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# DataWatch

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## Medicare And The Social Security Disability Insurance Program

by Thomas N. Chirikos

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**Abstract:** This DataWatch traces changes over time in the age and health characteristics of persons awarded Social Security Disability Insurance (SSDI) benefits. SSDI beneficiaries are increasingly younger and more likely to be incapacitated by health conditions that at any age lengthen spells of disablement. These changes have had a significant impact on SSDI operations; they also have important implications for financing the Medicare program.

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The Social Security Disability Insurance (SSDI) program provides income and in-kind support to workers who have a qualified medical condition that prevents gainful employment and who otherwise meet the work history requirements (insured status) of the Social Security program. Total SSDI cash benefits exceeded \$34.6 billion in 1993, with monthly payments going to more than 3.7 million disabled workers and 1.5 million spouses and children of disabled workers in that year.<sup>1</sup> This makes SSDI the largest federal disability program. Because beneficiaries qualify for Medicare benefits after they have been on the SSDI rolls for twenty-four months, SSDI now also drives a large, and growing, fraction of Medicare spending. In 1993 SSDI beneficiaries accounted for roughly 10 percent of total Medicare enrollment and slightly more than 12 percent of Medicare reimbursements—approximately \$9.4 billion under Part A (Hospital Insurance) and about \$6.5 billion under Part B (Supplemental Medical Insurance).<sup>2</sup> In view of the serious concern at the moment about Medicare's financial footing, SSDI trends warrant close scrutiny. Recent projections of the Old-Age, Survivors, and Disability Insurance (OASDI) Board of Trustees suggesting that the Disability Insurance trust fund will be exhausted within the next few years compound this concern, in part because efforts designed to shore up that trust fund may actually put additional stress on Medicare's financial base.<sup>3</sup> The time is ripe for health policymakers, particularly those interested in Medicare financing, to take stock of SSDI trends and programming options.

This DataWatch examines temporal changes in the composition of SSDI

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disabled-worker beneficiaries, with special focus on the age and health characteristics of successive SSDI awards populations over the period 1960-1993. Although growth and fluctuations in the level of SSDI activity are clearly important, long-term trends in the mix of demographic, health, and socioeconomic characteristics of program beneficiaries may be even more important now for at least two interrelated reasons: (1) This mix is a prime determinant of the average duration of entitlement spells (that is, the number of years, on average, that beneficiaries remain on the rolls) and thereby overall liabilities attributable to the program. SSDI-related Medicare spending is conditional on, and thus highly sensitive to, the length of the entitlement spell.<sup>4</sup> (2) The composition of the recipient group influences the effectiveness of rehabilitative interventions aimed at restoring functional independence and cushioning the adverse economic consequences of work disablement. Medicare coverage appears to play a particularly crucial role in "return-to-work" strategies in the SSDI program.

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### Changing Composition Of The SSDI Awards Population

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**Major trends.** When it was established in 1957, SSDI provided monthly cash benefits only to (fully insured) persons over age fifty who were unable to work because of a permanent or life-threatening health impairment. Because SSDI payments have always been automatically converted to Social Security (Old-Age and Survivors Insurance, or OASI) retirement payments when a beneficiary turns sixty-five, the original program design in effect provided Social Security cash benefits to a relatively homogeneous target group of workers in their sixth decade, who were forced by serious health problems to retire early. Under this design, program spells were relatively short and of predictable length; correspondingly, returning large numbers of recipients to the workforce was never viewed as a realistic option. These design features have been altered dramatically over time, beginning with the elimination of the age-eligibility provision in 1960 and later, among other changes, the liberalization of the legal definition of *disability*, the introduction of vocational/economic factors in the disability determination process, the gradual relaxation of the insured-status provisions for younger workers, and of course the extension of Medicare entitlement itself in 1972. Although the SSDI beneficiary population would have been expected to become more heterogeneous as a result of these changes, the extent to which it actually has is quite surprising nonetheless.

Exhibit 1 documents these compositional changes in the context of the growth in the number of annual SSDI awards and beneficiaries—that is, the incident and prevalent populations of the program.<sup>5</sup> Annual ups and downs notwithstanding, the size of the program has indeed grown since its

**Exhibit 1**  
**Selected SSDI Program Indicators And Time Periods, 1960-1993**

Indicators	Three-year averages							Average annual growth rate 1960-1993
	1960-1965 1962	1966-1967 1967	1970-1972 1972	1973-1977 1977	1981-1983 1983	1984-1988 1988	1989-1991 1993	
Number of awards (thousands)	246.1	277.7	407.2	570.8	320.2	414.1	602.8	2.14%
Number per 100 awards								
Beneficiaries	245.2	393.3	408.2	447.8	830.0	671.9	575.6	2.91
Terminations	45.1	63.9	65.3	60.8	143.9	82.1	57.1	1.38
Deaths	23.1	30.8	26.8	24.4	44.9	33.9	25.7	0.55 <sup>a</sup>
Retirement conversions	19.7	23.1	26.1	28.2	64.1	44.6	29.7	2.62
Awardees ages 50-64	72.6	71.2	10.8	68.8	65.2	56.7	50.6	-1.07
Awardees ages 18-34	4.7	5.8	9.2	11.2	15.0	18.4	17.8	4.51
Awardees with long-spell diagnoses	38.9	37.3	32.6	37.4	36.6	46.5	48.3	0.84
Awardees with short-spell diagnoses	16.3	15.4	13.0	12.2	19.7	15.2	20.4	0.73

**Source:** Author's calculations based on data derived from Annual Supplement, Social Security Bulletin, various issues, 1957-1994.

**Note:** SSDI is Social Security Disability Insurance.

<sup>a</sup> Not significantly different from zero; see Notes in text.

inception. Not only have the number of new awards risen rapidly, but low termination rates (departures from the program rolls as a result of death, retirement conversion, or medical improvement/work recovery) also have caused the prevalent population (beneficiaries per 100 awards) to rise at an even higher rate. Indeed, the ratio of terminations to awards is always less than one, with the exception of a short period in the early 1980s, when the Reagan administration attempted to pare down the rolls. The clear implication is that the average length-of-stay on the SSDI rolls has grown markedly over the history of the program. More importantly, perhaps, substantial changes in the composition of the awards population with respect to both age and health characteristics have taken place since 1960. Awards to the original target group (workers ages fifty to sixty-four) have declined from about three in four in the early 1960s (and, of course, from fully 100 percent in the period 1957-1960, when fifty was the minimum eligibility age) to only about one-half of all awards at present (Exhibit 1). In contrast, awards to younger persons ages eighteen to thirty-four have risen from one in twenty awards at the beginning of the period to more than one in six now. By implication, awards to persons in the residual age group (ages thirty-five to forty-nine) accounted for 22.7 percent of the total in the early years, but 3 1.6 percent of the total at present.

The distribution of awards by health or disease condition also has changed over time. The bottom two rows of Exhibit 1 use the results of

previous research to categorize the three conditions or diagnoses likely to lead at any age to the longest entitlement spells (namely, musculoskeletal, mental, and nervous/sensory disorders) and the three conditions likely to lead to the shortest spells (infectious disease, malignancies, and genitourinary problems) to portray the extent and direction of these health changes.<sup>6</sup> An increasing fraction of new awards goes to persons with “long spell” diagnoses, with almost half of all awards now accounted for by these three conditions. Since the growth rate in the proportion of awards to persons with “short-spell” diagnoses also is positive, the implication is that the fraction of awards going to the residual category of “all other diagnoses” fell over time from about forty-five to thirty-one per hundred awards.

Age and health interactions in the composition of the awards population are sufficiently important, from a policy perspective, to examine in more detail. Exhibit 2 again uses the average annual growth rates of awards by age groupings and detailed diagnostic categories as a means of systematically summarizing complex trends.<sup>7</sup> As evidenced by subgroup growth rates much in excess of the overall increase of 2.14 percent per year, these computations show convincingly that the SSDI incident population is both growing younger and more likely to suffer from health impairments that have earlier onset, are less likely to be life-threatening, and in many cases are less amenable to medical improvement or recovery. The extremely rapid in-

### Exhibit 2

#### Average Annual Growth Rates In SSDI Awards, By Age Group And Diagnostic Category, 1960-1993

Diagnostic category	Age grow			
	All ages	18-34	35-49	50-64
All diagnoses	2.14%	6.65%	2.92%	1.07%
Long-spell diagnoses	2.98	7.06	3.29	1.59
Musculoskeletal	3.27	5.57	3.44	3.04
Mental disorders	4.77	8.08	4.44	2.66
Nervous/sensory disorders	0.12 <sup>a</sup>	5.15	0.75 <sup>a</sup>	-1.44
Short-spell diagnoses	2.87	6.00	3.01	2.22
Infectious and related	-1.14 <sup>a</sup>	2.87 <sup>a</sup>	-0.51 <sup>a</sup>	-4.50
Neoplasms	3.37	6.18	3.68	3.04
Genitourinary problems	5.24	9.75	5.50	3.83
All other diagnoses	1.00 <sup>a</sup>	6.10	2.22	0.28 <sup>a</sup>
Circulatory system	0.08 <sup>a</sup>	3.21	0.93 <sup>a</sup>	-0.35 <sup>a</sup>
Respiratory system	0.24 <sup>a</sup>	4.20	0.05 <sup>a</sup>	0.18 <sup>a</sup>
Endocrine and related	3.14	7.44	5.10	1.73
Others	3.81	7.65	4.10	2.54

Source: Author's calculations based on data derived from *Annual Supplement, Social Security Bulletin*, various issues, 1957-1994.

Note: SSDI is Social Security Disability Insurance.

<sup>a</sup> Not significantly different from zero.

crease in the number of awards to young persons with mental disorders is a case in point. In the early 1960s this subgroup constituted only 1.7 percent of all awards and one-third of awards to persons ages eighteen to thirty-four. An annual rate of increase of slightly more than 8 percent per year (a rate that doubles the number of such awards every nine years) has changed this picture dramatically. Awards to this group now account for almost 9 percent of total awards and 48 percent of awards to that age group.

Equally noteworthy in this regard is the absence of significant changes in health conditions that were initially the most important causes of functional incapacity in older workers. At the outset of the program, circulatory system diagnoses were the most common disabling health impairment, accounting for almost one in three awards at all ages and one in four awards to persons ages fifty to sixty-four. However, because of extremely low growth rates over time (some statistically indistinguishable from zero), this subset of diagnoses now accounts for only 11 percent of all awards and about 20 percent of awards to disabled workers ages fifty to sixty-four.

**Impact of compositional trends.** Although the extent and direction of the age and health changes in the awards population imply nontrivial impacts on the scope and cost of the SSDI program, policymakers may be interested in even rough quantitative estimates of the magnitude of these effects. Thus, simulation estimates were prepared of the expected number of entitlement years and corresponding program-related liabilities incurred in successive annual awards populations over 1960-1993; selected results are presented in Exhibit 3.<sup>8</sup> Taking the entire awards population into account, average entitlement years are estimated to have been about 8.5 years in the

### Exhibit 3

#### Estimated Entitlement Years And Program-Related Liabilities Of SSDI Awards, Selected Subgroups And Time Periods, 1960-1993

Estimate/subgroup	Three-year averages		Average annual growth rate, 1960-1993
	1960-1962	1991-1993	
Entitlement years per award	8.5	10.8	0.84%
Ages 18-34/ long-spell	23.6	24.3	0.13
Ages 50-64/ short-spell	4.2	3.5	-0.69
Entitlement years (millions)	2.1	6.6	2.98
Ages 18-34/ long-spell	0.2	1.7	7.19
Ages 50-64/ short-spell	0.1	0.2	1.53
Liabilities <sup>a</sup>	\$19.7	\$58.3	2.78
Ages 18-34/ long-spell	1.3	11.9	7.15
Ages 50-64/ short-spell	1.3	2.4	1.79

**Source:** Author's calculations based on data derived from *Annual Supplement, Social Security Bulletin*, various issues, 1957-1994.

**Note:** SSDI is Social Security Disability Insurance.

<sup>a</sup> Billions of dollars.

early 1960s but close to 11 years at present, These values differ, of course, by age/health subgroups. To simplify the presentation, two subgroups at opposite ends of the continuum were chosen to illustrate these differences. The average number of entitlement years (for the period 1960-1962) of the first of these two subgroups, young/longspell awardees, is about three times greater than the overall average; as a result of its health composition, this average has increased slightly over time. Conversely, the average of the second subgroup, old/shortspell awardees, is only half of the overall average, and changes in its composition of constituent diagnoses have actually led to a decline in mean entitlement years over the period in question.

The middle rows of Exhibit 3 aggregate these effects over the total number of awards made at different points. Obviously, aggregate entitlement years have increased over the past thirty years. Age/health interactions are especially noticeable in these computations.

Not surprisingly, the growth in entitlement years translates into corresponding variations in expected costs or liabilities stemming from program operations. Indexes of inflation-adjusted cash payments plus the value of Medicare benefits (in 1989 dollars) expected to be paid out over the course of the entitlement episode were constructed for each subgroup of awardees with the aid of some simplifying assumptions.<sup>9</sup> Aggregate liabilities incurred on behalf of successive classes of the total SSDI awards population rose at about 2.8 percent per year. This rate is slightly lower than the rate for aggregate entitlement years, because cash benefits for younger, less experienced workers are generally lower on average. However, the proportion of the total dollar amount that would be expected to be spent over the entitlement episodes of the youngest workers with longspell diagnoses has risen at much higher rates, a result primarily attributable to higher estimated lifetime costs of Medicare coverage. This subgroup accounted for a portion of total aggregate liabilities identical to that of older, shortspell awardees in the early 1960s (6.6 percent), whereas it now accounts for an estimated amount that is five times greater than that for the older subgroup (20.4 percent versus 4.1 percent). Despite the lack of precision in these simulation estimates, there can be little doubt that age and health changes in the composition of the awards population have greatly raised the costs of operating the SSDI program, including Medicare outlays.

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## Policy Implications

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A more extensive multivariate statistical analysis (not reported here) tested a set of possible explanations for the trends in the age and health distributions of SSDI awards, including the impact of the baby-boom population bulge on the SSDI-insured population, trends in health status, fluc-

tuations in unemployment rates, and shifts in internal programming.<sup>10</sup> On balance, this analysis attributes observed changes in the composition of the awards population to complex interactions among the entire set of factors, not just a single one. It is noteworthy that health status trends appear to have played a major role in shaping the heterogeneity of the awards population, with rising prevalence rates of chronic disease and corresponding activity limitations in young adults being especially significant predictors of awards to the youngest subgroup of the SSDI beneficiary population. These health trends, in turn, may be explained by the absence of effective medical interventions for some health impairments, for example, the impact of deinstitutionalization on the rising number of awards to younger persons with mental disorders. Thus, in the absence of dramatic medical breakthroughs or significant adjustments in program rules, it seems unlikely that compositional trends will reverse much in the immediate future or reverse more completely over the next quarter-century or so when the baby-boom bulge recedes. Compositional trends, in other words, cannot be dismissed as a simple deviation from what traditionally was, and again will be, a program for an older, relatively homogeneous target population. As a result, the heterogeneity of the beneficiary population must be taken more explicitly into account in future deliberations about program options and financing.

Assuming these trends do continue, upward pressure on Medicare outlays attributable to SSDI entitlement, among other things, almost certainly will continue as well. Indeed, even if future awards populations are reduced in size by changes in program rules, financial pressures on Medicare will be relieved only after a substantial time lag, because of the divergent time paths of the incident and prevalent populations resulting from the changing distribution of beneficiary characteristics. Moreover, reducing the scale of the SSDI program may affect Medicare in different ways, depending on how it is accomplished. Across-the-board reductions in awards will have a much different, and probably smaller, impact than reductions brought about by selective targeting of specific demographic/health subgroups.

Whatever the future holds in regard to the SSDI awards population, the trends described above clearly suggest a higher priority for return-to-work strategies for persons already on the rolls. It seems intuitively clear that cost-effectiveness ratios of rehabilitative and training/employment efforts have been shifted by compositional trends, so searching for effective options to raise work recovery rates makes more sense now than it did in the past.<sup>11</sup> Yet, whatever other effects they may have, efforts designed to speed up work recovery probably will increase Medicare spending, not reduce it. For example, some have suggested eliminating the twenty-four-month waiting period for SSDI beneficiaries to qualify for Medicare, principally on the grounds that earlier medical intervention may reduce the severity of the

disabling health condition and thereby hasten the return of disabled workers to the workforce.<sup>12</sup> This strategy, however, is insensitive to the mix of health problems, especially between conditions that are amenable to earlier intervention and those that are not. Because Medicare costs tend generally to be higher during the last year of life, highly fatal diseases such as acquired immunodeficiency syndrome (AIDS) further complicate this strategy.

Because the threat of losing Medicare coverage appears to reduce the likelihood that persons will return to gainful employment, many have called for extending such coverage for even longer periods than current program rules allow. Convincing empirical evidence that continuing health insurance coverage raises work recovery rates is lacking, and coverage that has been extended in various ways in the recent past does not yet appear to have had much impact on program termination rates. If indeed it is effective, this option will add to the financial pressures on the Medicare trust funds, unless interfund transfers based on SSDI program "savings" are instituted simultaneously. Clearly, the same issue surfaces in recommendations to unbundle the SSDI benefits package, so that beneficiaries capable of working forgo cash benefits altogether and receive only Medicare coverage. Ultimately, this policy option begs the question of the real meaning of disability transfers as well as the appropriate role of Medicare entitlement. The changing face of the SSDI program attributable to the compositional trends detailed here suggests the need to rethink these matters soon.

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## NOTES

1. Unless otherwise noted, all figures are derived from relevant data series published in *Annual Supplement, Social Security Bulletin*, 1957-1994. A more detailed description of data sources and variable definitions is contained in a Technical Appendix available from the author at the University of South Florida, College of Public Health, 13201 Bruce Downs Boulevard, MDC 56, Tampa, Florida 33612. It is worth pointing out that there are currently fewer disabled Supplemental Security Income (SSI) recipients ages eighteen to sixty-four than there are SSDI disabled worker beneficiaries of those ages.
2. Enrollment of disabled beneficiaries in the Medicare program increased at a much higher rate than that of aged beneficiaries over 1975-1993, and their per capita costs are higher than those of aged enrollees. The federal contribution to the monthly premium under Part B, for instance, has always been higher for disabled than for aged enrollees (about 18 percent higher on average for 1991-1993, or \$114 versus \$97).
3. Board of Trustees, OASDI Trust Funds, *1994 Annual Report* (Washington: U.S. Government Printing Office, 1994), 2-7.
4. Up to three years of extended Medicare coverage is available to SSDI beneficiaries

returning to gainful employment, and recipients who lose cash benefits can now purchase continuing Medicare coverage by paying the Part A and Part B premiums.

5. Summarizing trends in SSDI awards is always complicated by annual fluctuations attributable to changing program rules and administrative processes. This difficulty is finessed here by (1) calculating three-year averages at specific time points to gauge changes in the absolute number of awards, and (2) estimating continuously compounded average annual growth rates in awards from log-linear time-series regressions of awards against time, using all of the yearly data points between 1960 and 1993. Average annual growth rates computed in this fashion obviate the need to select specific "base" or "terminal" years, and they do not accord undue weight to unusually high or low values at various points in the historical profile of changes. In effect, the estimated regression coefficient represents an "averaging out" of the changes between and among time points and may be interpreted as the expected rate of change between any pair of years over the period in question. Annual average growth rates have the added advantage of admitting to simple arithmetic operations; for example, the average annual growth rate in SSDI beneficiaries can be obtained by adding the growth rate of awards and the corresponding rate for beneficiaries per award given in Exhibit 1 ( $2.14 + 2.91 = 5.05$  percent), and so forth. Clearly, geometric growth rates such as these will differ according to the time period(s) over which they are calculated. The period 1960-1993 is reported here to show that SSDI beneficiary trends are not of very recent origin or necessarily a simple response to a particular policy regime. While growth rates for various subperiods differ, the pattern of change across age and health characteristics of awardees is roughly the same, irrespective of which subperiod is examined. Estimated growth rates for various subperiods as well as other details about the methods used to prepare them are described more fully in the Technical Appendix noted above and in T. Chirikos, *The Composition of Disability Beneficiary Populations: Trends and Policy Implications* (Report prepared for the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, December 1993).
6. See J. Hennessey and J. Dykacz, "Projected Outcomes and Length of Time in the Disability Insurance Program," *Social Security Bulletin* (September 1989): 241; and Chirikos, *The Composition of Disability Beneficiary Populations*. The diagnostic categories are fundamentally "one-digit" *International Classification of Diseases*, Ninth Revision (ICD-9) codes. Incidentally, available data through 1991 categorized awards to disabled workers with AIDS in the "other, not elsewhere classified" category. They have been included in the "infectious disease" category since that time.
7. See Note 5.
8. Although the size of the prevalent beneficiary population is important in a "pay-as-you-go" program such as SSDI, the implicit commitment to entitle successive incident populations for the full length of their spells of disablement is also of interest, particularly in regard to Medicare financing. The magnitude of these implicit commitments is gauged here by the expected length of entitlement spells (in years) and the expected cumulative cost of those spells (in constant 1989 dollars) for successive awards populations. Details of these calculations are available from the author. Lifetime Medicare spending estimates come from B. Bye et al., "Medicare Costs Prior to Retirement for Disabled-Worker Beneficiaries," *Social Security Bulletin* (April 1991): 2-23.
9. See Note 8.
10. These statistical results are set out in detail in the Technical Appendix noted above.
11. K. Rupp et al., "Design of the Project Network Return-to-Work Experiment for Persons with Disabilities," *Social Security Bulletin* (Summer 1994): 3-20.
12. See, for instance, B. Bye and G. Riley, "Eliminating the Medicare Waiting Period for Social Security Disabled-Worker Beneficiaries," *Social Security Bulletin* (May 1989): 2-15.