Health care use by Medicare's disabled enrollees

by James Lubitz and Penelope Pine

Three million persons under age 65 are entitled to Medicare because of disability. This study examines their Medicare use and mortality. Disabled enrollees had higher health care use and mortality than comparison groups of Medicare's aged enrollees or of the general population under age 65. One type of disabled enrollee, adults disabled as children (over one-half of whom are mentally retarded) show lower use rates than the other types of enrollees—workers and widows. High mortality of the disabled during the 2-year waiting period for Medicare suggests the need to investigate how they pay for care during this period.

Introduction

In the last major expansion of health care coverage by the Federal Government, the Social Security Amendments of 1972 extended Medicare to persons who had been receiving social security disability insurance benefits for 24 months, and to persons with end-stage renal disease (ESRD). Coverage for these individuals began on July 1, 1973, with 1.7 million disabled persons under age 65 becoming entitled to Medicare. Extension of Medicare coverage to disabled social security beneficiaries was motivated by congressional concern over the low level of health insurance protection for this vulnerable group. Surveys by the Social Security Administration in 1960, 1966, and 1972 had shown that disabled persons, including social security disability beneficiaries, were in poorer health, used more health care services, had less private health insurance coverage, and had higher out-of-pocket expenses for health services than the nondisabled population (Krute and Burdette, 1981; Stanley and Swisher, 1969; Brehm and Cormier, 1970; Duchnok, 1981; Ferron, 1981; Advisory Council on Social Security, 1965). Prior to the passage of Medicare, the Advisory Council on Social Security (1965) had recommended the provision of hospital insurance for the disabled, as well as the aged, through social security. In making its recommendation, the Advisory Council took into account the limited incomes, higher health care costs, and limited health insurance protection of the disabled. Medicare coverage for the disabled was considered by Congress in 1967 and was recommended by Advisory Councils in 1969 and in 1971 (Advisory Council on Health Insurance for the Disabled, 1969; Advisory Council on Social Security, 1971).

It is important to examine Medicare's disabled population because of large expenditures for the disability program.[1] Heightened interest also stems from recent controversies about the large number of terminations resulting from disability reviews, and from current proposals for changes in social security and Medicare which would affect disabled beneficiaries. Previous studies of the Medicare program have focused on aged beneficiaries or on beneficiaries with ESRD.

The purpose of this article is to analyze the use of Medicare services by the disabled and to examine the relationship between disability and health services use. This study goes beyond previous analyses of health care use by Medicare disability beneficiaries in four ways:

- It removes enrollees with ESRD from the study population whether they were entitled to Medicare because of the ESRD provisions of the Social Security Amendments of 1972 or because of the disability provisions (i.e., entitlement to social security disability benefits for 24 months). About one-half of all enrollees under age 65 with ESRD are entitled because of each provision. All enrollees under age 65 with ESRD were excluded because their high mortality and health care use would skew the findings for the disability population as a whole. Medicare beneficiaries with ESRD have been studied elsewhere (Eggers, Connerton, and McMullan, 1984; Eggers, 1984).
- It analyzes Medicare use by the three different types of Medicare disability beneficiaries; workers, widows and widowers, and adults disabled as children.
- It analyzes Medicare use by aged beneficiaries who were formerly entitled to Medicare because of disability to see if patterns of health care use persist after they change their basis for Medicare entitlement.
- It analyzes the relation of Medicare use by the disabled to the length of time entitled to Medicare.

Also presented is background material on the Social Security Disability Insurance program for persons not familiar with it.

An understanding of the disabled population and its health care use is vital to assessing the impact on beneficiaries of past and proposed changes to Medicare and social security. For example, one proposal would gradually raise the age of Medicare entitlement to 67 years, which would be in line with the already mandated rise in the age for social security

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[1]Federal expenditures related to the social security disability program totaled $25.4 billion in 1984, $17.9 billion from the Disability Trust Fund, and $7.5 billion from the Medicare Trust Fund.

entitlement (Advisory Council on Social Security, 1983). Data cited in this article show that if the retirement age for social security were raised, a substantial number of persons would be expected to retire on disability at ages 65 and 66—persons who would have no Medicare coverage because of the 2-year waiting period required between entitlement to social security disability benefits and to Medicare. Congress has already recognized the potential of an adverse effect from the increased retirement age on individuals who would not be able to continue working past 65 years of age. In the Social Security Amendments of 1983 (section 201) it called for a study with " . . . recommendations with respect to the provision of protection against the risks associated with early retirement due to health considerations . . . ".

Another area in which knowledge of patterns of health care use by disabled enrollees may become important is in setting prices for capitation in Medicare. Regulations to implement the health maintenance organization (HMO) and comprehensive medical plan (CMP) provisions of the Tax Equity and Fiscal Responsibility Act of 1982 were issued in January 1985. HMO's and CMP's are expected to play an increasingly important role in serving Medicare beneficiaries. This article shows that different subgroups of the disabled have distinct patterns of use of Medicare services. The current payment formula for HMO's and CMP's (known as the adjusted average per capita cost or AAPCC formula) does not adjust for the different levels of use by these subgroups. Thus, HMO's or CMP's attracting a disproportionate share of subgroups with lower-than-average use would be overpaid under the current formula and those attracting a disproportionate share of subgroups with higher-than-average use would be underpaid. Knowledge of use patterns by the disabled, therefore, might be used to improve Medicare's pricing formula for capitation.

Entitlement

To understand the nature of the Medicare disabled population under age 65 and their health care use, it is necessary to understand the Social Security Disability Insurance program. As previously mentioned, persons entitled to cash disability benefits for 24 months automatically become entitled to Medicare coverage. The Social Security Disability Insurance program was established in 1956 to provide cash benefits to disabled workers. To be eligible for benefits as a disabled worker an individual must meet the insured status requirements regarding length of time in social security covered employment applicable to his or her age. In addition, the worker must meet the social security definition of disability which is:

> "The inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months. A person must be not only unable to do his or her previous work or work commensurate with the previous work (e.g., amount of earnings and utilization of capacities) but cannot, considering age, education, and work experience, engage in any other kind of substantial gainful work which exists in the national economy. It is immaterial whether such work exists in the immediate area, or whether a specific job vacancy exists, or whether the worker would be hired if he or she applied for work.
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> In making a determination, the worker's impairment or impairments must be the primary reason for his or her inability to engage in substantial gainful activity, although age, education, and work experience are also taken into consideration." (Social Security Administration, 1984).

At present, the substantial gainful activity level is $300 per month in earnings. There is a 5-month waiting period between the date disability was determined to have begun and receipt of social security benefits.

In addition to disabled workers there are two other categories of disabled social security beneficiaries—adults disabled as children (ADC) and disabled widows or widowers. ADC beneficiaries must have been disabled before age 22 and must be the dependent child of a parent who is receiving social security disability or retirement benefits, or of a parent who died while insured under social security. ADC beneficiaries must meet the same definition of disability as disabled workers. The minimum age for eligibility as an ADC beneficiary is 18.

For disabled beneficiaries who are widows or widowers of workers who were insured at their death, the minimum age of eligibility is 50. The definition of disability is stricter for disabled widows and widowers than for workers or ADC. Disabled widow(er)s must not be able to engage in any gainful activity (as opposed to the substantial gainful activity definition for workers and ADC). Furthermore, age, education, and work experience are not considered in determining eligibility for widows or widowers, as they are for workers and ADC (Social Security Administration, 1984).

The Social Security Disability Insurance program is designed to assist persons who cannot work at all. The definitions of disability for purposes of entitlement to social security benefits have programmatic elements such as social security coverage and minimum and maximum ages of entitlement, as well as medical evidence requirements. In addition, for workers and ADC applicants who do not qualify solely on the basis of medical reasons, factors such as age, education, skills, and experience are considered in determining whether the applicant's disability prevents work. Thus, the social security (and hence Medicare) definition of disability is different from measures of disability used in medicine and sociology such as functional status or self-reported disability. Many persons who would be classified as

disabled by a variety of measures would not qualify as social security disability recipients.

The other class of disabled persons who receive benefits from the Federal Government are those entitled under the Supplemental Security Income (SSI) program. The definition of disability is basically the same for SSI and for social security. SSI is a means-tested program that is funded from general revenues. Also, recipients' income must not exceed certain limits. At the end of 1983, 2.2 million disabled persons were receiving Federal SSI payments. Some persons are covered under both programs. For instance, 10.5 percent of social security's disabled workers also received SSI payments in 1983.

Issues and trends

Certain aspects of social security's disability program have been of concern. Considerable public debate has been generated by the steady rise in the number of beneficiaries in the early and mid-1970's and by the recent controversies over benefit terminations. On the one hand, there is recognition of the need for a program to help with financial support and medical expenses for persons unable to work. On the other hand, there appears to be economic and social circumstances that influence workers' decisions to apply for benefits. The complexity of making disability determinations is illustrated by the substantial percent of awards made on appeal after denial at the initial level (35 percent of total awards in 1980) and by findings of high rates of disagreement on disability determinations when different reviewers review the same cases (Lando, Farley, and Brown, 1982; Social Security Administration, 1982).

In recent years, there have been several important trends in the Social Security Disability Insurance program (Lando, Farley, and Brown, 1982; Office of Research, Statistics, and International Policy, 1984). After a steady rise in disability awards to workers from 253,000 persons in 1965 to 592,000 in 1975, the annual number of awards declined to 311,000 in 1983. Reflecting the trends in awards, the number of disabled workers on the disability insurance rolls rose from 1.0 million in 1965 to 2.9 million in 1978 and then declined to 2.6 million in 1983. There has also been a dramatic drop in the percent of awards based on initial determinations on applications for disability. In 1965, 49 percent of initial determinations resulted in an award of benefits; in 1980, only 22 percent resulted in an award. As a result of the decline in the initial allowance rate, many more cases are being appealed to and allowed at higher levels.

Part of the reason for the drop in the initial allowance rate seems to have been tighter administration of the disability program in reaction to the sharp increase in the number of awards in the early 1970's (Social Security Administration, 1982). Under a 1980 law, the Social Security Administration (SSA) began to review the continued eligibility of every beneficiary (except the permanently disabled) every 3 years. (SSA had previously reviewed only about 5 percent of the cases annually.) This led to record numbers of terminations of benefits, concern about resulting hardships, and the implementation of administrative reforms in the review process (Demkovich, 1984). The Social Security Disability Benefits Reform Act of 1984, which made it more difficult to remove disability beneficiaries from the rolls, was signed into law in October 1984.

Characteristics of beneficiaries

The 1978 Survey of Disability and Work (Lando, Cutler, and Gamber, 1982) found an estimated 10.9 million severely disabled persons 18-64 years of age in the U.S. population. Of these 10.9 million persons, 2.9 million or 27 percent were social security disability beneficiaries (Table 1). The Survey defined "severely disabled" persons as those who reported being

Table 1

Noninstitutionalized persons 18-64 years of age and severely disabled persons, by selected measures: United States, 1978

Measure	Total population 18-64 years	Severely disabled persons		
		Total	Social security disability insurance beneficiary	Non-social security beneficiary
Number in millions	127.0	10.9	2.9	7.9
Percent 55-64 years	16.0	46.4	57.7	42.2
Percent male	49.6	43.2	65.9	34.7
Percent below poverty level	8.1	22.1	15.8	24.5
Percent black	10.6	16.8	14.0	17.8
Percent housebound	2.3	8.1	7.7	8.2
Median years of schooling completed	12	10	10	10

SOURCE: (Lando, Cutler, and Gamber, 1982).

"unable to work altogether or unable to work regularly." Virtually all social security disability beneficiaries were automatically classified as severely disabled by the Survey. The other less severe categories of disability were the "occupationally disabled" and those with "secondary work limitations."

Severely disabled persons, both social security beneficiaries and nonbeneficiaries, were older than the general population. Among this group, there was also a lower percent of males, a higher percent of black people, a higher percent living below the poverty level, and a higher percent housebound. They also had less education then the general population.

Among the severely disabled, social security beneficiaries and nonbeneficiaries had the same median education (10 years) and about the same percent housebound (7.7 and 8.2). But social security beneficiaries were older than nonbeneficiaries (57.7 percent versus 42.2 percent were 55-64 years of age), had a much higher percent of males (65.9 versus 34.7), a much lower percent living below the poverty level (15.8 versus 24.5), and a lower percent of black people (14.0 versus 17.8). The higher percent of males among social security beneficiaries compared with other severely disabled persons is a result of the historically greater labor force participation by men. The lower percent of SSA beneficiaries below the poverty level probably results from their receipt of social security benefits.

The two most common major disabling conditions found in the 1978 Survey for disability beneficiaries were diseases of the circulatory system (28 percent of beneficiaries) and diseases of the musculoskeletal system (27 percent). Other leading major disabling conditions were mental disorders, diseases of the nervous system and sense organs, and diseases of the respiratory system, each reported by about 9 percent of disability beneficiaries (Lando, Cutler, and Gamber, 1982).

Data sources and methods

Most of the data for this study come from a longitudinal file of Medicare enrollees known as the Continuous Medicare History Sample (CMHS). The CMHS was used to provide a cross-sectional view of the Medicare disabled population in 1978. The file (which begins with 1974 data) records the continuing experience of a 5-percent probability sample of Medicare enrollees selected by their identification numbers. The file is part of the Medicare Statistical System, which collects information from Medicare claims for services submitted by physicians, hospitals, and other providers. New enrollees whose identification numbers place them in the CMHS are added to the sample, and the records of enrollees who die are retained in the file. Information on the use of Medicare services is appended to enrollees' records in periodic updates. Because the data are based on a sample of enrollees, there are sampling errors associated with the estimates.[2]

The data are limited to the use of Medicare-covered services. Medicare covers the following services:

- Hospital inpatient.
- Skilled nursing facility.
- Home health agency.
- Physician and other medical.
- Hospital outpatient.

Services of importance not covered by Medicare are nursing home care below the skilled level and drugs for outpatients.

As previously mentioned, disabled enrollees with ESRD were excluded from the study. Out of a total of 2.8 million disabled Medicare enrollees under 65 years of age in 1978, 36,357 were identified as ESRD patients. Aged enrollees with ESRD (less than 0.1 percent of the total aged) were also excluded.

The different types of disabled beneficiaries (worker, ADC, widow(er)s) have different sets of Medicare identification numbers. This permitted analysis by type of beneficiary. To compare the use of services by disabled beneficiaries to aged Medicare beneficiaries, data also were generated for the aged. Information on the original reason for entitlement to Medicare was used to identify aged enrollees previously entitled to Medicare because of disability in order to study their use of services.

Some Medicare use data for 1981 is given. However, because of limitations in the systems that maintain the CMHS, utilization data for widow(er)s in 1981 were incomplete. Thus, 1978 data are used for breakdowns of Medicare use by type of disabled beneficiary.[3]

In addition to the CMHS, data from the Continuous Disability History Sample, maintained by the Social Security Administration, and from the 1978 Survey of Disability and Work conducted by the Social Security Administration are also used in this article to provide information on the characteristics of social security disability insurance beneficiaries.

Findings

Aged and disabled enrollees

On July 1, 1973, the first day of Medicare entitlement for disabled beneficiaries, there were 1.7 million disabled persons under 65 years of age (including ESRD beneficiaries) enrolled in Medicare. From 1973 to 1981, disability enrollment grew at a much faster rate than aged enrollment. By 1981, there were 3.0 million disabled enrollees, reflecting an average annual increase of 7 percent; from 1973 to 1981, enrollment of aged beneficiaries grew at an average annual rate of 2.2 percent. From 1981 to 1984,

[2]Sampling error tables are available from the authors.
[3]Data for 1981 on Medicare use for workers and ADC are available from the authors.

the number of disabled enrollees declined to 2.9 million and the number of aged enrollees continued to increase. The decline in Medicare disability enrollment reflects the previous decline in the number of persons on the social security disability rolls.

There were 2.8 million disabled enrollees in 1981 (which excludes enrollees with ESRD), and they accounted for $4.0 billion in Medicare reimbursements (Table 2). There were 25.1 million enrollees 65 years of age and over (excluding enrollees with ESRD), and they accounted for $32.9 billion in Medicare reimbursements. Thus, disabled enrollees made up 11 percent of the Medicare population and accounted for 12 percent of Medicare reimbursement.

Disabled enrollees as a whole have a rate of Medicare reimbursements per enrollee similar to aged enrollees, $1,393 for disabled and $1,292 for aged enrollees. But when utilization is compared for disabled and aged enrollees closest in age, it becomes clear that the disabled are much higher users of Medicare services than would be expected given their age alone. Reimbursement per enrollee for disabled enrollees 60-64 years of age was $1,510, and for enrollees 65-69 years of age it was $962, a 60-percent difference. The pattern of reimbursement by sex for disabled enrollees was opposite that for aged enrollees. For example, among disabled enrollees 60-64 years of age reimbursement per enrollee was higher for females than males ($1,561 and $1,476, respectively); among aged enrollees 65-69 years of age, reimbursement per enrollee was higher for males than females ($1,041 and $897, respectively).

Aged enrollees as a whole also have a higher mortality rate than disabled enrollees—52 deaths per 1,000 aged enrollees versus 31 deaths per 1,000 disabled enrollees. When death rates are compared for groups closest in age, however, this pattern is reversed. The death rate of 45 per 1,000 enrollees for the disabled group 60-64 years of age was nearly twice the rate of 24 per 1,000 for aged enrollees 65-69 years of age. Thus, a comparison of use and mortality of disabled with aged enrollees close in age confirms that the disabled are in much poorer health than their aged counterparts.

Medicare use by type of beneficiary

In 1978, there were 2.7 million disabled persons covered under Medicare for reasons other than ESRD (Table 3). Of these, 2.2 million (80 percent) were disabled workers, 107,000 were disabled widows (4 percent),[4] and 369,000 (14 percent) were ADC. The age and sex make up of each type of beneficiary group is quite different. The number of disabled workers rises with age. Only 164,000 (7 percent) were under 35 years of age, whereas 749,000 (34 percent) were 60-64 years of age. Most were males (67 percent), reflecting their higher labor force participation. The minimum age for eligibility for Medicare for disabled widows is 52 because the minimum age for eligibility for social security disabled widows benefits is 50 and there is a 2-year waiting period for Medicare. Most disabled widows (65,000 or 61 percent) were 60-64 years of age.

The age distribution of ADC beneficiaries is the reverse of disabled workers and widows. The 159,000 ADC beneficiaries under 35 years are 43 percent of the total. The number of ADC beneficiaries declines with increasing age and only 17,000 (4 percent) were

[4]A small number of disabled widowers are also entitled to Medicare. Because there were less than 1,000 disabled widowers, they are not analyzed separately.

Table 2

Medicare enrollment, reimbursements, and mortality for disabled and aged enrollees, and ratio of disabled to aged by selected age groups and sex: 1981

Sex	Disabled		Aged		Ratio	
	All persons	60-64 years	All persons	65-69 years	All disabled to all aged	Disabled 60-64 years to aged 65-69 years
	Number of enrollees in millions					
All persons	2.8	.9	25.1	8.4	—	—
Male	1.8	.5	10.1	3.8	—	—
Female	1.0	.4	14.9	4.6	—	—
	Reimbursements in billions					
All persons	$4.0	$1.3	$32.9	$8.2	—	—
Male	2.4	.8	14.1	4.0	—	—
Female	1.6	.5	18.8	4.2	—	—
	Reimbursements per enrollee					
All persons	$1,393	$1,510	$1,292	$962	1.1	1.6
Male	1,309	1,476	1,383	1,041	.9	1.4
Female	1,537	1,561	1,232	897	1.2	1.7
	Deaths per 1,000 enrollees					
All persons	31	45	52	24	.6	1.9
Male	36	54	63	33	.6	1.6
Female	22	32	44	17	.5	1.9

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

60-64 years of age. There were more male than female ADC beneficiaries in the two youngest age groups; we can offer no explanation for this.

Overall reimbursement per disabled enrollee was $849 in 1978 (Table 4). Reimbursement per enrollee was highest for widows ($1,051), followed by workers ($924), and lowest for ADC ($345). The relatively low reimbursement rate for the ADC group at every age-sex group probably reflects the fact that over one-half of ADC are mentally retarded (Cormier, 1972; Schmulowitz, 1985). The low reimbursement rate for the ADC group may be because of their lesser need for care for physical problems, compared with disabled workers and widows, and to Medicare coverage limitations on the types of care necessary for these beneficiaries, especially limitations on custodial care and on ambulatory mental health services. In addition, about 25 percent of the ADC population are institutionalized (Cormier, 1985). The need for acute hospital services may be less for persons already receiving institutional care.

Reimbursement per enrollee for disabled workers is higher at every age group for females than males. In the general population under age 65, per capita health care expenses are also higher for females than males. (National Center for Health Statistics, 1980). Reimbursement rates increased moderately for successively older age groups of male workers from $732 for disabled workers under age 35 to $952 for those 60-64 years of age. For disabled female workers, reimbursement per enrollee was virtually the same for each age group. For disabled widows, reimbursement per enrollee was also virtually the same for each age group. Reimbursement rates for widows were similar to those for disabled female workers.

Short-stay hospital use

In 1978, the overall discharge rate from short-stay hospitals for disabled enrollees was 356 per 1,000 enrollees (Table 5). This was higher than the rate of 328 discharges per 1,000 enrollees for aged enrollees and considerably above the rate of 250 discharges per 1,000 for aged enrollees 65-69 years of age. (Data not shown in table). The rate was highest for disabled widows (414 per 1,000), followed by disabled workers (390 per 1,000) and ADC (142 per 1,000). At every age, discharge rates were higher for disabled female workers than for disabled male workers. The discharge rate was higher for successively older age groups for male workers, but for female workers the rate declined after 35-44 years of age. The discharge rates for disabled widows were similar to those for disabled female workers.

The discharge rates for the ADC enrollees were less than one-half as large as the rates for workers and widows for all age-sex groups. For both males and females in the ADC group, the discharge rate declined from the youngest group, persons under 35 years, to the next group, persons 35-44 years of age; then the rate rose again for persons 45-54 years of age.

Table 3

Number of disabled Medicare enrollees under age 65, by type of beneficiary, sex, and age: July 1, 1978

Sex and age	Total	Type of beneficiary: Worker	Widow	Adults disabled in childhood
		Number in thousands		
All persons	2,675	2,188	107	369
Under 35 years	324	164	—	159
35-44 years	312	218	—	93
45-54 years	616	532	8	74
55-59 years	588	525	34	27
60-64 years	835	749	65	17
Male	1,677	1,470	—	203
Under 35 years	214	121	—	92
35-44 years	208	155	—	53
45-54 years	400	362	—	38
55-59 years	359	345	—	13
60-64 years	496	488	—	8
Female	998	717	106	165
Under 35 years	111	44	—	66
35-44 years	104	63	—	40
45-54 years	215	170	8	36
55-59 years	229	179	34	14
60-64 years	339	261	65	9

NOTE: The sum of types of beneficiary does not add to total because widows and ADC enrollees could not be identified for a small group of Railroad Board enrollees. Parts may not add to totals because of rounding. The minimum age for Medicare entitlement for disabled widows is 52 years. A small number of disabled widowers are also entitled to Medicare. Because there were less than 1,000 disabled widowers they are not analyzed separately. They are included in the total for widows.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4

Medicare reimbursement per disabled enrollee under age 65, by type of beneficiary, sex, and age: 1978

Sex and age	Total	Type of beneficiary: Worker	Type of beneficiary: Widow	Type of beneficiary: Adults disabled in childhood
	Reimbursement per enrollee			
All persons	$849	$924	$1,051	$345
Under 35 years	588	826	—	344
35-44 years	689	860	—	289
45-54 years	803	856	1,142	382
55-59 years	901	913	1,017	418
60-64 years	1,007	1,020	1,017	396
Male	763	823	—	332
Under 35 years	552	732	—	319
35-44 years	622	734	—	299
45-54 years	701	736	—	359
55-59 years	788	801	—	427
60-64 years	944	952	—	434
Female	993	1,132	1,049	361
Under 35 years	657	1,083	—	378
35-44 years	823	1,172	—	276
45-54 years	992	1,109	1,145	405
55-59 years	1,076	1,129	1,086	411
60-64 years	1,100	1,146	1,017	363

NOTES: The minimum age for Medicare entitlement for disabled widows is 52 years of age. A small number of disabled widowers are also entitled to Medicare. Because there were less than 1,000 disabled widowers they are not analyzed separately. They are included in the total for widows.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 5

Short-stay hospital discharges per 1,000 persons for Medicare disabled enrollees and the U.S. population, and ratio of disabled to U.S. population, by sex and age: 1978

Sex and age	Medicare disabled enrollees: Total	Worker	Widow	Adults disabled in childhood	U.S. population 15-64 years	Ratio of total disabled to U.S. population
	Discharges per 1,000 persons					
All persons	356	390	414	142	143	2.5
Under 35 years	234	319	—	147	112	2.1
35-44 years	297	377	—	112	147	2.0
45-54 years	359	386	454	154	175	2.1
55-59 years	380	388	426	172	[1]214	[1]1.8
60-64 years	406	412	403	170		
Male	333	361	—	135	118	2.8
Under 35 years	216	279	—	135	88	2.5
35-44 years	272	329	—	106	123	2.2
45-54 years	333	352	—	160	163	2.0
55-59 years	350	357	—	159	[1]225	[1]1.7
60-64 years	396	400	—	164		
Female	395	450	415	152	159	2.5
Under 35 years	269	428	—	163	135	2.0
35-44 years	348	496	—	119	169	2.1
45-54 years	407	460	455	149	185	2.2
55-59 years	428	449	427	183	[1]204	[1]2.1
60-64 years	421	436	403	176		

[1]This number applies to the age group 55-64 years of age.

NOTES: The minimum age for Medicare eligibility is 52 years for disabled widows. A small number of disabled widowers are also entitled to Medicare. Because there were less than 1,000 disabled widowers they are not analyzed separately. They are included in the total for widows. Data on discharges for females in the U.S. population exclude deliveries. Among disabled females, the discharge rate for the *Eighth Revision International Classification of Disease, Adapted for Use in the United States*, category of "complications of pregnancy, childbirth, and the puerperium" was only 8 per 1,000, compared with 85 per 1,000 in the general population.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System; Data for the U.S. population are from (Haupt, 1980).

Data from the National Center for Health Statistics (1982) on hospital discharge rates by the general population 15-64 years of age were compared with hospital use rates by Medicare disabled enrollees. Overall, the hospitalization rate for disabled enrollees was 2.5 times that of the general population. The discharge rates for disabled workers and widows were more than twice as high as the rates for the general population for nearly all age-sex groups, reflecting their poorer health. However, for ADC enrollees the discharge rates were somewhat lower for most age-sex categories than the rates for the general population. The lower discharge rates probably reflect the high rates of mental retardation and institutionalization in this population, mentioned earlier.

By far, the most common reason for hospitalization for disabled enrollees is diseases of the circulatory system, accounting for 83 discharges per 1,000 enrollees or 23 percent of all discharges (Table 6). Other common discharge diagnoses were diseases of the respiratory system and diseases of the digestive system, each accounting for 11 percent of total discharges. The main reasons for hospitalization for disabled workers and widows were the same as for all disabled enrollees. For ADC enrollees, however, the main reasons for hospitalization were diseases of the digestive system (21 discharges per 1,000 enrollees) and mental disorders (18 discharges per 1,000 enrollees). The differences in discharge diagnoses between ADC and other disabled enrollees reflect in large part their younger age and the large percent of mentally retarded in this group.

Table 6

Short-stay hospital discharges per 1,000 persons and percent distribution for Medicare disabled enrollees and the U.S. population, by diagnosis: 1978

Diagnostic group	ICDA-8[1] code(s)	Medicare disabled					U.S. population 45-64 years[2]	
		Total	Workers	Widows	Adults disabled in childhood	Percent distribution	Discharges per 1,000 persons	Percent distribution
		Discharges per 1,000 persons						
Total, all discharges	—	356	390	414	142	100	193	100
Malignant neoplasms	140-209	21	23	26	2	6	15	8
Diabetes mellitus	250	12	13	28	2	3	5	3
Mental disorders	290-315	26	28	15	18	7	11	6
Diseases of the nervous system and sense organs	320-389	17	17	16	11	5	9	5
Diseases of the circulatory system	390-458	83	94	107	11	23	38	20
Heart and hypertensive disease	393-429	(60)	(68)	(76)	(6)	(17)	(NA)	(NA)
Chronic ischemic heart diseases	412	(24)	(28)	(25)	(2)	(7)	(11)	(6)
Diseases of the respiratory system	460-519	40	44	52	13	11	16	8
Diseases of the digestive system	520-577	39	42	42	21	11	29	15
Diseases of the genitourinary system	580-629	21	22	23	12	6	19	10
Diseases of the musculoskeletal system and connecting tissue	710-738	21	24	22	5	6	15	8
Symptoms and ill-defined conditions	780-796	21	23	21	10	6	4	2
Accidents, poisoning, and violence	800-999	25	27	26	14	7	15	8
Residual	—	30	33	36	23	8	17	9

[1] *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.*

[2] Hospital use by diagnosis for the disabled was compared to that of the general population 45-64 years of age because 76 percent of the disabled are in that age group.

NOTE: Parts may not add to totals due to rounding.

SOURCE: Data on Medicare enrollees are from the Health Care Financing Administration, Bureau of Management and Strategy: Data from the Medicare Statistical System. Data for the U.S. population are from McCarthy, 1981.

Table 7

Number of deaths per 1,000 persons for Medicare disabled enrollees and the U.S. population 20-64 years of age, and ratio of disabled to U.S. population, by sex and age: 1978

Sex and age	Medicare disabled enrollees				U.S. population 20-64 years	Ratio of total disabled to U.S. population
	Total	Workers	Widows	Adults disabled in childhood		
	Number of deaths per 1,000 persons					
All persons	33	37	31	10	5	7.2
Under 35 years	10	12	—	8	1	7.1
35-44 years	15	19	—	6	2	6.3
45-54 years	29	32	15	15	6	4.8
55-59 years	38	40	34	16	11	3.4
60-64 years	49	51	32	29	18	2.8
Male	39	43	—	11	6	6.4
Under 35 years	10	12	—	8	2	5.0
35-44 years	17	21	—	6	3	5.5
45-54 years	36	38	—	17	8	4.5
55-59 years	45	46	—	21	15	3.0
60-64 years	59	60	—	31	24	2.4
Female	24	26	31	9	3	7.5
Under 35 years	9	13	—	7	1	12.8
35-44 years	11	15	—	5	2	6.5
45-54 years	18	20	13	13	4	4.2
55-59 years	27	27	34	11	8	3.5
60-64 years	33	33	32	27	12	2.7

NOTES: The minimum age for Medicare eligibility for disabled widows is 52. A small number of disabled widowers are also entitled to Medicare. Because there were less than 1,000 disabled widowers they are not analyzed separately. They are included in the total for widows. Ratios were computed on unrounded numbers and may differ from ratios computed on the rounded numbers shown in the table.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System; (National Center for Health Statistics, 1982).

The discharge rate for the disabled is greater than the rate for the general population 45-64 years of age[5] for virtually all diagnostic groups, but the percent distribution of discharges by diagnostic group among the general population and among disabled enrollees are not dissimilar. The leading cause for hospitalization for both groups was diseases of the circulatory system, accounting for 23 percent of total discharges for the Medicare disabled and 20 percent in the general population. Discharges for most other conditions also accounted for similar percentages of the total for disabled enrollees and the general population. Thus, although the rate of hospitalization for disabled enrollees is much greater than that of the general population their age, the patterns of hospitalization by diagnosis are generally similar.

Mortality rates

As would be expected, the mortality rates for disabled Medicare enrollees are considerably higher than for the population as a whole. The death rate for disabled enrollees in 1978 was 33 per 1,000 enrollees, a figure 6.6 times the rate of 5 per 1,000 persons in the general population 20-64 years of age (Table 7). Although the death rates increased with successively older age groups, the relative difference was greatest at the younger ages. As shown in the last column of the table, the mortality rate of disabled enrollees under age 35 was 7.1 times that of the general population; the mortality rate of disabled enrollees 60-64 years of age was 2.8 times that of the general population. The mortality rates for disabled male enrollees were higher at each age group than the rates for females, just as the overall rates for the U.S. population 20-64 years of age were consistently higher for males than females. The higher mortality rates for disabled males, compared with females, contrast with their lower per capita Medicare reimbursement and hospital use found earlier.

Mortality rates for the ADC group were considerably lower than for disabled workers or widows for all age-sex groups. Nonetheless, the mortality rates for the ADC enrollees in each age-sex group were much higher than the rates for the general population.

An interesting relation between mortality and hospital use was observed for ADC enrollees. As already noted, hospital discharge rates for this group were generally slightly lower than for the general population. However, mortality rates for ADC enrollees were higher than the general population rates. A reason that their higher mortality may not be reflected in higher hospital use may be that many ADC enrollees are in institutions for the mentally retarded where they may receive care that they would otherwise need to obtain in a hospital.

[5]Hospital use by diagnosis for the disabled was compared to that of the general population 45-64 years of age because 76 percent of the disabled are in that age group.

Table 8

Medicare enrollment, reimbursements, and mortality for formerly disabled Medicare enrollees and other groups, and ratio of formerly disabled to aged, by selected age groups and sex: 1981

Sex	Formerly disabled 65-69 years	Disabled 60-64 years	Aged 65-69 years	Ratio of formerly disabled 65-69 years to aged 65-69 years
		Number of enrollees in thousands		
All persons	837	886	8,408	—
Male	502	535	3,796	—
Female	335	351	4,612	—
		Reimbursement per enrollee		
All persons	$1,866	$1,510	$962	1.9
Male	1,821	1,476	1,041	1.7
Female	1,934	1,561	897	2.2
		Deaths per 1,000 enrollees		
All persons	58	45	24	2.4
Male	71	54	33	2.2
Female	40	32	17	2.4

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Formerly disabled enrollees

About 11 percent of aged persons who become entitled to Medicare each year are persons who were formerly entitled to Medicare under age 65 because of disability. How does their use of Medicare services compare with that of other aged Medicare enrollees?

In 1981, there were 837,000 aged enrollees who were formerly entitled to Medicare because of disability out of a total of 8.4 million enrollees 65-69 years of age[6] (Table 8). Reimbursement per enrollee for the formerly disabled 65-69 years of age ($1,866) was 1.9 times higher than the average of $962 per enrollee. Their mortality rates were 2.4 times higher. The reimbursement and mortality rates of the formerly disabled 65-69 years of age are similar to, but somewhat higher than, that of disabled enrollees 60-64 years of age. The reimbursement per enrollee for the formerly disabled was $1,866, compared with $1,510 for disabled enrollees 60-64 years of age; number of deaths per 1,000 enrollees was 58 for the formerly disabled, compared with 45 for the disabled 60-64 years of age. Thus, as might be expected, the ill health that led to disability entitlement under age 65, continues to result in higher use of Medicare benefits and higher mortality rates after age 65.

Patterns through time

As noted earlier, SSA disability beneficiaries must wait 2 years from award of disability benefits to Medicare entitlement. What is the effect of this waiting period on the population becoming entitled to Medicare? The death rates in the waiting period are much higher than in subsequent years (Schobel, 1980). For example, during the period 1975-78, age-adjusted death rates per 1,000 persons for male disabled workers were 86.3 in the first year of SSA entitlement, 55.1 in the second year, but leveled off at around 45 in the third, fourth, and fifth years. Mortality in the waiting period varies dramatically by reason for disability (Table 9). Overall, 11 percent of disabled persons die in the 2-year waiting period, but more than one-half of persons disabled for neoplasms (mostly cancer) die before becoming entitled to Medicare. The death rate for other reasons for disability was much lower, with diseases of the digestive system having the second highest rate, 16 percent. There is, of course, no Medicare program data on the use of health services during the waiting period. However, data from the 1972 Survey of Disabled and Nondisabled Adults shows a 90-percent higher probability of being hospitalized for persons entitled less than 2 years to social security disability benefits compared with persons entitled 2 or more years (Duchnok, 1981).

Data on use of Medicare services for 1976-80 were computed for the cohort of disabled persons becoming entitled to Medicare in 1976 (Table 10). Reimbursement per enrollee (adjusted), hospital days per 1,000 enrollees, and death rates did not vary greatly during the first 5 years of Medicare entitlement. Rates of reimbursement and hospital days peaked in the second or third year and declined somewhat thereafter. Mortality rates dropped during the first 4 years and then rose in the fifth year.

Conclusions

This study has shown that disabled Medicare enrollees are much higher users of health services and experience higher mortality than either their counterparts in the general population or than Medicare aged enrollees close to them in age. This is, of course, to be expected, but it is important to remember that the data reflect health care use and mortality occurring at least 29 months from the initial onset of disability (the 5-month waiting period from

[6]Since Medicare coverage for the disabled began on July 1, 1973, the oldest formerly disabled enrollees would be 72 years on July 1, 1981.

Table 9

Number of workers receiving social security disability awards in 1975 and percent who died during the 2-year waiting period for Medicare entitlement, by reason for disability

Reason for disability	ICD-8 codes	Number of disability awards in 1975	Percent dying during 2-year waiting period for Medicare benefits
Total	—	564,380	11
Infective and parasitic diseases	000-136	7,780	4
Neoplasms	140-239	55,340	55
Endocrine, nutritional and metabolic diseases	240-279	22,380	7
Mental disorders	290-315	64,360	3
Diseases of the nervous system and sense organs	320-389	37,300	5
Diseases of the circulatory system	390-458	170,860	9
Diseases of the respiratory system	460-519	37,900	8
Diseases of the digestive system	520-577	16,580	16
Diseases of the genitourinary system	580-629	5,480	8
Diseases of the musculoskeletal system	710-738	105,360	2
Congenital anomalies	740-759	6,520	3
Accidents, poisonings, and violence	800-999	30,100	3
Other	—	4,420	8

[1] *Eighth Revision International Classification of Disease, Adapted for Use in the United States.*

SOURCE: Social Security Administration: Data from the Continuous Disability History File.

onset of disability to receipt of social security benefits plus the 24-month waiting period for Medicare). Additionally, rates of health care use and mortality remain basically the same in the first 5 years of entitlement to Medicare. Thus, the data show both a higher need for health care and also that this need apparently does not diminish much over time. Clearly, then, the basic intent of the Social Security Amendments of 1972—to extend coverage to a high need group—is being met.

This study also raises again some issues that were first debated before the passage of the Social Security Amendments of 1972 concerning the requirement of a 2-year waiting period before Medicare entitlement. The majority view of the Report of the Advisory Council on Health Insurance for the Disabled (1969) recommended only a 3-month waiting period between the date disability was determined to have begun and entitlement to Medicare because of the belief that health care needs are greatest at the onset of disability. (This is in contrast to the current 5-month waiting period for receipt of cash benefits after disability has begun plus the 2-year wait from receipt of cash benefits to Medicare entitlement.) The minority view of the Council recommended a 12-month waiting period to avoid duplication of Medicare with private coverage. In passing the 1972 Amendments, Congress recognized the need for Medicare coverage for the disabled but provided for a 2-year waiting period, " . . . to keep program costs within reasonable bounds, avoid overlapping private health insurance protection . . . " and to " . . . provide assurance that protection will be available to those whose disabilities have proven to be severe and long lasting." (United States Senate, 1972). The waiting period requirement has had a paradoxical effect. Health care use is higher in the first 2 years of entitlement to social security disability benefits than in subsequent years. Death rates are also highest in the waiting period, and some of the sickest disability beneficiaries do not survive the waiting period. In

Table 10

Number of enrollees, Medicare reimbursements per enrollee, short-stay hospital days per 1,000 enrollees, and mortality rates for disabled Medicare enrollees becoming entitled in 1976: 1976-80

Measure	Year				
	1976	1977	1978	1979	1980
Number of enrollees entitled on June 30 of year	11,742	23,397	22,104	21,061	19,780
Medicare reimbursement per enrollee[1]	$759	$767	$794	$730	$702
Hospital days per 1,000 enrollees	3,840	4,027	4,015	3,823	3,765
Number of deaths per 1,000 enrollees	40	38	36	34	38

[1] Adjusted by deflating by the increase in Medicare reimbursement per enrollee for all disabled persons.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy, Data from the Medicare Statistical System.

particular, more than one-half of those beneficiaries entitled to social security disability because of cancer die before becoming entitled to Medicare. Thus, the waiting period reduces costs, but it does not provide Medicare coverage to disabled beneficiaries when their needs are greatest. Some beneficiaries are undoubtedly covered by private insurance either through their former employment or their spouse during all or part of the waiting period, but the current extent of such coverage is unknown. In 1972, 35 percent of social security disability beneficiaries surveyed who were entitled less than 2 years had no private health insurance (Duchnok, 1981).

Given the current mandate for cost control it seems unlikely that the 2-year waiting period would be eliminated without some other offsetting program change to decrease expenditures. One option could be for Medicare to become the secondary payer in the first few years of entitlement to cash disability benefits. This might offset the increased expenses of eliminating or reducing the waiting period for Medicare. A precedent for this has been established by the Tax Equity and Fiscal Responsibility Act of 1982 which made Medicare the secondary payer for persons 65-69 years age covered by group health insurance plans and for enrollees entitled because of ESRD for their first year on Medicare. Current data on the extent to which disability beneficiaries have health insurance protection during their first 2 years of entitlement would be needed to estimate the cost of such an option.

Related issues are raised by proposals to gradually raise the general age for Medicare entitlement from 65 years to 67 years of age in line with the Social Security Amendments of 1983 which gradually raise the age for social security benefits from 65 years to 67 years of age by the year 2027 (Advisory Council on Social Security, 1983). It can be anticipated that many persons 65 and 66 will retire on disability when the retirement age increases. Program data show that the number of disability awards increases with age, and that the largest number of disability awards for any age group are for persons 60-64 years of age (Lando, Farley, and Brown, 1982). If the waiting period provision were still in effect, disabled beneficiaries 66 and 67 years of age would have no Medicare entitlement. Additionally, disability retirees age 63 and 64 would no longer become entitled to Medicare when they reached age 65 but would have to wait a full 2 years for Medicare. Thus, as policymakers consider raising the Medicare entitlement age from 65 years to 67 years of age they will need to keep in mind that although the majority of persons in that age range are in good health, a segment of the population has failing health and may have difficulty remaining in the work force and retaining private health insurance coverage.

The ADC group emerges from this study as a population different in terms of use of Medicare benefits from the rest of Medicare disabled enrollees. They use less Medicare services probably because they are younger and are, to a large extent, disabled for mental (mainly mental retardation) rather than physical diseases. Despite their low use of Medicare services, their higher-than-average death rate suggests they are in poor health. There is new public concern that the mentally retarded not be "warehoused" in institutions that do not offer adequate care and services for developing as much independence as possible (Atkins, 1984). Under the Medicaid program, the States are using new authority to offer retarded persons community-based services rather than institutional care. As we develop better information and understanding about this population, the Federal Government and the States may be able to insure more cost-effective and beneficial services to this population.

This study represents the first step in increasing our knowledge of health care use by Medicare's disabled enrollees. Further research is planned to examine the relationship of reason for disability to use of Medicare services. It is hoped that a better understanding will lead to policy recommendations for changes to improve the efficiency of health care delivery and the health of this population.

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