HEALTH INSURANCE AND HEALTH CARE ACCESS BEFORE AND AFTER SSDI ENTRY

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ABSTRACT: This report uses National Health Interview Survey (NHIS) data linked to data from the Social Security Disability Insurance (SSDI) and Medicare programs to create profiles of SSDI beneficiaries during the three years before and after SSDI entry to illustrate changes in insurance status, health care access, and utilization. It finds that SSDI beneficiaries are less likely to be insured, even three years prior to SSDI entry, and that utilization and access problems peak right before and after entry. At the time their SSDI applications were allowed, 11 percent of beneficiaries had completed the entire 24-month Medicare waiting period and about one-third had completed 12 months or more. This implies that eliminating the Medicare waiting period would help many beneficiaries who lack health insurance. However, this policy alone would not be of help to beneficiaries who are uninsured before entry and whose allowances are made at long intervals after SSDI entitlement.

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EXECUTIVE SUMMARY

The goal of the Social Security Disability Insurance (SSDI) program is to provide a safety net for workers who must stop working because of a disability. There is, however, a significant hole in that safety net with respect to health care coverage and access to care: although Medicare coverage is available to people with disabilities, most beneficiaries must wait for that coverage until 24 months after their eligibility for SSDI begins. Previous studies have provided information about SSDI beneficiaries' characteristics, health insurance coverage, and experiences in accessing health care during the 24-month Medicare waiting period. Far less is known about the extent to which SSDI beneficiaries have adequate health care coverage and access during the years preceding their entry into the SSDI program.

In this study, we profile the characteristics, health insurance status, and health care access and utilization patterns of SSDI beneficiaries during the years before and after their entry into the program. Using data from the 1994–1996 National Health Interview Survey (NHIS) linked to SSDI, Medicare, and death records, we focus on SSDI beneficiaries during the three years prior to their SSDI entry and three years after entering the program. The study builds on the body of previous research on the 24-month Medicare waiting period after SSDI entry by more broadly examining the circumstances of SSDI beneficiaries in the years immediately before their eligibility for benefits. It considers a policy to expand Medicare to workers with significant medical conditions. The rationale for considering such policies is based partly on the work disincentives inherent in the current system for people with disabilities. For those with disabilities, lack of adequate coverage and access to care might contribute to their decision to stop working and instead apply for SSDI.

Characteristics. Even three years before entering the SSDI program, beneficiaries differ from other working-age adults in many respects: they are older; have lower levels of education; are more likely to be divorced, widowed, or separated; are more likely to be black; are more likely to be in laborer and service occupations and less likely to be in managerial/professional occupations; have lower average earnings; are in poorer health; are more likely to be uninsured; and have higher reported rates of health care access problems. Yet, in several important respects, beneficiaries observed three years before SSDI entry are similar to all working-age persons: they are about as likely to be employed, have health coverage through their own employment, live in households with incomes below the federal poverty level, and have Medicaid coverage.

Sources of Health Insurance. Among beneficiaries observed during the years prior to SSDI entry, a large share (about 22%) was uninsured (Table ES-1). By contrast, about 16 percent of the general population of adults ages 18 to 64 is uninsured. Rates of uninsurance remain fairly constant and high until the second year after SSDI entry. By the third year after entry, only a small share of SSDI beneficiaries reports being uninsured, primarily because all of them have become eligible for Medicare. The non-Medicare sources of health insurance coverage change from the period before SSDI entry to the period after: there is a marked decline in coverage obtained through beneficiaries' own employment, a less-marked decline in coverage obtained through a family member, and a marked increase in reliance on Medicaid.

Poverty. Prior to SSDI entry, the poverty rate among beneficiaries is comparable to the rate for all working-age adults. Immediately after SSDI entry, poverty rates among beneficiaries jump, with rates in the years after entry nearly doubling from those in the years before.

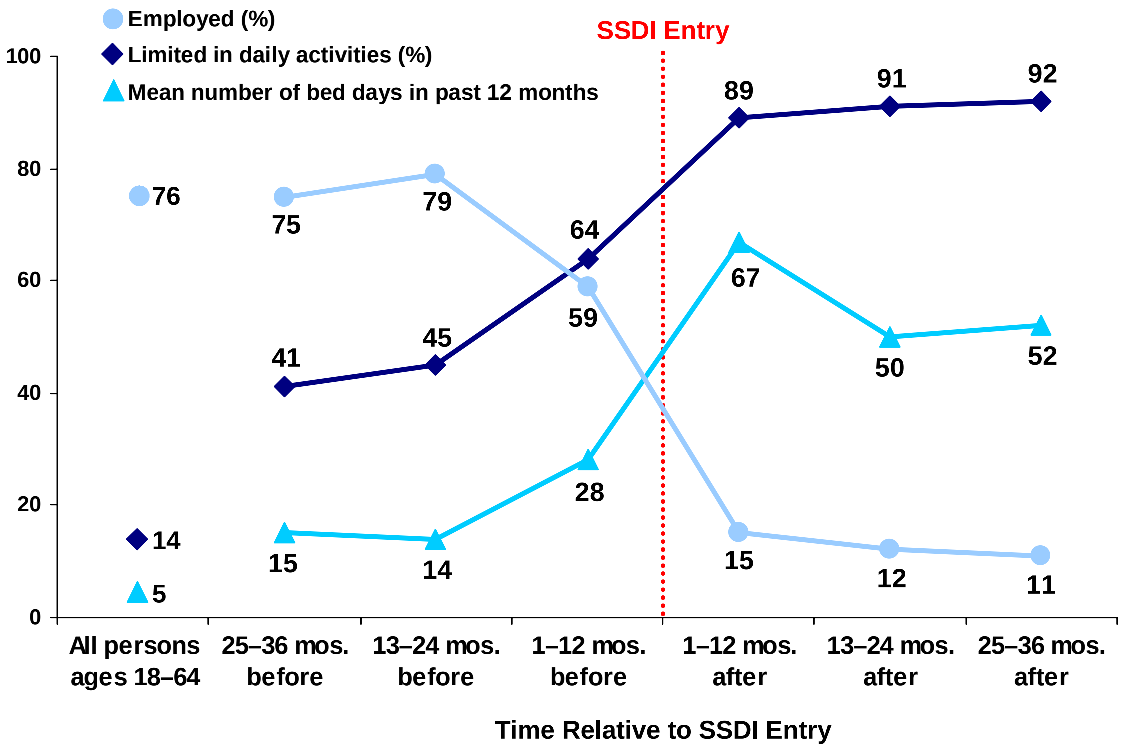
Table ES-1. Selected Sources of Health Insurance Coverage of Disabled Workers Before and After SSDI Entry

	Prior to SSDI Entry			**After SSDI Entry**		
	25–36 months	**13–24 months**	**1–12 months**	**1–12 months**	**13–24 months**	**25–36 months**
Source of Health Insurance (%)						
None (uninsured)	22	21	23	23	17	4
Medicaid	6	7	8	17	21	29
Own employer	40	41	37	26	21	16
Family member employer	39	37	33	30	35	31

Note: SSDI beneficiary cohorts include NHIS sample members ages 18–64 who became entitled to SSDI based on their own work histories within 36 months (before or after) the month the household was interviewed in the NHIS. The SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the interview month. Coverage status could not be ascertained for approximately 10 percent of sample members in each SSDI 12-month group. Percentages do not sum to 100 because not all sources are shown, and because individuals may have multiple sources of coverage.

Health Status and Employment. During the years leading up to and following SSDI entry, many beneficiary characteristics change, primarily in ways that might be expected to accompany the onset or worsening of a disabling health condition. There is a marked decline in health status (based on a number of indicators) and a marked decline in employment (Figure ES-1). But even three years prior to SSDI entry, a large share of eventual beneficiaries report activity limitations (41%) relative to all working-age adults (14%).

Figure ES-1. Health Status and Employment

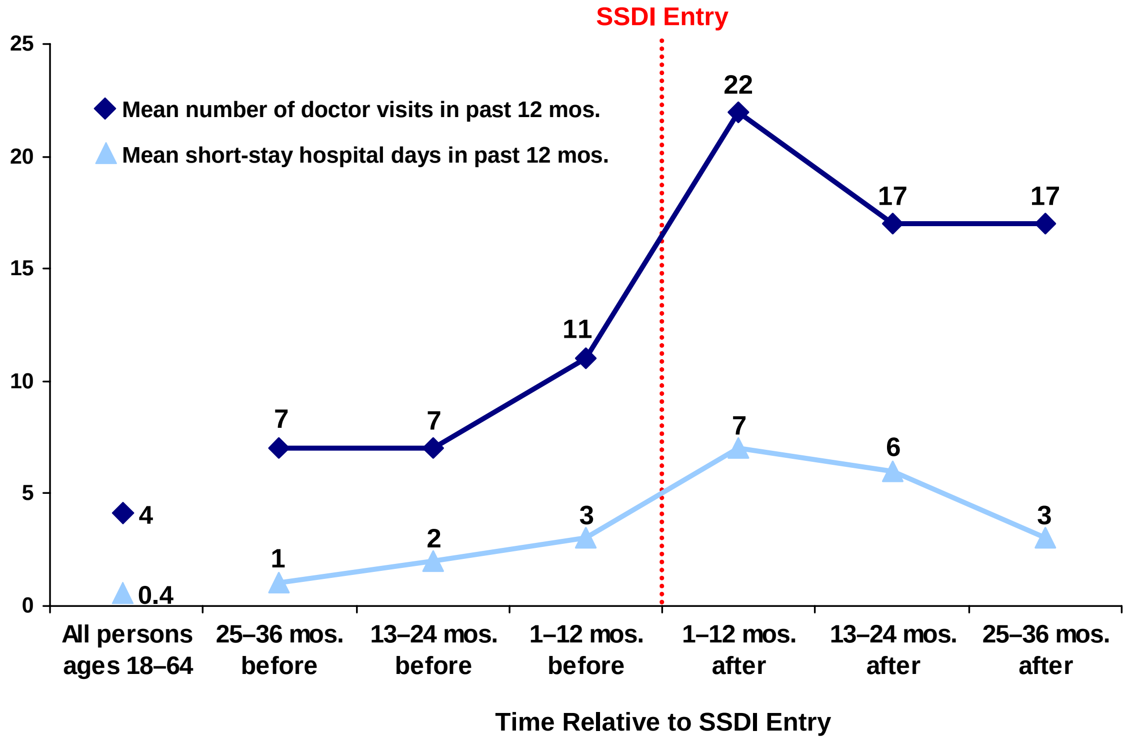


Source: Authors' analysis.

Mortality. Mortality rates during the first three years after SSDI entry are high. For those beneficiaries observed in the NHIS before entry, the cumulative mortality rates by the 13th, 25th, and 37th month after entry are approximately 9 percent, 13 percent, and 15 percent, respectively. One implication of this finding is that an estimated 13 percent of entrants never receive Medicare benefits, even though they likely contributed to Medicare's financing for many years.

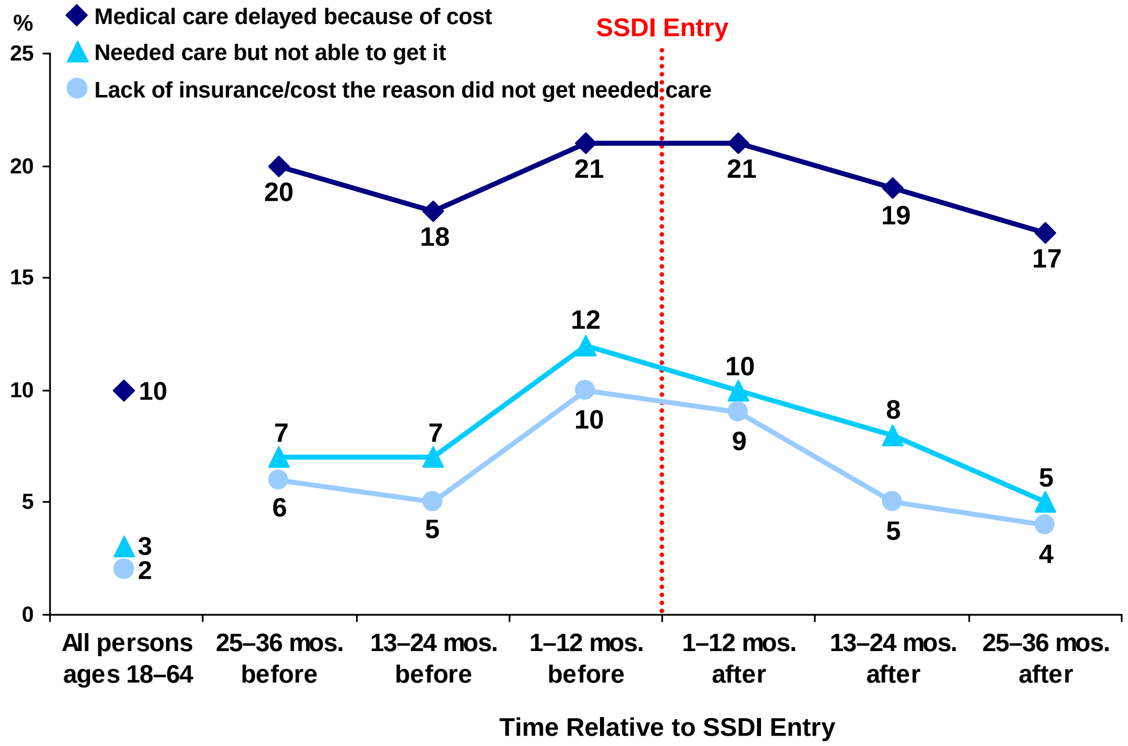
Health Care Utilization and Access. At the same time beneficiary health status is declining, there are increases in health care utilization and reported health care access problems (Figures ES-2 and ES-3). Beneficiaries experience problems accessing care at rates that are two or more times those of all adults ages 18 to 64. Rates of health care utilization and access problems follow a pattern of gradually increasing and peaking during the year before and the year after SSDI entry, then declining somewhat thereafter. Using a logistic regression model, we find that poverty, poor health, and lack of health insurance are significant predictors of cost-related health care access problems among beneficiaries, with lack of insurance having the largest effect.

Figure ES-2. Health Care Utilization Before and After SSDI Entry



Source: Authors' analysis.

Figure ES-3. Health Care Access Problems Before and After SSDI Entry



Source: Authors' analysis.

Medicare Waiting Period. The majority of beneficiaries in our sample entered SSDI retroactively; that is, the month in which their application was allowed was after the first month in which they were entitled to benefits. Because of the length of time it takes for SSDI applications to be reviewed and approved, many beneficiaries receive benefits that are retroactive to the first month they were entitled to receive them. For example, a person may find out in May 2009 that she is eligible for SSDI benefits as of July 2008—the first benefit check (presumably received in June or July 2009) would include retroactive benefits back to July 2008. The Medicare waiting period begins the first month beneficiaries are entitled to benefits. About one-third of SSDI entrants had completed 12 months or more of the Medicare waiting period by the time their SSDI claim was allowed, including 11 percent who had completed the entire 24-month waiting period. Therefore, while elimination of the waiting period for Medicare would help many SSDI beneficiaries, it would be of less help to those with significant health care needs who are waiting review of their SSDI claims—even if Medicare benefits were awarded retroactively. This is because their health care decisions would have been made in the absence of having the Medicare coverage. Of course, elimination of the waiting period also would not provide access to care during the months and years leading to SSDI entry.

The findings diminish some of the arguments justifying the Medicare waiting period. They suggest that private insurance crowd-out due to the extension of public coverage would be limited to a minority of beneficiaries: those with inferior private coverage and those for whom COBRA, with its high premiums, was the only coverage option—less than one-third of all beneficiaries in the waiting period. Our estimates indicate that it would cost about $12 billion per year (based on program year 2006) to eliminate the Medicare waiting period (including the costs for Medicare Parts A, B, and D) (Table ES-2). While a substantial sum, this is only a small share (3%) of all Medicare program expenditures. This estimate assumes that Medicare coverage would be retroactive to the month of SSDI entitlement. If Medicare coverage was not retroactive to the entitlement month, the annual cost of eliminating the waiting period would be approximately $7 billion.

Table ES-2. Estimated Annual Cost of Eliminating the 24-Month Medicare Waiting Period for SSDI Beneficiaries, 2006 Dollars*

Component	Estimate
Annual cost of eliminating the Medicare waiting period net of federal Medicaid savings (range)	$11.1–$11.9 billion
Annual cost of eliminating the Medicare waiting period net of federal Medicaid savings if coverage were not retroactive to SSDI entitlement date (range)	$6.9–$7.4 billion

* See Appendix C for details of the cost estimation methodology.

Other Policy Options. We provide cost estimates for policy options that would expand access to Medicare to other groups of workers and former workers with significant medical conditions that might eventually lead to SSDI eligibility. The rationale for considering such policies is partly to reduce the work disincentives inherent in the current system and partly to address health insurance market failures and current trends in employer-sponsored health insurance coverage that result in limited access to health care among workers with significant medical needs. Earlier and more consistent access to health care for such workers might reduce or delay their exit from the labor force and application for SSDI. Our analysis finds that, while expanding coverage to broader populations of workers with significant disabilities would be costly, individuals and employers now spend considerable sums on the health care of workers with disabilities. A very large share of the costs of expanding Medicare coverage could potentially be financed from this pool of private funds under a well-designed worker/employer premium system. in which workers and employers share the costs of Medicare premiums.

Governments of several states are taking steps to reduce the number of uninsured, but it is not yet clear whether these efforts will help individuals gain and retain health insurance. Federal policymakers are also debating the need for mechanisms to address uninsured Americans. It is uncertain whether these efforts will aid those with disabilities who are struggling to obtain coverage for their often intensive health care needs. One important criterion for judging the adequacy of any proposal to cover the uninsured is the extent to which it will meet the needs of workers with significant health conditions—and whether it will continue to meet their needs if they must exit the labor force and apply for SSDI.

HEALTH INSURANCE AND HEALTH CARE ACCESS BEFORE AND AFTER SSDI ENTRY

I. INTRODUCTION

The goal of the Social Security Disability Insurance (SSDI) program is to provide a safety net for workers who must stop working because of a disability. Those who become eligible for SSDI receive a monthly cash benefit that varies according to their work history. There is, however, a significant hole in that safety net with respect to health care coverage and access to care. Those who apply successfully become eligible for Medicare 24 months after their SSDI entry month (officially termed the SSDI "entitlement month"). As there is also a five-month waiting period for SSDI during which applicants must demonstrate they are unable to work because of disability, Medicare eligibility actually occurs 29 months after SSDI beneficiaries are first unable to work due to disability. Those who apply for SSDI but who are not allowed benefits after exhausting all appeals become eligible for Medicare only when they reach age 65, unless they reapply for SSDI and receive an allowance—a process that can take years.

Previous studies have provided some information about the characteristics, health insurance coverage, and experiences in accessing health care of SSDI beneficiaries during the 24-month Medicare waiting period. Far less is known about the extent to which SSDI beneficiaries have adequate health care coverage and access during the years leading up to their SSDI entry. For some, lack of adequate coverage and access to care might contribute to their decision to stop working and instead apply for SSDI. Many workers with chronic health conditions and disabling impairments require a variety of medical services and supports. Average health care expenditures for working-age people with disabilities are about five times higher than those of their counterparts without disabilities.[1] Health insurance coverage is extremely important to people with disabilities; without it, they might face substantial out-of-pocket costs or risk not being able to afford needed care. Because of this, access to insurance coverage is likely to figure prominently in the employment and program participation decisions of people with disabilities.

The purpose of this study is to develop a profile of the characteristics, health insurance coverage, and health care access and utilization patterns of SSDI beneficiaries during the years surrounding SSDI entry. We focus on a six-year window: the three years before and three years after SSDI entry. The study builds on previous research that focuses on SSDI beneficiaries during the 24-month Medicare waiting period after SSDI entry by more broadly examining the circumstances of SSDI beneficiaries in the years immediately preceding and following their eligibility for benefits. Understanding the circumstances of SSDI beneficiaries during the period immediately before entry can inform policy proposals designed to address the health insurance gap that arises for some SSDI beneficiaries, who are unable to work but must wait 24 months for Medicare.

We use pooled data from the 1994, 1995, and 1996 National Health Interview Survey (NHIS), which are linked to Social Security Administration (SSA) program data, to identify and analyze six SSDI beneficiary cohorts. The cohorts are defined based on the timing of SSDI entry relative to the NHIS interview date. The data are used to address the following questions:

- What are the characteristics of SSDI participants, and how do they differ during the periods before and after SSDI entry?
- What are the sources of health insurance coverage and rates of uninsurance among SSDI participants, and how do they differ during the periods before and after SSDI entry?
- What is the prevalence of health care access problems reported among SSDI participants, and does it differ during the periods before and after SSDI entry, by health insurance status, or by other important characteristics?
- What is the timing of the allowance of SSDI claims, relative to the SSDI entry month (i.e., the first month when beneficiaries are eligible for benefits). It can take many months for SSDI claims to be adjudicated, and benefits are often awarded retroactively. How much of the Medicare waiting period remains for beneficiaries at the time that their SSDI applications are allowed?

We also use NHIS data linked to Medicare program data for the subgroup in the NHIS sample who were SSDI beneficiaries and enrolled in Medicare during the year they were interviewed for the NHIS. These data are used to estimate a model of Medicare expenditures for purposes of imputing expected Medicare expenditures to address the following questions:

- What would be the cost associated with eliminating the Medicare waiting period?
- What would be the cost of providing Medicare benefits to an even broader population of workers and former workers with disabilities?

The remainder of this paper is organized as follows: in section II, we provide a summary of previous studies of issues related to health insurance coverage and health care access among SSDI beneficiaries; in section III, we describe the data and methods used in the study; in section IV, we present the findings from our analyses, discuss policy options for addressing health insurance needs of workers with disabilities, and present estimates of several options; we conclude in section V with a summary of the key findings.

II. PREVIOUS STUDIES

Considerable attention has been paid to the health insurance status of SSDI beneficiaries in the 24-month Medicare waiting period, primarily because many new SSDI beneficiaries are particularly vulnerable to high health care costs that immediate enrollment in Medicare could help defray. Studies based on focus groups and interviews with people with disabilities have illustrated very poignantly the hardships experienced by individuals with disabilities during this waiting period. At a time when health insurance coverage is needed most—when individuals have lost their health, jobs, income, and, for many, access to affordable health insurance—federal law requires them to wait two full years to become eligible for Medicare. Many uninsured SSDI beneficiaries in the Medicare waiting period skip medications, postpone needed care, become depressed and anxious about the future, and feel that they are not in control of their own lives. Others experience severe financial hardships and are unable to maintain employer-sponsored coverage under the COBRA provisions for the full duration of the waiting period because they are faced with very high premiums.[2]

Dale and Verdier (2003) and Riley (2004) have profiled beneficiaries in the Medicare waiting period and produced cost estimates related to its elimination. Dale and Verdier estimate that eliminating the waiting period would have cost $8.7 billion in 2002. They also assess the impact the policy would have on state Medicaid programs, estimating that states would realize $1.8 billion in savings, or just under 2 percent of what states spent on Medicaid in 2002, if the waiting period were eliminated.[3] Riley's analysis finds that a significant proportion of beneficiaries (12%) dies during the waiting period, and that a large share of the waiting period months (39%) has elapsed, on average, by the time the beneficiary actually is allowed benefits. Riley estimates that eliminating the waiting period for new SSDI beneficiaries in 1995 would have cost $5.3 billion (expressed in 2000 dollars).[4]

Reduction or elimination of the waiting period has been proposed by disability advocates and members of Congress since 1972, when Medicare was first expanded to cover SSDI beneficiaries. Whittaker (2005) provides background on the legislative history of the waiting period, and summarizes the issues that undermine political support for its elimination.[5] She notes that Congress wished to "proceed on a conservative basis," striving to keep costs down, avoid overlap with private coverage, and ensure that only those with long-lasting disabilities were given access to the benefits. She also notes that congressional concern about whether to eliminate the waiting period centers around expectations of high costs, difficulties in administering a retroactive benefit, the creation of greater incentives to stop working and apply for SSDI benefits, and possible crowding out of private insurance sources.

The findings from one study lend some credence to concerns about private insurance crowd-out and induced SSDI applications that could result from the elimination of the Medicare waiting period. Gruber and Kubik (2002) use data from a sample of older workers to assess the effect of health insurance coverage on the decision to apply for SSDI.[6] Their findings suggest that the incidence of being uninsured does not rise during the Medicare waiting period—that the small loss of private coverage through own employment observed in their sample of SSDI applicants is made up by increases in private coverage obtained through family members and public sources, such as Medicaid. They also find that the lack of access to alternative sources of coverage appears to deter SSDI applications. For this reason, they conclude that eliminating the waiting period would not increase insurance coverage, but would increase SSDI applications.

More recently, Riley (2006) has provided extensive information about the insurance coverage, limitations on access to care, health conditions, and other characteristics of SSDI beneficiaries in the Medicare waiting period, using NHIS data linked to SSA and Medicare administrative records.[7] Among those for whom insurance coverage status was known, most (63%) had private coverage under COBRA, via a spouse, or under workers' compensation; some had public coverage other than Medicare (especially Medicaid); but a fairly large share (29%) had no coverage at all. Riley also provides information about how the insurance coverage of those in the Medicare waiting period is related to their medical, socioeconomic, and demographic characteristics. With other characteristics held constant, men, blacks, those in poverty, and those with musculoskeletal conditions were significantly less likely to be insured during the waiting period. Those who were uninsured were significantly more likely to report experiencing health care access problems such as the inability to obtain needed health care, mental health care, and prescription drugs.

Our analysis adds to the body of existing research in the following ways: it tracks the health insurance coverage, health care access, and utilization of SSDI beneficiaries during specific periods before and after SSDI entry, thereby extending previous analyses that focus on beneficiaries in the Medicare waiting period only. In this way, we provide a broader context for considering the health care spending and coverage status of people who become SSDI beneficiaries. Although the focus is on issues related to health care, it also presents a profile of beneficiaries that illustrates the effects of disability progression on living arrangements, employment, and poverty and compares beneficiaries to all working-age individuals. In addition, it updates previous estimates of the costs of eliminating the Medicare waiting period, and provides estimates of the costs of broader health policy options that would extend Medicare benefits to a larger group of workers and former workers with disabilities.

III. DATA AND METHODS

A. DATA SOURCES

Under a federal interagency agreement, several National Center for Health Statistics (NCHS) population-based surveys were linked to SSA and Medicare administrative records. The NCHS-Social Security linked files combine health and sociodemographic information from the surveys with administrative data on the receipt of retirement, survivors, and disability insurance benefits as well as Supplemental Security Income (SSI) benefits obtained from the SSA. The NCHS-Medicare linked files combine health and sociodemographic information from the surveys with claims information from the Medicare program. NCHS also has linked national survey data to the National Death Index, a central source of information obtained from state vital statistics records. For this study, we use NHIS data for each of three years (1994, 1995, and 1996) that are linked to administrative records from the SSDI and Medicare programs, as well as data from the National Death Index. We use these data to analyze the characteristics, health insurance coverage, health care access, and expected Medicare costs of SSDI beneficiaries who were interviewed for the NHIS while in the six-year window surrounding the SSDI entry month. The data sources used in the analyses are described briefly below.[8]

NHIS. Sponsored by NCHS, the NHIS provides data on the health of the civilian noninstitutional U.S. population, primarily to monitor the country's health and health care utilization. The NHIS is a repeated cross-sectional survey conducted annually since 1957. Following a multistage area probability design that permits the representative sampling of households, it contains a nationally representative sample of roughly 100,000 persons in recent years. The survey includes a core set of questions that is modified every 10 to 15 years, and various sets of supplemental questions that change annually. The NHIS contains a broad range of health and disability-related data, including those related to health insurance and access to and utilization of health care. It also provides information on household composition, socioeconomic status, and family income and assets.

Disability-related questions address work and activity limitations, and the conditions causing those limitations. For this study, we pooled observations from the 1994, 1995, and 1996 NHIS. NCHS provides a set of pooled strata and sampling unit variables that can be used to adjust variance estimates for the complex survey design.

SSA Master Beneficiary Record (MBR). The MBR file is the major administrative database for the Social Security Retirement, Survivors, and Disability Insurance programs. The file includes data used to determine program eligibility, as well as information for the calculation of benefit amounts and the maintenance of information about beneficiaries. The MBR contains information about each person who has applied for retirement, survivors, or disability benefits, starting in 1962. The files that have been linked to the NHIS represent data through December 2003. An MBR record is created whenever an individual applies for benefits; however, not everyone who applies will receive benefits, and the MBR record reflects the final decision about the initial claim, including denials. For this study, we used information from the MBR regarding SSDI applications and eligibility for disabled workers who were allowed benefits on the basis of their own employment histories.

Summary Medicare Enrollment and Claims (SMEC). The SMEC files were created by NCHS to assist researchers in analyzing Medicare cost and claims data from multiple Medicare service files. The files contain data on the beneficiary’s reason for Medicare entitlement, number of months of entitlement, plan enrollment, and summarized Medicare service charges and reimbursement amounts. We used SMEC files for claim years 1994 through 1996 that were linked to those for NHIS sample members in the respective years.

National Death Index (NDI). The NDI is a central computerized index of death record information on file in state vital statistics offices. Working with the state offices, NCHS established the NDI as a resource to provide researchers with population mortality information, as well as mortality information on sample members in selected surveys, including the NHIS, to which the NDI has been linked. The NHIS-NDI linked files contain mortality information on adult NHIS sample members (including the date of death) as of December 2002.

B. STUDY SUBGROUPS

We focus on six SSDI beneficiary subgroups defined on the basis of the timing of SSDI entry (defined as the month of entitlement to SSDI benefits) relative to the NHIS household interview month. The SSDI beneficiary subgroups include respondents ages

18 to 64 who entered SSDI within 36 months of the NHIS interview month. If a respondent entered SSDI multiple times during the study time window (i.e., had multiple entitlement dates), the latest entry month was used for purposes of the analysis. Sample members who meet these criteria are categorized as belonging to one of the following six mutually exclusive subgroups:

- interviewed in NHIS 25–36 months *before* SSDI entry;
- interviewed in NHIS 13–24 months *before* SSDI entry;
- interviewed in NHIS 1–12 months *before* SSDI entry;
- interviewed in NHIS 1–12 months *after* SSDI entry;
- interviewed in NHIS 13–24 months *after* SSDI entry; or
- interviewed in NHIS 25–36 months *after* SSDI entry.

The subgroups provide cross-sectional snapshots of SSDI beneficiaries during the different periods surrounding the SSDI entry month. Although the data do not represent true longitudinal data from a single cohort of individuals, the six cross-sectional cohorts taken together provide a longitudinal perspective. The sample sizes for each of the beneficiary cohorts, and for other subgroups analyzed in the study, are shown in Table A-1.

C. METHODS

Descriptive Statistics. We produce descriptive statistics for a variety of sociodemographic, health, employment, health insurance, and health care access characteristics for all working-age persons (ages 18–64), and for members of each of the six SSDI beneficiary cohorts. We also present selected SSDI program–related characteristics for the beneficiary cohort members.

Logistic Regression Models. We estimate logistic regression models to explore the determinants of the following among SSDI beneficiaries:

- the likelihood of being uninsured;
- the likelihood of having private, employer-sponsored health insurance; and
- the likelihood of needing medical care but not being able to obtain it, or delaying care due to cost.

Each model is estimated using a set of explanatory variables representing sociodemographic, health, and SSDI program–related characteristics. These variables are described in Table A-2. We use the estimates from selected models to produce simulated probabilities, holding other explanatory variables constant for purposes of illustrating the relationship between specific variables and the likelihood of the outcome of interest.

Medicare Cost Estimates. We produce estimates of the average annual health care costs that would be associated with each SSDI beneficiary cohort if the cohort members were covered by Medicare. We also estimate Medicare costs for sample members representing a broader population of people with disabilities. The methodology used to produce these estimates is described in Appendix C.

In this study, all estimates are generated using the pooled NHIS samples and a special weight developed by Riley (2006), which accounts for bias associated with the missing information of NHIS respondents who could not be linked to the Social Security data.[9] Standard errors of the estimates are computed using SUDAAN and pooled sample strata and primary sampling unit variables developed by NCHS.

IV. FINDINGS

In the sections below, we present the findings of our analyses. We first present a profile of all working-age persons and members of our SSDI beneficiary cohorts in terms of their sociodemographic, health, and employment characteristics. We then present the findings of the analyses of health insurance coverage, health care utilization, and health care access problems. In the final section, we present information about the timing of Medicare entitlement relative to the SSDI allowance month among the SSDI beneficiaries in our sample and estimates of the average costs of providing Medicare coverage to beneficiaries during the periods before and after SSDI entry, as well as the costs of providing Medicare coverage to a broader population of workers with disabilities.

In reviewing the findings, it is important to keep in mind that, because our cohorts represent respondents to the NHIS, those who die or become institutionalized are not represented in our study samples. High mortality rates in the years immediately following SSDI entry especially affect our findings in the sense that they do not represent a true longitudinal picture of beneficiaries during the periods before and after entry, but rather represent cross-sectional snapshots of those who are alive and living in the community.

A. BENEFICIARY CHARACTERISTICS

1. Sociodemographic Characteristics

Beneficiaries, even during the years prior to SSDI entry, differ from all persons ages 18 to 64 in some respects—they are older; have lower levels of education; and are more likely to be widowed, divorced, or separated from a spouse (Table 1). These findings are explained in part by the fact that age is correlated with disability status (older individuals are more likely to experience disability), marital status (older individuals have had more time both to marry and then subsequently to become separated, divorced, or widowed), and education (those ages 55 and older in the mid-1990s had lower levels of educational attainment relative to younger adults, on average).

Some noteworthy trends are evident in the characteristics of beneficiaries as they progress through the time periods leading up to and following SSDI entry. Compared with the periods before SSDI entry, during the periods after entry beneficiaries are less likely to be married (falling from a peak of 66% before entry to 51% after), more likely to be living alone (increasing from about 14% before entry to 24% after), and more than twice as likely to be in poverty (increasing from 10% before entry to 25% after). These findings suggest that the period surrounding SSDI entry is likely to be traumatic for individuals in ways that go beyond their disabling health conditions. At the same time that beneficiaries are experiencing the onset or worsening of a disabling health condition, many may also experience the loss of a spouse and/or other familial support, as well as impoverishment.

One other demographic characteristic warrants discussion. Our findings indicate that the share of beneficiaries who are black increases markedly from the year prior to SSDI entry (16%) to the first year after entry (24%). We do not have a definitive explanation for this, but suspect that it might be due to differential mortality rates and/or rates of institutionalization between blacks and whites during the periods immediately before and after SSDI entry.

Table 1. Sociodemographic Characteristics of SSDI Beneficiaries

Characteristic	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13–24 months	1–12 months	1–12 months	13–24 months	25–36 months
Mean Age (Years)	38.5	44.8	46.9	46.7	47.3	46.6	47.5
Male (%)	49.0	48.6	57.2	51.8	55.9	51.0	55.4
Race (%)							
White	83.2	80.3	79.3	81.4	71.8	76.1	80.2
Black	12.0	16.8	17.2	16.1	23.5	22.4	17.9
Other race	4.8	2.9	3.6	2.5	4.7	1.5	1.9
Hispanic Origin (%)	10.0	8.3	7.9	9.3	7.6	7.0	9.3
Marital Status (%)							
Married	65.0	59.3	66.3	63.1	58.4	51.9	51.0
Widowed, divorced, separated	12.1	24.1	21.9	19.1	23.6	25.8	29.0
Never married	22.0	15.7	11.8	16.0	17.8	19.9	16.5
Unknown	0.9	0.9	0.0	1.8	0.2	2.4	3.6
Highest Level of Education (%)							
Less than high school	15.2	26.2	27.2	24.3	30.4	31.9	31.2
High school diploma or equivalent	36.8	43.0	43.9	48.2	39.1	36.2	36.4
Beyond high school	46.4	29.3	27.5	24.0	29.2	26.6	27.8
Unknown	1.6	1.5	1.4	3.5	1.3	5.3	4.6
Living Arrangement (%)							
Lives alone	11.0	14.3	14.6	13.3	14.8	19.7	23.5
Lives with spouse	64.0	58.4	65.1	62.1	57.4	51.7	49.1
Lives with other relative	22.2	24.4	19.4	23.2	25.1	26.3	25.5
Lives with nonrelative(s) only	2.9	2.9	0.9	1.4	2.7	2.3	1.9
Family Income Below Poverty (%)	9.8	10.4	10.9	11.7	23.5	22.4	24.5

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

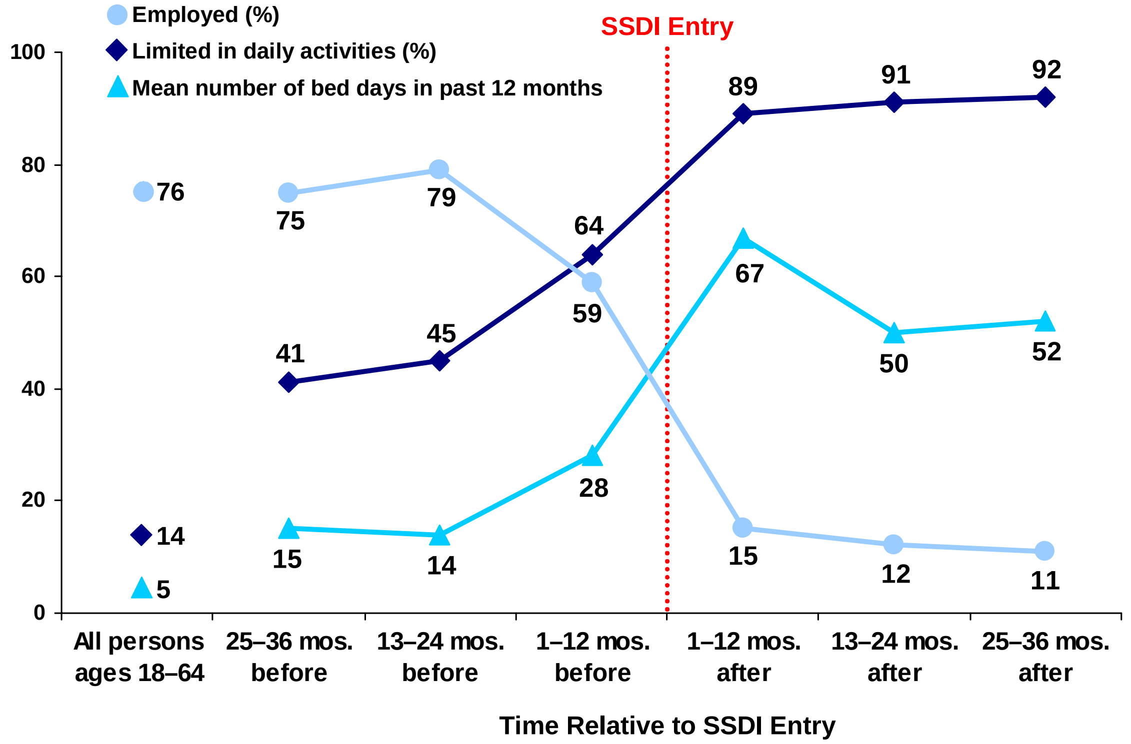
Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Because our cohorts represent respondents to the NHIS, those who die or become institutionalized will not be represented in our study samples, and if death rates or rates of institutionalization differ by race over time, the race distribution will change across our cross-sectional beneficiary cohorts. While we do not have information about the rates of institutionalization by race, mortality data from the NDI indicate that, among the SSDI beneficiaries observed during the year immediately prior to SSDI entry, those who are white have mortality rates about twice that of black beneficiaries (10% compared with 5%) as measured by the end of the first year (13th month) after SSDI entry. The higher mortality rates among whites during the period immediately following SSDI entry might contribute to the greater percentage of blacks we observed in our cross-sectional sample during that period.

2. Health Status

Health deterioration during the periods leading up to and following SSDI entry is quite evident, based on a number of health status indicators: a measure of general health status; the likelihood of reporting specific limitations and health conditions causing limitation; the need for personal care assistance; and the mean number of bed days per year (Figure 1 and Table 2). For example, from the period two to three years before SSDI entry to the periods after entry, the share of beneficiaries reporting the need for help with personal care increases from 6 percent to 34 percent, and the mean number of activity-restricted days (bed days) due to illness during the past year increases from 15 to 50.

Figure 1. Health Status and Employment



Source: Authors' analysis.

Table 2. Health-Related Characteristics of SSDI Beneficiaries

Health Indicator	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13–24 months	1–12 months	1–12 months	13–24 months	25–36 months
General Health Status (%)							
Excellent/very good	65.7	34.9	30.6	20.3	10.3	10.4	13.2
Good/fair	30.8	53.9	56.9	52.5	49.8	55.7	48.2
Poor	2.7	10.2	12.3	25.3	38.8	33.1	36.1
Unknown	0.8	1.1	0.2	1.9	1.1	0.9	2.5
Obese (%)	15.7	26.2	27.6	33.3	24.6	26.8	30.6
Activity Limitations (%)							
Limited in daily activities	14.0	40.7	45.3	63.9	88.8	91.0	92.1
Needs help with personal care	2.5	5.8	6.8	20.0	31.7	37.0	34.0
Work limitation	10.4	32.8	36.6	57.0	81.9	86.5	88.4
Unable to work	6.0	14.4	16.6	40.9	73.7	80.4	79.3
Limited amount/kind of work	4.4	18.4	20.0	16.1	8.2	6.1	9.1
Limited in other activities	3.6	7.9	8.7	6.9	6.9	4.5	3.7
No limitations	86.0	59.3	54.7	36.1	11.2	9.0	7.9
Health Condition(s) Causing Limitation (%)							
Musculoskeletal	7.3	18.2	20.2	27.5	35.0	38.8	40.7
Heart/circulatory	2.4	9.4	10.5	15.6	26.3	24.4	24.1
Vision/hearing/speech	0.8	2.8	4.1	2.3	5.5	10.1	7.9
Nervous system	1.5	5.6	7.1	7.8	12.6	15.9	15.4
Mental/cognitive	1.4	2.9	4.8	7.7	9.5	21.4	17.3
Cancer	0.5	1.0	1.5	6.7	10.0	4.8	5.5
Endocrine	1.2	4.5	5.2	7.2	10.4	13.7	12.5
Other/unknown	0.0	6.7	7.6	8.9	16.1	22.2	19.6
No limitations	86.0	59.3	54.7	36.1	11.2	9.0	7.9

Health Indicator	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13–24 months	1–12 months	1–12 months	13–24 months	25–36 months
Bed Days Past 12 Months (%)							
None	55.3	45.0	45.9	30.3	22.7	31.4	31.2
1–7	34.3	31.2	27.2	23.6	14.0	16.8	20.7
8–30	6.5	11.5	14.6	22.6	19.4	20.7	19.5
> 30	2.8	10.4	10.9	20.5	41.4	26.6	24.1
Unknown	1.2	1.9	1.5	3.1	2.5	4.6	4.5
Mean Bed Days Past 12 Months	5.3	14.6	14.2	27.7	67.1	50.0	52.0
Mortality After SSDI Entry (%)							
13th month after entry	NA	8.7	9.0	9.3	3.1	NA	NA
25th month after entry	NA	12.8	12.8	12.8	7.3	1.7	NA
37th month after entry	NA	14.0	16.0	15.5	11.5	3.2	1.0

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative and National Death Index data.

Interestingly, a very large share of beneficiaries report having some type of activity limitation even two to three years before entry, at a rate that is about three times that of all working-age individuals (41% compared with 14%). The share of beneficiaries reporting being limited in the amount or kind of work they can perform, or being unable to work, increases from 33 percent to 57 percent over the three-year period just prior to entry, and continues to increase from 82 percent to 88 percent in the years after entry.

We examine the mortality rates of beneficiaries at three points in time relative to the SSDI entry month—death by the 13th, 25th, and 37th month after entry. Focusing on the mortality rates of beneficiaries observed in our sample during the three years prior to entry, we find that approximately 9 percent, 13 percent, and 15 percent had died by the 13th, 25th, and 37th month after SSDI entry, respectively (Table 2). Thus, about 13 percent of beneficiaries in our sample died during the 24-month waiting period for Medicare.

3. Employment

Employment characteristics of beneficiaries during the six one-year time periods surrounding SSDI entry are shown in Table 3. Prior to SSDI entry, the beneficiary cohorts have employment rates similar to those of all persons ages 18 to 64 (between 75% and 80%). Not surprisingly, the employment rate at interview among beneficiaries drops markedly during the year prior to (59%) and after (15%) SSDI entry, and continues to decline somewhat thereafter, to 11 percent in the third year after entry. Corresponding to the decline in the employment rate is a decline in the share of beneficiaries reporting work as their main activity, and increases in the share reporting housekeeping or other activities. During the year prior to entry, 72 percent report work as their main activity, compared with just 14 percent during the year after SSDI entry.

The pre-SSDI entry occupations, industries, and monthly earnings of workers who become SSDI beneficiaries differ somewhat from those of the general population of workers ages 18 to 64 (Table 4). Prior to SSDI entry, employed members of the beneficiary cohorts are more likely relative to all employed persons ages 18 to 64 to be in laborer/operator (20% to 26% versus 14%) and service (about 33% versus 25%) occupations, and less likely to be in managerial/professional occupations (10% to 20% versus about 30%). Beneficiaries also are somewhat more likely to have jobs in the mining/construction industry (about 30% versus 23%) prior to entry. Average monthly income from employment is about 10 percent lower among employed beneficiaries in the periods prior to entry, compared with all employed persons ages 18 to 64 (about $1,900 versus $2,100).

Table 3. Reported Main Activity and Employment Status at Interview Among SSDI Beneficiaries

	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13–24 months	1–12 months	1–12 months	13–24 months	25–36 months
Main Activity (%)							
Working	72.4	73.5	80.6	71.5	14.4	9.0	8.3
Keeping house	12.7	10.8	8.7	10.8	22.3	28.8	27.3
Going to school	7.3	5.5	1.6	2.1	3.5	5.1	3.8
Other/unknown	7.6	10.2	9.0	15.6	59.8	57.2	60.5
Employment Status (%)							
Employed	75.5	74.8	78.9	59.0	15.4	12.3	11.0
Unemployed	3.3	8.1	3.5	8.0	4.8	3.4	2.1
Not in labor force	21.2	17.1	17.5	33.0	79.8	84.3	87.0

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Table 4. Job Characteristics Among SSDI Beneficiaries of Those Employed at NHIS Interview

	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13-24 months	1–12 months	1–12 months	13–24 months	25–36 months
Employed at Interview (%)	75.5	74.8	78.9	59.0	15.4	12.3	11.0
Occupation (%)							
Managerial/professional	28.6	10.4	19.8	12.6	8.3	11.0	12.5
Sales/technical/admin	28.9	25.2	25.7	29.6	29.4	29.4	18.6
Service	25.2	36.6	33.4	31.9	33.0	34.9	35.3
Operators/laborers	14.1	25.6	19.8	23.4	19.1	21.5	28.0
Other/unknown	3.2	2.1	1.3	2.5	10.2	3.2	5.5
Industry (%)							
Mining/construction/manufacturing	23.3	31.2	26.8	31.7	22.9	23.5	22.4
Retail/wholesale	18.9	23.5	16.3	19.7	14.0	24.3	28.4
Finance/business/repair services	11.9	9.2	12.0	8.9	18.1	13.8	9.7
Personal services	3.2	3.8	3.2	4.3	1.1	0.0	0.0
Entertainment/recreation services	1.7	2.7	1.4	1.5	1.5	0.0	1.7
Professional services	23.4	14.8	20.9	20.3	16.6	23.6	23.8
Public administration	4.7	1.6	6.6	3.1	1.6	3.0	1.3
Other/unknown	12.8	13.2	12.9	10.6	24.2	11.8	12.7
Self-employed (%)	13.2	11.2	13.7	12.8	26.4	18.8	7.8
Hours worked per week (%)							
1–10	1.8	0.4	0.9	1.6	6.9	2.1	7.6
11–20	6.2	8.6	6.3	5.7	16.7	24.7	31.0
21–35	12.0	15.9	12.7	20.3	19.4	17.6	22.1
35+	80.1	75.0	80.0	72.4	57.0	55.5	39.2
Mean hours worked per week	40.1	38.6	40.4	38.2	33.1	34.6	28.9
Mean monthly income from job/business (expressed in 1996 dollars)	2109.9	1808.6	1936.3	1572.7	1400.5	1457.4	765.3

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Among beneficiaries who are employed during the periods after SSDI entry, full-time work declines markedly, as does monthly income from employment, relative to beneficiaries during the periods before entry. The share of employed beneficiaries working full time declines from around 70 percent to 80 percent during the periods prior to entry to about 56 percent during the two years after entry, and then declines further to 39 percent during the third year after entry. Average monthly income from a job or business among employed beneficiaries experiences a corresponding decline—from a peak of about $1,900 during the second year prior to entry to $765 in the third year after entry.

B. HEALTH INSURANCE AND HEALTH CARE UTILIZATION AND ACCESS

1. Health Insurance Coverage

Among beneficiaries observed in our sample during the years prior to SSDI entry, a large share (about 22%) is uninsured at the time of interview (Table 5). By contrast, the rate of uninsurance among the general population of persons ages 18 to 64 is about 16 percent. The share of uninsured beneficiaries remains fairly constant at around 22 percent from the third year prior to SSDI entry until the third year after SSDI entry, when all who remain in the SSDI program have completed the 24-month waiting period and are eligible for Medicare.[10]

During the period two to three years before SSDI entry, beneficiaries are as likely as all persons ages 18 to 64 to be covered by a private health plan through their own employer (about 40%). The share with this coverage begins to decline slightly during the year before entry (37%), and more markedly during the three years after entry—from 26 percent in the first year to 16 percent in the third year after entry. COBRA provisions allow people with disabilities to continue their employer-sponsored coverage for up to 29 months; however, loss of this coverage before becoming eligible for Medicare can occur under two circumstances: a) the beneficiary chooses not to continue the employer-sponsored coverage under COBRA; or b) the COBRA coverage expires before the beneficiary is found eligible for SSDI benefits.[11]

Beneficiaries may choose not to enroll in or continue COBRA coverage because it is expensive. The individual typically pays the entire premium, which, in 2006, averaged about $350 per month for individual coverage.[12] For people with disabilities, employers are permitted to charge up to 150 percent of the actual premium during the additional 11 months they are eligible for coverage under COBRA, so premiums may be substantially higher. This large expense may not be affordable, especially at a time when the individual is experiencing significant reductions in income due to the loss of earnings.

Some who eventually become eligible for SSDI may lose private coverage through COBRA if their SSDI claim is not allowed during the first 18 months of COBRA coverage. While most initial SSDI claims are processed within the standard 18-month COBRA coverage period, if a claimant initially is denied benefits, the appeals process could take several years to complete, in which case extended COBRA coverage would not be granted.[13] (Without the SSDI disability determination, the individual cannot establish that disability onset occurred during the first 60 days of COBRA coverage, a condition required for the additional 11 months of this coverage.) Among our sample of beneficiaries, about 20 percent had experienced a claim denial before being allowed SSDI benefits (Table 10). In two logistic regression models that estimate the likelihood of being uninsured and of having employer-sponsored insurance among beneficiaries, holding other characteristics constant (including when the beneficiaries were observed relative to the SSDI entry month), those with a previous SSDI denial were significantly more likely to be uninsured at the time they were interviewed in the NHIS, and significantly less likely to be covered by an employer plan (Tables B-1 and B-2).

Private health insurance obtained through a family member’s employment is another important source of coverage for beneficiaries, both before and after SSDI entry. In the period two to three years prior to SSDI entry, about 37 percent of beneficiaries have employer-sponsored coverage obtained through a family member (typically, a spouse), a rate somewhat lower than that among all persons ages 18 to 64 (41%) (Table 5). Private coverage obtained via a family member’s employment declines slightly during the year prior to, and the three years following, SSDI entry (ranging from 30% to 35% during those years). The decline might partly reflect the previously noted decline during these periods in the share of beneficiaries who are married.

Table 5. Health Insurance Coverage at Interview Among SSDI Beneficiaries

	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13–24 months	1–12 months	1–12 months	13–24 months	25–36 months
Sources of Health Insurance (%)							
None (uninsured)	15.9	21.8	21.2	23.1	23.3	17.4	3.6
Medicare	2.0	0.8	2.5	1.7	3.7	11.4	60.7
Medicaid	5.2	6.1	7.1	8.2	17.1	20.5	29.4
Private—own employer	41.1	40.3	40.5	37.4	26.4	21.4	15.6
Private—family member employer	41.4	38.5	36.7	33.0	29.9	34.9	30.8
Private—other	9.3	7.3	9.7	12.1	10.8	11.1	10.6
Other insurance	2.9	5.4	5.3	2.9	7.1	6.5	4.5
Coverage status unknown	9.5	9.7	10.4	13.1	10.9	10.7	12.4
Enrolled in Medicare at Least One Month During Calendar Year of NHIS Interview, Based on Medicare Data (%)	2.4	2.0	1.4	1.2	4.5	44.8	91.7

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA and Medicare administrative data.

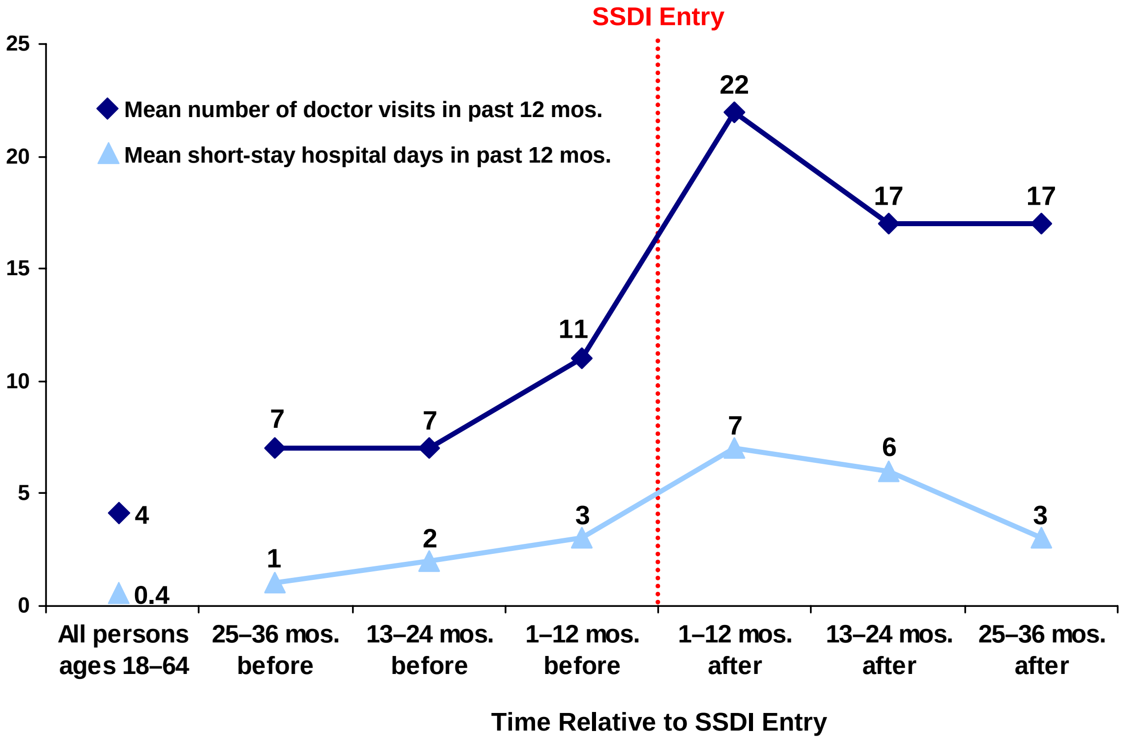
Medicaid coverage becomes an increasingly important source of health insurance during the years after SSDI entry. During the years prior to entry, 6 percent to 8 percent of beneficiaries report being covered by Medicaid—percentages not very different from the 5 percent Medicaid coverage rate reported in the general population of working-age individuals (Table 5). The share reporting coverage through Medicaid increases markedly during the three years after SSDI entry, from 17 percent during the first year to 29 percent during the third year. This pattern coincides with the marked increase during this period in the share of beneficiaries with household incomes below the federal poverty level noted previously.

2. Health Care Utilization and Access

Health care utilization (as measured by doctor visits and hospital stays in the previous 12 months) during the third year prior to SSDI entry is slightly greater among beneficiaries, relative to all persons ages 18 to 64 (Figure 2 and Table 6). The average annual number of doctor visits among beneficiaries during this period is seven, compared with four visits among all persons ages 18 to 64. About 15 percent of beneficiaries have a hospital stay, compared with only 6 percent of all working-age adults. Health care utilization among beneficiaries begins to increase substantially in the year prior to SSDI entry, with a peak in utilization occurring during the first year after entry. During the peak period, the average number of doctor visits is 22. About 41 percent of beneficiaries have a hospital stay during this period, with nearly one-quarter (23%) spending 10 or more days in the hospital. During the second and third years after entry, health care utilization declines somewhat, with doctor visits averaging around 17 per year, and just under one-quarter of beneficiaries having a hospital stay during each year.

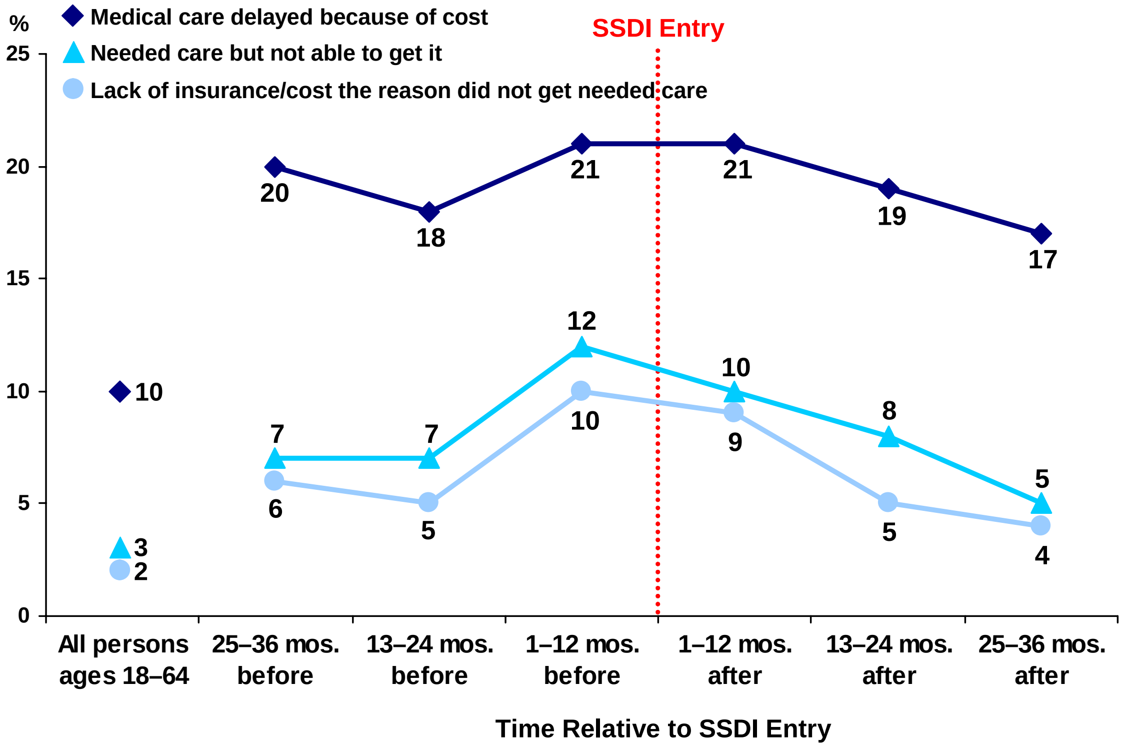
Beneficiaries experience health care access problems at rates twice or more those of all adults ages 18 to 64. Reports of health care access problems experienced by beneficiaries during the 12 months before interview follow a pattern similar to that of their health care utilization, with problems peaking during the year prior to and after SSDI entry (Figure 3 and Table 7). The share of beneficiaries reporting that they needed care but were unable to get it increases from about 7 percent during the period two to three years prior to entry to 12 percent during the year before entry. After SSDI entry, the share of beneficiaries reporting they were not able to get needed care declines from 10 percent during the first year after entry to about 5 percent during the third year. The shares of beneficiaries reporting they were not able to get needed mental health care or

Figure 2. Health Care Utilization Before and After SSDI Entry



Source: Authors' analysis.

Figure 3. Health Care Access Problems Before and After SSDI Entry



Source: Authors' analysis.

prescription drugs follow a similar pattern, although with less marked declines in the years after entry. Lack of insurance or high cost were the main reasons cited for not being able to get care by at least three-quarters of beneficiaries in all years surrounding SSDI entry.[14]

Compared with the general working-age population, much larger shares of beneficiaries reported that they delayed the receipt of medical care due to cost. The shares reporting delays for this reason remain consistently high across the time periods surrounding SSDI entry (ranging from 17% to 22%), with the peak occurring in the years just before and after entry. The rates among beneficiaries are about twice the rate of the general working-age population (10%).

Using a logistic regression model, we analyzed the determinants of the likelihood of reporting not receiving and/or delaying needed medical care due to cost (Table B-3). Not surprisingly, poverty, poor health, and lack of health insurance are significant predictors of health care access problems, with lack of insurance having the largest effect. Among beneficiaries, being uninsured increases this likelihood by about 36 percentage points, other characteristics held constant (increasing from 12% to 48%). Time relative to SSDI entry is not significantly associated with health care access problems once other factors are held constant.

Table 6. Health Care Utilization During the Previous 12 Months Among SSDI Beneficiaries

	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	13–24 months	1–12 months	1–12 months	13–24 months	25–36 months
Doctor Visits Past 12 Mo. (%)							
None	27.5	22.0	22.5	9.1	6.3	7.1	5.8
1–4	51.9	43.0	40.5	36.9	19.9	25.3	30.0
5–9	9.6	12.5	12.9	14.7	14.9	17.9	17.3
10 +	10.4	21.7	23.6	37.5	56.9	48.6	46.1
Unknown	0.6	0.9	0.5	1.7	2.0	1.1	0.8
Mean Number of Doctor Visits	4.0	7.4	7.3	11.4	22.5	16.6	17.4
Short-Stay Hospital Days (%)							
None	94.4	85.5	80.8	70.2	58.8	71.4	75.7
1–4	3.4	8.1	7.5	13.1	10.6	9.1	7.7
5–9	1.2	3.1	5.5	7.4	7.9	6.1	5.5
10+	1.0	3.3	6.1	9.4	22.7	13.5	11.1
Mean Short-Stay Hospital Days	0.4	1.0	1.6	2.7	7.2	6.1	3.2

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Table 7. Health Care Access Problems Experienced During the Previous 12 Months Among SSDI Beneficiaries

	All Persons Ages 18–64	Interviewed in NHIS Prior to SSDI Entry			Interviewed in NHIS After SSDI Entry		
		25–36 months	**13–24 months**	**1–12 months**	**1–12 months**	**13–24 months**	**25–36 months**
Health Care Access Problems (%)							
Needed care but was not able to get it	3.0	6.9	6.7	12.3	10.4	7.8	5.4
Lack of insurance or cost the reason did not get needed care	2.3	5.8	4.9	9.7	9.5	5.4	4.3
Needed dental but did not get it	8.7	14.8	13.5	18.4	16.0	14.9	16.2
Needed prescription medication but did not get it	2.8	8.3	8.2	11.8	11.5	10.6	11.0
Needed mental health care but did not get it	0.6	2.3	1.3	4.6	4.0	3.4	3.0
Medical care delayed due to cost	9.6	19.9	18.3	21.5	21.2	18.6	17.2

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

C. MEDICAL COSTS BEFORE AND AFTER SSDI ENTRY AND COSTS OF ELIMINATING THE MEDICARE WAITING PERIOD

We wanted to demonstrate the progression of medical care costs before and after SSDI entry, and to assess the costs of eliminating the 24-month Medicare waiting period. To do so, we used Medicare expenditure information on SSDI beneficiaries enrolled in Medicare to project what the average annual Medicare costs would be if the beneficiaries in our sample were covered during the periods in which they were observed in the NHIS. The findings indicate that, during the second and third years before SSDI entry, average Medicare Parts A and B costs (expressed in 2006 dollars) would be about $4,000 per enrollee per year (Table 8). Estimated costs increase to about $6,200 during the year prior to entry, and peak at about $8,600 during the first year after SSDI entry. The estimated costs are then somewhat lower during the second and third years after SSDI entry (averaging about $7,100 and $7,400 per year, respectively).

Table 8. Estimated Cost of Providing Medicare Benefits to SSDI Beneficiaries During the Periods Before and After SSDI Entry

SSDI Beneficiary Subgroup	Annual per Enrollee Medicare Cost Estimate[a] (2006 dollars)	Annual per Enrollee Medicare Cost Estimate Including Part D Coverage[b] (2006 dollars)
25–36 months before SSDI entry	$3,950	$4,732
13–24 months before SSDI entry	$4,079	$4,887
1–12 months before SSDI entry	$6,193	$7,419
1–12 months after SSDI entry	$8,622	$10,329
13–24 months after SSDI entry	$7,115	$8,524
25–36 months after SSDI entry	$7,384	$8,846

[a] Estimated based on the regression models shown in Tables C-1 and C-2.

[b] Estimated based on the regression models shown in Tables C-1 and C-2, and inflating the estimate by a factor of 1.198, representing the ratio of Medicare Parts A, B, and D benefit costs to Part A and Part B costs in 2006 (Medicare Boards of Trustees 2007).

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Applying the Medicare cost findings for the first two years after SSDI entry to the number of SSDI disabled worker allowances in 2006, inflating the estimates to reflect the ratio of Part D Medicare costs to Parts A and B costs, subtracting annual Part B premium payments, and subtracting the federal share of Medicaid program savings, we estimate that eliminating the Medicare waiting period would increase annual Medicare costs (including Part D) by approximately $12 billion—provided that all SSDI beneficiaries are actually enrolled throughout the entire 24-month period (Table 9, upper bound estimate). This represents about a 3 percent increase in total Medicare program expenditures. Thus, while $12 billion is a large number, it represents a very small share of total Medicare program costs.

Table 9. Estimated Annual Cost of Eliminating the Medicare Waiting Period for SSDI Beneficiaries, 2006 Dollars*

Component	Estimate
Number of SSDI beneficiaries in the Medicare 24-month waiting period	1,662,966
Estimated annual per enrollee Medicare Parts A, B, and D cost net of Part B premiums	$8,366
Annual cost of eliminating the Medicare waiting period	$13.9 billion
Annual cost of eliminating the Medicare waiting period net of federal Medicaid savings (range)	$11.1–$11.9 billion

* See Appendix C for details of the cost estimation methodology.

As emphasized above, our estimate assumes that all beneficiaries would be enrolled in Medicare throughout the 24-month waiting period. This assumption is unrealistic, however, because most SSDI beneficiaries have already completed part of the Medicare waiting period when they receive their SSDI allowance, because it can take many months for an SSDI claim to be adjudicated. The average processing time for a disability claim at the initial decision level is about 90 days, and processing times are substantially longer for claims that are initially denied then subsequently allowed during the appeals process.[15] Also, those who eventually are allowed benefits might not file a disability claim immediately following the onset of disability. In our sample of beneficiaries, 70 percent had SSDI entry months that preceded the allowance month (Table 10).

Among the beneficiaries in our sample, 11 percent had completed the Medicare waiting period and another 25 percent had 12 months or fewer remaining in their waiting period at the time they were allowed SSDI benefits (Table 10). These findings are very similar to those of Riley, based on an administrative data sample of newly entitled SSDI beneficiaries in 1995.[16] An implication of these findings is that proposals seeking to eliminate the 24-month waiting period for Medicare likely will not affect a large share of SSDI beneficiaries—unless they are coupled with a mechanism for providing interim coverage for the period before the allowance decision is made. Beneficiaries could receive retroactive coverage under Medicare, but it may be of minimal value, since it would not be available at the time when treatment decisions are made. As a result, retroactive coverage may not help ensure that beneficiaries receive care when they need it.

Table 10. Prior SSDI Determinations, Timing of the SSDI Allowance Relative to SSDI Entry, and Medicare Waiting-Period MonthsRemaining at SSDI Entry Among All Sample Beneficiaries

	All Beneficiaries
Prior SSDI Denial (%)	19.1
Prior SSDI Allowance (%)	7.6
SSDI Allowance Month Relative to SSDI Entry Month	
Entry month was prior to allowance month (%)	70.2
Entry month was in or after allowance month (%)	22.9
Allowance month unknown (%)	6.8
Medicare Waiting-Period Months Remaining at SSDI Allowance Month (%)*	
0	11.2
1 to 6	7.7
7 to 12	17.4
13 to 18	13.5
19 to 24	43.4
Unknown	6.8

* Based on the difference between the SSDI allowance (claim decision) month and the entry (entitlement) month.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

In the absence of retroactive Medicare enrollment, the estimated cost to Medicare of eliminating the waiting period would be much lower. Based on the experience of our sample, the allowance month for the average new beneficiary is in the 15th month of the Medicare waiting period, so that 62.5 percent of the waiting period remains. If medical costs were uniformly distributed over the 24-month waiting period, the cost of Medicare coverage during the waiting period commencing with the claim allowance month, with no retroactive coverage, would be 62.5 percent of coverage for the full 24 months, or an estimated $7.4 billion. This estimate would be lower if we were to adjust for the fact that mean medical expenditures in the first 12 months after SSDI entry are higher than in the second 12 months. Adjustments for increases in the length of the determination process since the mid-1990s also would reduce this estimate.

Our $12 billion estimate of the cost of eliminating the full 24-month waiting period is substantially higher than estimates made in previous studies. Riley (2004) estimated the costs to be $5.3 billion (in 2000 dollars) and Dale and Verdier (2003) estimated the costs to be $8.7 billion (in 2002 dollars).[17] This is due partly to differences in methodology, but also due to medical cost inflation, the inclusion of Medicare Part D costs in our estimates, and growth in the number of SSDI beneficiaries since the previous studies were conducted. Although the total dollar amount differs markedly, our estimated per enrollee costs for Parts A and B and our estimate of the share of total Medicare expenditures represented by the costs are similar to the findings of the previous studies.[18]

The Congressional Budget Office (2008) estimates that phased elimination of the Medicare waiting period would increase federal outlays, net of federal Medicaid savings and revenue increases, by $11.6 billion in 2013, the first year this policy would be phased in, in current year dollars, or $10.2 billion in 2006 dollars (for purposes of comparison to our estimates).[19] This estimate is higher than our $7.4 billion estimate for elimination of the waiting period without retroactive eligibility and lower than our $12 billion estimate for elimination with full retroactive eligibility. The differences between our estimates and the CBO estimate appear to reflect the following: 1) CBO assumes a partial retroactive benefit (for Part A only, and with very limited use by those with private coverage); 2) the CBO estimate of Medicaid savings is somewhat higher; 3) CBO projects small increases in tax revenues because of reductions in employer health care expenses that translate into higher wages; 4) CBO's estimate for Medicare expenditures per beneficiary, based on means for all Medicare beneficiaries, do not adjust for the extraordinarily high health care utilization concurrent with SSDI entry, whereas our own methodology does; and 5) CBO projections are for a year when, under current policy, the number of beneficiaries in the waiting period would be larger than in 2006.[20]

Even apart from the issue of whether coverage would be retroactive, and how much retroactive coverage might cost, the $12 billion annual estimated cost of coverage for all 24 months of the Medicare waiting period is likely to be imprecise for several reasons: it assumes that other behavior (such as maintenance of private health insurance coverage and the likelihood of filing an SSDI application) does not change in response to the elimination of the waiting period; it assumes that the Medicare costs of those in the waiting period are similar to those enrolled in fee-for-service Medicare; it assumes that all would enroll in Parts B and D coverage; and it is based on SSDI beneficiary characteristics and Medicare expenditure patterns dating from the mid-1990s.

D. ADDITIONAL HEALTH POLICY OPTIONS

Current Medicare policy controls federal expenditures by withholding health insurance coverage from a subgroup of the population with severe disabilities, many of whom are in a period of great financial and medical need. Although this might have seemed a reasonable policy when health care costs were lower, private coverage was more widely available, and Medicare was first made available to any SSDI beneficiaries; the growing cost of health care and tightening of private coverage have meant that many beneficiaries face financial constraints for accessing care when they need it the most. Our findings suggest that eliminating the Medicare waiting period would help a great many beneficiaries who either lack insurance coverage or who must pay extremely high premiums to maintain coverage through COBRA. There are, however, a number of limitations to such a policy. The first has already been discussed: enrollment in Medicare would occur only after the SSDI allowance is made, which often occurs long after the SSDI entry month, the first month of the Medicare waiting period. Retroactive Medicare entitlement would be less helpful to the enrollee as well as administratively problematic. A second, more important limitation is that it is a patchwork approach to addressing a larger problem—lack of health care access and insurance coverage for all workers who stop working and apply for SSDI, including those who might continue to work if they had better access and coverage. A third limitation is that most denied applicants would not attain coverage until age 65; for some denied applicants, coverage might be critical for access to health care services to not only improve their health but support their return to work.

There are several reasons to consider expanding access to public health insurance to a broader population of workers with medical conditions that, if not treated promptly, could lead them to exit the labor force and enter the SSDI program. First, for this population, having access to insurance coverage can be a key factor in their ability to continue work. Currently, public health insurance may be a disincentive to employment since workers must limit their earnings to qualify. Both fear of losing public health insurance and inadequate employer-sponsored coverage frequently are cited as barriers to work by people with disabilities.[21] Empirical studies have found evidence that the availability of health insurance affects the employment decisions of people with disabilities.[22] From the worker's perspective, lack of health care access at a critical time can lead to job loss, a lower standard of living, and a life of dependency. From a social perspective, the capabilities of such workers become a wasted resource. From a government and taxpayer perspective, their entry into SSDI and eventual reliance on public insurance becomes a fiscal burden.

Second, recent cost-driven trends in employer-sponsored health insurance are making matters worse for workers with significant medical conditions who have employer coverage. Employers have been using numerous strategies to control rising health care costs, and these strategies can disproportionately affect workers with significant health conditions. For example, fewer employers are offering coverage to their employees, and there is evidence that workers with significant impairments may be less likely than others to have jobs that offer coverage.[23] Consumer-directed health plans—typically involving a high-deductible health plan paired with a medical savings account—

are also becoming more popular, and those with low incomes and those in poor health are much more likely to experience cost-related access problems associated with these plans.[24] In addition, the increased use of encounter-based strategies (copayments, coinsurance, deductibles) by employers raises out-of-pocket costs for people with significant medical conditions more than for others.[25] Employer-sponsored plans also often limit access to care that people with significant medical conditions are likely to need if they are to work. Although covered benefits under employer plans tend to be relatively comprehensive for acute care and other care that is deemed medically necessary, they tend to be much less comprehensive for services that are intended to promote and maintain functional independence—the types of services often needed by people with medical conditions that could eventually lead them to exit the labor force. For example, employer plans frequently limit benefits related to rehabilitation, assistive technology and durable medical equipment, and mental health services.[26]

Third, an important rationale for the existence of the Medicare program is that it addresses failures in the private health insurance market. Before Medicare, many elderly Americans were uninsured and unable to obtain coverage through the private insurance market. The same was true for people who were not working because of significant medical conditions, but not for those who worked despite such conditions. The rising cost of health care has changed that; work is no longer a viable route to health care access for many with significant medical conditions. The private health insurance market is failing workers with significant medical conditions because of the growing burden it places on employers who offer coverage. Further, it creates strong financial incentives for employers that offer coverage to avoid hiring or retaining workers with significant medical conditions. Although we are aware of no definitive evidence that employers routinely terminate or fail to hire workers for this reason, the incentives exist and are high. The tightening of employer coverage can be viewed as one way to encourage employees with high-cost conditions to quit, and to discourage job applications from workers with such conditions. Workers unable to obtain coverage through an employer can turn to the individual insurance market, but those with high-cost medical conditions face extremely high premiums or might be unable to buy coverage at any price.[27] For them, the private insurance market has failed.

The above reasons support policy options that would make public health insurance available to a broader population of workers with significant medical conditions—particularly those with conditions that could otherwise lead to labor force exit. To assess the potential costs of such options, we present simulations of two possible expansions. Ideally, we would use the estimates from our Medicare cost models to determine the cost for Medicare to cover all workers and former workers with medical conditions that could lead to labor force exit because of inadequate access to care. Unfortunately, the NHIS data are insufficient to define this population. Hence, we produce ballpark estimates of the cost of expanding Medicare benefits to two groups of workers (or former workers) with disabilities—one group that is more broadly defined and one that is more narrowly defined. We expect that the cost of a program for workers with medical conditions that are likely to lead to labor force exit and SSDI entry is somewhere between the estimates for these two groups. The groups are:

- all working-age adults in the labor force who have work limitations due to a physical or mental health condition
- all SSDI disabled worker applicants not in the labor force

To be "in the labor force" means that the individual is either working or looking for work.

The first group includes individuals who have not yet left the labor force or applied for SSDI but who report having medical conditions that limit their ability to work, thus putting them at risk for leaving the labor force. Not all of them will be at risk, however, as some will have relatively minor or perhaps short-term medical conditions, and others will have sufficient access to health care to treat their conditions and enable them to continue working. The second group represents workers who have left the labor force to apply for SSDI but who have not yet been determined eligible for the program. These individuals may obtain the proposed coverage initially as a worker and then continue to receive that coverage throughout the application process, even though they are no longer in the labor force.

For the first group, we base the estimates on the number and characteristics of persons in our sample who reported having a work limitation due to a physical or mental health condition. We base the estimates for the SSDI applicant group on the characteristics of beneficiaries in our sample who were observed during the first year after SSDI entry and assume that Medicare coverage for this group would be limited to two years.[28]

Our estimates indicate that offering the equivalent of Medicare Parts A, B, and D benefits to those in the labor force who have health-related work limitations (about 8.7 million individuals) would cost approximately $33 billion per year (in 2006 dollars). Offering a time-limited benefit of two years to all SSDI applicants (excluding those already counted among those with work limitations in the labor force) would cost approximately $31 billion per year. The additional costs for each group would represent about 8 percent of total Medicare Parts A, B, and D benefit costs in 2006. These estimates assume 100 percent participation by those eligible (Table D-1). The cost of covering workers and former workers with medical conditions that are likely to lead to SSDI entry in the absence of adequate care is likely between the $31 billion cost of covering just SSDI applicants who are no longer in the labor force and the $64 billion cost of covering both applicants and workers who have work limitations but remain in the labor force.

Although this would be an expensive addition to Medicare, much of it could potentially be financed by workers and employers rather than by Medicare payroll taxes. The program could operate in a manner similar to state Medicaid Buy-In programs, in which premiums are based on income (i.e., higher-income individuals pay higher premiums). A mechanism also might be established whereby employers contribute on behalf of their employees who participate in the Medicare plan. Employers would benefit from lower costs because the government would pay part of the cost of insuring the employee (or the family member of an employee) with a disability. The individual with a disability would have access to a source of health insurance coverage independent of both employment and SSDI program participation.

The cost to the government would depend on the extent to which employers and insured workers are required to finance the coverage. Our analyses suggest that a well-designed premium system could generate a very large share of the revenue from workers and their employers. According to our analyses of the two groups for which we developed Medicare cost estimates, the private sector premiums currently paid by individuals and employers would cover more than 80 percent of the Medicare costs for labor force participants with work limitations and 25 percent of the costs for applicants not in the labor force (Table D-2).

V. SUMMARY AND DISCUSSION

Using data from the 1994–1996 NHIS linked to SSDI, Medicare, and death records, we developed profiles of SSDI beneficiaries observed during six one-year time periods immediately before and after SSDI entry. The findings indicate that:

- Beneficiaries, even three years before SSDI entry, differ from the larger group of all working-age adults in many respects: they are older; have lower levels of education; are more likely to be divorced, widowed, or separated; are more likely to be black; are more likely to be in laborer and service occupations and less likely to be in managerial/professional occupations; have lower average earnings; are in poorer health; are more likely to be uninsured; and have higher reported rates of health care access problems. However, beneficiaries observed three years before SSDI entry are similar to all working-age adults in several important respects. They are about equally likely to be employed, have health insurance coverage through their own employment, live in households with incomes below the federal poverty level, and have Medicaid coverage.

- During the years leading up to and following SSDI entry, many beneficiary characteristics change, primarily in ways that might be expected to accompany the onset or worsening of a disabling health condition. There is a marked decline in health status and employment as well as increases in health care utilization and reported health care access problems. Both health care utilization and most reported access problems follow a pattern of gradually increasing and peaking during the year immediately before and the year immediately after SSDI entry, and then declining somewhat thereafter. Rates of poverty show a distinct jump immediately after SSDI entry, with the rates in the years after entry being about double the rates in the years before.
- Rates of uninsurance remain fairly constant and very high until the second year after SSDI entry. By the third year after entry, only a small share report being uninsured, primarily because all who have remained on the SSDI rolls have become eligible for Medicare. The non-Medicare sources of health insurance coverage change from the period before SSDI entry to the period after entry: there is a marked decline in coverage obtained through their own employment, a less-marked decline in coverage obtained through a family member, and a marked increase in reliance on Medicaid.

The findings portray some dramatic changes occurring in the lives of people with disabilities around the time they become entitled to SSDI. Many beneficiaries die during the first years after SSDI entry and, among those who survive, the profound changes in health status are accompanied by the loss of employment and earnings; much greater health care needs; and, for some, impoverishment and changes in living arrangements and marital status.

It is easy to understand why advocates for eliminating the waiting period view it as an inhumane mechanism for controlling public health care and disability benefit expenditures.

An important concern about elimination of the Medicare waiting period is that doing so would crowd out private insurance coverage for these beneficiaries. Our findings suggest that any crowd-out would be limited to a minority of beneficiaries—those with inferior private coverage and those who must pay high COBRA premiums to maintain coverage. Nearly 40 percent of beneficiaries in the waiting period are either uninsured or must rely on Medicaid, and most of those with access to family coverage have no incentive to drop or decline that coverage for Medicare coverage (and many do not appear to do so after the waiting period is over). These facts suggest that private coverage crowd-out might apply to less than one-third of all beneficiaries—and many of those might be spared substantial financial hardship associated with maintaining private coverage.

The cost of eliminating the waiting period would be high; our rough estimate indicates that it would cost about $12 billion per year. Although this is a substantial sum, it represents only a small share (3%) of all Medicare program expenditures.

A major problem with eliminating the Medicare waiting period is that most beneficiaries complete a substantial part of the waiting period before they receive their SSDI allowance; one of 10 complete the entire waiting period. Retroactive entitlement would be difficult to administer, and the value of retroactive benefits to future beneficiaries is diminished by the uncertainty of eventual eligibility. The simplest way to address this problem is to base Medicare eligibility on the SSDI claim allowance month (rather than the entry month), thereby eliminating the need for retroactive entitlement. This would not completely eliminate the Medicare waiting period, but it would greatly reduce it for many. It also would reduce costs by about one-third, based on our estimates. Other ways to minimize administrative difficulties may include limiting the time period allowable for retroactive coverage or making Medicare the secondary payer for this population.

Another major concern is that eliminating the waiting period may induce substantial numbers of workers to apply for SSDI and some share of those to obtain allowances. Given the growing limitations of private coverage for workers, some induced entry into both SSDI and Medicare seems quite likely, thereby increasing both SSDI and Medicare expenditures. Our findings do not shed light on the extent to which induced entry would occur. However, this argument is as much an indictment of failures in the existing health insurance system as an argument for retaining the waiting period. Providing Medicare sooner would tip the scales for those on the margin in favor of applying for benefits, but those most likely to be induced to apply for SSDI are:

1) those who lack adequate private coverage and have significant health care needs, and 2) those who remain employed primarily to maintain coverage but otherwise gain relatively little from employment in terms of compensation or personal satisfaction. For the first group, the only way under our current system to gain coverage is to leave the labor force and qualify for SSDI. Both groups would still be held to SSA's disability standards, subject to the five-month waiting period for SSDI entitlement and also subject to the sometimes long and uncertain application process. While applications might very well increase, allowances would probably not increase as much.

Induced demand for SSDI would be a non-issue if affordable and reliable health insurance coverage were universally available to workers with medical conditions that can lead to labor force exit and SSDI entry. As discussed previously, there is evidence that access to health insurance is an important factor in the labor force participation decisions of workers with disabilities; there is also evidence that de-linking eligibility for public health insurance from eligibility for federal disability programs would promote employment among people with disabilities. This is the underlying rationale for the most recent legislation authorizing states to offer Medicaid Buy-In programs to working people with disabilities.[29]

We have provided a range of cost estimates for a Medicare option that would expand Medicare access to workers with significant medical conditions. The rationale for considering such policies is based partly on the work disincentives inherent in the current system for people with disabilities. It is also based partly on health insurance market failures and current trends in employer-sponsored coverage that limit access to health care among workers with significant medical needs. Earlier and more consistent access to health care would likely reduce or delay exit from the labor force and application for SSDI, but there is no empirical evidence on this point. Expanding coverage to this broader population of workers would be costly, as our estimates show, but a large share of the costs could be financed from the very large pool of private funds that currently pays for most of the health care of these workers, under a well-designed worker/employer premium system in which workers and employers share the costs of Medicare premiums.

Our findings also suggest areas for further research. The large and consistent percentages of beneficiaries who are uninsured both before and after SSDI entry raises questions about who these individuals are and the causes and duration of their spells of uninsurance. This group might also be one for whom earlier intervention (i.e., earlier provision of health insurance and greater health care access) might delay the onset of disability and withdrawal from the labor force. Although not a central finding of our study, the changing race composition of our beneficiary samples during the periods before and after SSDI entry also raises issues for further research. Do differences in mortality rates account for this pattern, or might other factors play a role? If due to mortality, what characteristics of black and white beneficiaries would account for those differences during the period immediately surrounding SSDI entry?

Finally, due to data limitations, we were unable to identify SSDI applicants whose claims had been denied during specified time frames relative to their NHIS interviews. If more complete information about the dates of disability claim denials were linked to the NHIS, it would be possible to develop a profile of denied applicants analogous to the profile we have developed for beneficiaries.

Governments of several states are taking steps to reduce the number of uninsured people, but it is not yet clear whether these efforts will help individuals gain and retain access to health insurance. Federal policymakers are also debating the need for mechanisms to address uninsured Americans. It is uncertain whether these efforts will aid those with disabilities who are struggling to obtain coverage for their often intensive health care needs. One important criterion for judging the adequacy of any proposal to cover the uninsured is the extent to which it will meet the needs of workers with significant health conditions—and whether it will continue to meet their needs if they must exit the labor force and apply for SSDI.

NOTES

[1] U.S. Government Accountability Office, *Medicaid and Ticket to Work: States' Early Efforts to Cover Working Individuals with Disabilities*, GAO-03-587 (Washington, D.C.: Government Accountability Office, 2003).

[2] B. Williams, A. Dulio, H. Claypool et al., *Waiting for Medicare: Experiences of Uninsured People with Disabilities in the Two-Year Waiting Period for Medicare* (New York: The Commonwealth Fund, 2004); R. Hayes, D. Beebe, and H. Kreamer, *Too Sick to Work, Too Soon for Medicare: The Human Cost of the Two-Year Medicare Waiting Period for Americans with Disabilities* (New York: The Commonwealth Fund, April 2007).

[3] S. Dale and J. Verdier, *Elimination of Medicare's Waiting Period for Seriously Disabled Adults: Impact on Coverage and Costs* (New York: The Commonwealth Fund, 2003).

[4] G. Riley, "The Cost of Eliminating the 24-Month Medicare Waiting Period for Social Security Disabled-Worker Beneficiaries," *Medical Care*, 2004 42(4):387–94.

[5] J. Whittaker, "Social Security Disability Insurance (SSDI) and Medicare: The 24-Month Waiting Period for SSDI Beneficiaries Under Age 65," CRS Report to Congress # RS22195, July 2005. Congressional Research Service. Accessed on April 15, 2008, from http://digital.library.unt.edu/govdocs/crs/data/2005/upl-meta-crs-7749/RS22195_2005 Jul 14.pdf.

[6] J. Gruber and J. D. Kubik, "Health Insurance Coverage and the Disability Insurance Application Decision," Center for Retirement Research Working Paper No. 2002-04, 2002.

[7] G. Riley, "Health Insurance and Access to Care Among Social Security Disability Insurance Beneficiaries During the Medicare Waiting Period," *Inquiry*, 2006 43:222–30.

[8] See NCHS (undated a and b) for more information about the NHIS data linking methodology and outcomes.

[9] See National Center for Health Statistics (undated, a and b) for information about the NCHS record linkage process and outcomes; the weights developed by Riley (2006) used in this study adjust the distribution of characteristics in the sample to account for non-linkage to the SSA records, but do not inflate the sample to reflect the population size. Thus, the weighted study sample sizes shown in Table A-1 are less than the actual number of SSDI allowances per year during the years covered by our study sample, by a factor approximately equal to the rate of record non-linkage (about one-third). The fact that the NHIS covers only the household (non-institutionalized) population also contributes to the weighted sample sizes being lower, when compared with published numbers of SSDI beneficiaries.

[10] Although only 61 percent of beneficiaries interviewed during the third year after SSDI entitlement report having Medicare coverage at interview, Medicare program data indicate that 92 percent were enrolled in Medicare at some point during the year they were interviewed in the NHIS (Table 5). Some of this 31-percentage-point difference is due to the timing of the NHIS interview relative to the timing of initial Medicare eligibility, but some is likely due to a lack of awareness of coverage. In another study using data from SSA's National Beneficiary Survey, only 80 percent of SSDI beneficiary respondents (or their proxies) correctly reported their Medicare coverage status when interviewed (Wright et al. 2007). Others have noted similar reporting inaccuracies among Medicaid enrollees (Peterson and Grady 2005). Although inaccurate reporting of public insurance sources appears to be common, a recent study of the accuracy of reported insurance status in the Medical Expenditure Panel Survey found that reports of private insurance coverage and uninsured status are reasonably accurate among the non-elderly (Hill 2007/2008).

[11] If SSA determines that the date of an individual's onset of disability occurred during the first 60 days of COBRA coverage or earlier, the employee is eligible for an additional 11 months of continuation coverage, or a total of 29 months from the date of the qualifying event (Whittaker 2005).

[12] G. Claxton, I. Gil, B. Finder et al., *Employer Health Benefits, 2006 Annual Survey* (Menlo Park, Calif., and Chicago: Henry J. Kaiser Family Foundation and Health Research and Educational Trust, 2006).

[13] In 2006, average processing times for disability claims were 89 days at the initial level, 72 days at the reconsideration level, and 481 days at the administrative law judge (ALJ) hearings level (U.S. GAO 2007). Between each of these steps, a claimant has 60 days to file the appeal to take the claim to the next step in the process.

[14] Authors' calculation based on data in Table 7.

[15] U.S. Government Accountability Office, *Social Security Disability: Better Planning, Management, and Evaluation Could Help Address Backlogs*, GAO-08-40 (Washington, D.C.: U.S. Government Accountability Office, December 2007).

[16] G. Riley, 2004.

[17] Ibid.; S. Dale and J. Verdier, 2003.

[18] Inflating the Riley (2004) estimate in 2000 dollars to 2006 dollars, based on the growth in per-enrollee Medicare costs (among Medicare beneficiaries under age 65) during the 2000–06 period, increases his estimate per enrollee to $14,821 for the entire 24-month waiting period. Based on our estimates, the per-enrollee cost would be $15,737. According to the Dale and Verdier (2003) estimates for 2002, eliminating the waiting period would increase total Medicare expenditures by about 3.4 percent. Based on our upper bound estimate, total expenditures would increase by 2.9 percent.

[19] Congressional Budget Office, *CBO Budget Options Volume I: Health Care* (Washington, D.C.: Congressional Budget Office, December 2008); We used CBO's Personal Consumption Expenditure index to deflate the CBO projections.

[20] CBO does not provide its estimate, but starts with an estimate of 1.8 million for December 2007, which is higher than our 1.66 million estimate for 2006 (see Livermore et al. 2009), and can be expected to grow because of the aging of the baby boom generation.

[21] President's Committee on Employment of People with Disabilities, *Operation People First: Toward a National Disability Policy, A Report of the President's Committee on Employment of People with Disabilities 1993 Teleconference Project* (Washington, D.C.: President's Committee on Employment of People with Disabilities, 1994); P. Hanes, Testimony presented at the House Ways and Means Subcommittee on Social Security hearing on Work Incentives for Blind and Disabled Social Security Beneficiaries. March, 23, 2000; K. MacDonald-Wilson, E. Rogers, M. Ellison et al., "A Study of the Social Security Work Incentives and Their Relation to Perceived Barriers to Work Among Persons with Psychiatric Disability," *Rehabilitation Psychology,* 2003 48(4):301–309; and A. Porter, "Characteristics, Experiences, and Earnings of Early Enrollees in Connecticut's Medicaid Buy-In Program," Doctoral Dissertation, Boston University, Sargent College of Health and Rehabilitation Sciences, 2004.

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[27] According to one study (Pollitz et al. 2001), a number of disabling or potentially disabling health conditions are commonly considered to be "uninsurable" by insurers in the individual insurance market. Among these are AIDS/HIV, arthritis, brain or spinal cord injury, recently diagnosed or treated cancer, coronary heart disease, cystic fibrosis, diabetes, epilepsy, hemophilia, kidney disease, Lou Gehrig's disease, lupus, multiple sclerosis, muscular dystrophy, paraplegia or quadriplegia, Parkinson's disease, and stroke.

[28] Limitations of the SSA administrative data linked to the NHIS prevent us from distinguishing denied applicants who filed claims during the six-year window from other denied applicants, thus preventing us from directly estimating their costs. Using the characteristics of beneficiaries during the first year of SSDI entitlement to estimate the costs for all applicants likely overstates the costs that would be associated with the approximately 50 percent of SSDI applicants who would be denied benefits. Thus, our Medicare cost estimates for the SSDI applicant group represent an upper bound; we limit coverage to a two-year period under the assumption that most SSDI applicants would have completed the application process after 24 months (i.e., they either would have been allowed benefits and have completed the waiting period or would have been denied benefits and either returned to the labor force or reapplied). However, this will not be the case for some of the approximately 19 percent of claims that progress to the ALJ hearings level of the adjudication process and beyond. In 2006, 28 percent of disability claims processed at the ALJ level had ALJ processing times of 600 days or longer (U.S. GAO 2007). This suggests that about 5 percent of all applicants would remain in the application process beyond the 24 months of Medicare coverage offered under the hypothetical policy.

[29] The Ticket to Work and Work Incentives Improvement Act of 1999 expanded states' authority to offer Medicaid coverage to working people with disabilities who meet SSA's medical criteria for disability but who otherwise would not qualify because of their income or resources.

APPENDICES

Appendix A. Sample Sizes and Variable Definitions

Appendix B. Regression Models of Insurance Status and Health Care Access Problems

Appendix C. Medicare Cost Estimates

Appendix D. Cost Estimates for Additional Policy Options

APPENDIX A
SAMPLE SIZES AND VARIABLE DEFINITIONS

Table A-1. Study Sample Sizes

Study Subgroup	Unweighted Sample	Weighted Sample
All NHIS Respondents Ages 18 to 64	168,089	159,820,000
SSDI Beneficiaries Interviewed in the NHIS		
25–36 Months Before SSDI Entry	428	405,539
13–24 Months Before SSDI Entry	393	345,471
1–12 Months Before SSDI Entry	414	389,035
1–12 Months After SSDI Entry	441	390,183
13–24 Months After SSDI Entry	374	322,714
25–36 Months After SSDI Entry	463	392,911
All SSDI Beneficiaries Meeting Study Criteria	2,513	2,245,853
Non-ESRD Medicare Enrollees Ages 18 to 64 Enrolled in Both Parts A and B and Not Enrolled in a Medicare Managed Care Plan During the Year Interviewed in the NHIS		
All	2,174	1,858,064
All with Medicare Expenditures During the Year Interviewed in the NHIS	1,687	1,431,329

Note: SSDI beneficiary cohorts include NHIS respondents ages 18–64 who become entitled to SSDI within 36 months (before or after) the month interviewed in the NHIS. SSDI entitlement (entry) month is based on the date associated with the latest entitlement occurring during the 36-month period before and after the month the respondent was interviewed in the NHIS.

Source: 1994, 1995, and 1996 NHIS data linked to SSA and Medicare administrative data.

Table A-2. Explanatory Variables Used in the Regression Models

Variable Name	Description
Ages 18–34 Ages 35–44 Ages 45–54	Dummy variables representing age categories; omitted category = ages 55–64
Male	=1 if male; 0 otherwise
Not White	=1 if race is not white; 0 otherwise
Hispanic	=1 if Hispanic ethnicity; 0 otherwise
Education = High School Education Beyond High School	Dummy variables representing education categories; omitted category = education less than the high-school level
Married	=1 if married; 0 otherwise
Northeast Midwest West	Dummy variables representing geographic regions; omitted category = South
Employed Full Time Employed Part Time	Dummy variables representing employment status; omitted category = not employed (insurance and health care access models only)
Employed	=1 if employed; 0 otherwise (Medicare expenditure models only)
Poverty	=1 if household income is below federal poverty level; 0 otherwise
Uninsured	= 1 if no health insurance coverage at interview; 0 otherwise (health care access model only)
Poor Health	=1 if in poor health; 0 otherwise
Needs Personal Care Help	=1 if needs help with personal care; 0 otherwise
Musculoskeletal	=1 if a musculoskeletal causes limitation; 0 otherwise
Heart/Circulatory	=1 if a heart or circulatory condition causes limitation; 0 otherwise
Vision/Hearing/Speech	=1 if a sensory condition causes limitation; 0 otherwise
Nervous System	=1 if a nervous system condition causes limitation; 0 otherwise
Mental/Cognitive	=1 if a mental or cognitive condition causes limitation; 0 otherwise
Cancer	=1 if cancer causes limitation; 0 otherwise
Endocrine	=1 if an endocrine condition causes limitation; 0 otherwise
No Limitation	=1 if reported no activity limitation; 0 otherwise
Previous SSDI Denial	=1 if had an SSDI claim denial which occurred previous to the study reference SSDI allowance date; 0 otherwise (insurance and health care access models only)
13–24 Months Before SSDI 1–12 Months Before SSDI 1–12 Months After SSDI 13–24 Months After SSDI 25–36 Months After SSDI	Dummy variables representing the time period (months) when observed in the NHIS relative to SSDI entry; omitted category = 25–36 months before SSDI entry (insurance and health care access models only)
Medicare Months	Number of months enrolled in Medicare during year observed in the NHIS; range = 1–12 (Medicare expenditure models only)
Private Insurance	=1 if covered by private health insurance; 0 otherwise (Medicare expenditure models only)
1–7 Bed Days Past 12 Months 8–30 Bed Days Past 12 Months >30 Bed Days Past 12 Months	Dummy variables representing categories of the number of bed days during the past 12 months; omitted category = no bed days during the past 12 months (Medicare expenditure models only)

APPENDIX B

REGRESSION MODELS OF INSURANCE STATUS AND PROBLEMS GETTING NEEDED CARE

Table B-1. Logistic Regression Model of the Likelihood of Being Uninsured at NHIS Interview Among Members of the SSDI Beneficiary Cohorts

	Coefficient	**Std. Error**	**Odds Ratio**	**P-value**	**Variable Mean**
Sample Size (unweighted): 2,513					
Dependent Variable: Uninsured					0.18
Intercept	–0.43	0.31	0.65	0.16	
Ages 18–34	0.02	0.21	1.02	0.93	0.18
Ages 35–44	0.37	0.19	1.45	0.06	0.20
Ages 45–54	0.27	0.16	1.30	0.09	0.30
Male	**0.49**	**0.13**	**1.63**	**0.00**	**0.53**
Not White	–0.26	0.17	0.77	0.14	0.22
Hispanic	0.18	0.21	1.20	0.40	0.08
Education = High School	–0.13	0.15	0.88	0.39	0.41
Education Beyond High School	**–0.52**	**0.18**	**0.59**	**0.00**	**0.27**
Married	**–0.76**	**0.13**	**0.47**	**0.00**	**0.58**
Northeast	**–0.54**	**0.19**	**0.58**	**0.00**	**0.18**
Midwest	**–0.61**	**0.18**	**0.54**	**0.00**	**0.23**
West	**–0.34**	**0.16**	**0.71**	**0.03**	**0.18**
Employed Full Time	**–0.82**	**0.18**	**0.44**	**0.00**	**0.27**
Employed Part Time	–0.34	0.22	0.71	0.12	0.09
Poverty	**0.74**	**0.15**	**2.10**	**0.00**	**0.17**
Poor Health	–0.19	0.15	0.83	0.21	0.26
Needs Personal Care Help	–0.12	0.17	0.89	0.49	0.22
Musculoskeletal	0.11	0.16	1.11	0.51	0.30
Heart/Circulatory	–0.18	0.20	0.84	0.37	0.18
Vision/Hearing/Speech	0.11	0.28	1.12	0.68	0.05
Nervous System	**–0.87**	**0.27**	**0.42**	**0.00**	**0.11**
Mental/Cognitive	–0.19	0.28	0.82	0.49	0.10
Cancer	–0.41	0.33	0.67	0.22	0.05
Endocrine	0.22	0.21	1.24	0.30	0.09
No Limitation	–0.04	0.20	0.96	0.86	0.30
Previous SSDI Denial	**0.46**	**0.15**	**1.58**	**0.00**	**0.19**
13–24 Months Before SSDI	–0.10	0.19	0.90	0.59	0.15
1–12 Months Before SSDI	–0.02	0.21	0.99	0.94	0.17
1–12 Months After SSDI	–0.31	0.22	0.73	0.17	0.17
13–24 Months After SSDI	**–0.70**	**0.24**	**0.49**	**0.00**	**0.14**
25–36 Months After SSDI	**–2.62**	**0.30**	**0.07**	**0.00**	**0.17**

Note: Bold type indicates statistical significance at the .05 level.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Table B-2. Logistic Regression Model of the Likelihood of Having Employer-Sponsored Insurance (Through Own Employer) at NHIS Interview Among Members of the SSDI Beneficiary Cohorts

	Coefficient	Std. Error	Odds Ratio	P-value	Variable Mean
Sample Size (unweighted): 2,513					
Dependent Variable: Likelihood of Having Private Insurance via Own Employer					0.30
Intercept	**–1.92**	**0.30**	**0.15**	**0.00**	
Ages 18–34	**–1.29**	**0.20**	**0.28**	**0.00**	**0.18**
Ages 35–44	**–0.78**	**0.18**	**0.46**	**0.00**	**0.20**
Ages 45–54	**–0.34**	**0.14**	**0.71**	**0.01**	**0.30**
Male	**0.25**	**0.12**	**1.29**	**0.03**	**0.53**
Not White	–0.29	0.16	0.75	0.06	0.22
Hispanic	**–0.50**	**0.23**	**0.61**	**0.03**	**0.08**
Education = High School	**0.64**	**0.15**	**1.91**	**0.00**	**0.41**
Education Beyond High School	**0.88**	**0.16**	**2.41**	**0.00**	**0.27**
Married	0.04	0.13	1.04	0.77	0.58
Northeast	**0.41**	**0.18**	**1.51**	**0.02**	**0.18**
Midwest	**0.30**	**0.15**	**1.36**	**0.04**	**0.23**
West	0.04	0.19	1.04	0.83	0.18
Employed Full Time	**2.07**	**0.16**	**7.96**	**0.00**	**0.27**
Employed Part Time	**0.66**	**0.24**	**1.94**	**0.01**	**0.09**
Poverty	**–1.27**	**0.20**	**0.28**	**0.00**	**0.17**
Poor Health	–0.08	0.15	0.92	0.58	0.26
Needs Personal Care Help	0.08	0.17	1.09	0.61	0.22
Musculoskeletal	**0.32**	**0.16**	**1.37**	**0.05**	**0.30**
Heart/Circulatory	0.28	0.17	1.32	0.11	0.18
Vision/Hearing/Speech	–0.45	0.28	0.64	0.11	0.05
Nervous System	**0.41**	**0.19**	**1.51**	**0.03**	**0.11**
Mental/Cognitive	–0.43	0.25	0.65	0.09	0.10
Cancer	–0.02	0.31	0.98	0.94	0.05
Endocrine	–0.23	0.22	0.79	0.28	0.09
No Limitation	0.15	0.18	1.17	0.39	0.30
Previous SSDI Denial	**–0.38**	**0.15**	**0.68**	**0.01**	**0.19**
13–24 Months Before SSDI	–0.10	0.17	0.91	0.57	0.15
1–12 Months Before SSDI	0.13	0.20	1.14	0.51	0.17
1–12 Months After SSDI	**0.46**	**0.23**	**1.59**	**0.05**	**0.17**
13–24 Months After SSDI	0.20	0.24	1.22	0.41	0.14
25–36 Months After SSDI	–0.23	0.24	0.79	0.33	0.17

Note: Bold type indicates statistical significance at the .05 level.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

Table B-3. Logistic Regression Model of the Likelihood of Delaying or Not Getting Needed Medical Care Because of Cost Among Members of the SSDI Beneficiary Cohorts

	Coefficient	Std. Error	Odds Ratio	P-value	Variable Mean
Sample Size (unweighted): 2,513					
Dependent Variable: Cost a Reason Delayed/Did Not Receive Care					0.20
Intercept	**–2.19**	**0.31**	**0.11**	**0.00**	
Ages 18–34	0.10	0.20	1.10	0.64	0.18
Ages 35–44	0.15	0.18	1.16	0.42	0.20
Ages 45–54	0.21	0.15	1.23	0.18	0.30
Male	**–0.40**	**0.12**	**0.67**	**0.00**	**0.53**
Not White	**–0.70**	**0.18**	**0.50**	**0.00**	**0.22**
Hispanic	–0.20	0.22	0.82	0.37	0.08
Education = High School	0.10	0.16	1.11	0.51	0.41
Education Beyond High School	0.24	0.16	1.27	0.15	0.27
Married	–0.02	0.12	0.98	0.84	0.58
Northeast	–0.23	0.19	0.79	0.21	0.18
Midwest	–0.09	0.18	0.92	0.64	0.23
West	–0.17	0.18	0.85	0.35	0.18
Employed Full Time	**0.34**	**0.17**	**1.40**	**0.05**	**0.27**
Employed Part Time	0.41	0.22	1.50	0.06	0.09
Poverty	**0.51**	**0.15**	**1.66**	**0.00**	**0.17**
Poor Health	**0.39**	**0.15**	**1.48**	**0.01**	**0.26**
Needs Personal Care Help	0.17	0.17	1.18	0.32	0.22
Musculoskeletal	**0.55**	**0.15**	**1.73**	**0.00**	**0.30**
Heart/Circulatory	0.28	0.16	1.32	0.09	0.18
Vision/Hearing/Speech	–0.39	0.27	0.67	0.14	0.05
Nervous System	–0.01	0.20	0.99	0.96	0.11
Mental/Cognitive	**0.69**	**0.20**	**1.99**	**0.00**	**0.10**
Cancer	–0.19	0.32	0.83	0.56	0.05
Endocrine	0.15	0.20	1.16	0.46	0.09
No Limitation	–0.23	0.22	0.79	0.30	0.30
Previous SSDI Denial	0.21	0.15	1.24	0.16	0.19
13–24 Months Before SSDI	–0.14	0.23	0.87	0.53	0.15
1–12 Months Before SSDI	–0.04	0.23	0.96	0.85	0.17
1–12 Months After SSDI	–0.10	0.24	0.90	0.67	0.17
13–24 Months After SSDI	–0.36	0.24	0.70	0.14	0.14
25–36 Months After SSDI	–0.11	0.26	0.89	0.66	0.17
Uninsured	**1.89**	**0.14**	**6.64**	**0.00**	**0.18**

Note: Bold type indicates statistical significance at the .05 level.

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

APPENDIX C
MEDICARE COST ESTIMATES

I. INTRODUCTION

In this Appendix, we provide details on the methods used to estimate the annual Medicare costs of beneficiaries in our sample, and the cost of eliminating the 24-month Medicare waiting for new SSDI beneficiaries.

The waiting period cost estimates have four primary components: 1) the number of SSDI beneficiaries in the waiting period; 2) the average projected Medicare costs associated with those in the waiting period; 3) the number of beneficiaries in the waiting period covered by Medicaid; and 4) the federal share of Medicaid expenditures attributed to those in the waiting period that would be covered by Medicare under the new policy. The four components are combined as follows to produce estimates of the annual cost (in 2006) of eliminating the waiting period:

[Number of SSDI beneficiaries in the waiting period x Average projected Medicare cost of those in the waiting period net of Part B premiums] – [Number of SSDI beneficiaries in the waiting period covered by Medicaid x Average federal Medicaid cost for those in the waiting period that would be displaced by Medicare]

The purpose of the third and fourth components is to net out the costs that are already being paid by the federal government for those covered by Medicaid, and which would instead be covered by Medicare if the waiting period were eliminated.

In the sections that follow, we describe our methods for estimating each of the four components. The estimates presented are for the entire waiting period, including months prior to SSDI allowance. Estimates for the period from the SSDI allowance month through the end of the waiting period are derived by multiplying the full waiting period estimates by 62.5 percent—the proportion of waiting period months that, for the average beneficiary, are in or after the allowance month based on the experience of our sample of SSDI beneficiaries.

II. NUMBER OF SSDI BENEFICIARIES IN THE WAITING PERIOD

To estimate the number of SSDI beneficiaries in the waiting period as of the end of 2006, we used published data on the number of SSDI awards in 2005 and 2006, and then adjusted the numbers to account for those who would have died at some point during the waiting period.

The data reported by the Social Security Administration (SSA) on specific categories of SSDI awards (workers, widow(er)s, and adult children) are based on a 1 percent sample. Data on disabled workers were also reported based on 100 percent of awards. Because the 1 percent sample appears to underestimate the number of awards (when compared with the 100 percent data), we used the number of disabled worker awards based on the 100 percent data, and then estimated the number of disabled widow(er) and adult child awards by representing those awards as a percentage of disabled worker awards based on the 1 percent sample, and applying the percentages to the number of disabled worker awards based on the 100 percent data. Table C-1 shows the number of SSDI awards for each year by type of award (disabled worker, widow(er)s, and adult child).

The assumption of a cumulative 13 percent reduction is based on the cumulative mortality rates observed in our sample of SSDI beneficiaries. The reduction is applied to the average monthly number of awardees over the 2005 through 2006 period in the following manner. We first assume that the number of awards per month is roughly constant over the relevant period, and estimate that number as the total number awarded benefits in 2005 and 2006 divided by 24 (74,191). We also assume that the monthly death rate for those in the waiting period who were alive at the end of the previous month is a constant 0.6 percent, which implies that 87 percent ($.994^{23}$) of those allowed each month are alive at the end of the waiting period, consistent with our NHIS estimate of 13 percent mortality during the waiting period. Based on the award data shown in Table C-1, these assumptions imply that the number in the waiting period in the average month is 74,191 x $(1 + .994 + .994^2 + \ldots + .994^{23}) = 1{,}662{,}966$.

Table C-1. Number of SSDI Beneficiaries in the Waiting Period, 2006

	2005		2006		
	Awards as a % of Disabled Worker Awards[a]	Number of SSDI Awards[b]	Awards as a % of Disabled Worker Awards[a]	Number of SSDI Awards[b]	Total Number in Waiting Period at End of 2006[c]
Disabled Workers	100	829,687	100	798,675	
Disabled Widow(er)s	5.8	48,504	5.6	44,415	
Disabled Adult Children	3.7	30,968	3.5	28,337	
Total		909,159		871,428	
Total in Waiting Period at End of 2006[c]					**1,662,966**

[a] Based on data in Table 6.A3 in SSA (2006 and 2007) from a 1 percent sample.

[b] Based on 100 percent data on disabled workers in Table 6.A1 in SSA (2007), and the number of disabled widow(er)s and adult children as a percentage of disabled workers from the 1 percent sample.

[c] Assumes that 13 percent of those awarded benefits die or leave the program during the waiting period. See the text description of the computation.

III. MEDICARE EXPENDITURE ESTIMATES

Using data from the NHIS that were linked to SSDI and Medicare program data, we developed estimates of the average annual health care costs that would be associated with all sample SSDI beneficiaries, including those SSDI beneficiaries who were in the 24-month period, if these individuals were covered by Medicare. In the sections below, we describe the methods used to develop these estimates. The description focuses on the estimates derived for the sample member who were in the 24-month waiting period, however, the same methodology was applied to derive the estimates for all SSDI beneficiaries in our sample reported in the body of the report. The data sources for these estimates are described in the body of the report.

For purposes of estimating Medicare costs during the waiting period, we used data on the NHIS sample members observed 1 to 12 and 13 to 24 months after SSDI entry. To develop the Medicare cost models (described below), we also used information on all SSDI beneficiaries identified in the survey data who were covered by Medicare at the time their household was interviewed in the NHIS. The sample sizes for these beneficiary subgroups are shown in Table C-2.

Table C-2 NHIS Samples Used in Medicare Cost Estimates

Study Subgroup	Unweighted Sample	Weighted Sample
SSDI Beneficiaries Interviewed in the NHIS		
1–12 Months After SSDI entry	441	390,183
13–24 Months After SSDI entry	374	322,714
Non-ESRD Medicare Enrollees Ages 18 to 64 Enrolled in Both Parts A and B and Not Enrolled in a Medicare Managed Care Plan During the Year Interviewed in the NHIS		
All	2,174	1,858,064
All with Medicare Expenditures During the Year Interviewed in the NHIS	1,687	1,431,329

Source: 1994, 1995, and 1996 NHIS data linked to SSA and Medicare administrative data.

To produce the Medicare cost estimates, we used Medicare expenditure data associated with the year the NHIS sample member's household was interviewed for those sample members ages 18 to 64 who were entitled to Medicare during that year. Medicare costs were inflation-adjusted to 2006 dollars, based on the growth in average annual per enrollee expenditures for Medicare beneficiaries under age 65 (estimated from data in Board of Trustees 2007). Only disabled Medicare beneficiaries meeting the following criteria were included in the analysis sample: enrolled in both Medicare Parts A and B; not enrolled in a Medicare managed care plan during the year observed; and not eligible for Medicare on the basis of end-stage renal disease (ESRD).[1] Using this subgroup of

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[1] We include only those enrolled in both Parts A and B so that the full Medicare cost could be estimated. We exclude those in Medicare managed care plans because cost information for those beneficiaries is not available. We exclude those eligible on the basis of ESRD because they are not subject to the 24-month waiting period.

Medicare beneficiaries (N = 2,174), we estimated a two-part (logit and logarithmic regression) model of Medicare expenditures.[2] The two models predict:

- the likelihood of any Medicare expenditures during the year interviewed in the NHIS; and
- the natural log of total Medicare expenditures conditional on positive expenditures during the year interviewed in the NHIS.

Each component of the Medicare cost model was estimated using a set of explanatory variables representing sociodemographic characteristics, health status, and private health insurance coverage. The number of months enrolled in Medicare during the observation year also was included as an explanatory variable (shown in Table A-2).

The final set of pooled estimates from the two Medicare cost prediction components (shown in Tables C-3 and C-4) were used to produce annual Medicare cost estimates. For sample members in the six periods surrounding SSDI entry, the Medicare cost model estimates were applied to the relevant covariates to obtain the sample member's predicted annual Medicare costs. The predicted logarithm of Medicare expenditures was transformed to dollars using a smearing methodology. The predicted values derived from the two component models were combined as follows to produce the Medicare cost estimate:

- [predicted prob (any Medicare expenditure)] * [predicted Medicare expenditures | any expenditures].

All estimates were generated using the pooled NHIS samples and a weight developed by Riley (2006) that accounts for bias associated with the missing information of NHIS respondents who could not be linked to the Social Security data.[3] Standard errors of the estimates were corrected for the complex design of the NCHS, using pooled sample strata and primary sampling unit variables developed by NCHS, in SUDAAN. We used the values for sample members observed in the first two years after SSDI entry for

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[2] We also experimented with a four-component model of Medicare costs that distinguished between those with and without inpatient expenditures, in a manner similar to that estimated by Riley (2004). We chose to use the two-component model because it yielded average cost estimates closer to the actual costs of the Medicare beneficiary sample members who were used to estimate the model.

[3] See National Center for Health Statistics (undated, a and b) for information about the NCHS record linkage process and outcomes; The weights developed by Riley (2006) used in this study adjust the distribution of characteristics in the sample to account for non-linkage to the SSA records, but do not inflate the sample to reflect the population size. Thus, the weighted study sample sizes shown in Table A-2 are less than the actual number of SSDI allowances per year during the years covered by our study sample, by a factor approximately equal to the rate of record non-linkage (about one-third). The fact that the NHIS covers only the household (non-institutionalized) population also contributes to the weighted sample sizes being lower, when compared to published numbers of SSDI beneficiaries.

purposes of estimating the waiting period costs. The predicted Medicare Parts A and B costs for the NHIS sample members in the waiting period are shown in Table C-5.

Table C-3. Logistic Regression Model Estimates of the Likelihood of Any Medicare Expenditures During the Year Interviewed in the NHIS

	Coefficient	Std. Error	Odds Ratio	P-value	Variable Mean
Sample Size (unweighted): 2,174					
Dependent Variable: Any Medicare Expenditures					0.78
Intercept	**–0.97**	**0.4**	**0.38**	**0.02**	
Ages 18–34	–0.1	0.23	0.91	0.67	0.12
Ages 35–44	–0.08	0.18	0.92	0.65	0.21
Ages 45–54	–0.27	0.17	0.76	0.10	0.29
Male	**–0.55**	**0.13**	**0.58**	**0.00**	**0.63**
Not White	–0.31	0.16	0.74	0.06	0.23
Hispanic	0.23	0.26	1.26	0.38	0.11
Education = High School	0.16	0.14	1.17	0.27	0.34
Education Beyond High School	0.03	0.17	1.03	0.87	0.20
Married	**–0.34**	**0.12**	**0.71**	**0.01**	**0.47**
Northeast	–0.03	0.2	0.97	0.88	0.17
Midwest	0.06	0.17	1.07	0.71	0.23
West	0.05	0.2	1.05	0.81	0.17
Employed	–0.32	0.24	0.72	0.18	0.10
Poverty	0.09	0.15	1.1	0.54	0.29
Poor Health	**0.47**	**0.16**	**1.6**	**0.00**	**0.31**
Needs Personal Care Help	0.13	0.15	1.13	0.40	0.35
Musculoskeletal	0.12	0.14	1.13	0.39	0.41
Heart/Circulatory	0.16	0.16	1.17	0.32	0.26
Vision/Hearing/Speech	–0.21	0.25	0.81	0.40	0.07
Nervous System	0.05	0.18	1.05	0.78	0.16
Mental/Cognitive	0.17	0.2	1.18	0.39	0.20
Cancer	**0.71**	**0.37**	**2.04**	**0.05**	**0.04**
Endocrine	**1.47**	**0.33**	**4.36**	**0.00**	**0.11**
Respiratory	0.2	0.25	1.23	0.42	0.08
Digestive	–0.07	0.31	0.93	0.83	0.04
No Limitation	0.49	0.26	1.64	0.06	0.08
Medicare Months	**0.19**	**0.03**	**1.21**	**0.00**	**11.33**
Private Insurance	0.12	0.13	1.12	0.39	0.44
1–7 Bed Days Past 12 Months	0.04	0.16	1.04	0.79	0.21
8–30 Bed Days Past 12 Months	**0.47**	**0.18**	**1.61**	**0.01**	**0.17**
>30 Bed Days Past 12 Months	**0.34**	**0.18**	**1.41**	**0.07**	**0.24**

Note: Bold type indicates statistical significance at the .05 level.

Source: 1994, 1995, and 1996 NHIS data linked to Summary Medicare Enrollment and Claims data.

Table C-4. Regression Model Estimates of Log Medicare Expenditures Among Those with Expenditures During the Year Interviewed in the NHIS

	Coefficient	Std. Error	P-value	Variable Mean
Sample Size (unweighted): 1,687				
Dependent Variable: Log Medicare Expenditures				7.16
Intercept	**5.56**	**0.49**	**0.00**	
Ages 18–34	0.08	0.2	0.67	0.13
Ages 35–44	0.02	0.15	0.91	0.22
Ages 45–54	–0.1	0.15	0.50	0.27
Male	–0.05	0.11	0.62	0.61
Not White	–0.05	0.13	0.72	0.21
Hispanic	–0.18	0.18	0.32	0.08
Education = High School	0.08	0.13	0.50	0.34
Education Beyond High School	0.12	0.16	0.48	0.20
Married	0.06	0.1	0.57	0.45
Northeast	0.12	0.17	0.47	0.18
Midwest	–0.13	0.14	0.36	0.23
West	0.06	0.16	0.70	0.16
Employed	–0.2	0.18	0.26	0.10
Poverty	0.21	0.13	0.10	0.26
Poor Health	**0.35**	**0.13**	**0.01**	**0.33**
Needs Personal Care Help	0.22	0.12	0.06	0.36
Musculoskeletal	**–0.33**	**0.12**	**0.01**	**0.39**
Heart/Circulatory	**0.27**	**0.13**	**0.04**	**0.26**
Vision/Hearing/Speech	–0.3	0.23	0.20	0.06
Nervous System	0.2	0.16	0.20	0.16
Mental/Cognitive	–0.01	0.15	0.96	0.22
Cancer	**0.69**	**0.26**	**0.01**	**0.04**
Endocrine	0.19	0.18	0.30	0.11
Respiratory	0.17	0.19	0.37	0.08
Digestive	–0.09	0.25	0.71	0.04
No Limitation	0.36	0.21	0.10	0.09
Medicare Months	**0.09**	**0.04**	**0.01**	**11.56**
Private Insurance	**–0.41**	**0.12**	**0.00**	**0.44**
1–7 Bed Days Past 12 Months	0.19	0.16	0.24	0.21
8–30 Bed Days Past 12 Months	**0.96**	**0.17**	**0.00**	**0.17**
>30 Bed Days Past 12 Months	**0.93**	**0.16**	**0.00**	**0.24**
Smearing Factor: 4.98				

Note: Bold type indicates statistical significance at the .05 level.

Source: 1994, 1995, and 1996 NHIS data linked to Summary Medicare Enrollment and Claims data.

Because the Medicare Part D (drug) benefit was not in place at the time the data on our samples were collected we made an adjustment to the cost estimates to reflect Part D expenditures. The predicted Medicare Parts A and B costs generated from the Medicare cost model were inflated by a factor of 1.198, representing the ratio of Medicare Parts A, B, and D benefit costs to Part A and Part B costs in 2006, (as reported in Medicare Board of Trustees 2007). The estimated Medicare Parts A, B, and D costs for the NHIS sample members who were in the waiting period are shown in Table C-5.

Table C-5. Estimated Cost of Providing Medicare Benefits to SSDI Beneficiaries During the Waiting Period

SSDI Beneficiary Subgroup	Annual Per Enrollee Medicare Cost Estimate[a] (2006 dollars)	Annual Per Enrollee Medicare Cost Estimate Including Part D Coverage[b] (2006 dollars)
1–12 Months After SSDI Entitlement	$8,622	$10,329
13–24 Months After SSDI Entitlement	$7,115	$8,524

[a] Estimated based on the regression models shown in Tables C3 and C4.

[b] Estimated based on the regression models shown in Tables C3 and C4, and inflating the estimate by a factor of 1.198, representing the ratio of Medicare Parts A, B, and D benefit costs to Part A and Part B costs in 2006 (Medicare Boards of Trustees 2007).

Source: 1994, 1995, and 1996 NHIS data linked to SSA administrative data.

We then took the simple average of the estimated Medicare costs for the first two years after SSDI entry (shown in Table C-5) and subtracted the total annual Part B premium amount in 2006 ($1,062). The resulting figure ($8,366) is applied to the estimated number of SSDI beneficiaries in the waiting period in 2006. We estimate that eliminating the Medicare waiting period would increase annual Medicare costs in 2006 (including Part D) by approximately $13.9 billion, assuming that all SSDI beneficiaries are enrolled in Parts A, B, and D throughout the entire 24-month period (Table C-6).

Table C-6. Estimated Annual Cost of Eliminating the Medicare Waiting Period for SSDI Beneficiaries, 2006

Component	Estimate
Number of SSDI Beneficiaries in the Medicare 24-Month Waiting Period[a]	1,662,966
Estimated Annual Per Enrollee Medicare Part A, B, and D Cost net of Part B Premium[b]	$8,366
Annual Cost of Eliminating the Medicare Waiting Period	$13.9 billion

[a] See Table C-1.

[b] Based on the average of the estimates of per enrollee Part A, B, and D Medicare costs during the first and second years after SSDI entitlement ($9,428) shown in Table C-5, minus 12 months of Part B premiums ($1,062).

IV. BENEFICIARIES IN THE WAITING PERIOD COVERED BY MEDICAID

Among the SSDI beneficiaries in our NHIS samples who were in the waiting period, about 20 percent reported being covered by Medicaid. We believe this to be an underestimate of the share of beneficiaries with Medicaid coverage during this period for a number of reasons: Medicaid coverage is often underreported in national surveys (Peterson and Grady 2005); the point-in-time estimates of coverage will not fully reflect beneficiaries who obtain Medicaid for only part of the waiting period; and our sample does not include individuals who are institutionalized, a large share of whom are likely to be covered by Medicaid.

Using a different data source and methodology, Dale and Verdier (2003) found rates of Medicaid coverage (assumed based on SSI eligibility status) ranging from 29 to 47 percent in nine states.[4] Based on this, they assumed that 40 percent of new SSDI beneficiaries were covered by Medicaid during the waiting period. We think their point estimate is higher than the actual share covered by Medicaid during the waiting period, however, because a large share of new SSDI beneficiaries who are initially concurrent beneficiaries (entitled to both SSI and SSDI) and, thus, entitled to Medicaid, lose their SSI (and Medicaid) eligibility immediately after being awarded SSDI benefits. These “serially” eligible beneficiaries receive SSI during the five-month waiting period for SSDI, but then lose SSI when SSDI payments start because the SSDI payments result in income higher than the SSI eligibility standard. According to one study (Rupp et al. 2008), about one-third of SSDI beneficiaries are initially covered by SSI as well. In contrast, concurrent beneficiaries represented just 16 percent of all SSDI beneficiaries in 2006 (SSA 2007), suggesting that as many as one-half of those who are initially concurrent beneficiaries are serially eligible, and lose their SSI (and Medicaid) eligibility at the start of the waiting period.

As no definitive data exist on the percent of SSDI beneficiaries in the waiting period who are covered by Medicaid, we chose to present a range of estimates based on a lower bound assumption of 25 percent (5 percent higher than the NHIS estimate) and an upper bound assumption of 35 percent (5 percent lower than the figure used by Dale and Verdier).

V. FEDERAL MEDICAID COST ESTIMATES

According to Congressional Budget Office estimates (CBO 2006), the federal share of Medicaid benefit payments for disabled Medicaid enrollees in 2006 was $7,940 per enrollee. We used this information to estimate the federal Medicaid costs associated with those in

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[4] In most cases, SSI recipients are automatically eligible for Medicaid.

the waiting period covered by Medicaid that would be displaced, at least in part, if those individuals gained Medicare coverage through the elimination of the waiting period.

As Medicaid covers a broader array of services than Medicare, and also does not require the level of copayments and deductibles that exist under Medicare, only a portion of the federal Medicaid share payment per enrollee would be displaced by Medicare if the waiting period were eliminated. Based on the findings of Foote and Hogan (2001) that Medicare covered approximately 60 percent of all costs associated with non-institutionalized dually-eligible beneficiaries under age 65, we have assumed that 60 percent of the federal share of Medicaid costs associated with those in the waiting period covered by Medicaid would be displaced by Medicare if the waiting period were eliminated. Table C-7 summarizes the estimates associated with the federal Medicaid cost estimates.

Table C-7. Estimates of the Medicaid Costs Displaced by Elimination of the Medicare Waiting Period

Component	Estimate
Share of beneficiaries in the waiting period covered by Medicaid[a]	25%–35%
Number of beneficiaries in the waiting period covered by Medicaid[a]	415,742–582,038
Federal Medicaid cost for disabled enrollees in 2006[b]	$7,940 per enrollee
Share of federal Medicaid costs for SSDI beneficiaries in the waiting period that would be displaced by Medicare if the waiting period were eliminated[c]	60% or $4,764 per enrollee
Federal Medicaid cost displaced by elimination of the waiting period	$2.0 billion–$2.8 billion

[a] See the assumptions described in the previous section.

[b] Based on estimates from CBO (2006).

[c] Based on data presented in Foote and Hogan (2001).

APPENDIX D
COST ESTIMATES FOR ADDITIONAL POLICY OPTIONS

Table D-1. Estimated Costs of Providing Medicare Benefits to Working-Age Labor Force Participants with Work Limitations and SSDI Applicants, 2006 Dollars

	Labor Force Participants Ages 18–64 with Work Limitation	**SSDI Applicants Not in the Labor Force**
Number of persons[a]	8,469,198	3,354,030
Percent of all non-institutionalized persons ages 18–64[b]	4.6	NA
Percent of all persons ages 18–64[c]	4.5	1.8
Medicare Benefit Cost Estimates		
Per enrollee cost of Medicare benefit[d]	$4,024	$9,428
Annual cost of providing Medicare	$34.0 billion	$31.6 billion
Percent already covered by Medicare[e]	3.4	2.3
Net annual increase in Medicare costs[f]	**$31.9 billion**	**$31.0 billion**

[a] For labor force participants, based on the civilian non-institutionalized population ages 18 to 64 in 2006 (U.S. Bureau of Labor Statistics 2006) multiplied by the estimate of the percent of the population with work limitations from our NHIS analyses. For SSDI applicants, based on the number of SSDI disabled worker applications in 2005 (SSA 2008) multiplied by .97 (under the assumption that three percent died or otherwise left the applicant pool by 2006), plus the number of SSDI disabled worker applications in 2006 (SSA 2008), and minus the 20 percent who are in the labor force (from our NHIS analysis of beneficiaries during the first year after SSDI entitlement).

[b] Based on analyses of the 1994–1996 NHIS.

[c] For labor force participants, based on the civilian non-institutionalized population ages 18 to 64 in 2006 (U.S. Bureau of Labor Statistics 2006) multiplied by the estimate of the percentage of the population with work limitations based on our NHIS analyses and expressed as a share of all persons ages 18–64 in 2006 (U.S. Census 2007). For SSDI applicants, based on the number of SSDI disabled worker applications in 2005 (SSA 2008) multiplied by .97 (under the assumption that 3 percent died or otherwise left the applicant pool by 2006), plus the number of SSDI disabled worker applications in 2006 (SSA 2008) expressed as a share of all persons ages 18–64 in 2006 (U.S. Census 2007).

[d] For labor force participants, based on the regression models shown in Tables C-1 and C-2 under the assumption of no private coverage, and inflating the estimate by a factor of 1.198, representing the ratio of Medicare Parts A, B, and D benefit costs to Parts A and B costs in 2006 (Medicare Boards of Trustees 2007). For SSDI applicants, based on the average of the estimated Medicare costs for beneficiaries during the first two years after SSDI entry (shown in Table 8).

[e] Based on analyses of the 1994–1996 NHIS. For SSDI applicants, based on the share of beneficiaries in the NHIS sample with Medicare coverage during the first year after SSDI entry (from Medicare program data linked to the NHIS sample), and divided by two under the assumption that all who were Medicare-covered were among the roughly 50 percent of applicants who subsequently were allowed benefits (i.e., no denied applicants were covered by Medicare). The 50 percent award rate assumption is based on final award rates over the 1992 to 2002 period (the period for which complete statistics were available), which varied from 48 to 55 percent (SSA 2008).

[f] Net of costs associated with those already covered by Medicare, which are estimated as the annual per enrollee Medicare Part A and Part B costs in 2006 for disabled Medicare enrollees ($7,744) (CMS 2007), increased by a factor of 1.198 (or $1,533), representing the ratio of Medicare Parts A, B, and D benefit costs to Parts A and B costs in 2006 (Medicare Boards of Trustees 2007), and multiplied by the number estimated to be covered already by Medicare (based on other information shown in the table).

Table D-2. Estimates of the Private Sector Premium Costs Paid by Working-Age Labor Force Participants with Work Limitations, SSDI Applicants, and Their Employers in 2006

	Labor Force Participants Ages 18–64 with Work Limitation	SSDI Applicants Not in the Labor Force
Number of persons[a]	8,469,198	3,354,030
Percent of all non-institutionalized persons ages 18–64[b]	4.6	NA
Percent of all persons ages 18–64[c]	4.5	1.8
Private Sector Premium Cost Estimates		
Percent with private health insurance coverage[d]	73.4	54.0
Estimated maximum total private sector premium costs (paid by employer and individual) that could be drawn upon to help finance an expanded Medicare benefit[e]	$26.4 billion	$7.7 billion

[a] For labor force participants, based on the civilian non-institutionalized population ages 18 to 64 in 2006 (U.S. Bureau of Labor Statistics 2006) multiplied by the estimate of the percent of the population with work limitations from our NHIS analyses. For SSDI applicants, based on the number of SSDI disabled worker applications in 2005 (SSA 2008) multiplied by .97 (under the assumption that three percent died or otherwise left the applicant pool by 2006), plus the number of SSDI disabled worker applications in 2006 (SSA 2008), and minus the 20 percent who are in the labor force (from our NHIS analysis of beneficiaries during the first year after SSDI entitlement).

[b] Based on analyses of the 1994–1996 NHIS.

[c] For labor force participants, based on the civilian non-institutionalized population ages 18 to 64 in 2006 (U.S. Bureau of Labor Statistics 2006) multiplied by the estimate of the percentage of the population with work limitations based on our NHIS analyses and expressed as a share of all persons ages 18–64 in 2006 (U.S. Census 2007). For SSDI applicants, based on the number of SSDI disabled worker applications in 2005 (SSA 2008) multiplied by .97 (under the assumption that 3 percent died or otherwise left the applicant pool by 2006), plus the number of SSDI disabled worker applications in 2006 (SSA 2008) expressed as a share of all persons ages 18–64 in 2006 (U.S. Census 2007).

[d] Based on analyses of the 1994–1996 NHIS. For SSDI applicants, based on the share of beneficiaries in the NHIS sample with private coverage during the first year after SSDI entry.

[e] Estimated as the national average annual employer-sponsored insurance premium cost for an individual in 2006 ($4,242) (Claxton et al. 2006) multiplied by the estimated number in the group with private coverage.