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To Apply or Not to Apply: The Employment and Program Participation of Social Security Disability Insurance Applicants and Non-applicants

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ABSTRACT

From 1992 to 2012, enrollment in the Social Security Disability Insurance (DI) program increased from 4.7 million people to 8.7 million people, but the number of beneficiaries leaving the program to return to work remained very small. The U.S. government has implemented several programs to reduce federal expenditures on DI and help beneficiaries return to work, but the limited success of these efforts has raised interest in approaches that help workers with disabilities remain in the workforce. The focus of this paper is to provide information on the services and supports used by workers with disabilities at risk of applying for DI and to help build the evidence base for policies that enable workers with disabilities to avoid applying for DI and for the supports necessary to keep them in the workforce. Using three panels of the Survey of Income and Program Participation matched to SSA administrative data, we answer questions about the demographic, employment, and program participation characteristics of DI beneficiaries before and after they apply for DI, and of individuals at risk of applying for DI. We find that DI applicants are older and less educated, have significantly less income and lower employment rates, and receive poverty-related benefits at higher rates than the general population, especially in the six months before applying for DI. We observe similar trends among applicants and non-applicants within our seven at-risk groups. Based on this analysis, we identify particular at-risk groups that might benefit from receiving early intervention services.

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EXECUTIVE SUMMARY

From 1992 to 2012, enrollment in the Social Security Disability Insurance (DI) program increased from 4.7 million to 8.7 million people, but the number of beneficiaries leaving the program to return to work remained very small. The U.S. government has implemented several programs to reduce federal expenditures on DI and help beneficiaries return to work, but these efforts have seen limited success. The rapid growth of DI and the continued low rate of recipients exiting DI because of work have raised interest in approaches that help workers with disabilities remain in the workforce.

The focus of this study is to provide information on the services and supports used by workers with disabilities at risk of applying for DI and to help build the evidence base for policies that avert workers with disabilities from applying for DI and for the supports necessary to keep them in the workforce. We do this by answering two questions: (1) What are the demographic, employment, and program participation characteristics of DI beneficiaries before they apply for DI? and (2) What are the demographic, employment, and program participation characteristics of individuals at risk of applying for DI? We use data from three panels (1996, 2001, and 2004) of the Survey of Income and Program Participation (SIPP) matched to Social Security Administration (SSA) administrative data. The SIPP contains information on respondents' demographic characteristics, employment and income measures, and program participation during the waves they responded to the survey. The SSA administrative files show which individuals applied for DI benefits, their application dates, and their DI and Supplemental Security Income (SSI) receipt.

We further examined characteristics of DI applicants by examining seven groups of individuals at risk of applying for DI: (1) Unemployment Insurance (UI) recipients with a disability, (2) workers with disabilities at risk of applying for UI, (3) individuals with high health expenditures, (4) workers compensation recipients, (5) private short- and long-term disability insurance (PDI) beneficiaries, (6) military veterans with a disability, and (7) individuals with disabilities who received job training or education services within the past year.

DI applicants were likely to be older and less educated and to have significantly less income than the general population. Regarding employment outcomes, DI applicants had declines in their employment rates and earned income more than two years before DI application, with the biggest decline observed in the 6 months before application. Surprisingly, however, more than two-thirds of DI applicants were employed immediately before they applied to DI. On benefit receipt, eventual DI applicants received poverty-related benefits at higher rates than observed in the general population up to 42 months before applying for DI, and participation often increased during the 6 months immediately before they applied for DI.

We observed similar patterns across our seven at-risk groups. Differences between DI applicants and nonapplicants in these groups were often large but not statistically significant due to small sample sizes. Labor force participation was often higher and SSI participation lower for DI applicants compared with nonapplicants. Employment and income measures for DI applicants were often below those of nonapplicants. Participation in Supplemental Nutrition Assistance Program (SNAP) and disability-related programs was higher for DI applicants than nonapplicants across the at-risk groups. In addition, our analysis showed that members of some

groups (particularly new PDI beneficiaries) were more likely to apply for DI than members of other groups.

This analysis provides insight for evaluating which at-risk groups might be best to target for early intervention services, but also highlights the complexities of that effort. New PDI and UI beneficiaries, new workers compensation recipients, and workers with disabilities at risk of UI had higher rates of applying for DI than members of other at-risk groups. However, each of these groups makes up a relatively small portion of all DI applicants (no more than 5 percent). Instead, people with high health expenditures, the at-risk group with the lowest proportion of members applying to DI, also had the highest number of people apply for DI, though this number still represents only 7 percent of all DI applicants.

Two key policy implications result from this analysis. First, it seems plausible that people within a program or at-risk group who are likely to apply to DI could be identified and provided supports to help them maintain employment. However, developing such early intervention approaches will require additional information about the characteristics of the target populations. For example, analyzing administrative data from programs such as workers compensation might provide more detail than public use data and could more effectively identify the best candidates for return-to-work services. Second, because the at-risk groups comprise a small portion all DI applicants, the effect of targeting specific groups for interventions to promote employment might have a small effect on the DI program overall. Therefore, examining successful DI applicants could provide additional insight to identify targets for early intervention services.

Further research into the paths to DI application and receipt could focus on collecting more nuanced and detailed data on the factors influencing individuals' decisions to apply to DI, by looking at people with specific disabilities or conducting a survey of applicants at the time of application.

I. INTRODUCTION

Enrollment in and federal outlays for the Social Security Disability Insurance (DI) program have been on upward trajectories for two decades. In 1992, 4.7 million people were enrolled in DI. By 2012, DI provided benefits to 8.7 million beneficiaries and administrative costs and benefit payouts had more than doubled (Biggs 2012). Most of this growth comes from an increase in the number of covered workers and the aging of the working-age population, but some is due to factors that are more difficult to ascertain (Autor and Duggan 2003). For example, in 2012 55 percent of DI beneficiaries with terminated benefits moved to Old-Age and Survivors Insurance benefits, 35 percent died, and the rest lost coverage because of earnings, an improvement in their health, or other reasons (SSA 2013). In a typical year, the proportion of beneficiaries who leave because of sufficient work is less than half of one percent. From a longitudinal perspective, the percentage of new beneficiaries who eventually have their benefits terminated for work is higher, but still small—under 4 percent for the 1996 entry cohort after 10 years (Liu and Stapleton 2011).

In response to these pressures, the U.S. government has implemented several policies to reduce federal DI expenditures, with limited success. In the late 1970s, the Social Security Administration (SSA) tightened eligibility requirements for DI beneficiaries. Although this change reduced the number of beneficiaries, it did not lead to an increase in the employment of former beneficiaries (Autor 2011). The 1984 amendments to the Social Security Act required SSA to expand eligibility in a manner that reversed the earlier tightening, and subsequent court decisions about the new rules contributed to further expansion. These programmatic changes along with changes in the labor market and other factors external to DI contributed to rapid program growth in the early 1990s (Stapleton and Burkhauser 2003). More recently, via the 1990 Americans with Disabilities Act, the government has required that employers provide accommodations for employees with disabilities, which could potentially encourage workers to stay in the workforce rather than apply for DI. Workers who receive employer accommodations are less likely to apply for DI (Burkhauser et al. 2004). In 1999, Congress passed the Ticket to Work Act (TTW) to increase the availability of employment services to DI beneficiaries (Wittenburg et al. 2013). TTW was intended to increase the extent to which existing beneficiaries return to work and give up their DI benefits by increasing support services. The implementation of TTW was fraught with challenges that substantially limited its reach, and an impact evaluation for the first five years of TTW found no evidence of a positive impact on suspension or termination of benefits because of work (Stapleton et al. forthcoming).

The rapid growth of DI and continued low rate of recipients exiting DI because of work have stimulated interest in policies that would divert workers from entering DI by helping them to stay in the labor force. The motivation for this interest is a perception that many workers who experience disability onset do not have timely access to services and supports that would enable them to stay in the labor force, and that available services and supports sometimes tend to lead to labor force exit and DI entry when they could potentially do the opposite. To build the evidence base for such policies, we need more information on the services and supports used by such workers; this paper aims to provide that information.

This paper describes the employment and program participation patterns of people before and after they apply for DI. We used three panels of the Survey of Income and Program

Participation (SIPP) data matched to SSA administrative data to answer questions about the demographic, employment, and program participation characteristics of DI beneficiaries (before they apply for DI) and those of individuals at risk of applying for DI.

The key findings of the analysis are as follows:

- **Employment.** The proportion of DI applicants who were employed began to decline more than two years before DI application and continued to decline until the point of DI application, yet a large proportion were working even one to six months before they applied.
- **Benefit receipt.** A sizeable proportion of DI applicants received various types of non-DI benefits up to 36 months before applying for DI, and this proportion increased just before they applied.
- **Subgroup comparisons.** Among the various groups of individuals at risk of applying for DI, those who applied for DI had poorer employment and higher benefit receipt than non-applicants, and members of some groups (particularly new private disability insurance beneficiaries) were more likely to apply for DI than others.

Our research contributes to the literature by expanding the knowledge about DI applicants before and after they applied. Previous studies have examined DI beneficiaries' or applicants' employment and program participation over a relatively short timeframe or have included a limited number of public and private programs. We use a broader timeframe around DI application to determine applicants' medium-term program use and employment trajectories. Additionally, we analyze DI applicants' participation in multiple programs, and consider seven groups of individuals who may be at higher risk of applying for DI benefits than those in the general population.

II. BACKGROUND

A. DI application process

DI, enacted in 1956, is a public disability program to insure workers and their dependents against wage losses due to a long-term disability that prevents them from working. Through DI, beneficiaries are guaranteed monetary benefits and Medicare health coverage (after a two-year waiting period), along with greater access to vocational services. To be eligible for DI, individuals must be insured, meaning that they have earned a sufficient amount in covered employment over a specified period, based on the age at which they apply. In addition, their health condition must prevent them from engaging in substantial gainful activity (SGA) for at least 12 months or be expected to result in death. Individuals apply for benefits at a Social Security office, and a special state agency determines medical eligibility. Allowances are made by the Disability Determination Services (DDS) and effectuated by an SSA field office. Applicants may appeal denials to the DDS for reconsideration, an administrative law judge, the Appeals Council, and, ultimately, a federal court.

The disability determination process is often very long, partly because of difficulties in collecting the required medical information and adjudicating complex issues, and partly because of large backlogs, especially for appeals. Applicants with the most severe, easily documented impairments may receive allowances within weeks, but a substantial share of applicants receive allowances more than 12 months after the initial filing (Social Security Advisory Board 2012).

B. Factors associated with DI application

1. Demographic characteristics

Following the 1984 amendments to the Social Security Act, low-skilled individuals were more likely to apply for benefits, despite improving aggregate health during this period (Autor and Duggan 2003). As a result, more program beneficiaries were younger, and they were more likely to be female, to suffer from low-mortality conditions, and to have very low skills. SSA and SIPP data from 1989 to 1995 indicate that people with disabilities who were from metropolitan areas, were white, and either were married or had never married had a lower propensity to apply for DI benefits (Lahiri et al. 2008). Likewise, DI applicants were older, less likely to have education beyond high school, and more likely to be widowed, divorced, or separated than the general population ages 18 to 64 (Livermore et al. 2010).

2. Employment characteristics

Relatively few studies have examined the pre-DI employment characteristics of eventual DI applicants and recipients. Before they apply for DI, these individuals often experience a disruptive health change, separation from employment, and a gap between their first job separation and applying for DI (Lindner 2013). Applicants experience varying circumstances between their job separation and DI application, depending on their reason for stopping work. Most applicants stop work for health-related reasons, such as illness, rather than layoff or resignation. Those who leave for health reasons are more likely than others to apply for DI quickly and have shorter determination periods. These individuals are less likely to search for other work or apply for unemployment insurance (UI) before applying for DI. Individuals who apply for benefits because of job loss are more likely to do so based on program and labor

market conditions, rather than health. Particularly after the 1984 liberalization of DI, individuals facing job loss displayed a higher propensity for applying to DI for the following reasons: the cash income replacement rates increased for low-income individuals, DI reduced the screening stringency, and the value of Medicare benefits provided to DI beneficiaries increased (Autor and Duggan 2003).

Individuals' reasons for applying for benefits can also vary depending on their earnings level before application. DI beneficiaries are as likely as the general working-age population to be employed and to live in households with incomes below the federal poverty level before receiving DI (Livermore et al. 2010). Beneficiaries who were earning high incomes may apply for benefits following health shocks, but they face a higher opportunity cost of applying for benefits and demonstrating that they cannot engage in SGA (Lahiri et al. 2008).

Numerous studies have established that DI applications increase when unemployment rises (Stapleton et al. 1998; Rupp and Scott 1998; Black et al. 2002). Autor and Duggan (2003) found that DI applications have become more sensitive to the business cycle since 1984, presumably reflecting an increase in the number of workers who would qualify for DI benefits if they were not working. During a recession, individuals may perceive their employment to be more unstable and replacement work more difficult to find, increasing their likelihood of applying for DI.

3. Program participation characteristics

Studies evaluating DI beneficiaries' program use find that a nontrivial proportion of them participated in other assistance programs before applying for DI. Between 1970 and 1991, an estimated 25 percent of new DI beneficiaries had received some type of public assistance from programs such as Temporary Assistance for Needy Families (TANF, formerly Aid to Families with Dependent Children) or the Supplemental Nutrition Assistance Program (SNAP, formerly the Food Stamp Program), in the five years before they received DI benefits (Daly 1998). Similarly, from 1996 through 1999, 32 to 35 percent of new DI beneficiaries received some type of public assistance before receiving DI benefits, and between 34 and 42 percent of new DI beneficiaries received some type of disability income (such as workers' compensation or employer disability benefits) (Honeycutt 2004). Another way of looking at program participation, though, is the proportion of program beneficiaries who make their way to DI; larger proportions of those from disability benefit programs (particularly personal disability insurance and employer disability insurance programs) eventually received DI than those from public assistance programs. However, less than 16 percent of new DI beneficiaries had received disability benefits.

DI application is sensitive to participation in temporary assistance programs. Improved access to UI benefits reduce DI applications, at least in the short term, though SNAP participation does not influence applications for DI (Lindner and Nichols 2012). These relationships may be explained in part by the target populations of each program. The DI target population overlaps with that of UI, particularly in their requirements for earnings and employment history. However, SNAP is means-tested and its beneficiaries typically do not qualify for DI receipt because they are poorer and have a weak attachment to the labor force. In addition, once unemployment benefits are exhausted, disability insurance applications increase, a finding that is consistent in other countries (see Henningsen 2007 and Larsson 2006) as well as the United States (Rutledge 2011).

Access to health insurance and health care has also been shown to influence individuals' propensity to apply for benefits. In a study by Livermore et al. (2010), before receiving benefits, about 22 percent of DI beneficiaries were uninsured, compared to 16 percent of all working-age individuals. Moreover, beneficiaries reported issues accessing health care at twice the rate reported by the general population. Although DI applicants do not have uniformly high health costs, for many the value of future Medicare benefits might be very high. One study found that the expected value of health insurance through Medicare increased the average probability of DI application by nearly 12 percent (Lahiri et al. 2008). These findings suggest that beneficiaries who experience periods of uninsurance and difficulty accessing health care could benefit from early intervention policies that would increase their access to health care and insurance without DI. The Affordable Care Act may help to address this issue for some potential DI entrants, especially in states that opted to expand Medicaid eligibility. The expected impact on DI entry will not necessarily be negative, however, because it will be easier for some applicants to obtain insurance coverage during the Medicare waiting period.

C. Research questions

This paper builds on the above literature by answering the following questions:

1. What are the demographic, employment, and program participation characteristics of DI beneficiaries before they apply for DI?
2. What are the demographic, employment, and program participation characteristics of individuals at risk of applying for DI?

For this analysis, we divided our sample into seven groups who may be at risk of applying for and receiving DI (called "at-risk groups"). These groups include: (1) UI recipients with a disability, (2) workers with disabilities at risk of applying for UI, (3) individuals with high health expenditures, (4) workers' compensation recipients, (5) private short-term and long-term disability insurance (PDI) beneficiaries, (6) military veterans with a disability, and (7) individuals with disabilities who have received job training or education services within the past year (Table 1). Some of these groups (those receiving UI, PDI, and workers' compensation) are included because previous literature has shown that they are more likely to apply for DI benefits. Others are included because of policy interest (such as veterans with disabilities) or their potential likelihood of involvement with DI (such as individuals with disabilities receiving job training, workers with disabilities at risk of applying for UI, and individuals with high health expenditures).

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III. DATA AND METHODOLOGY

The analysis relies on pooled 1996, 2001, and 2004 panels of the SIPP (selected because they represent recent DI patterns). The SIPP is a survey designed to be nationally representative of households in its initial year, with its sample weighted to reflect the civilian noninstitutionalized population ages 15 years old and older. SIPP respondents are interviewed every four months for the duration of the survey panel. During each interview, they provide information about the preceding four months. Each interview constitutes a wave; linking a series of waves creates a panel of two to four years. The SIPP contains a range of information on respondents' demographic characteristics, employment and income measures, and program participation during the waves they respond to the survey.

We used SSA administrative files linked to the SIPP data to determine which individuals applied for DI benefits, their application dates, and their DI and Supplemental Security Income (SSI) receipt. Not all SIPP records could be matched to SSA administrative data, either because SIPP respondents did not provide Social Security numbers, respondents opted out of having their data matched to federal records (beginning in 2004), or the SIPP information (Social Security number, name, gender, date of birth) did not match SSA administrative data (McNabb et al. 2009). The match rate for the panels was 84 percent for the 1996 panel, 60 percent for the 2001 panel, and 79 percent for the 2004 panel. The statistics presented here, therefore, could be biased if nonmatched respondents systematically differ by DI receipt or application status from matched respondents. Using the SSA administrative data, we excluded individuals who received DI benefits as of the first SIPP wave from our analysis sample, tracked SSI receipt throughout the SIPP observation period (a more accurate approach than using the SIPP self-reported data), and identified DI applications up to six years after the first SIPP wave.[1] We followed respondents for a long period to better understand the extent to which their membership in various risk groups predicts future DI entry.

The sample for this analysis was restricted to people between the ages of 25 and 55 whose first survey response occurred in wave 1 of each SIPP panel. We excluded individuals younger than age 25 because they are less likely to qualify for DI and more likely to be enrolled in school. (Less than 6 percent of new DI beneficiaries, for example, are less than 25 years old [SSA 2013]). We excluded individuals older than 55 to avoid tracking sample members who could potentially qualify for early retirement benefits during our six-year observation period.

The analysis includes statistics for individuals ages 25 to 55 in the general population, individuals who applied for DI benefits, and individuals in the seven at-risk groups (Table 1). Of particular note is the group of workers with disabilities at risk of applying for unemployment benefits. We identified members of this group by using a logistic regression model to predict the likelihood of unemployment benefit receipt, which we developed by examining UI benefit receipt within 36 months for individuals ages 25 to 55 who worked in the first SIPP wave.

[1] Using this approach, our analytical sample includes some individuals who applied for DI before the first SIPP wave and subsequently received DI benefits after the first SIPP wave.

Table 1. Definitions of at-risk groups

At-risk group	Definition
Workers' compensation recipients	Individuals who began receiving workers' compensation benefits after the first interview wave.
Private disability insurance beneficiaries	Individuals who began receiving employer or individual disability benefits (either short- or long-term) after the first interview wave.
Unemployment benefit recipients	Individuals with a work limitation who began receiving unemployment benefits after the first interview wave.
Workers with disabilities at risk of unemployment benefit receipt	Individuals with a disability who worked in the first interview wave and who scored in the top 33 percent based on a model predicting unemployment benefit receipt within 36 months.
Veterans with disabilities	Individuals with a disability who reported being a veteran in the first interview wave.
Individuals with disabilities who had job training or education services	Individuals with a work limitation who reported participating in job training or education services in the past 12 months in wave 2.
Individuals with high health expenditures	Individuals who had out-of-pocket health expenditures, not including health insurance premiums, in the past year that equaled or exceeded 7.5 percent of their household income. This mirrors federal tax law, which allowed individuals to claim out-of-pocket health expenses above 7.5 percent as a tax deduction. (In 2013, this percentage increased to 10 percent.) Health expenditures are available only in topical modules 3 and 6.

Individuals with a disability who worked in wave 1 and had a score in the upper one-third of the distribution were included in this group. The disability measure used for the at-risk groups is a work limitation question asked in wave 1: whether the person had a physical, mental, or other health condition that limited the kind or amount of work he or she could do. Although the SIPP panels include additional disability and limitation questions in two topical modules (Wittenburg and Nelson 2006), we did not include these measures in the analysis because of nonresponse or because the modules that included them did not always align with modules containing the information needed to define at-risk groups. Though the use of the work limitation measure underreports individuals with disabilities, it does identify individuals receiving SSA disability benefits roughly 88 percent of the time, thereby suggesting its utility in identifying potential DI applicants for this study (Burkhauser et al. 2014). In addition, people who report a work limitation might not meet the disability criteria to receive DI benefits.

For each analytical group, we examined characteristics including demographic variables (age, sex, race, marital status, and educational attainment) from either the first SIPP wave or the wave at which the individual was identified as being in the at-risk group. We also included specific employment, income, and program participation measures (defined in Table 2). For DI applicants, these measures were calculated around the month of their application in six-month intervals, up to 42 months before and 36 months after they applied for DI. For at-risk group members, these measures were calculated around the month they were identified as being in the at-risk group, with similar six-month periods before and after. We do not have complete information on all individuals for all months; cases are right- or left-censored depending on when they were first identified in the data. For two at-risk groups, veterans and workers with disabilities at-risk of receiving unemployment benefits, we have no information before they were identified as being in the at-risk group, as these individuals are identified in the first SIPP wave. For at-risk group members, we compared the characteristics of those who did and did not apply for DI; there are likely unobservable characteristics—particularly disability severity—that could differentiate the two subgroups.

The analytical methods incorporated descriptive statistics, measured at a point in time or across six-month intervals, and comparative statistics (t-tests) to determine statistical significance. For reasons of precision, we show statistics only for groups with at least 50 observations across all three SIPP panels. Data were weighted using the SIPP panel wave 1 weights, and we applied the SIPP recommended adjustment factors to our variance estimates to account for the SIPP's complex sampling design.

Table 2. Definitions of employment, income, and program participation

Measure	Definition
Employment and income	
Any employment	Reported having a job for any month during the specified period
Without a job and not looking for work	Reported not having a job and not looking for work for any month during the specified period
Individual earned income	The individual's average monthly earnings during the specified period (calculated both for all individuals and those with earnings)
Individual total income	The individual's average monthly earned and unearned income during the specified period
Household total income	The household's average monthly earned and unearned income
Households under federal poverty level (FPL)	Households with household total income relative to 100 percent of FPL
Program participation	
Supplemental Nutrition Assistance Program (SNAP)	Household receipt of food stamps
Energy assistance	Household receipt of federal, state, or local energy assistance
Subsidized housing	Household receipt of housing assistance or subsidized rental assistance
Temporary Assistance to Needy Families (TANF)	Household receipt of TANF (or, for the first three waves of the 1996 SIPP panel, Aid to Families with Dependent Children)
Supplemental Security Income (SSI)	Receipt of SSI benefits due to disability (from SSA administrative data)
Employer-based disability insurance	Receipt of disability insurance benefits through one's employer
Own sickness or disability insurance	Receipt of benefits through a personal sickness, accident, or disability policy
Workers' compensation	Receipt of workers' compensation income in one's own name
Medicaid	Receipt of Medicaid health coverage in one's own name
Private health insurance	Covered by health insurance other than Medicaid and Medicare
Unemployment benefits	Receipt of state unemployment compensation benefits in one's own name
Veterans' benefits	Receipt of veterans' benefits in one's own name

IV. RESULTS

A. Characteristics of individuals before and after applying for DI

Demographics. As expected, DI applicants differed from all people ages 25 to 55 on most demographic characteristics. Compared to all individuals ages 25 to 55, DI applicants were significantly more likely to be black, divorced, or separated, and to have lower educational attainment (Table 3). DI applicants were also older than all individuals ages 25 to 55 and had significantly lower incomes.

DI applications. The timing of DI applications was roughly equally distributed across the observation period, from 16 to 19 percent for each 12-month period (Table 4). The 3.4 million people who applied for DI represent just less than 3 percent of all individuals ages 25 to 55.

Employment. The proportion of DI applicants who were employed declined—and their proportion of the labor market increased—the closer the observation period was to the DI application date. From 37 to 42 months before they applied, 89 percent of applicants worked, and 18 percent had no job and had not looked for work during the six-month period (these categories are not mutually exclusive because we calculated them based on monthly reports over the six-month period) (Table 5). As individuals approached DI application, the proportion employed declined substantially—to 66 percent in the six-month period before DI application—and more than half (54 percent) had at least one month in which they were neither working nor looking for a job. After applying for DI, applicants' employment levels continued to decline; in the first six months after applying, 38 percent of applicants worked, and subsequent periods had similar proportions. These numbers, though, do not show individuals who worked consistently or intermittently during the observation period. For instance, some who were not working 37 to 42 months before applying likely did not work at all before they applied for DI, while others may have worked at various points before they applied. (Table 5 also includes statistics for individuals ages 25 to 55 for reference.)

Income. Similar to employment, average earnings and income levels dropped before people applied for DI. Thirty-seven to 42 months before applying for DI, applicants' mean monthly individual earned income and household total income were $1,887 and $3,923, respectively; 24 percent of DI applicants lived in households whose incomes were below the federal poverty level (Table 5). In the six months before applying for DI, applicants' mean individual monthly earned income fell to $944, the mean monthly household total income fell to $3,359, and the proportion living below the federal poverty level increased to 40 percent. Additionally, the mean individual income fell by less than the applicants' mean individual earned income. This suggests that future DI applicants partially offset their declining earnings by receiving support from household members or other programs. After applying for DI, applicants' earnings and income continued to decline, then increased in the later observation periods toward the levels just before DI application for all measures except individual earnings.

Program participation. Participation in various programs was common for DI applicants, even up to 36 months before they applied, and benefit receipt tended to increase in the 6 months before they applied. A sizeable proportion of DI applicants received means-tested benefits up to 36 months before applying for DI (Table 6). Between 10 and 21 percent of eventual DI

Table 3. Demographic and DI application characteristics of DI applicants, individuals ages 25 to 55, and new program recipients (percentages unless otherwise indicated)

			New program recipients					
			Workers' compensation		Private disability insurance		Unemployment Insurance	
	DI applicants	Individuals ages 25–55	DI applicants	Non-applicants	DI applicants	Non-applicants	DI applicants	Non-applicants
Female	53.0	50.9	44.5	46.4	48.7	52.7	49.1	44.4
Age (mean)	44.7	39.4	45.0	41.4*	45.9	43.8	44.2	42.0*
Race								
Asian	1.6	4.2*	1.2	3.1	0.7	3.1	0.5	1.8
Black	19.4	11.9*	16.4	15.0	16.0	16.4	8.6	14.2
White	76.1	82.1*	79.4	79.4	80.9	77.8	87.7	81.3
Other	2.9	1.8	3.0	2.5	2.3	2.8	3.2	2.7
Marital status								
Married	53.4	64.5*	61.8	55.5	62.0	52.8	56.9	51.5
Never married	18.2	19.1	12.2	20.9	8.4	23.4	14.4	21.4
Widowed	2.5	1.2	1.4	2.1	2.6	2.8	2.3	2.1
Divorced	20.9	12.2*	21.8	16.7	21.0	16.6	22.6	20.6
Separated	5.1	3.0*	2.8	4.8	6.0	4.4	3.8	4.4
Educational attainment								
Less than high school diploma	20.0	11.8	19.6	17.7	12.4	16.2	21.4	17.4
High school diploma/GED	34.4	28.2	36.6	38.1	31.1	32.4	31.6	32.7
Some college	36.0	32.1	36.7	31.3	44.0	35.2	37.6	39.4
Four-year college degree or more	9.7	27.8*	7.1	12.8	12.5	16.2	9.4	10.6
Monthly household income	$2,802	$5,783*	$4,360*	$5,570*	$5,572*	$5,387*	$4,751	$3,678*
Unweighted sample size	**3,754**	**127,972**	**172**	**1,062**	**186**	**674**	**78**	**481**
Weighted sample size (average per panel)	**3,380,365**	**121,410,365**	**161,671**	**1,000,847**	**176,550**	**637,016**	**68,849**	**448,127**

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows demographic characteristics for DI applicants, all individuals ages 25 to 55, and new program recipient at-risk groups (by DI application status).

*Value is statistically significantly different from the DI applicant value at $p < 0.05$.

Table 4. DI application percentages and timing (percentages unless otherwise indicated)

		New program recipients			Individuals with disabilities			
	DI applicants	Workers' compensation	Private disability insurance	Unemployment Insurance	Workers at risk of Unemployment Insurance	Veterans with disabilities	Job training/ education services	Individuals with high health expenditures
Applied to DI								
Unweighted sample size	3,754	172	186	78	108	166	125	275
Weighted sample size	3,380,365	161,671	176,550	68,849	99,095	153,821	114,687	251,233
Percentage (weighted)	100.0	13.9	21.7	13.3	14.7	12.7	9.0	5.6
Time to application								
1 to 12 months	15.7	49.9	65.9	36.8	22.5	26.3	22.9	25.1
13 to 24 months	16.7	22.3	14.6	16.2	12.9	17.7	12.3	18.8
25 to 36 months	16.4	17.0	5.7	18.9	17.3	19.3	21.2	18.3
37 to 48 months	16.0	10.8	9.4	12.4	12.9	11.1	18.0	16.0
49 to 60 months	15.9	[a]	4.4	13.2	18.0	13.0	16.3	21.8
61 to 72 months	19.3	[a]	0.0	2.5	16.4	12.7	9.4	0.0
Unweighted sample size	**3,754**	**1,234**	**860**	**559**	**714**	**1,285**	**1,365**	**4,768**
Weighted sample size (average per panel)	**3,380,365**	**1,162,518**	**813,566**	**516,976**	**674,944**	**1,208,894**	**1,268,832**	**4,491,099**

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

[a] Cell suppressed to limit disclosure.

Table 5. DI applicants' employment characteristics (percentages unless otherwise indicated)

Period	Sample size	Employment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
Periods before application								
37 to 42 months	204	89*	18*	$1,887*	$2,132*	$2,068*	$3,923*	24*
31 to 36 months	376	87*	20*	$1,865*	$2,178*	$2,071*	$4,351*	22*
25 to 30 months	626	84*	23*	$1,656*	$2,024*	$1,860*	$4,047*	26*
19 to 24 months	856	81*	25*	$1,531*	$1,916*	$1,766*	$3,889*	26*
13 to 18 months	1,045	79*	29*	$1,507*	$1,938*	$1,767*	$3,776*	29*
7 to 12 months	1,202	77*	35*	$1,356*	$1,811*	$1,699*	$3,637*	33*
1 to 6 months	1,335	66*	54*	$944*	$1,499*	$1,396*	$3,359*	40
Periods after application								
1 to 6 months	1,261	38	76	$335	$1,041	$848	$2,809	48
7 to 12 months	1,016	34	78	$327	$1,056	$892	$2,734	42
13 to 18 months	770	32	74	$368	$1,189	$1,027	$2,909	37
19 to 24 months	532	30	75	$350	$1,179	$1,010	$2,802	35*
25 to 30 months	325	29	78	$337	$1,209	$1,018	$2,853	35
31 to 36 months	199	36	68	$602	$1,709*	$1,426*	$3,531	31*
37 to 42 months	108	42	62	$741*	$1,857*	$1,666	$4,032	30*
All individuals ages 25 to 55	**127,972**	**84**	**17**	**$2,727**	**$3,399**	**$2,892**	**$5,783**	**13**

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for DI applicants in six-month periods before and after their DI application.

*Value is statistically significantly different from the 1- to 6-month period after application value at $p < 0.05$.

Table 6. DI applicants' program participation characteristics (percentages unless otherwise indicated)

		Means-tested benefits					Disability-related benefits			Health coverage		Work-related benefits	
Period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compen-sation	Medicaid	Private health insurance	UI	Veterans' benefits
Periods before application													
37 to 42 months	204	10*	4*	3	4	1*	0*	0*	4	11*	73*	7	2
31 to 36 months	376	13*	6	3	3*	0*	0*	0*	4	12*	72*	6	2
25 to 30 months	626	11*	5*	3	3*	0*	1*	0*	2*	12*	70*	6	3
19 to 24 months	856	12*	6	2	2*	1*	1*	0*	3*	12*	71*	7	4
13 to 18 months	1,045	13*	5*	2	3*	1*	1*	0*	4	14*	67*	5	4
7 to 12 months	1,202	15*	5*	2	4	1*	3*	1	6	16*	67*	6	3
1 to 6 months	1,335	21	8	3	5	1*	7	2	9	20*	67*	7	3
Periods after application													
1 to 6 months	1,261	29	11	3	8	15	8	3	7	35	54	6	3
7 to 12 months	1,016	29	9	4	6	11	6	2	5	35	51	3	3
13 to 18 months	770	27	9	4	5	11	6	2	5	33	55	2*	3
19 to 24 months	532	24	9	3	4	15	7	1	3	37	51	2*	3
25 to 30 months	325	24	9	3	3	19	5	3	3	37	48	1*	2
31 to 36 months	199	20	8	2	4	19	4	2	4	34	54	1*	3
37 to 42 months	108	20	5	1	3	19	3	4	3	37	60	0*	3
All individuals ages 25 to 55	**127,972**	**4%**	**2%**	**1%**	**1%**	**1%**	**0%**	**0%**	**0%**	**6%**	**78%**	**2%**	**1%**

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for DI applicants in six-month periods before and after their DI application.

*Value is statistically significantly different from the 1- to 6-month period after application value at $p < 0.05$.

applicants received benefits from SNAP during the 42 months before they applied for DI, 4 to 8 percent received energy assistance, and 2 to 3 percent received housing assistance. Relatively small proportions of DI applicants were involved in other programs related to disability or health in the 42 months before they applied for DI, though the proportion tended to increase in the 6 months just before they applied. Notably, less than 1 percent of applicants received SSI benefits before they applied for DI; this amount increased to 15 percent in the six months after applying (an indication of the applicants' possible eligibility for DI benefits, as well as a possible decline in resources that had previously made them ineligible for SSI).

Regarding health insurance coverage, a majority of individuals had private health insurance before DI application, even just before they applied for DI, although the percentage declined as individuals approached DI application and continued to do so after they applied. The proportion of applicants who reported having Medicaid coverage increased from 11 percent to 20 percent until they applied for DI, and further increased to over one-third after they applied.

Relatively few individuals who entered the DI program received unemployment or veterans' benefits up to 42 months before they applied for DI; participation in these programs was stable across the observed periods.

B. New program recipients at-risk groups

In this section, we assess the results for individuals in the workers' compensation, private disability insurance, and UI at-risk groups together, for two reasons. First, individuals with disabilities in these groups are all new program recipients. As such, their trajectories of applying for DI may be similar. Second, our data allow us to follow individuals in these three groups from the month that they joined their respective at-risk group (that is, the data identify individuals when they first reported receiving workers' compensation, private disability insurance, or UI benefits). Thus, we can follow their post-benefit experiences. Because of sample sizes, we can only compare employment for UI recipients who did and did not apply for DI in the one to six months directly after UI receipt, which is a shorter period than for the other program groups. Detailed employment and program participation data are shown in Appendix Tables A.1 through A.6.

Demographics. Individuals in these three at-risk groups had demographic characteristics very similar to those of DI applicants, whether or not they applied for DI. The only significant differences were: (1) members of these at-risk groups had higher monthly household incomes than DI applicants (which reflects the fact that DI applicants were measured in the month when they applied) and (2) non-applicants with workers' compensation and UI were younger (Table 3). UI recipients who went on to apply for DI had a mean household income statistically no different from that of all DI applicants (despite a difference of $1,900), likely because of the small sample size for that group.

DI applications. Sizeable proportions of new program recipients eventually applied for DI benefits. Of the seven at-risk groups in this study, individuals who began receiving private disability insurance had the highest rate of applying for DI benefits (Table 4). More than one-fifth (22 percent) of those receiving private disability insurance applied for DI during the observation period. This high rate may in part be due to administrative protocols that require

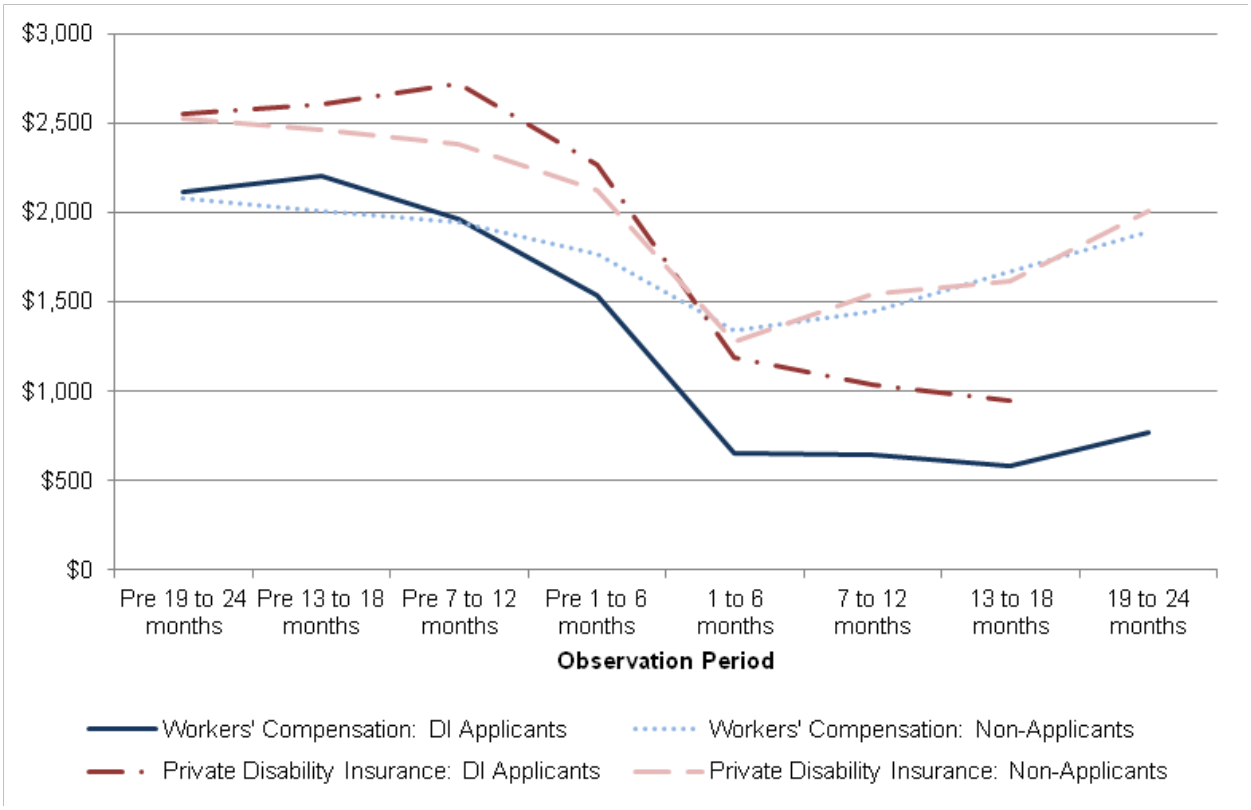
long-term private disability insurance recipients to apply for DI, but this proportion might have been higher had we been able to distinguish between short-term and long-term disability recipients. The other two at-risk groups had similar rates of application: 13 percent of individuals who received UI benefits and 14 percent of individuals with workers' compensation applied. The timing of DI application was relatively fast: of those who applied, 66 percent of individuals with new private disability insurance applied within one year of receiving private benefits, compared to 50 percent of new workers' compensation recipients and 38 percent of new UI beneficiaries.

Employment. Before their benefit receipt, employment rates were significantly higher in some periods for new workers' compensation and private disability insurance recipients who eventually applied for DI than for those who did not. For each group, employment levels were typically higher before application, and they did not return to pre-benefit levels for any group. The limited information we have for new UI recipients suggests similar patterns, though non-applicants' employment levels in later months are similar to the levels they had before becoming recipients.

Income. Among new workers' compensation and private disability insurance recipients, those who applied for DI had larger decreases in earnings and income than non-applicants after becoming beneficiaries. For example, DI applicants' individual earnings fell from $2,116 in the 19 to 24 months before workers' compensation benefit receipt to $767 in the 19 to 24 months after benefit receipt, a decrease of $1,349 (Appendix Table A.1). Non-applicants' individual earnings went from $2,077 to $1,889 for the same period, a decrease of $188 (see Figure 1). In each period after benefit receipt, the differences between new workers' compensation recipients who did and did not apply to DI were significant for individual earnings, though not for individual earnings among those with earnings, individual income, or household income. For new private disability insurance, the differences in earnings and income between applicants and non-applicants after becoming recipients were insignificant. An interesting pattern in these tables is that, among DI applicants, the changes in individual earnings after receiving benefits were greater than the changes for overall income; individuals likely received other income or household support to partly make up for the loss in earnings. Among new UI recipients, the earnings and income variables for DI applicants were not statistically different from those of DI non-applicants.

Program participation. With respect to program participation, DI applicants and non-applicants who were new program recipients had similar levels of program participation, with one exception. Among those who received workers' compensation, individuals who applied for DI had significantly higher receipt of workers' compensation benefits in the 7 to 12 months after initial receipt (66 percent) than did those who did not apply for DI (40 percent) (Appendix Table A.2). Though DI applicants also had higher workers' compensation receipt than non-applicants in the following two periods for which we had data, these differences were not statistically significant.

Figure 1. Individual earnings of new workers' compensation and private disability insurance beneficiaries, by DI application status



Source: 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Data shown in Appendix Tables A.1 and A.3 (individual earnings column).

C. Disability at-risk groups

We next present results for three groups of individuals with disabilities: (1) workers at risk of receiving UI benefits, (2) veterans with disabilities (which may or may not be related to their service), and (3) individuals with disabilities who received job training or education services ("training"). Members of these groups reported having a disability in wave 1 of the SIPP data and were identified as being in one these groups relatively early (in wave 1 or wave 2). Detailed data are shown in Appendix Tables A.7 through A.12.

Demographics. Individuals with disabilities in these at-risk groups differed from all DI applicants in more ways than observed for members of the new program beneficiary groups (Table 7). Non-applicants in all of these groups had higher monthly household income than DI applicants, and veterans with disabilities and those with training also had higher educational attainment. Workers with disabilities who were at risk of receiving UI or who received training and who did not apply for benefits were younger and more likely to be white. Additionally, veterans with disabilities were less likely to be female regardless of their DI application status, and non-applicants at risk of receiving UI were more likely to be never married.

Table 7. Demographic and DI application characteristics for disability at-risk groups and individuals with high health expenditures (percentages unless otherwise indicated)

	DI applicants	Disability at-risk groups						Individuals with high health expenditures	
		Workers at risk of Unemployment Insurance		Veterans with disabilities		Job training/ education services			
		DI applicants	Non-applicants	DI applicants	Non-applicants	DI applicants	Non-applicants	DI applicants	Non-applicants
Female	53.0	48.5	50.7	6.2*	10.2*	57.8	53.9	56.0	56.6
Age (mean)	44.7	42.4	40.9*	46.0	45.6	43.8	42.1*	44.2*	41.6
Race									
Asian	1.6	1.1	0.8	1.4	0.6	0.0*	1.1	0.9	2.9
Black	19.4	12.8	9.8*	19.3	17.0	12.4	11.8*	13.1	9.9*
White	76.1	84.6	87.3*	73.8	79.0	82.3	84.9*	84.2	85.6*
Other	2.9	1.4	2.1	5.6	3.4	5.3	2.2	1.9	1.7
Marital status									
Married	53.4	31.3	35.8*	63.8	54.6	49.9	56.8	43.1	50.1
Never married	18.2	25.8	33.1*	8.6	14.7	17.9	20.6	16.5	21.2
Widowed	2.5	3.0	2.7	2.7	1.1	2.2	1.9	3.3	2.7
Divorced	20.9	30.3	22.8	19.1	25.0	26.4	16.9	31.6	21.8
Separated	5.1	9.6	5.6	5.8	4.6	3.7	3.8	5.4	4.2
Educational attainment									
Less than high school diploma	20.0	28.1	24.8	12.4	7.6*	10.3	7.4*	16.9	11.5*
High school diploma/GED	34.4	46.9	45.8*	27.9	35.1	22.7	23.3*	33.6	29.7
Some college	36.0	21.8	22.1	51.3	45.1*	56.4	43.5	37.0	34.5
Four-year college degree or more	9.7	3.2	7.2	8.3	12.2	10.5	25.8*	12.4	24.3*
Monthly household income	$2,802	$3,254	$3,689*	$3,237	$4,032*	$4,626*	$5,197*	$2,605	$3,278*
Unweighted sample size	**3,754**	**108**	**606**	**166**	**1,119**	**125**	**1,240**	**275**	**4,493**
Weighted sample size (average per panel)	**3,380,365**	**99,095**	**575,849**	**153,821**	**1,055,073**	**114,687**	**1,154,146**	**251,233**	**4,239,866**

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows demographic characteristics for DI applicants, disability at-risk groups (by DI application status), and individuals with high health expenditures (by DI application status).

*Value is statistically significantly different from the DI applicant value at $p < 0.05$.

DI applications. Almost 15 percent of individuals with disabilities at risk of UI applied to DI, and of those who applied, 23 percent did so in the first year after joining the at-risk group (Table 4). Slightly less than 13 percent of veterans with disabilities applied to DI during the observation period. About one-quarter of veterans applied to DI during the first year of observation and 18 percent applied in the second year. Among individuals with disabilities who received training, 9 percent eventually applied for DI benefits; 23 percent applied within 12 months after they were identified in the at-risk group.

Employment. Among workers with disabilities at risk of receiving UI benefits, both DI applicants' and non-applicants' employment levels decreased after the one-to-six-month period, likely an artifact of all working in the initial observation period. For no group were the employment differences between DI applicants and non-applicants significant.

Income. Individual earnings and income for members of the three at-risk groups tended not to differ significantly from those observed in the initial period and, for veterans with disabilities and people with disabilities who received training, the individual earnings for applicants tended to be significantly below those of non-applicants. For example, the average individual earnings of veterans with disabilities decreased in the 42 months after observation from $1,101 to $845 for DI applicants and increased from $1,617 to $2,091 for non-applicants; the differences between DI applicants and non-applicants were significant beginning at 7 to 12 months after observation (Appendix Table A.9). However, individual and household incomes typically were not significantly different for applicants and non-applicants in this at-risk group. Poverty rates between applicants and non-applicants were not statistically significant across all three groups.

Program participation. The program participation rates of DI applicants and non-applicants for all three at-risk groups were not often statistically significantly different.

D. Individuals with high health expenditures

The final at-risk group included in the analysis is individuals with high health expenditures. Statistics for this group are presented with a caveat: we identified such individuals at two points in time relative to their first interview dates (the fourth and sixth SIPP waves). Unlike other at-risk group members (such as those with unemployment benefits), we did not observe high health expenditure members upon their earliest entry into the group (that is, the point at which they may have first had high health expenditures). As such, we might not have observed these individuals when they first encountered a health shock that could lead to DI application, or we may have errantly excluded individuals with such expenditures before the SIPP wave when the information was collected. Data are shown in Appendix Tables A.13 and A.14.

Demographics. People with high health expenditures were less likely to be black or to have dropped out of high school relative to all DI applicants (Table 7). Individuals with high health expenditures also were younger than DI applicants, were more likely to be white or have a four-year college degree, and had higher monthly household incomes.

DI applications. Of the seven at-risk groups, individuals with high health expenditures were the least likely to turn to DI for support. Nearly 6 percent of those with high health expenditures applied to DI during the observation period (Table 4). One reason for this low proportion relative

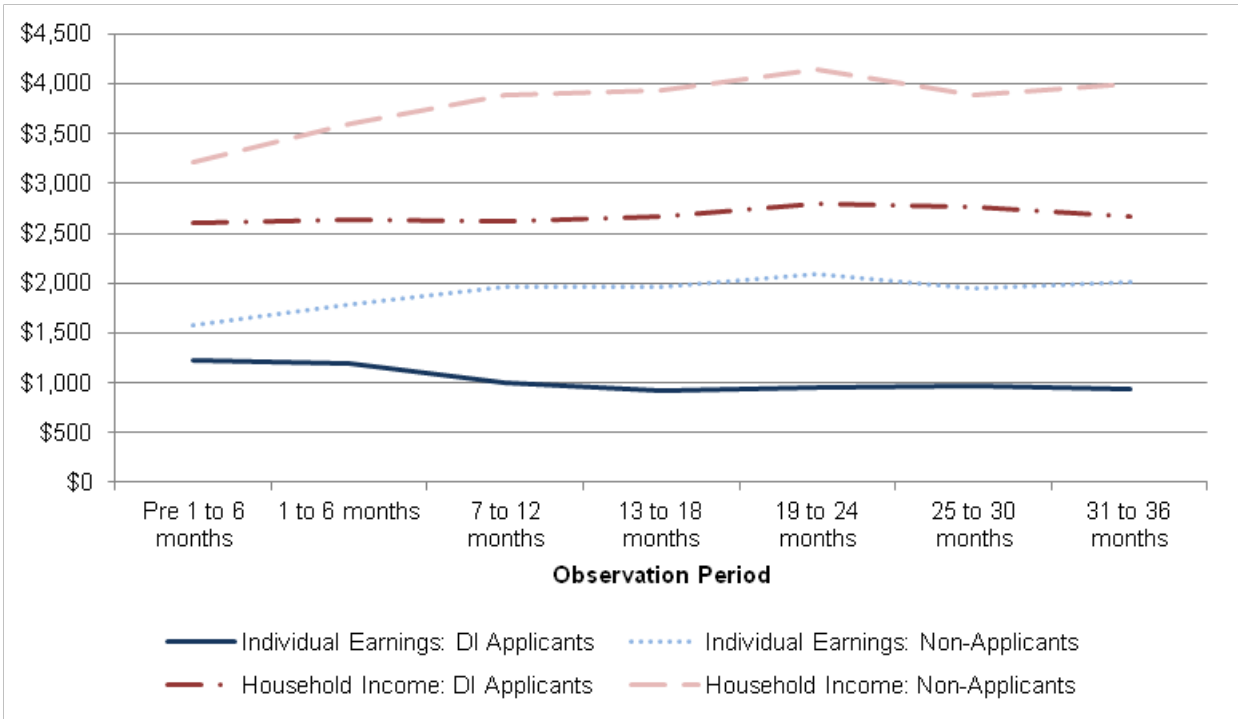
to other at-risk groups is that disability status was not a consideration; individuals with high health expenditures may have conditions that are not disabling, at least in terms of DI criteria. One-quarter of those with high health expenditures who eventually applied for DI did so in the first observation year.

Employment. Although employment rates for DI applicants with high health expenditures declined during the observation period, the employment rates of non-applicants with high health expenditures remained relatively stable. For those who eventually applied to DI, the proportion employed fell from 77 to 56 percent between the 1- to 6-month period and the 31- to 36-month period, though significant for only one period (19 to 24 months) (Appendix Table A.13). For those who did not apply, the employment rate was consistently around 80 percent during the same time span, and the differences between those who did and did not apply for DI were significant beginning at 13 to 18 months after being identified in the at-risk group.

Income. DI applicants had consistently lower measures for individual earnings, individual income, and household income than non-applicants, as shown in Figure 2 for individual earnings and household income. This pattern suggests a relatively worse financial situation of individuals with high health expenditures who eventually applied for DI relative to those who did not.

Program participation. We observed two distinct program usage patterns between DI applicants and non-applicants with high health expenditures. First, in many observation periods, a significantly greater percentage of DI applicants participated in SNAP and Medicaid than did DI non-applicants, and though these proportions often increased for DI applicants over time, such changes were not statistically significant. Second, the percentage of DI applicants with private health insurance was often significantly less than non-applicants, likely because of their higher employment rates.

Figure 2. Individual earnings and household income of individuals with high health expenditures, by DI application status



Source: 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Data shown in Appendix Table A.13 (individual earnings and household income columns).

V. CONCLUSION

In this analysis, we examined the employment and program participation paths of individuals with disabilities who did and did not apply for DI. The patterns help us understand the characteristics of those at greater risk of applying for DI, which can help inform policies that simultaneously divert those with disabilities from applying for DI while providing the supports necessary to make work feasible for them.

As expected, we observed declines in individuals' employment and earned income before they applied for benefits, with the biggest changes observed in the six months just before they applied for DI. However, somewhat surprisingly, more than two-thirds of DI applicants were employed immediately before they applied. Eventual DI applicants received poverty-related benefits up to 42 months before applying for DI at higher rates than observed in the general population, and participation often increased during the six months immediately before they applied for DI. Furthermore, DI applicants were likely to be older and less educated and to have significantly less income than the general population. These patterns for DI applicants also hold within our at-risk groups, though differences between applicants and non-applicants were often large but not statistically significant (likely because of the small sample size).

Table 3 contains several clues to answering one of the study's key questions: Which at-risk groups might be best to target for early intervention services? The answers to this question are not as straightforward as it might seem. On the one hand, four at-risk groups (new private disability insurance beneficiaries, new unemployment beneficiaries with disabilities, new workers compensation recipients, and workers with disabilities at risk of UI) had higher rates of applying for DI. These groups would therefore seem to be better targets for developing early intervention programs, given the larger portions of members who go on to apply for DI. However, each of these groups represents a relatively small portion of all DI applicants (no more than 5 percent). Oddly, the at-risk group with the lowest proportion of members who applied to DI (individuals with high health expenditures) also had the largest overall number of individuals who applied, though this number is still just 7 percent of the overall DI applicant population. This pattern is further born out with a review of Table 4; large numbers of individuals who apply for DI do not come from any particular benefit program (aside from private health insurance, likely through an employer).

This finding has two policy implications. First, it seems plausible that individuals within a program or at-risk group who are likely to apply to DI could be identified and provided supports to help them maintain employment. However, developing such early intervention approaches will require additional information about the characteristics of the target populations, including applicants' likelihood of receiving benefits. Though we can identify broad characteristics of individuals through public use data (such as strong employment connections and use of alternative program and benefit supports), these data may not have sufficient detail to identify the best candidates for return-to-work services. Administrative data from programs such as workers compensation or private disability insurance benefits could be extremely useful in improving ways to identify likely DI applicants. Second, while focusing on a specific group to promote employment over benefits may improve that group's work-to-benefit transition, its effect on the overall DI program might be small because applicants come from multiple groups.

Instead, examining successful applicants who eventually receive DI might provide additional insight to help identify targets for early intervention services.

This analysis uncovers key patterns for DI applicants and non-applicants, but three important caveats bear mentioning. First, the sample sizes for a few of the programs included in our study were quite small, which limits our ability to draw firm conclusions regarding the pathways from these programs to DI application. Second, detailed data on disability status are not available during each SIPP wave, which makes it difficult to determine the disability status of individuals participating in certain programs, or patterns of employment or program participation that might differ by disability type. Third, our analysis uncovers patterns but does not prove a causal relationship between at-risk group membership and DI application. Further analysis is needed to uncover the presence of a causal relationship between these two phenomena.

Future investigations of the various paths to DI application and receipt could focus on three areas. The first area would be individuals with specific disabilities—such as those with severe mental illness; studying this group could provide a more nuanced understanding of the factors that lead to DI application and continued participation in the labor market. The second area would be conducting a survey of applicants when they apply for benefits, to obtain more detailed information about applicants than can be obtained through public use files. The findings could be critical both for understanding how applicants decide to apply for benefits and for tracking their employment and benefit receipt outcomes. The third area would be more closely analyzing SSA administrative data, such as examining DI application data on employment history or characteristics of successful DI applicants, to identify potential approaches for early intervention services.

REFERENCES

Autor, David H. "The Unsustainable Rise of the Disability Rolls in the United States: Causes, Consequences, and Policy Options." Working paper 17697. Cambridge, MA: National Bureau of Economic Research, December 2011.

Autor, David H., and Mark G. Duggan. "The Rise in the Disability Rolls and the Decline in Unemployment." *The Quarterly Journal of Economics,* vol. 118, no. 1, February 2003, pp. 156–205.

Biggs, Andrew G. "An Entitlement in Need of Reform." Alexandria, VA: Our Generation, August 2012.

Black, Dan, Kermit Daniel, and Seth Sanders. "The Impact of Economic Conditions on Participation in Disability Programs: Evidence from the Coal Boom and Bust." *American Economic Review,* vol. 92, no. 1, March 2002, pp. 27–50.

Burkhauser, Richard V., J.S. Butler, and Gulcin Gumus. "Dynamic Programming Model Estimates of Social Security Disability Insurance Application Timing." *Journal of Applied Econometrics,* vol. 19, no. 6, 2004, pp. 671–685.

Burkhauser, Richard V., Andrew J. Houtenville, and Jennifer R. Tennant. "Capturing the Elusive Working-Age Population with Disabilities: Reconciling Conflicting Social Success Estimates from the Current Population Survey and American Community Survey." *Journal of Disability Policy Studies,* vol. 4, no. 4, 2014, pp.195–205.

Daly, Mary C. "Characteristics of SSI and DI Recipients in the Years Before Receiving Benefits." In *Growth in Disability Benefits,* edited by Kalman Rupp and David C. Stapleton. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 1998.

Henningsen, Morten. "Benefit Shifting: The Case of Sickness Insurance for the Unemployed." *Labour Economics,* vol. 15, no. 6, 2008, pp. 1238–1269.

Honeycutt, Todd. "Program and Benefit Paths to the Social Security Disability Insurance Program." *Journal of Vocational Rehabilitation,* vol. 21 no. 2, 2004, pp. 83–94.

Katz, Marsha Rose, Jagadeesh Gokhale, Dorcas R. Hardy, and Mark J. Warshawsky. "Aspects of Disability Decision Making: Data and Materials." Washington, DC: Social Security Advisory Board, February 2012. Available at http://www.ssab.gov/Publications/Disability/GPO_Chartbook_FINAL_06122012.pdf.

Lahiri, K., J. Song, and B. Wixon. "A Model of Social Security Disability Insurance Using Matched SIPP/Administrative Data." *Journal of Econometrics,* vol. 145, 2008, pp. 4–20.

Larsson, Laura. "Sick of Being Unemployed? Interactions Between Unemployment and Sickness Insurance." *The Scandinavian Journal of Economics,* vol. 108, no. 1, March 2006, pp. 97–113.

Lindner, Stephan. "From Working to Applying: Employment Transitions of Applicants for Disability Insurance in the United States." *Journal of Social Policy,* vol. 42, no. 2, 2013, pp. 329–348.

Lindner, Stephan, and Austin Nichols. "The Impact of Temporary Assistance Programs on Disability Rolls and Re-Employment." Working paper number 2012-2. Chestnut Hill, MA: Center for Retirement Research at Boston College, 2012.

Liu, Su, and David Stapleton. "Longitudinal Statistics on Work Activity and Use of Employment Supports for New Social Security Disability Insurance Beneficiaries." *Social Security Bulletin,* vol. 71, no. 3, August 2011, pp. 11–75.

Livermore, Gina, David Stapleton, and Henry Claypool. "Health Care When Workers Need It Most: Before and After Entry into the Social Security Insurance Program." *Inquiry,* vol. 47, 2010, pp. 135–149.

Rupp, Kalman, and Charles Scott. "Determinants of Duration on the Disability Rolls and Program Trends." In *Growth in Disability Benefits: Explanations and Policy Implications,* edited by Kalman Rupp and David C. Stapleton. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research, 1998.

Rutledge, Matthew. "The Impact of Unemployment Insurance Extensions on Disability Insurance Application and Approval Rates." Working paper 2011-17. Chestnut Hill, MA: Center for Retirement Research at Boston College, 2011.

Social Security Administration. "Annual Statistical Report on the Social Security Disability Insurance Program, 2012." Washington, DC: Social Security Administration, November 2013. Available at http://www.socialsecurity.gov/policy/docs/statcomps/di_asr/2012/index.html.

Stapleton, D., K. Coleman, K. Dietrich, and G. Livermore. "Empirical Analyses of DI and SSI Application and Award Growth." In *Growth in Disability Benefits,* edited by Kalman Rupp and David C. Stapleton. Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, 1998.

Stapleton, David C., and Richard V. Burkhauser (eds.). *The Decline in Employment of People with Disabilities: A Policy Puzzle.* Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2003.

Stapleton, David, Arif Mamun, and Jeremy Page. "Initial Impacts of the Ticket to Work Program Estimates Based on Exogenous Variation in Ticket Mail Months." *IZA Journal of Labor Policy,* forthcoming.

Wittenburg, David, David Mann, and Allison Thompkins. "The Disability System and Programs to Promote Employment for People with Disabilities." *IZA Journal of Labor Policy,* vol. 2, no. 4, April 2013, pp. 13–58.

APPENDIX A

SUPPLEMENTAL TABLES

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Table A.1. Employment characteristics of new workers' compensation recipients

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
19 to 24 months before	57	97%*,**	8%*	$2,116*	$2,328*	$2,221	$3,997	17%
13 to 18 months before	66	98%*,**	5%*,**	$2,203*	$2,301*	$2,323	$4,271	18%
7 to 12 months before	101	94%*,**	15%*	$1,964*	$2,153*	$2,150	$4,401	17%
1 to 6 months before	141	88%*	21%*	$1,538*	$1,795	$1,696	$3,761	28%
1 to 6 months after	139	60%	51%	$656**	$1,295**	$1,627**	$3,672**	27%
7 to 12 months after	110	52%	59%	$640**	$1,431	$1,620	$3,760	28%
13 to 18 months after	96	45%	61%	$580**	$1,615	$1,460	$3,673	29%
19 to 24 months after	52	46%	69%	$767**	$1,655	$1,434	$3,533	27%
Non-applicants								
31 to 36 months before	111	89%*	18%*	$2,090*	$2,389	$2,318	$4,588	21%
25 to 30 months before	188	86%*	20%*	$2,214*	$2,607	$2,445	$5,138	17%
19 to 24 months before	318	79%*	26%*	$2,077*	$2,674	$2,336	$4,855	18%
13 to 18 months before	421	76%*	29%*	$2,007*	$2,645	$2,254	$4,565	18%
7 to 12 months before	619	76%*	29%*	$1,944*	$2,553	$2,189	$4,559	22%
1 to 6 months before	792	74%*	35%*	$1,769	$2,428	$2,040	$4,458	29%
1 to 6 months after	863	63%	51%	$1,341	$2,276	$2,314	$4,784	23%
7 to 12 months after	597	64%	45%	$1,451	$2,352	$2,030	$4,425	26%
13 to 18 months after	503	65%	41%	$1,666	$2,650	$2,145	$4,506	24%
19 to 24 months after	301	68%	40%	$1,889	$2,800	$2,399	$4,771	20%
25 to 30 months after	238	67%	39%	$1,803	$2,740	$2,252	$4,903	20%
31 to 36 months after	136	64%	44%	$1,599	$2,581	$2,033	$4,554	30%
37 to 42 months after	59	59%	46%	$1,709	$2,875	$2,309	$5,531	18%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for new workers' compensation recipients, by DI application status, in six-month periods before and after they first received workers' compensation benefits.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.2. Program participation characteristics of new workers' compensation recipients

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
19 to 24 months before	57	4%	4%	0%	0%	0%	0%	0%	0%*	9%	83%	2%	3%
13 to 18 months before	66	6%	4%	0%	0%	0%	0%	2%	0%*	9%	78%	4%	2%
7 to 12 months before	101	5%	3%	3%	0%**	0%**	1%	0%	0%*	7%	77%	6%	4%
1 to 6 months before	141	10%	4%	2%	0%	1%	1%	2%	0%*	11%	76%	1%**	4%
1 to 6 months after	139	16%	6%	2%	0%	1%	3%	3%	91%	17%	68%	3%	3%
7 to 12 months after	110	13%	6%	3%	1%	2%	5%	3%	66%*,**	17%	71%	7%	3%
13 to 18 months after	96	11%	4%	2%	3%	2%	6%	0%	47%*	23%	72%	8%	3%
19 to 24 months after	52	13%	9%	2%	4%	2%	9%	0%	42%*	27%	68%	4%	6%
Non-applicants													
31 to 36 months before	111	7%	6%	2%	4%	2%	2%	0%	0%*	11%	78%	5%	3%
25 to 30 months before	188	9%	5%	2%	3%	3%	1%	1%	0%*	13%	76%	5%	3%
19 to 24 months before	318	10%	3%	2%	3%	3%	3%	1%	0%*	13%	74%	5%	2%
13 to 18 months before	421	9%	3%	2%	3%	4%	3%	0%	0%*	16%	74%	5%	2%
7 to 12 months before	619	7%	4%	2%	2%	4%	3%	0%	0%*	15%	74%	6%	2%
1 to 6 months before	792	8%	5%	1%	2%	5%	4%	1%	0%*	16%	74%	6%	2%
1 to 6 months after	863	9%	5%	2%	2%	5%	4%	1%	90%	18%	70%	4%	2%
7 to 12 months after	597	10%	7%	3%	2%	7%	3%	2%	40%*	21%	69%	4%	2%
13 to 18 months after	503	9%	6%	2%	1%	7%	2%	1%	23%*	20%	67%	3%	2%
19 to 24 months after	301	10%	4%	2%	2%	9%	4%	1%	18%*	19%	71%	3%	2%
25 to 30 months after	238	9%	2%	2%	1%	8%	2%	1%	13%*	13%	71%	3%	2%
31 to 36 months after	136	9%	4%	1%	0%	8%	1%	1%	7%*	14%	66%	3%	1%
37 to 42 months after	59	9%	1%	2%	1%	8%	1%	1%	4%*	13%	68%	4%	3%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for new workers' compensation recipients, by DI application status, in six-month periods before and after they first received workers' compensation benefits.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.3. Employment characteristics of new private disability insurance recipients

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
19 to 24 months before	69	91%*	8%*	$2,556*	$2,858	$2,691	$5,056	13%
13 to 18 months before	83	93%	12%*	$2,609*	$2,815	$2,788	$5,000	11%
7 to 12 months before	116	94%*,**	11%*	$2,725*	$2,896	$2,851	$5,061	14%
1 to 6 months before	151	91% **	16%*,**	$2,264*	$2,525	$2,460	$4,603	22%
1 to 6 months after	144	72%	53%	$1,187	$2,267	$2,788	$4,854	29%
7 to 12 months after	107	55%	60%	$1,037	$2,295	$2,173	$4,577	23%
13 to 18 months after	87	42%*	64%	$948	$2,516	$1,721	$4,165	24%
Non-applicants								
31 to 36 months before	80	83%	19%*	$2,576*	$3,147	$2,873	$5,447	13%
25 to 30 months before	134	81%*	26%*	$2,351*	$2,939	$2,633	$5,185	18%
19 to 24 months before	247	81%*	23%*	$2,524*	$3,151*	$2,842	$5,418	14%
13 to 18 months before	332	81%*	23%*	$2,463*	$3,044	$2,806	$5,393	17%
7 to 12 months before	435	80%*	27%*	$2,384*	$3,018*	$2,769	$5,429	14%
1 to 6 months before	529	75%*	33%*	$2,121*	$2,867	$2,520	$5,080	20%
1 to 6 months after	518	62%	48%	$1,276	$2,188	$2,367	$4,901	22%
7 to 12 months after	355	62%	46%	$1,542	$2,542	$2,243	$4,653	23%
13 to 18 months after	287	63%	42%	$1,612	$2,563	$2,264	$4,655	21%
19 to 24 months after	167	64%	39%	$2,010	$3,094	$2,704	$5,087	25%
25 to 30 months after	105	64%	44%	$2,392	$3,742	$3,155	$5,548	26%
31 to 36 months after	52	68%	48%	$1,674	$2,535	$2,252	$4,994	19%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for new private disability insurance recipients, by DI application status, in six-month periods before and after they first received private disability insurance benefits.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.4. Program participation characteristics of new private disability insurance recipients

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
19 to 24 months before	69	9%	2%	4%	3%	0%	0%*	0%*	0%	13%	87%	6%	1%
13 to 18 months before	83	8%	1%	3%	3%	0%	0%*	0%*	5%	8%	88%	4%	2%
7 to 12 months before	116	7%	2%	2%	2%	0%**	0%*	0%*	4%	9%	89%	2%	1%
1 to 6 months before	151	9%	5%	2%	4%	0%**	0%*	0%*	4%	9%	90%	2%	1%
1 to 6 months after	144	9%	4%	3%	4%	0%**	73%	26%	7%	15%	89%	3%	2%
7 to 12 months after	107	9%	4%	1%	4%	1%	35%*	14%	6%	15%	87%	3%	2%
13 to 18 months after	87	10%	6%	3%	7%	1%	23%*	7%	9%	19%	79%	2%	1%
Non-applicants													
31 to 36 months before	80	5%	4%	1%	2%	4%	0%*	0%*	2%*	16%	78%	5%	4%
25 to 30 months before	134	8%	5%	2%	2%	7%	0%*	0%*	2%*	20%	79%	3%	4%
19 to 24 months before	247	5%	4%	1%	0%	5%	0%*	0%*	5%	12%	83%	3%	6%
13 to 18 months before	332	4%	2%	2%	1%	5%	0%*	0%*	5%	13%	80%	3%	4%
7 to 12 months before	435	6%	2%	2%	1%	6%	0%*	0%*	8%	12%	82%	4%	5%
1 to 6 months before	529	7%	3%	3%	1%	6%	0%*	0%*	8%	15%	81%	3%	6%
1 to 6 months after	518	9%	4%	3%	1%	6%	72%	19%	10%	18%	79%	4%	6%
7 to 12 months after	355	11%	6%	3%	1%	7%	28%*	7%*	9%	20%	78%	4%	5%
13 to 18 months after	287	9%	3%	4%	1%	6%	17%*	5%*	7%	20%	79%	3%	6%
19 to 24 months after	167	11%	3%	5%	2%	8%	14%*	6%*	6%	19%	80%	7%	4%
25 to 30 months after	105	11%	2%	6%	3%	9%	16%*	4%*	5%	18%	71%	4%	5%
31 to 36 months after	52	10%	8%	4%	2%	14%	15%*	6%*	4%	20%	73%	5%	3%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for new private disability insurance recipients, by DI application status, in six-month periods before and after they first received private disability insurance benefits.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.

**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.5. Employment characteristics of new UI recipients

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
1 to 6 months before	57	95%*	15%*	$1,669*	$2,159	$1,853	$3,485	30%
1 to 6 months after	66	60%	51%	$659	$1,528	$1,329	$3,008	38%
Non-applicants								
25 to 30 months before	80	85%	23%	$1,665	$1,955	$1,985	$3,999	19%
19 to 24 months before	125	83%	22%	$1,734	$2,139	$1,998	$3,976	29%
13 to 18 months before	170	91%*	23%	$1,784*	$2,013	$2,034	$3,786	23%
7 to 12 months before	242	90%*	18%	$1,835*	$2,028	$2,039	$3,674	28%
1 to 6 months before	360	89%*	20%	$1,896*	$2,111	$2,091	$4,038	30%
1 to 6 months after	386	75%	28%	$1,101	$1,473	$1,624	$3,689	36%
7 to 12 months after	304	84%	24%	$1,424	$1,687	$1,735	$3,871	31%
13 to 18 months after	240	84%	26%	$1,577	$1,821	$1,841	$3,972	31%
19 to 24 months after	159	88%	20%	$1,539	$1,743	$1,837	$4,023	25%
25 to 30 months after	96	89%	16%	$1,600	$1,749	$1,822	$3,820	27%
31 to 36 months after	63	88%	18%	$2,313	$2,502	$2,547	$4,714	27%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for new UI recipients, by DI application status, in six-month periods before and after they first received UI benefits.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.6. Program participation characteristics of new UI recipients

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
1 to 6 months before	57	21%	10%	1%	1%	0%	1%	0%	9%	19%	70%	0%*	1%
1 to 6 months after	66	20%	7%	0%	2%	0%	0%	0%	5%	23%	57%	81%	4%
Non-applicants													
25 to 30 months before	80	13%	6%	3%	6%	3%	0%	0%	8%	23%	69%	0%*	3%
19 to 24 months before	125	10%	5%	4%	7%	2%	0%	1%	6%	20%	67%	0%*	2%
13 to 18 months before	170	7%	4%	3%	5%	2%	1%	1%	5%	13%	69%	0%*	3%
7 to 12 months before	242	6%	3%	2%	2%	2%	1%	0%	5%	14%	73%	0%*	2%
1 to 6 months before	360	11%	4%	3%	1%	2%	1%	0%	7%	14%	71%	0%*	3%
1 to 6 months after	386	11%	6%	3%	2%	2%	1%	0%	3%	16%	60%	82%	3%
7 to 12 months after	304	11%	7%	3%	3%	2%	2%	0%	3%	15%	66%	24%*	4%
13 to 18 months after	240	11%	7%	2%	3%	2%	1%	0%	4%	15%	68%	16%*	4%
19 to 24 months after	159	8%	4%	3%	1%	2%	1%	0%	3%	15%	68%	18%*	3%
25 to 30 months after	96	5%	1%	0%	0%	3%	1%	0%	1%	13%	62%	16%*	5%
31 to 36 months after	63	12%	1%	1%	0%	2%	0%	0%	0%	17%	67%	11%*	5%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for new UI recipients, by DI application status, in six-month periods before and after they first received UI benefits.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.7. Employment characteristics of workers with disabilities at risk of UI benefits

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
1 to 6 months after	108	100%	8%	$1,337	$1,382	$1,499	$3,078	36%
7 to 12 months after	105	92%	23%	$1,150	$1,305	$1,377	$2,960	38%
13 to 18 months after	106	82%*	27%	$1,223	$1,505	$1,492	$3,029	27%
19 to 24 months after	105	79%*	27%	$1,176	$1,492	$1,520	$3,037	30%
25 to 30 months after	80	74%*	27%	$1,117*	$1,506	$1,492	$3,002	25%
Non-applicants								
1 to 6 months after	602	100%	9%	$1,636	$1,640	$1,807	$3,870	23%
7 to 12 months after	592	95%*	15%	$1,575	$1,660	$1,810	$3,825	21%
13 to 18 months after	593	90%*	15%	$1,531	$1,713	$1,790	$3,742	22%
19 to 24 months after	589	92%*	19%*	$1,560	$1,724	$1,846	$3,862	23%
25 to 30 months after	457	88%*	17%	$1,589	$1,833	$1,838	$3,888	24%
31 to 36 months after	232	87%*	20%	$1,473	$1,708	$1,722	$3,660	22%
37 to 42 months after	361	87%*	20%*	$1,484	$1,735	$1,733	$3,740	23%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for workers with disabilities at risk of UI benefits, by DI application status, in six-month periods after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.8. Program participation characteristics of workers with disabilities at risk of UI benefits

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
1 to 6 months after	108	21%	4%	2%	3%	3%	4%	3%	2%	17%	62%	1%	1%
7 to 12 months after	105	25%	11%	2%	7%	6%	4%	3%	4%	26%	59%	5%	1%
13 to 18 months after	106	18%	9%	1%	10%	5%	3%	1%	2%	29%	63%	5%	1%
19 to 24 months after	105	19%	7%	1%	8%	4%	4%	1%	3%	29%	67%	7%	2%
25 to 30 months after	80	18%	5%	0%	4%	5%	1%	1%	2%	27%	59%	8%	3%
Non-applicants													
1 to 6 months after	602	9%	5%	3%	2%	2%	2%	0%	4%	15%	68%	1%	2%
7 to 12 months after	592	9%	5%	3%	2%	2%	1%	0%	3%	15%	69%	6%	2%
13 to 18 months after	593	8%	4%	3%	1%	2%	1%	0%	3%	14%	66%	5%	2%
19 to 24 months after	589	11%	6%	4%	2%	2%	1%	0%	2%	16%	68%	5%	2%
25 to 30 months after	457	10%	5%	4%	2%	3%	2%	0%	1%	14%	69%	4%	2%
31 to 36 months after	232	8%	4%	3%	1%	5%	1%	0%	1%	15%	70%	3%	3%
37 to 42 months after	361	6%	3%	2%	0%	4%	1%	0%	2%	14%	68%	3%	3%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for workers with disabilities at risk of UI benefits, by DI application status, in six-month periods after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.9. Employment characteristics of veterans with disabilities

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
1 to 6 months after	158	58%	51%	$1,101	$1,909	$1,751	$3,408	35%
7 to 12 months after	141	55%	59%	$964**	$1,810	$1,695	$3,433	33%
13 to 18 months after	136	50%	54%	$905**	$1,819	$1,653	$3,223**	32%
19 to 24 months after	118	53%	53%	$945**	$1,838	$1,777	$3,570	26%
25 to 30 months after	103	45%	56%	$714**	$1,645	$1,659	$3,304	30%
31 to 36 months after	55	55%	57%	$772**	$1,501	$1,592	$3,273	36%
37 to 42 months after	66	43%	64%**	$845**	$2,079	$2,217	$3,995	27%
Non-applicants								
1 to 6 months after	942	65%	44%	$1,617	$2,563	$2,224	$4,187	24%
7 to 12 months after	816	66%	43%	$1,668	$2,563	$2,241	$4,276	23%
13 to 18 months after	793	66%	39%	$1,672	$2,602	$2,302	$4,248	19%
19 to 24 months after	697	68%	40%	$1,675	$2,508	$2,334	$4,189	21%
25 to 30 months after	582	66%	39%	$1,630	$2,520	$2,303	$4,129	20%
31 to 36 months after	187	71%	36%	$1,845	$2,601	$2,391	$4,565	19%
37 to 42 months after	295	72%	34%	$2,091	$2,929	$2,761	$4,902	16%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for veterans with disabilities, by DI application status, in six-month periods after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.10. Program participation characteristics of veterans with disabilities

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
1 to 6 months after	158	15%	7%	3%	2%	3%	5%	3%	10%	13%	69%	3%	28%
7 to 12 months after	141	17%	9%	3%	4%	4%	5%	3%	12%	17%	71%	7%	28%
13 to 18 months after	136	16%	8%	3%	4%	4%	6%	2%	11%	15%	71%	4%	29%
19 to 24 months after	118	15%	10%	3%	2%	4%	6%	1%	14%	16%	73%	5%	29%
25 to 30 months after	103	16%	8%	2%	1%	5%	6%	1%	11%	13%	66%	5%	31%
31 to 36 months after	55	13%	12%	4%	0%	12%	10%	1%	7%	24%	67%	0%	28%
37 to 42 months after	66	10%	7%	3%	0%	9%	8%	5%	5%	25%	78%	0%	29%
Non-applicants													
1 to 6 months after	942	10%	4%	2%	1%	3%	2%	1%	5%	14%	72%	3%	28%
7 to 12 months after	816	10%	5%	3%	1%	6%	2%	0%	5%	15%	75%	3%	29%
13 to 18 months after	793	7%	5%	1%	1%	5%	2%	0%	4%	13%	73%	2%	27%
19 to 24 months after	697	8%	4%	1%	1%	4%	3%	1%	4%	14%	77%	3%	29%
25 to 30 months after	582	8%	4%	1%	0%	5%	3%	1%	3%	14%	75%	3%	29%
31 to 36 months after	187	8%	3%	0%	0%	8%	4%	0%	3%	16%	81%	2%	30%
37 to 42 months after	295	8%	1%	1%	0%	8%	2%	0%	4%	13%	77%	1%	28%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for veterans with disabilities, by DI application status, in six-month periods after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.11. Employment characteristics of persons with disabilities who received training

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
1 to 6 months before	125	94%	19%	$1,835	$1,980**	$2,140	$4,314	24%
1 to 6 months after	112	84%	25%	$1,637**	$2,018**	$1,968**	$4,241	26%
7 to 12 months after	108	78%	33%	$1,549**	$1,972	$1,932	$4,204	24%
13 to 18 months after	105	74%	29%	$1,390**	$1,914**	$1,862**	$4,286	24%
19 to 24 months after	79	69%	35%	$1,196**	$1,778**	$1,711**	$4,346	32%
25 to 30 months after	50	63%	44%	$1,147**	$1,906**	$1,664**	$3,575**	35%
31 to 36 months after	52	61%	52%**	$870**	$1,512**	$1,548**	$3,702**	34%
Non-applicants								
1 to 6 months before	1,240	88%	21%	$2,380	$2,739	$2,660	$5,136	19%
1 to 6 months after	1,091	89%	15%	$2,469	$2,792	$2,759	$5,117	16%
7 to 12 months after	1,043	89%	15%	$2,456	$2,790	$2,754	$5,092	16%
13 to 18 months after	974	89%	16%	$2,567	$2,902	$2,868	$5,353	15%
19 to 24 months after	783	87%	16%	$2,481	$2,856	$2,792	$5,271	16%
25 to 30 months after	465	89%	17%	$2,536	$2,883	$2,887	$5,391	12%
31 to 36 months after	459	87%	18%	$2,599	$3,013	$2,981	$5,474	14%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for persons with disabilities who received training, by DI application status, in six-month periods before and after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.12. Program participation characteristics of persons with disabilities who received training

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
1 to 6 months before	125	13%	8%	2%	6%	0%**	2%	1%	10%	12%	80%	6%	7%
1 to 6 months after	112	17%	10%	0%**	9%	1%	4%	1%	7%	18%	74%	5%	5%
7 to 12 months after	108	16%	6%	1%	9%	3%	2%	1%	8%	17%	72%	4%	7%
13 to 18 months after	105	16%	5%	2%	6%	1%	3%	1%	6%	20%	73%	7%	7%
19 to 24 months after	79	20%	8%	3%	3%	3%	6%	1%	7%	24%	66%	7%	8%
25 to 30 months after	50	15%	3%	0%**	4%	9%	8%	8%	6%	21%	70%	7%	4%
31 to 36 months after	52	22%	0%	1%	6%	12%	10%	9%	5%	27%	71%	10%	7%
Non-applicants													
1 to 6 months before	1,240	9%	5%	4%	3%	3%	2%	1%	6%	14%	81%	4%	4%
1 to 6 months after	1,091	8%	4%	3%	3%	4%	1%	0%	4%	12%	82%	3%	4%
7 to 12 months after	1,043	7%	4%	3%	2%	4%	1%	0%	4%	12%	82%	3%	4%
13 to 18 months after	974	7%	4%	3%	2%	4%	1%	0%	3%	11%	82%	3%	4%
19 to 24 months after	783	7%	4%	3%	2%	5%	1%	0%	2%	11%	82%	3%	4%
25 to 30 months after	465	6%	3%	3%	1%	6%	1%	0%	2%	11%	82%	3%	4%
31 to 36 months after	459	6%	2%	3%	1%	7%	0%	0%	3%	12%	83%	3%	4%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for persons with disabilities who received training, by DI application status, in six-month periods before and after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.13. Employment characteristics of persons with high health expenditures

DI applicant group/period	Sample size	Employ-ment rate	Not looking for work	Individual earnings	Individual earnings of those with earnings	Individual income	Household income	Poverty
DI applicants								
1 to 6 months before	265	84%	28%	$1,220**	$1,504	$1,448	$2,613**	33%
1 to 6 months after	243	77%	33%	$1,192**	$1,649	$1,476**	$2,636**	35%
7 to 12 months after	226	71%	44%**	$1,003**	$1,499	$1,315**	$2,623**	41%
13 to 18 months after	177	62%**	51%**	$921**	$1,570	$1,321**	$2,673**	33%
19 to 24 months after	132	54%*,**	53%**	$956**	$1,844	$1,352**	$2,794**	36%
25 to 30 months after	100	58%**	52%**	$963**	$1,811	$1,429**	$2,767**	29%
31 to 36 months after	98	56%**	54%**	$939**	$1,805**	$1,470**	$2,668**	33%
Non-applicants								
1 to 6 months before	4,236	81%	26%	$1,574*	$2,012*	$1,770*	$3,217*	33%*
1 to 6 months after	3,882	81%	23%	$1,792	$2,289	$2,015	$3,598	27%
7 to 12 months after	3,717	82%	22%	$1,966	$2,455	$2,192	$3,889	25%
13 to 18 months after	2,945	81%	23%	$1,968	$2,508	$2,197	$3,941*	24%
19 to 24 months after	2,429	82%	21%	$2,099*	$2,629*	$2,348*	$4,149*	22%
25 to 30 months after	1,512	82%	22%	$1,952	$2,490	$2,184	$3,893	22%
31 to 36 months after	1,482	82%	22%	$2,004	$2,548*	$2,212	$3,997	21%*

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the employment and income characteristics for persons with high health expenditures, by DI application status, in six-month periods before and after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

Table A.14. Program participation characteristics of persons with high health expenditures

DI applicant group/period	Sample size	SNAP	Energy assistance	Subsidized housing	TANF	SSI	Employer-based disability	Personal sickness or accident insurance	Workers' compensation	Medicaid	Private health insurance	UI	Veterans' benefits
DI applicants													
1 to 6 months before	265	8%	3%	0%	1%	0%**	2%	1%	2%	8%	74%	7%	1%
1 to 6 months after	243	16%	3%	1%	2%	1%	3%	2%	3%	12%	69%	5%	2%
7 to 12 months after	226	19%**	4%	1%	3%	3%	4%	1%	4%	20%**	62%**	6%	2%
13 to 18 months after	177	22%**	10%	2%	5%	5%	4%	2%	5%	27%**	59%**	5%	1%
19 to 24 months after	132	22%**	11%	4%	4%	5%	4%	1%	4%	30%**	60%**	2%	0%
25 to 30 months after	100	15%	7%	5%	1%	7%	6%	3%	4%	32%*,**	66%	4%	1%
31 to 36 months after	98	16%	7%	5%	1%	4%	2%	3%	4%	29%**	58%**	4%	1%
Non-applicants													
1 to 6 months before	4,236	6%	2%	1%	1%	1%	1%	0%	1%	6%	82%	3%	1%
1 to 6 months after	3,882	5%	2%	1%	1%	1%	0%	0%	1%	7%	81%	3%	1%
7 to 12 months after	3,717	5%	2%	1%	1%	1%	0%	0%	1%	7%	80%	3%	1%
13 to 18 months after	2,945	5%	3%	1%	0%	2%	0%	0%	1%	7%	80%	2%	1%
19 to 24 months after	2,429	4%	2%	1%	1%	2%	0%	0%	1%	7%	81%	3%	1%
25 to 30 months after	1,512	4%	2%	1%	0%	3%	1%	0%	1%	6%	79%	2%	1%
31 to 36 months after	1,482	4%	1%	1%	0%	3%	0%	0%	1%	5%	80%	2%	1%

Source: Pooled 1996, 2001, and 2004 SIPP panels matched to SSA administrative data.

Note: Table shows the program participation characteristics for persons with high health expenditures, by DI application status, in six-month periods before and after being identified in this at-risk group.

*Value is statistically significantly different from the "1 to 6 months after" value at $p < 0.05$.
**Value is statistically significantly different from the non-applicant value at $p < 0.05$.

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