.6**	**5.1**	**1.2**	**13.2**

SOURCE Authors' estimates based on longitudinal study file of 22,747 persons first awarded SSI benefits during 1974–1982.

Chart 4.4 Average Length of First SSI Disability Spell and Total Pre-65 Stay: Nonconcurrents



total stay estimates by age-group among prime-age adults are fairly close. Accounting for multiple stays in SSI highlights the age, and to a lesser extent, diagnostic differences in duration.

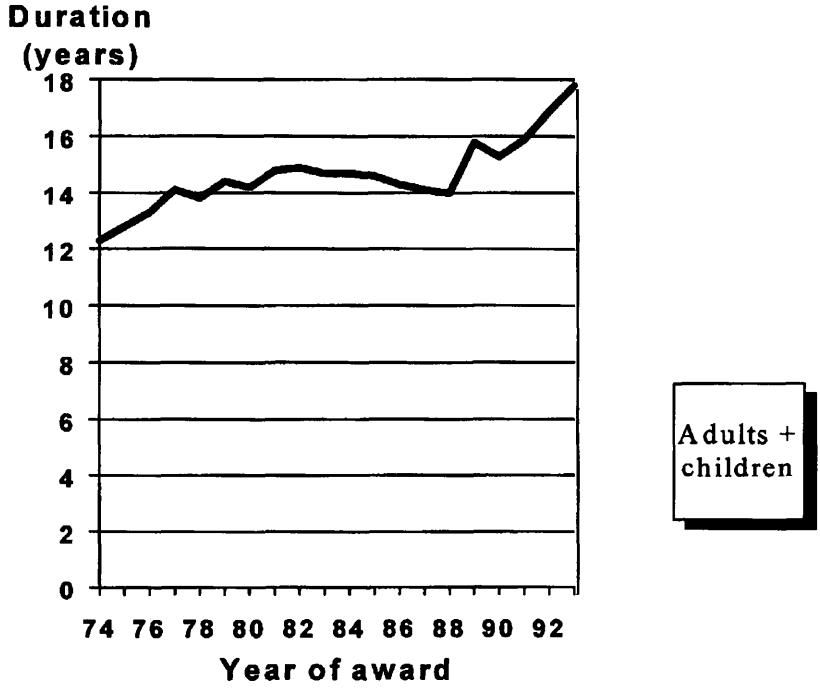
With duration patterns already described, we need to see how the demographic and diagnostic mix has changed over time. The most dramatic trend is the increasing proportion of children from 12.7 percent of new awardees in 1974 to 40.9 percent in 1993. Changes in the diagnostic mix of new awardees are also substantial, with the proportion with mental retardation and psychiatric conditions increasing dramatically, from 5 percent to 22 percent (mental retardation) and from 6.8 percent to 31.1 percent (psychiatric conditions) between 1974 and 1993. A long-term decline of the proportion of females among new nonconcurrent SSI awardees from 56.8 percent in 1974 to 47.5 percent in 1993 reflects the increase in the proportion of women in the DI-insured population during this period of time.

Armed with both durations and demographic patterns, we were able to produce simulations that reflect changes in the joint distribution of new awardee cohorts by age, gender, and diagnosis. We also conducted simulations using information on changes in the age distribution alone and on changes in the age-gender mix. These latter, cruder methods, resulted in almost identical results. This robustness suggests that factors associated with the age mix of new awardees dominate the results. This is consistent with our findings for DI in this respect.

Changes in the age distribution of new awardees between 1974 and 1993 are responsible for a substantial increase in expected duration from a mean of 12.3 years in 1974 to a mean of 17.8 years in 1993 (Chart 4.5). This is a much more dramatic increase than was observed for DI. However, when children are excluded from the analysis, the trends for DI and SSI nonconcurrent adults appear much more similar. The combined effect of changes in the number of new awardees and the mix of awardees by the demographic variables considered in our analysis can be represented by the simulated benefit years associated with each entry cohort. As previously shown for DI, this is simply the product of the number of new awards and simulated mean total duration for each annual cohort of new awards (Table 4.5).

The combined effect of the dramatic drop of new awards between 1974 and 1982 and the dramatic increase in childhood disability awards with long expected duration during subsequent years produces

Chart 4.5 Simulated Average Length of Total Pre-65 SSI Disability Stays: Nonconcurrents



a dramatic pattern of changes and contrast between the early 1980s and recent years.

The analysis above is limited to the effects of awardee mix on expected duration and does not address the possibility that factors other than age, gender, and diagnosis might have also induced changes in duration on the rolls. Such other factors could include either awardee characteristics other than the three variables considered, or factors (such as programmatic variables) directly affecting duration events.

Table 4.5 Simulated Expected Total Preretirement Age Duration on the SSI Disability Rolls among Children and Nonconcurrent Adults, 1974–1993

Year	Number of awardees	Simulated mean total duration (years)		Simulated benefit-years (total)
		Total (adults + children)	Adults only	
1974	423,400	12.3	9.8	5,207,820
1975	366,900	12.8	9.9	4,696,320
1976	295,100	13.3	10.3	3,924,830
1977	266,600	14.1	10.4	3,759,060
1978	225,000	13.8	10.2	3,105,000
1979	195,000	14.4	10.3	2,808,000
1980	196,000	14.2	10.3	2,783,200
1981	158,200	14.8	10.2	2,341,360
1982	160,800	14.9	10.5	2,395,920
1983	198,700	14.7	10.7	2,920,890
1984	222,300	14.7	10.8	3,267,810
1985	261,300	14.6	11.3	3,814,980
1986	262,200	14.3	11.0	3,749,460
1987	250,100	14.1	10.7	3,526,410
1988	253,500	14.0	10.7	3,549,000
1989	327,400	15.8	10.8	5,172,920
1990	391,700	15.3	10.8	5,993,010
1991	472,900	15.9	11.0	7,519,110
1992	549,400	16.9	11.3	9,284,860
1993	525,400	17.8	11.3	9,352,120

NOTE: Number of awardees estimated from SSI 1-percent sample file Simulations based on joint distribution of annual awardees by age, gender, and diagnosis and authors' estimates of total stay for subgroups.

PROGRAMMATIC FACTORS DIRECTLY AFFECTING DURATION

In the previous section we have demonstrated that the mix of awardees fundamentally shapes duration on the rolls. Nevertheless, these effects are conditional on programmatic rules concerning exit and reentry events. In this section we will focus on programmatic factors directly affecting duration, including suspensions and terminations for medical- and income-related reasons, work incentive provisions, and vocational rehabilitation.

CDRs form the primary vehicle for removing persons from the DI and SSI disability rolls for medical reasons. The number of CDRs performed greatly varied over the years subject to swings in political decision making and SSA staffing constraints. During the early Reagan years, CDRs were perceived as important tools for containing the growth of the disability rolls. Following a political backlash and numerous court decisions, a moratorium was issued on CDRs during the mid 1980s, followed by the introduction of the medical improvement standards making the removal of persons from the disability rolls for medical reasons more difficult. At the 1983 peak, 436,000 DI cases were reviewed, comprising 13.5 percent of the caseload (U.S. House of Representatives 1993, p. 64). More than 40 percent (182,000) were removed from the rolls. In contrast, during 1995 only 0.1 percent of the DI caseload was reviewed, and only 15 percent of these (475 cases) were removed from the rolls. Subsequently the number of CDRs performed increased somewhat. The experience with CDRs in the SSI program also showed great variations, with a minimum level of activity during the last couple of years.

More recently, the role of CDRs as a policy tool has increased again, as exemplified by Section 212 of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 concerning SSI childhood disability cases, as well as other recent initiatives. Section 201 of P.L. 103-296, the Social Security Independence and Program Improvements Act of 1994, introduced time-limited benefits for persons disabled based on a finding that drug addiction or alcoholism was a contributing factor material to the finding of disability. More recently, these provisions were replaced by stricter provisions of P.L. 104-121,

the "Contract with America Advancement Act of 1996," providing for the outright termination of cash benefits and health coverage for all DI and SSI disability recipients who received disability benefits based on drug addiction and/or alcoholism at the time of the enactment of the law as of January 1, 1997, and prohibiting future DI and SSI disability benefit allowances (and associated Medicare and/or Medicaid eligibility) to any future disability applicant whose drug addiction and/or alcoholism would be material to the determination of disability.

CDRs clearly affect duration on the rolls and may affect subsequent applications similar to the effect of denial rates, as was demonstrated by Parsons' work (1991). In this pioneering study, based on economic theory, Parsons hypothesized that high denial rates discourage subsequent disability applications as a result of their negative effect on the expected net benefits of DI application. His empirical analysis—based on data from the late 1970s—provided results consistent with this hypothesis. CDRs may have negative effects not only on duration among those on the rolls, but also on subsequent DI applications for similar reasons.

However, past experience suggests difficulties with relying on CDRs as a primary strategy of containing caseload growth both because of the legal and political problems embedded in the approach and for substantive reasons. Many persons on the disability rolls face serious medical problems; identifying those whose medical condition sufficiently improves and is likely to improve in the future is inherently difficult. Moreover, time spent on the disability rolls results in the depreciation of work skills and is expected to result in difficulties in returning to the labor force, especially without assistance. The General Accounting Office study of DI beneficiaries terminated during 1981–84 found that more than half returned to the rolls, and of those who did not, nearly half were not working (quoted in U.S. House of Representatives 1993, p. 70).

Administrative changes related to the SSI means test are also of potential importance in affecting duration. As we discussed previously, the data presented in Table 4.5 suggest that recent changes in the handling of failure to respond to an agency request for information had a negative effect on suspensions, and hence a positive effect on length of stay. In general, procedures designed to tighten the monitoring of SSI means-test eligibility are expected to reduce duration, while loosening

of procedures and/or reduction in the amount of resources devoted to monitor SSI income or asset eligibility are expected to increase duration.

In light of the difficulties of relying on the stick-only approach of CDRs, the interest in the carrots of work incentives is understandable. Both SSI (Section 1619 program) and DI (trial work period and extended period of eligibility) have gone through substantial liberalizations. Little is currently known about the effects of these changes on duration. The cohort-based comparison of DI exit rates during the 1970s and 1980s (Hennessey and Dykacz 1993) suggests that the liberalization of DI work incentives during the early 1980s actually increased length of stay. Similarly, with the introduction of Section 1619 provisions SSI suspensions directly resulting from work activities were eliminated, and data presented in Table 4.6 suggests no secular increase in income-related suspensions either. Thus, it appears that previous reforms of work incentive provisions might have increased duration in both programs. In addition, as Hoynes and Moffitt (1996) argue, such changes in work incentive provisions may induce additional applications thereby further adding to caseload size.

Vocational rehabilitation (VR) is another positive strategy to reduce duration in the disability rolls. The number of disability beneficiaries served by the state VR system has been historically small and has decreased further since SSA's placement-oriented reimbursement of VR agencies was introduced. Moreover, little is known about the effectiveness of these interventions because of the difficulty in establishing a useful control group. The interest in vocational rehabilitation demonstrations is rooted in the perceived failure of work incentives to move sizable numbers of beneficiaries to productive employment in an efficient manner. Six-year experimental follow-up results from the Transitional Employment Training Demonstration (Decker and Thornton 1995) indicate that the employment services raised the average employment and earnings levels of the mentally retarded SSI recipients who were offered transitional employment services, and that the increases persisted relatively undiminished during the six-year period. However, the modest reduction in SSI payments offset only a fraction of the cost of transitional employment services. Moreover, only a small subset of eligible SSI recipients volunteered for the demonstration. A more recent SSA demonstration initiative, Project NetWork, targets a

Table 4.6 Reason for First Exit by 24, 48, and 120 Months after First Award, Children and Nonconcurrent SSI Awardee Cohorts (%)

Exit reason	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Total[a]	4,234	3,669	2,951	2,666	2,250	1,950	1,960	1,582	1,608	1,987
Exit status at month 120										
No exit	22.6	22.8	23.1	21.3	23.4	23.6	25.1	25.3	24.5	26.3
Excess income	31.7	30.6	32.0	33.3	32.4	34.4	33.7	33 6	35 2	34.5
Death	10.2	9.9	9.7	10.5	11.3	11.3	11.6	11.6	11.3	10.5
Public institution	3.4	4 1	3.8	4.7	4.4	4.5	4.1	3.7	4 2	4 9
Excess resources	2.4	2.6	2.3	2 4	3.1	3.3	3.8	3.7	2.9	4.0
Other	29.7	30.1	29.1	27.9	25 4	23.0	21.7	22.2	22.0	19.8
Total	100	100	100	100	100	100	100	100	100	100

	1984	1985	1986	1987	1988	1989	1990	1991	1995
Total[a]	2,223	2,613	2,622	2,501	2,535	3,274	3,917	4,729	5,494
Exit status at month 120									
No exit	27.1								
Excess income	35.5								
Death	10.4								
Public institution	4.5								
Excess resources	2.3								
Other	20.1								
Total	100								

(continued)

Table 4.6 (continued)

Exit reason	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Total[a]	4,234	3,669	2,951	2,666	2,250	1,950	1,960	1,582	1,608	1,987
Exit status at month 48										
No exit	46.2	45.5	44.1	43 7	44.3	43.9	45.8	47 5	46.3	48.0
Excess income	23.9	24 0	24.9	25.9	25.0	26.6	25.6	25.7	27.7	26.9
Death	6.4	6.5	6.1	6.8	8.0	8.5	8.4	7.1	7.5	5.9
Public institution	2.5	3.0	3.0	3.6	3 5	3.2	3 1	2.5	3.1	3.9
Excess resources	1.6	1.5	1 5	1.0	2 2	2 3	2.8	2.5	2 0	3.2
Other	19.5	19.5	20 4	19 0	17.0	15.6	14.3	14.7	13.4	12.1
Total	100	100	100	100	100	100	100	100	100	100

	1984	1985	1986	1987	1988	1989	1990	1991	1995
Total[a]	2,223	2,613	2,622	2,501	2,535	3,274	3,917	4,729	5,494
Exit status at month 48									
No exit	48.2	50.7	51.5	51.9	51 7	55 0	57.2		
Excess income	27.7	25.2	24.6	24.8	26 1	22.4	23.3		
Death	7.0	5.9	7.4	8.2	7.5	7.4	6.3		
Public institution	3.3	3.7	3.1	3.3	2.5	2.4	2.3		
Excess resources	1.8	2.1	1.9	1.6	1.4	2.2	1.8		
Other	12.0	12.4	11.4	10.2	10 9	10.7	9.1		
Total	100	100	100	100	100	100	100		

Exit reason	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Total[a]	4,234	3,669	2,951	2,666	2,250	1,950	1,960	1,582	1,608	1,987
Exit status at month 24										
No exit	63.7	61.1	59.7	60.2	59.5	60 1	61 6	60.5	58.1	61.1
Excess income	16.9	18 6	19 6	19 7	20.1	20.7	19.4	20.5	23 7	21 1
Death	4.6	4.4	4.0	4.4	5.8	5 6	5.7	5.8	5.6	4.2
Public institution	1.6	2 2	2.3	2 4	2.5	2.1	2 2	1 5	2 5	2 9
Excess resources	1 0	1.1	0.9	0.6	1.4	1.4	1.4	1.6	1.4	2.4
Other	12.1	12.7	13.5	12.7	10.8	10.2	9.6	10.2	8.8	8.2
Total	100	100	100	100	100	100	100	100	100	100

	1984	1985	1986	1987	1988	1989	1990	1991	1995
Total[a]	2,223	2,613	2,622	2,501	2,535	3,274	3,917	4,729	5,494
Exit status at month 24									
No exit	62.3	65.0	64 2	65 4	64.7	67.8	69.2	70.5	72.1
Excess income	22 1	19 3	19.8	19.6	20.8	17 9	18 5	17.4	16 1
Death	4.8	4.0	4.9	5.6	5.1	4.4	4.0	4.0	3.9
Public institution	1.8	2.6	2.2	2.2	1.5	1.7	1.6	2.0	1.9
Excess resources	1.2	1.7	1 4	1.0	0.6	1.1	1.3	1.1	0.7
Other	7.8	7.4	7.6	6.1	7 3	7.0	5.5	5.0	5.4
Total	100	100	100	100	100	100	100	100	100

[a]Number, not percent

much broader group, including all DI beneficiaries and SSI recipients in the demonstration areas and uses a case-management approach to return-to-work (Rupp, Bell, and McManus 1994). The net impact results of this large-scale experimental evaluation are not available yet, but preliminary analyses of demonstration participation suggest that—similar to the Transitional Employment and Training Demonstration—only a fraction of project eligibles volunteered for the demonstration (Rupp, Wood, and Bell 1996).

In view of the increases in the size of the caseload, policymakers continue to have an interest in these more direct methods of limiting duration on the rolls as evidenced by SSA's evolving employment strategy and the recent review of the disability program by the National Academy of Social Insurance (Mashaw et al. 1996). Whether such initiatives are going to have substantial effects on duration in the desired direction (reduction) is too early even to speculate on. Nevertheless, while much more research needs to be done on the effects of CDRs, work incentives, vocational rehabilitation, and other programmatic variables on duration, it appears safe to infer that none of these factors had a large overall effect on containing caseload growth over the last decade. If anything, the most consequential recent changes probably had effects in the opposite direction. By all likelihood the medical improvement standards, changes in the mental regulations, and the *Zebley* decision contributed to increased expected duration. Thus, the results of our simulations concerning expected length of stay in the previous section are likely to provide a conservative view of past trends in expected duration.

IMPLICATIONS FOR FUTURE DURATION AND CASELOADS

In our analysis so far we have focused on past trends in awardee characteristics and expected duration. These factors do affect the future by virtue of the fact that the potential exposure to program participation of new awardees, especially among those young at first entry, is extremely long. Thus, as we have demonstrated, and assuming no major changes in program rules, the past trend toward younger entrants

in both DI and SSI, most notably evidenced by the recent influx of a large number of children to the SSI disability rolls, is expected to put a strong upward pressure on caseloads for many years to come, unless a large number of the recent entrants are removed from the rolls through new policy initiatives. This implication of past trends for future caseloads will affect SSA's disability programs even if the past trends toward younger entrants were to be reversed in the future.

This section addresses the next logical question. What can we say about the expected duration of future cohorts of new entrants? Can we assume that the past trends toward younger entrants and increasing expected duration will continue in the future? Or perhaps we should expect the reversal of these trends and shorter duration for future entrants? What are the expected effects of such future trends in duration on caseloads?

There are a large number of potential factors that might affect the duration of future entry cohorts, from demographic and economic factors to future policy and procedural changes. The purpose of this section is not to provide crystal ball speculations about the net effect of all of these diverse forces, but rather to spell out the implications of some relatively tangible factors, notably demographic trends.

While we did not attempt to project future changes in age-specific incidence rates, we have used actuarial projections of the age distribution of the DI-insured population to assess the likely future effects of the aging of the baby boom generation on expected future mean duration.

Our analysis shows that this factor alone is likely to result in a one-year decline in expected duration of first spells between 1993 (see Table 4.2) and 2006 (Chart 4.6). While this appears as good news, the same demographic forces also seem to imply future increases in incidence rates.

The net effect may be an upward demographic pressure on caseloads during the next ten to fifteen years as suggested by the relationship between age, DI incidence rates, and duration in a cross-sectional framework (Table 4.7). The two factors (incidence and expected duration) work in the opposite direction: as age increases the incidence of disabling conditions serious enough to warrant the award of DI disability benefits increases, while expected duration decreases. The product of these two factors represents the net effect on caseloads: expected DI

Chart 4.6 Estimated Effect of Changes in Age-Mix of the DI Insured Population on Average Length of First SSDI Spells

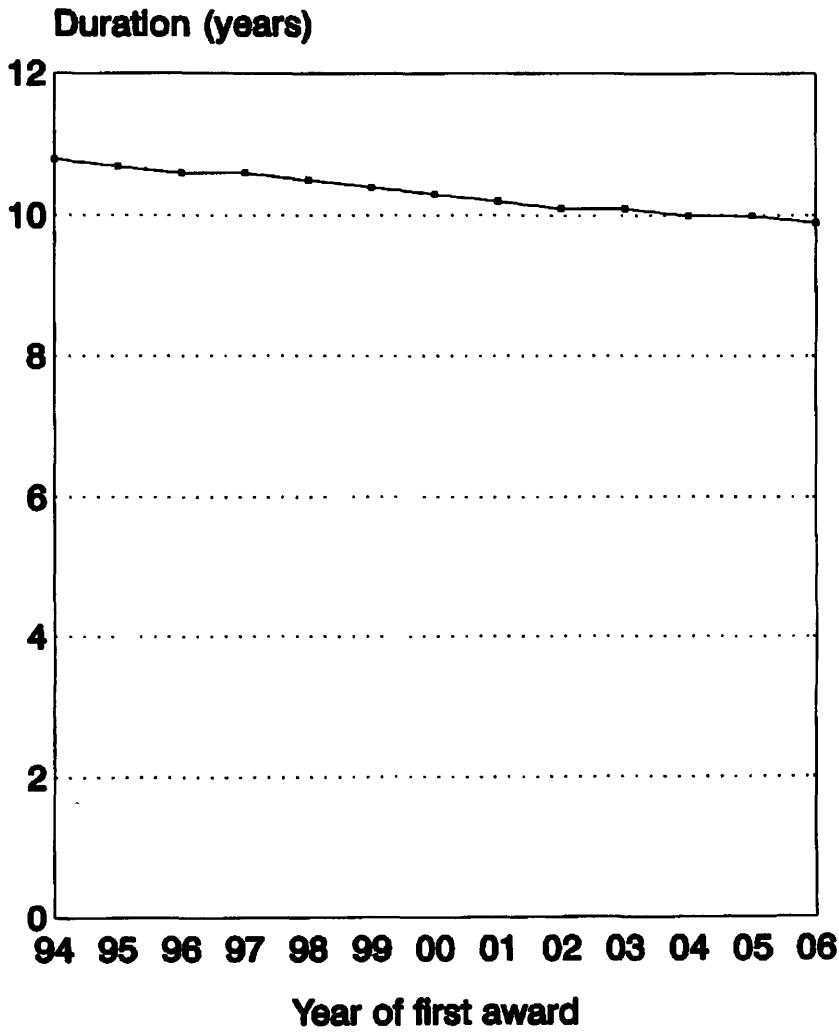


Table 4.7 DI Incidence Rates, Expected Duration, and Benefit Years per 1,000 Insured Workers

Age group	Awards per 1,000 DI-insured workers	Expected first-spell duration (years)	Expected DI benefit years per 1,000 insured workers
18–34	2.1	18.4	39.0
35–49	4.5	12.5	55.9
50–61	13.1	6.5	85.3

SOURCE Incidence rates were calculated by the authors based on data on the number of DI-insured workers (1993) provided by SSA's Office of the Actuary and the number of 1993 awards by age group. Estimated first-spell duration data by age group are based on estimated by Hennessey and Dykacz (1989)

benefit years increase as we move toward the older cohorts of new entrants, because the positive effect of age on incidence rates is stronger than the negative effect on duration.

We do not have actuarial projections for the population financially eligible for SSI. Nevertheless, the population satisfying the SSI means test is conceptually akin to the notion of the DI-insured population. While the SSI financial eligibility criteria are much more complex than the concept of the DI-insured status, a microsimulation model developed by analysts at the Social Security Administration (Wixon and Vaughan 1989; Vaughan and Wixon 1989) based on the rich income and asset information available from the SIPP provides an opportunity for some analysis. Table 4.8 provides an estimate of the size and age-distribution of the population economically eligible for SSI. The estimate, provided by Denton Vaughan to the authors, suggests that approximately 25.7 million persons aged 18–64 were financially eligible for SSI disability benefits in 1984. These estimates include (but do not identify) persons concurrently satisfying the economic eligibility criteria of both programs, as well as working-age persons eligible for SSI only. Our analysis shows that overall, the relationship between age, incidence, and expected duration of benefits is similar in the two programs. Nevertheless, there are some notable differences.

First of all, the SSI incidence rate is higher than the DI incidence rate. The comparison is affected by the exclusion of concurrents from

Table 4.8 SSI Awards per 1,000 Persons Satisfying the SSI Means Test, Expected Total Duration and Benefit Years per 1,000 Financially Eligible Persons

Age group	Number of persons financially eligible for SSI (000)	New SSI noncurrent awards per 1,000 financially eligible persons in 1984	Mean total duration on SSI disability rolls (years)	Expected SSI disability benefit-years of new awardees per 1,000 financially eligible persons
18–34	18,198	3.4	19.9	68
35–49	3,791	10.7	11.6	124
50–61	2,713	22.5	5.1	115
62–64	470	26.4	1.2	32

NOTE: The estimated number of financially eligible persons was provided to the authors by Denton Vaughan based on the 1984 SIPP using the microsimulation model developed by him and Bernard Wixon (Wixon and Vaughan 1991; Vaughan and Wixon 1991). The SIPP estimates reflect the estimated number of persons satisfying the SSI income and assets means test, irrespective of eligibility for DI. The number of SSI awards estimated from the author's 1-percent SSI study file, however, is limited to persons receiving SSI benefits only, at least during the initial year following first award. Total duration estimates reflect all SSI disability spells and are based on age-specific means.

our SSI incidence rate numerator and by the fact that the SSI incidence rates reflect the 1984 experience, while the DI incidence rates reflect 1993 data. However, considering both of these factors would strengthen, rather than weaken the contrast. An important issue for future research is the reason for the higher SSI incidence rate. There are at least three competing hypotheses that might contribute to this finding. First, the average health and disability status of the financially eligible SSI population might be relatively low. Second, SSI benefits are more attractive relative to alternative sources of income for the SSI financially eligible population than the DI benefits are relative to the wages of DI-insured workers. Third, because of differences in human capital and the lack of work experience, financially eligible SSI applicants might have an easier time of qualifying under SSA's vocational criteria than might be the case with the average DI applicant. One factor that might work in the opposite direction is that a substantial por-

tion of the financially eligible SSI population may meet the means test only marginally, and therefore face only relatively low levels of expected SSI payments reducing the economic incentive to apply. When both cash and noncash benefits are considered, however, the net incentives to apply for SSI may be very strong even for financially eligible persons qualifying only for a small amount of SSI cash benefits because of the importance of Medicaid for many SSI applicants.

Table 4.8 shows that the relationship between age and expected benefit years is somewhat different for SSI when compared to DI. In particular, the increase between the two younger age groups is reversed as age increases. The implication of this finding for the projection of the future effects of demographics on caseloads is that the aging of the baby boom generation might have a smaller net effect on SSI caseloads when compared to DI. However, because of the complex relationships between age, poverty status, family structures, disabilities, and other factors affecting the size of the SSI financially eligible population and incidence rates, much more work needs to be done before firm conclusions can be reached about trends in future awards, duration, and caseloads in the SSI disability program.

CONCLUSIONS

In this chapter we assessed the relationship between age, gender, diagnosis, and duration on the DI and SSI disability rolls, and quantified the implications of past trends in awardee characteristics and future caseloads. We also looked at programmatic factors directly affecting duration, and the combined effect of incidence rates and expected duration on age-specific expected benefit years. We also made some inferences about the likely effects of the aging of the baby boom generation on expected duration and caseloads.

The data show that lifetime duration in both the DI and SSI disability programs is long; thus long duration is an important determinant of caseloads, and hence of program cost. Between 1975 and 1993 the shift toward younger entrants resulted in substantial increases in the expected duration of new awardees in both DI and SSI. These past trends in expected duration create an upward pressure on future case-

loads, especially in SSI where the recent influx of children is expected to have substantial future effects on caseloads, under the assumption that current program rules will stay in effect for persons already on the rolls in the future. An important issue for future research concerns the effects of Section 211 of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 envisioning substantial tightening of SSI childhood disability eligibility provisions.

Our analysis suggests that the aging of the baby boom generation contributed to the 1975–1993 increase in the expected average duration of successive cohorts of new DI entrants, but that these trends will reverse during the 1993–2006 period as the baby boom generation ages. This will moderate, but not entirely eliminate, the likely upward pressures of the aging of the baby boom generation on future caseloads arising from rising incidence rates.

Our analysis suggests the usefulness of cohort-based studies of duration for understanding and quantifying the factors affecting future terminations and caseloads. In particular, such a perspective seems useful in disentangling the effects of awardee characteristics, the size of successive awardee cohorts, programmatic variables and other factors. Several important issues remain for future research. We need to learn much more about the interaction of the SSI and DI programs as they affect the duration of disability benefits and future caseloads, and particularly about the duration experience of concurrent awardees. Much more work needs to be done, and is feasible to do, concerning trends in SSI financial eligibility and their effect on duration and caseloads. Finally, there is a clear need for creative and rigorous work on the likely consequences of various strategies to contain the growth of the disability rolls through affecting entry and exit events.

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Comments on Chapter 4

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Kalman Rupp and Charles Scott (Chapter 4) provide an important extension to the work on award growth presented in this volume. As they correctly point out, the extent to which caseloads grow is dependent not only on the inflow of recipients to the major disability programs, but how long those recipients remain on the rolls.

The aging of the baby boom generation, report Rupp and Scott, will increase caseloads. This increase, however, is the result of two opposing effects. On the one hand, an older population will have more occurrences of disability; that is, awards should increase as baby boomers age. On the other hand, older people typically have shorter spells of receiving disability benefits. Once they reach the normal retirement age they are no longer classified as disabled, and their benefits convert to retirement benefits.

Rupp and Scott examine factors other than age that influence the duration of spells on Social Security Disability Insurance (DI) and Supplemental Security Income (SSI), such as gender and diagnosis. What is lacking, as they point out, are analyses that isolate the impact of programmatic factors. Continuing Disability Reviews (CDRs), vocational rehabilitation, the trial work period and extended period of eligibility, and the level of substantial gainful activity presumably all have an effect on the length of time someone receives benefits. The impacts of these program characteristics are not well understood.

The main reason concern has risen over growing caseloads in the DI program is the dwindling of the program's trust fund. Recently, the disability trust fund was bolstered, but this was by reallocating resources away from the retirement trust fund. The fundamental problem remains.

To understand the effects of age on total benefits paid (and thus on the trust fund), it is necessary to not only consider the effect of age on caseloads but on benefits paid. Since DI benefits are a function of past

earnings, more awards to older applicants will generally mean higher average monthly checks. As shown in Table 1 (using demographic and program data reported in Rupp's and Scott's paper), the age distribution of awards in 2005 should be much higher than in 1993, the most recent year reported in the paper. Furthermore, older awardees get significantly larger monthly checks; as shown in Table 1, the difference can be hundreds of dollars per month. Therefore, the impact of aging baby boomers on the disability trust fund will be larger than their impact on caseloads.

Table 1 Percentage of DI Awards by Age, Recipients under 62

	Under 35	35–49	50–61
1993	19.3	34.7	46.1
2005[a]	14.2	30.6	55.2
Average monthly benefit of new award in 1993	$521.6	$681.6	$809.5

SOURCE: Computed using data from the Social Security Administration.
[a]Projection