Longitudinal Outcomes of an Early Cohort of Ticket to Work Participants

by Gina A. Livermore and Allison Roche*

Using 2004–2006 National Beneficiary Survey data matched to Social Security administrative data, we follow a cohort of disability beneficiaries participating in the Ticket to Work (TTW) program for several years to assess changes in their service use, health status, employment, and income. About 20 percent of TTW participants achieved employment at levels that would significantly reduce their disability benefits. Another 40 percent achieved some employment success, but the remaining 40 percent reported no earnings during 2003–2005. Use of TTW support services during 2003–2005 was modest. Many participants experienced significant changes in their health status across survey rounds, which might have affected their ability to actively participate in TTW and to become employed. Many also experienced significant employment and income instability. The findings suggest that employment among TTW participants was associated with reduced poverty

Introduction

The Ticket to Work and Work Incentives Improvement Act of 1999 prompted numerous changes in the Social Security Disability Insurance (DI) and Supplemental Security Income (SSI) programs intended to encourage and facilitate the work efforts of disability program participants. Among the changes was the implementation of the Ticket to Work (TTW) program. TTW was designed to increase access to and quality of employment services for disability beneficiaries. Under TTW, the Social Security Administration (SSA) provides beneficiaries with a ticket they can use to obtain vocational rehabilitation or other employment support services either from participating providers called Employment Networks (ENs) or from state vocational rehabilitation agencies (SVRAs). These providers receive payments from SSA if the beneficiaries they serve achieve successful employment outcomes.

Other studies evaluating the TTW program have presented extensive information about the characteristics, experiences, and employment outcomes of TTW participants (Thornton and others 2006; Thornton and others 2007; Stapleton and others 2008; Stapleton, Gruman, and Prenovitz 2009). Findings of these previous studies include:

- Only about 2 percent of disability beneficiaries have participated in TTW. Relative to other disability beneficiaries, TTW participants were younger, had higher levels of education, were more likely to be receiving DI benefits, had been on the disability rolls for a shorter period, were in better health, and were less likely to have severe functional or activity limitations. Although these characteristics suggest

Selected Abbreviations

DI	Disability Insurance
EN	employment network
IRS	Internal Revenue Service
MCS	mental component summary
NBS	National Beneficiary Survey
PCS	physical component summary

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This article is based on a report prepared for the Social Security Administration as part of the Ticket to Work program evaluation, under contract no. 0600-03-60130.

Selected Abbreviations—*Continued*

SGA	substantial gainful activity
SIPP	Survey of Income and Program Participation
SSA	Social Security Administration
SSI	Supplemental Security Income
SVRA	state vocational rehabilitation agency
TRF	Ticket Research File
TTW	Ticket to Work

that TTW participants might face fewer employment obstacles than other disability beneficiaries, they do have significant health and functional limitations, low levels of education, and very high poverty rates relative to the general working-age population—factors that can limit their employment success.

- Relative to other disability beneficiaries, TTW participants were significantly more likely to have used services to improve their ability to work or live independently, and in particular to have used services that were specifically intended to help them obtain or keep a job.
- TTW participants were nearly four times as likely as other disability beneficiaries to be employed, to be looking for work, or to have been employed recently. TTW participants worked a similar number of hours relative to other beneficiaries who were employed, but they earned higher average wages and were more likely to be in competitive (rather than sheltered) employment.
- TTW participants' service use and employment outcomes differed significantly depending on the type of service provider. Participants who used ENs were less likely to have received services, received fewer median hours of service, and were more likely to report unmet service needs than those who used SVRAs. Although participants were equally likely to be employed regardless of provider type, working participants who used ENs worked more hours, had higher wages and earnings, were offered more job-related benefits, and were less likely to be in sheltered employment than working participants who used SVRAs.

In this study, we build on the previous cross-sectional findings by following an early cohort of TTW participants for 3 years using survey data and for 5 years using administrative data to provide a longitudinal perspective on their TTW enrollment, service use, and employment experiences. We also examine changes in health status and income—characteristics that might be affected directly or indirectly by TTW participation.

In interpreting the findings it is important to keep in mind that TTW participants are not typical SSI and DI beneficiaries, and likewise do not represent all working-age disability beneficiaries who are interested in employment. The sample of TTW participants studied here is a very small subgroup of working-age SSI and DI beneficiaries who were sufficiently interested in pursuing employment that they assigned their tickets to service providers very shortly after TTW was implemented. Their characteristics and experiences might differ from those of other employment-oriented disability beneficiaries.[1] It is also important to keep in mind that the findings presented here and in previous studies reflect substantial differences, in both the characteristics and employment outcomes, between TTW participants who assigned their tickets to ENs and those who assigned their tickets to SVRAs.[2] Given these differences, in this study we report nearly all findings by provider type.

The article opens with some background on the SSI, DI, and TTW programs, and a description of the data and methods. We next present detailed findings for the early cohort of TTW participants on longitudinal TTW enrollment and service use, health status, employment, and income. Then we compare selected outcomes of TTW participants across three levels of employment success during 2003–2005. We conclude with a discussion of the findings.

Background

The SSI and DI programs are designed to provide income support to individuals with significant disabilities who are unable to work at levels considered by SSA to be substantial, as determined by earnings amount, hours worked, and nature of work. To qualify for either program, an applicant must demonstrate that he or she is unable to engage in substantial gainful activity (SGA) because of a medically determinable impairment expected to last at least 12 consecutive months or to result in death. As of 2011, SSA considers earnings above $1,000 per month as SGA for most applicants. DI eligibility is also contingent on having accumulated a sufficient number of recent and lifetime quarters of Social Security–covered employment, and the level of the DI benefit is based on past earnings—individuals with higher lifetime earnings are eligible for higher DI benefits. By contrast, SSI is a

means-tested program where eligibility is subject to strict income and resource limits. The monthly SSI payment is based on the individual's income and living arrangement. Individuals may qualify for both SSI and DI if their income (including DI benefits) and assets do not exceed SSI limits. Eligibility for either program can also provide access to public health insurance. DI beneficiaries qualify for Medicare coverage after a 24-month waiting period, and most SSI recipients are eligible for Medicaid automatically.

Although initial eligibility for both programs is contingent on an inability to engage in substantial work activity, the DI and SSI programs differ in their treatment of earnings for determining monthly cash payments and ongoing program eligibility. In the DI program, individuals are permitted to work and earn at any level for up to 9 months without losing eligibility for cash benefits. This 9-month period is referred to as the trial work period.[3] As of 2011, an individual is considered to be in a trial work period if monthly earnings exceed $720 or if he or she is working more than 80 self-employed hours per month. If individuals earn more than the SGA level in any month after completing the trial work period, they become ineligible for any DI benefits but remain eligible for Medicare if they completed the 24-month Medicare waiting period prior to losing DI eligibility.[4]

In the SSI program, payments are reduced by $1 for every $2 of earnings above $65 per month; thus, SSI payments decline gradually as earnings rise. Program provisions that allow participants who meet certain conditions to retain SSI eligibility they would otherwise lose are known by their Social Security Act section numbers. Section 1619(a) preserves SSI payments for those with earnings exceeding the SGA level, and Section 1619(b) preserves Medicaid eligibility even if earnings are high enough to cause SSI cash payments to cease. Individuals remain eligible for Medicaid until their earnings exceed a "threshold amount," which is based on annual per capita Medicaid expenditures for SSI recipients and varies by state. The threshold also can be computed for individuals if their Medicaid expenditures exceed the state per capita amount. In 2010, state threshold amounts ranged from about $24,000 to almost $55,000.

The SSI and DI programs have a number of provisions to support beneficiaries' efforts to return to work, using mechanisms such as those noted above that allow beneficiaries to keep more of their cash benefits and retain eligibility for public health insurance as earnings increase. Enacted in 1999, the Ticket to Work and Work Incentives Improvement Act included a number of new provisions designed to promote the employment of disability beneficiaries. One provision established the TTW program.[5] TTW is intended to increase access to, and the quality of, rehabilitation and employment services for disability beneficiaries. The program is designed to provide beneficiaries with a greater choice of service providers, foster competition among providers to develop high-quality services responsive to beneficiary needs, and give providers incentives to deliver services efficiently and appropriately. TTW implementation occurred in a phased rollout beginning in February 2002. By September 2004, the program was implemented in all US states and territories.

Under TTW, eligible DI and SSI disability beneficiaries are given a ticket, which can be used to obtain vocational rehabilitation or other employment support services through a participating provider—an EN—or through the SVRA. Although the beneficiary typically initiates a ticket assignment by selecting a provider from which he or she would like to receive services, the provider can choose whether to accept the ticket. Once the ticket is assigned to a provider, the beneficiary can choose to reassign it to a different provider at any time and for any reason. Likewise, providers have the option to discontinue services to a beneficiary and "unassign" the ticket. This might occur, for example, if the provider believes that the beneficiary is not actively pursuing employment or that its available services are insufficient or inappropriate for the beneficiary's specific needs. Ticket assignment thus represents a mutual and voluntary agreement between the provider and the beneficiary, and over time, a participant may use services from both provider types. Therefore, in this study, whether a participant is identified as an EN client or as an SVRA client depends on the type of provider to which his or her ticket had been assigned for the longest period as of December 2006.

When the program was implemented, ENs chose one of two TTW payment systems, *outcome-only* and *milestone-outcome*. Under the outcome-only system, an EN received an outcome payment from SSA for each month (up to 60 total months) in which the beneficiary received no DI or federal SSI payments because of work or earnings. Under the milestone-outcome system, an EN would receive payment when a beneficiary achieved one of up to four employment milestones, defined by a specified number of months working at or above SGA level during a specified period. In addition to the milestone payments, monthly

outcome payments could be paid to the EN if the beneficiary received no DI or SSI payments because of work or earnings.[6] Amounts paid for DI beneficiaries differed from those paid for SSI-only recipients.

SVRAs could also choose one of the TTW payment systems, or instead choose the traditional cost-reimbursement system in place prior to TTW implementation. Under the traditional SVRA payment system, SSA will pay an SVRA its allowable costs of providing services to a beneficiary if the beneficiary works and has earnings above the SGA level for at least 9 consecutive months during a 12-month period. For an agency to obtain payment under the traditional cost-reimbursement system, a beneficiary's ticket had to be assigned to the SVRA.

In July 2008, SSA implemented new TTW program regulations. Among other changes, the two TTW payment systems were substantially revised in order to make provider participation more financially worthwhile. The revised regulations increased the total potential amounts payable under the milestone-outcome and outcome-only systems, reduced the outcome payment period from 60 to 36 months for DI beneficiaries, increased the number of milestone payments, reduced the level of employment necessary to generate certain milestone payments (the Phase 1 milestones), and no longer reduced outcome payments for previous milestone payments.[7]

Data and Methods

The findings are based in part on data from the first three rounds of the National Beneficiary Survey (NBS). The NBS is conducted as part of an ongoing evaluation of the TTW program. Survey rounds were administered in each year from 2004 through 2006.[8] Each NBS round included both cross-sectional and longitudinal samples of TTW participants. For the cross-sectional samples, a new, nationally representative sample of SSI and DI beneficiaries aged 18 to 64 was interviewed for each round. Samples numbered 7,603 in 2004, 4,864 in 2005, and 2,508 in 2006. Each NBS round provided a wealth of information about the characteristics, service use, and employment activities of Social Security disability beneficiaries that was not available from administrative data, nor from any other survey for such a large and recent sample of SSI and DI beneficiaries.

The findings of this study are based on the longitudinal sample of TTW participants who were followed in all three NBS rounds. This sample is representative of TTW participants who were enrolled in the program at some point between January and June 2003 and who resided in the 13 states where TTW was first implemented in 2002 (the Phase 1 states).[9] The findings thus represent the longitudinal experiences of one of the first participant cohorts, one whose members were enrolled in the program while it operated under the original TTW regulations. We believe that the early cohort analyzed here can be considered comparable to later cohorts for two reasons. First, analyses of TTW participants in the Phase 2 states indicate that the characteristics and employment experiences of TTW participants across implementation rounds did not differ substantially (Stapleton and others 2008). Second, and perhaps more importantly, the vast majority of tickets (nearly 90 percent) have been and continue to be assigned to SVRAs under the traditional payment system that was in place prior to TTW. Thus, for the majority who assigned their tickets to SVRAs, we would expect their characteristics and experiences to be comparable to later cohorts. To date, no detailed analyses of the characteristics of beneficiaries entering TTW since the implementation of the revised TTW regulations in 2008 have been conducted. The revised regulations changed the TTW payment system in ways that increased the incentives for ENs to accept tickets, and the number of tickets assigned to ENs has increased since that change (Altshuler and others 2011). Even so, we have little reason to believe that the characteristics and experiences of the early cohort presented here would differ substantially from those of later TTW participant cohorts, as the fundamental nature of the program has not changed.

Only sample members who responded to all three rounds of the survey are included in the analysis.[10] Analysis of a variety of characteristics and outcomes between the full 2004 NBS TTW participant sample and the sample members who responded to all three NBS rounds indicated no statistically significant differences (Grau 2007), suggesting that attrition bias is likely to be minimal. Table 1 compares the characteristics of the longitudinal TTW sample members who answered all three NBS rounds with those of the full 2004 NBS TTW sample and of all disability beneficiaries (based on the 2004 NBS).

Because the types of beneficiaries seeking services from ENs versus SVRAs differ significantly, and because the provider types face different payment systems and incentives, many of the characteristics and outcomes of TTW participants are shown by provider type. Sample sizes for specific subgroups used in the analyses are shown in Table 2.

Table 1.
Sample characteristics: Longitudinal and full TTW participant samples, and all disability beneficiaries, 2004 (in percent)

Characteristic	Longitudinal TTW participant sample	Full TTW participant sample	All beneficiaries
	Program characteristics		
Program type			
DI only	48	50	53
Concurrent	22	22	16
SSI only	30	28	31
TTW provider type			
EN	12	13	…
SVRA	88	87	…
Age at disability onset			
Younger than 18	38	37	23
18 or older	62	63	77
	Sociodemographic characteristics		
Sex			
Men	51	52	50
Women	49	48	50
Age			
18–24	11	10	5
25–39	34	35	17
40–54	41	42	39
55 or older	14	14	39
Race			
White only	60	61	71
Black only	34	33	22
Other	6	5	6
Ethnicity			
Hispanic origin	10	9	11
Non-Hispanic	90	91	89
Education			
Did not obtain high school diploma or equivalent	20	22	42
High school diploma or equivalent	39	36	35
Education beyond high school	41	42	23
Marital status			
Married	16	16	33
Widowed, divorced, or separated	29	29	34
Never married	55	55	33
Household income as a percentage of federal poverty threshold [a]			
Less than 100	53	50	49
100–299	37	36	38
300 or more	10	11	13
Mean months on the disability rolls since initial eligibility	152	150	…

SOURCES: 2004 NBS; Thornton and others (2007).

NOTES: Values are weighted. Statistics reported are based on the sample member's status at interview in 2004.

… = not applicable.

Rounded components of percentage distributions do not necessarily sum to 100.

a. The threshold is determined by family size and the ages of family members. In 2003 (the reference period for the household income question in the 2004 NBS), the threshold for a household with one individual under age 65 was $9,573 per year.

Table 2.
Phase 1 TTW participant longitudinal sample sizes, by analytical subgroup

Subgroup	Number (unweighted)	Number (weighted)	Percentage (weighted)
All Phase 1 TTW participants	767	20,763	100
TTW provider type[a, b]			
EN	407	2,507	12
SVRA	354	18,181	88
Employment status at round 3 interview (2006)			
Employed	267	7,206	35
Not employed	500	13,558	65

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds, with results matched to the 2007 TRF.

a. TTW provider and payment types are based on the provider to which the participant's ticket was assigned the longest as of December 2006.

b. Six members of the Phase 1 TTW participant longitudinal sample lacked any TTW program-related information in the TRF and so were excluded from all statistics generated for subgroups defined by TTW-related characteristics.

Records in the NBS Phase 1 TTW participant longitudinal sample were matched to Social Security administrative data contained in the 2007 Ticket Research File (TRF). The TRF is made up of data extracts from a number of Social Security administrative data files and contains a record for all individuals from ages 10 to full retirement age who have participated in the SSI and DI programs since 1996. From these data, we are able to analyze information about the use of SSA work supports and the number of months that cash benefits were suspended or terminated because of work during 2004–2007 for our sample members.

The NBS Phase 1 TTW participant longitudinal sample also was matched to annual Internal Revenue Service (IRS) earnings records for 2003–2007 to analyze the earnings of the early TTW participants during that time.[11] The earnings data come from SSA's Master Earnings File, which contains earnings items from the employer-filed W-2 form and information on other earnings not subject to Federal Insurance Contributions Act (FICA) Social Security and Medicare taxes.[12]

Wage and earnings values presented were adjusted for changes over time based on the national average wage index. Income amounts were adjusted for inflation using the SSA cost-of-living adjustment.[13] All estimates were derived using the relevant survey sampling weights, and all standard errors used to compute tests of statistical significance account appropriately for the survey's complex sampling design.[14] The statistics presented are representative of all SSI and DI beneficiaries residing in Phase 1 states who were enrolled in the TTW program at some point between January and June 2003.

TTW Enrollment and Service Use

Using Social Security administrative data in the TRF through December 2006, we examined the enrollment characteristics of our sample of early TTW participants.[15] Here, "enrollment" refers to an eligible beneficiary signing up for TTW services by assigning his or her ticket to a provider. Recall that all sample members had enrolled in TTW at some time between February 2002 (when TTW was first implemented) and June 2003 (when the 2004 NBS TTW sample was drawn).

As of the end of December 2006, 16 percent of the TTW participants were no longer enrolled in the program; that is, their ticket was no longer assigned to a provider (Table 3). On average, participants had been enrolled in TTW for 45 months out of a possible maximum of 59 months. Significant differences in the duration of enrollment are evident between EN clients and SVRA clients. About one-half (52 percent) of EN clients had left the program by the end of December 2006, compared with just 10 percent of SVRA clients. The mean TTW enrollment duration was 34 months among EN clients and 46 months among SVRA clients. Among those who left TTW, about half had done so after participating in the program for 1 year or less, and this did not differ significantly by provider type.

Using data from the three NBS rounds, we examined the likelihood of using services, hours of

Table 3.
TTW enrollment characteristics, by provider type, as of December 2006

Enrollment status and duration	All TTW	Provider type[a]	
		EN	SVRA
Still enrolled in TTW (%)	84	48*	90
Total months enrolled (%)			
Fewer than 13	6	28**	4
13–24	3	10**	2
25–36	3	7**	2
37 or more	87	55**	92
Mean months enrolled	45	34*	46

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds, with results matched to the 2007 TRF.

NOTES: Sample size = 767.

* = Significantly different from SVRA clients at the 0.05 level, two-tailed test.

** = Significantly different from SVRA clients at the 0.05 level, chi-square test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

service use, and reported unmet service needs during 2003–2005. Services are defined very broadly, and include any that respondents identified as having been received for purposes of improving their ability to work or live independently. In the analyses presented below, we categorize the types of services used into two broad groups: employment services and medical or other services. Employment services include work or job assessment, help finding a job, prehire or on-the-job training, job coaching, and advice about modifying a job to accommodate a disability. Medical or other services include all other types, such as physical, occupational, and speech therapy; mental health and counseling services; and medical procedures and devices. Note that the data include all services received during the calendar year prior to the year of interview and encompass all services received regardless of whether they were arranged by a TTW provider or outside program auspices.

Table 4 shows the likelihood of using services overall, by service type, and by provider type:

- As expected, the likelihood of using services was relatively high among TTW participants, ranging from 52 percent to 61 percent across the 3 years. Only 29 percent of all disability beneficiaries and 37 percent of disability beneficiaries employed at the 2004 NBS interview had used services during 2003 (Thornton and others 2006). Although the likelihood of using either type of services declined each year, the decline was sharper for employment-related services than for medical or other services.
- SVRA clients were more likely to use services in all years than were EN clients.[16]
- The decline in service use over the 3 years was less pronounced among EN clients than among SVRA clients because use of medical or other services remained fairly constant for EN clients (at around 40 percent) but declined significantly for SVRA clients (from 54 percent in 2003 to 42 percent in 2005). Use of employment services declined similarly (in percentage terms) for both groups over the 3 years.

We examined the share of all TTW participants who used 50 or more hours of service in each year (Table 5), which we believe represents a very modest level of service use—equivalent to approximately 1 hour per week, on average. Only 19–25 percent of TTW participants received services at this level in any year, and the proportion declined each year. Relative to SVRA clients, EN clients were significantly less likely to use 50 or more hours of service in 2003 and 2004; in 2005, there was no significant difference.

The median number of service hours used followed a similar pattern. Overall, annual median service hours among users declined over the 3 years, from 43 in 2003 to 24 in 2005. SVRA clients had much higher median service hours, overall and in each year, than EN clients had. However, SVRA clients experienced the sharpest decline in service hours over the 3-year period.

In each interview round, sample members were asked whether they had any unmet service needs

Table 4.
Service use during 2003–2005, by provider type (in percent)

Service and year	All TTW	Provider type[a]	
		EN	SVRA
Used employment services			
2003	46	[b] 31	48
2004	[c] 39	[b] 26	[c] 41
2005	[c] 29	[b,c] 19	[c] 30
Anytime during 2003–2005	66	[b] 45	69
Percent change 2003 to 2005	-37	-39	-38
Used medical or other services			
2003	52	[b] 39	54
2004	48	[b] 41	49
2005	[c] 42	40	[c] 42
Anytime during 2003–2005	70	[b] 59	71
Percent change 2003 to 2005	-19	2	-22
Used any services			
2003	61	[b] 48	63
2004	58	[b] 47	60
2005	[c] 52	46	[c] 52
Anytime during 2003–2005	82	[b] 68	83
Percent change 2003 to 2005	-15	-4	-17

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTE: Sample size = 767.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

b. Significantly different from SVRA clients at the 0.05 level, two-tailed test.

c. Significantly different from 2003 value at the 0.05 level, two-tailed test.

Table 5.
Service use hours, 2003–2005

Year	All TTW	Provider type[a]	
		EN	SVRA
Used 50 or more hours of service (%)			
2003	25	11*	27
2004	24	14*	26
2005	19**	15	20**
Median hours of service use among all service users			
2003	43	19	48
2004	39	18	45
2005	24	16	24
Percent change 2003 to 2005	-44	-16	-50
Median service use hours, all years 2003–2005	102	44	109

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Sample size = 767.

Tests of significance were not performed for median values. Mean service use hours among users differed significantly between the EN and SVRA groups in 2003 and 2004, at the 0.05 level, two tailed test.

* = Significantly different from SVRA clients at the 0.05 level, two-tailed test.

** = Significantly different from 2003 value at the 0.10 level, two-tailed test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

during the previous calendar year, regardless of whether they had used any services. Previous TTW evaluation reports have noted the relatively higher rate of unmet needs among TTW participants; based on the 2004 NBS sample, about 10 percent of all disability beneficiaries and the same share of all employed beneficiaries reported having unmet service needs during 2003 (Thornton and others 2006). In our sample of TTW participants, 19 percent reported unmet service needs in that year (Table 6). Among all beneficiaries indicating an unmet service need, the most common reasons for not obtaining services were being ineligible for or refusing services (23 percent), inability to afford services (18 percent), and lack of information about where to get services (16 percent) (Thornton and others 2007). The higher rate of unmet need among TTW participants possibly reflects demand (desire to work) more than it reflects supply (availability of services). Assigning a ticket implies interest in working, and thus greater demand for services, than is likely among all beneficiaries. Presumably, participants' unmet needs would have been even higher in the absence of TTW.

Over the 3 years we analyzed, about one-third (34 percent) of all TTW participants reported unmet service needs in at least 1 year, but only 5 percent reported unmet needs in all 3 years (Table 6). The share of participants reporting unmet needs generally declined over the 3 years, although the difference from 2003 to 2005 was statistically significant only for EN clients. There were no significant differences in the likelihood of reporting unmet needs by provider type (overall or within each survey round), and there were few significant differences across rounds (not shown). We also examined unmet needs by whether participants were employed at the round 3 interview in 2006. Those employed at this round were significantly less likely to report unmet needs between 2003 and 2005 than those who were not. From the information available, we cannot determine whether those who were employed had fewer needs, had more success in getting their needs met, or had both, than those who were not.

Although we cannot determine whether the observed declines in the unmet needs of TTW participants were because services met needs or because needs changed, we do have some information about the reasons for reporting unmet needs (Chart 1). Lack of information and problems with service providers were the two most frequently cited reasons, each reported by 26 percent of participants with unmet needs. These were followed closely by ineligibility or service denial, reported by 20 percent of those with unmet needs. Reasons for unmet needs did not differ significantly by provider type or employment status at round 3 (not shown).

Health Status

Previous studies using NBS data (Stapleton and others 2008; Thornton and others 2007; Livermore, Stapleton, and Roche 2009) have shown a strong relationship between general physical and mental health status

Table 6.
Reported unmet service needs, 2003–2005, by provider type and employment status at round 3 (in percent)

Year	All TTW	Provider type[a]		Employed at round 3	Not employed at round 3
		EN	SVRA		
Unmet service needs					
2003	19	23	18	17	20
2004	17	21	17	12*	20
2005	15	15**	15	9*	18
Percent change 2003 to 2005	-21	-35	-17	-47	-10
Unmet needs in at least one year 2003–2005	34	38	33	28*	37
Unmet needs in all years, 2003–2005	5	6	4	3	6

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

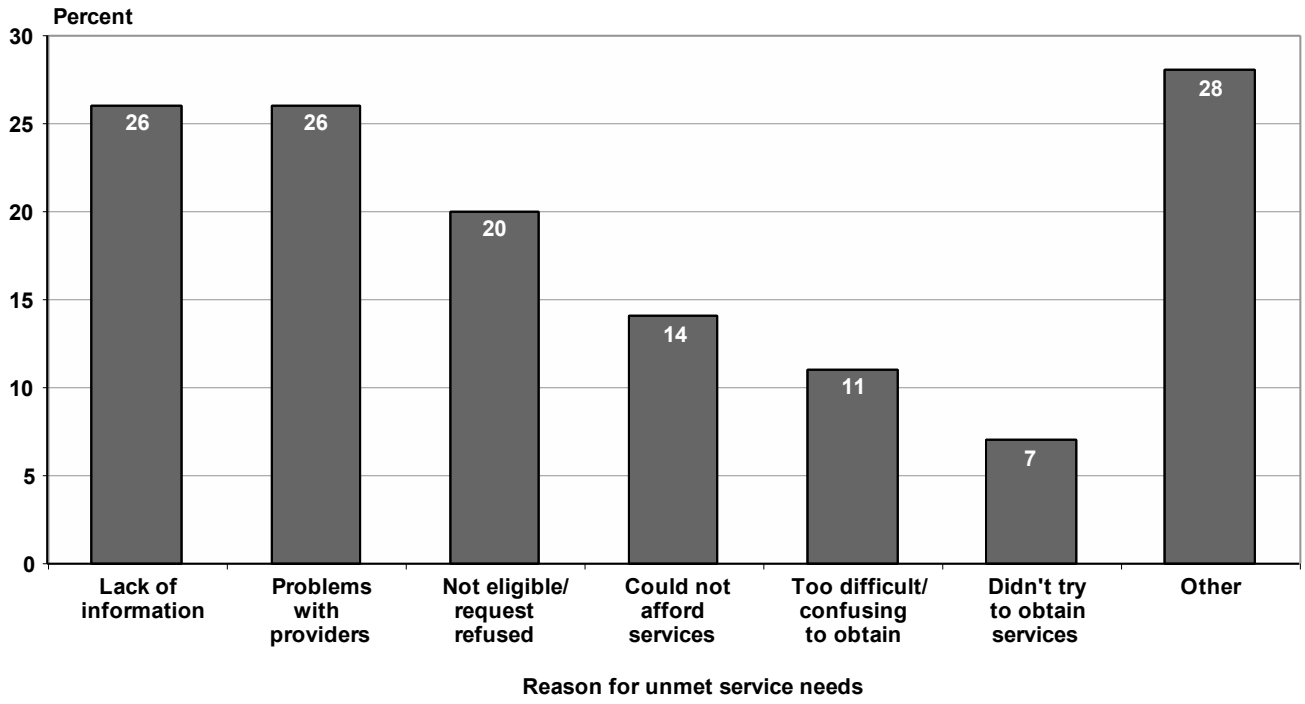
NOTES: Sample size = 767.

* = Significantly different from those not employed at round 3 at the 0.05 level, two-tailed test.

** = Significantly different from 2003 value at the 0.05 level, two-tailed test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

Chart 1.
Reasons for unmet service needs among those reporting unmet needs in any year, 2003–2005 (in percent)



SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTE: Sample size = 767.

and the likelihood of beneficiary employment. For example, employment rates among SSI and DI beneficiaries are markedly higher for those who report their general health to be excellent or very good (27 percent) than for those reporting their health to be good or fair (10 percent) or poor or very poor (3 percent). Consistent with the previous studies, we use health measures called the physical component summary (PCS) and the mental component summary (MCS). These measures were constructed by developers of the SF-8 Health Survey, a generic, multipurpose, eight-item survey intended to assess health status across several domains.[17]

In Table 7, we show the distribution of PCS and MCS scores for the full sample of Phase 1 TTW participants as of their 2004, 2005, and 2006 interviews. We also indicate the shares of participants in the latter 2 years who experienced an increase or a decline of 10 percent or more in their health status score from the previous year. Overall, the mean PCS and MCS scores were very similar to the mean scores reported for the general adult population, and also appear to be stable across the three survey rounds. Findings reported in Ware and others (2001) indicate that the mean PCS and MCS scores for an adult general population sample (interviewed by phone) are about 50 and 51, respectively. The means for our sample ranged between 51 and 53 for both scores across the 3 years. It is perhaps surprising that the average mental and physical health scores for TTW participants were similar to those of the general adult population. One might expect individuals with disabilities severe enough to qualify for the SSI and DI programs to be in poorer health than the general adult population. This is certainly the case for all SSI and DI beneficiaries. The average PCS and MCS scores for all beneficiaries in the 2004 NBS were about 10 points lower than those for our TTW participant sample. As noted earlier, TTW participants are younger and healthier than SSI and DI beneficiaries in general. Additionally, the general population norms published in Ware and others (2001) reflect adults of all ages, including individuals older than 65. The mean age of the TTW sample was 41, compared with a mean age of 50 in the SF-8 norm studies. The fact that average PCS and MCS scores decline with

Table 7.
Health status indicators, 2004–2006 (in percent)

Health status measure	2004	2005	2006
Percentage distribution by PCS score:			
Less than 45	31	33	30
45–51	15	16	20*
More than 51	54	51	49
Percentage whose PCS score—			
Declined 10 percent or more from previous interview	…	28	22
Increased 10 percent or more from previous interview	…	24	29
Mean PCS score	52	51	52
Percentage distribution by MCS score:			
Less than 45	33	28*	26*
45–51	13	14	17
More than 51	54	58	57
Percentage whose MCS score—			
Declined 10 percent or more from previous interview	…	24	30
Increased 10 percent or more from previous interview	…	37	25
Mean MCS score	52	53*	53
Percentage whose PCS and MCS scores both—			
Declined 10 percent or more from previous interview	…	6	5
Increased 10 percent or more from previous interview	…	5	6
Self-reported current health compared to last year (%)			
Same	45	46	48
Better	31	26	27
Worse	24	27	25

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Sample size = 767.

Among the general population of US adults, PCS and MCS scores of less than 45 correspond approximately with the 25th percentile, scores of 45–51 correspond approximately with the 25th through 50th percentiles, and scores of more than 51 correspond approximately with percentiles above the 50th (Ware and others 2001).

… = not applicable.

Rounded components of percentage distributions do not necessarily sum to 100.

* = Significantly different from 2004 value at the 0.05 level, two-tailed test.

age, combined with the differences in the age composition of the TTW and general adult population samples, likely contributes to the surprisingly high scores for the TTW sample.

Although the mean health status scores appear fairly stable across the 3 years, about one-quarter to one-third of the sample experienced health improvements each year, and roughly the same share experienced health declines. We define improvement and decline as a change of at least 10 percent in the PCS or MCS from the previous year. We were not able to identify comparable information about the variation in the health measures over time for the general adult population, but approximately half of the TTW sample experienced rather significant health improvements or declines in each year. This suggests that the health status of TTW participants might be rather volatile.[18] The findings on PCS and MCS score changes are supported by participant responses to the question comparing their current health to their health during the previous year. Roughly one-half reported their current health as being the same as last year, and about one-quarter to one-third reported improvements or declines in their current health in each year (Table 7).[19]

Employment

The employment and earnings of SSI and DI beneficiaries have been examined in a number of studies (Scott 1992; Muller 1992; Hennessey and Muller 1995; Hennessey 1996; Muller, Scott, and Bye 1996;

Newcomb, Payne, and Waid 2003; Livermore, Goodman, and Wright 2007) and in previous TTW evaluation reports (Thornton and others 2006; Thornton and others 2007; Stapleton and others 2008; Livermore, Stapleton, and Roche 2009) using both survey and administrative data sources. The most recent of these studies based on the 2004 NBS indicates that about 9 percent of all SSI and DI beneficiaries were working at a given time and, of these, most (79 percent) were working part-time, at an overall average of about 22 hours per week. About one-third were earning below the federal minimum wage ($5.15 per hour at the time) and about one-third earned $8.00 or more per hour. Average monthly earnings were $622, and about one-fifth (22 percent) were earning above the monthly SGA level ($810 in 2004). The median number of months they had been employed at the current job was 26 (Livermore, Stapleton, and Roche 2009). In summary, these statistics indicate that relatively few beneficiaries are working at a given time. Working beneficiaries have typically held their jobs for an extended period, but make relatively low wages and work about half-time on average.

The employment statistics presented here differ from those of previous studies in that we focus on TTW participants, a very select group of beneficiaries. The earnings and job characteristics of employed TTW participants are of substantial interest, in part because of the incentives in the three TTW payment systems. The milestone-outcome and outcome-only payment systems introduced by TTW give providers a stronger incentive to help their clients secure and sustain high-paying jobs than does the traditional payment system that remains available to SVRAs. In fact, providers receive the maximum payment amounts under the two new TTW payment systems only if their clients earn enough to exit the disability benefit rolls for at least 36 months (for DI beneficiaries) or 60 months (for SSI-only recipients). Of course, the traditional payment system available to SVRAs also gives providers an incentive to help their clients achieve high earnings, but providers are paid if these earnings are above the SGA level for at least 9 months; their clients do not have to exit the rolls.

As might be expected, TTW participants are much more likely to be working than are disability beneficiaries in general. Among the 2004 NBS sample, 32 percent of TTW participants were employed at interview, compared with 9 percent of all beneficiaries (cited earlier) and 21 percent of all disability beneficiaries reporting work goals or expectations (Livermore, Roche, and Prenovitz 2009). At each of three NBS rounds, information needed to construct a complete employment history for the previous calendar year was collected from respondents in the longitudinal TTW sample. This information provides a more complete picture of TTW participant work activity than is provided by the cross-sectional employment rates cited earlier. During each of the 3 years for which complete employment information was collected (2003–2005), about 45 percent of the cohort of early TTW participants was employed at some time during each year, and 59 percent had been employed at some point during the 3-year period (Table 8). No significant differences in employment rates were evident by provider type.

Overall, just over one-quarter of the sample (27 percent) was employed for more than 2 years during the 3-year period. This share represents nearly half (46 percent) of those who were employed at some time during the 3 years. The remaining half of those who were employed at all is nearly equally divided between those working for 1 year or less and those working for 1 to 2 years over the 3-year period. With respect to the number of jobs held, most (about 60 percent) of those who were employed held two or more jobs. We found no significant differences by provider type in the distributions of total months employed or the number of jobs held.

Using annual IRS earnings data matched to the longitudinal TTW participant sample, we can examine employment activity over a longer period (2003–2007) than is available from the NBS. The IRS data (Table 9) indicate that TTW participants underreported their work activity in the NBS (Table 8). Underreporting of work activity was greatest for 2003; although 46 percent of TTW participants reported working in 2003 in the NBS, the IRS data indicate that 57 percent had earnings in that year. In both 2004 and 2005, the differences between the survey-reported work activity and the IRS data were less than 5 percentage points.

According to IRS earnings information, 75 percent of the cohort of early TTW participants had earnings in at least 1 year from 2003–2007 (Table 9). The percentage with earnings was highest in 2003 (57 percent) but remained at approximately 50 percent in all 5 years. Among those with positive earnings in at least 1 year and including only years with earnings, average annual earnings (across all years) were $6,830 (2007 dollars). Average earnings were

Table 8.
Employment during 2003–2005, by provider type

Employment indicator	All TTW	Provider type[a]	
		EN	SVRA
Percentage employed—			
2003	46	47	46
2004	46	46	46
2005	45	44	46
Any time during 2003–2005	59	60	59
Percentage distribution by months employed :			
0	41	40	41
1–12	15	17	15
13–24	13	13	13
25 or more	27	24	27
Unknown	4	6	4
Percentage distribtution by number of jobs held:			
0	41	40	41
1	20	17	21
2 or 3	26	26	26
4 or more	9	11	9
Unknown	4	6	4

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Sample size = 767.

Rounded components of percentage distributions do not necessarily sum to 100.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

lowest in 2003 at just under $6,000, and ranged from $8,000 to nearly $10,000 in all subsequent years. Comparable data reported for all beneficiaries in Livermore, Roche, and Prenovitz (2009) indicate that the average earnings of TTW participants are about 15 percent to 20 percent higher than the average for all beneficiaries with earnings. For example, among those with earnings in 2007, average annual earnings were $8,127 for all beneficiaries and $9,710 for TTW participants. With respect to the number of years with earnings, nearly one-third of TTW participants (30 percent) had earnings in all 5 years analyzed. Among those who had any earnings during 2003–2007, two-thirds had earnings in 3 or more of the 5 years.

Although there were no significant differences between EN clients and SVRA clients with respect to the likelihood of having earnings in each year, there were significant differences in average earnings amounts. EN clients had higher average annual earnings than SVRA clients for the period overall and in 3 of the 5 individual years, and the differences were statistically significant. Significant differences in the wage and earnings between provider types have been documented in the previous TTW evaluation reports, as we discuss further in the next section.

Job Characteristics

Previous studies have presented statistics about the characteristics of jobs held by TTW participants at the time they were interviewed (Thornton and others 2007; Stapleton and others 2008). In Table 10, we present similar statistics; but instead of looking at a particular job, we look across all jobs held by a sample member during 2003–2005 and report the means and distributions associated with his or her "best" job. The best job is defined as that with the longest hours, highest hourly wages, highest monthly pay, or longest duration for each set of statistics pertaining to hours, wages, pay, and duration, respectively. Thus, if an individual held multiple jobs, different jobs might be the basis for the statistics generated for different job characteristics. Examining the individual maximum values for the various job features across all jobs held during 2003–2005 is intended to provide a more accurate picture of the maximum work capacity of Phase 1 TTW participants over the 3-year period. In all cases, the statistics reported in Table 10 indicate a

Table 9.
Employment rate and average annual earnings, by provider type, 2003–2007

Indicator	All TTW	Provider type [a]	
		EN	SVRA
2003			
Percentage employed	57	55	58
Average annual earnings ($)	5,760*	8,693**	5,365
2004			
Percentage employed	49	49	49
Average annual earnings ($)	8,081	11,863**	7,538
2005			
Percentage employed	49	49	51
Average annual earnings ($)	9,284	11,665	9,002
2006			
Percentage employed	52	52	53
Average annual earnings ($)	9,106	11,662**	8,761
2007			
Percentage employed	47	48	47
Average annual earnings ($)	9,710	11,387	9,477
2003–2007			
Percentage employed at any time	75	76	75
Average annual earnings ($)	6,830	8,899**	6,566
Percentage who had earnings in—			
0 years	25	24***	25
1 year	14	16***	13
2 years	11	9***	12
3 years	11	9***	11
4 years	9	16***	9
5 years	30	26***	30

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds, with results matched to IRS earnings data.

NOTES: Sample size = 767.

Earnings are expressed in 2007 dollars and represent the average among all beneficiaries with any positive earnings during the reported period.

* = Significantly different from average earnings in all other years, two-tailed test.

** = Significantly different from SVRA clients at the 0.05 level, two-tailed test.

*** = Significantly different from the distribution of SVRA clients at the 0.05 level, chi-square test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

greater work capacity for TTW participants than that suggested by the analogous cross-sectional statistics presented in previous studies.

Employed TTW participants worked an average of 27 hours per week in the jobs at which they worked the most hours during 2003–2005. Nearly one-third had engaged in full-time employment (35 or more hours per week) for at least one of their jobs. They received a maximum average hourly wage of $10.40 and the average highest monthly pay over the period was $1,196. About 60 percent of TTW participants were able to earn above the SGA level in at least 1 month during the 3-year period, and about one-third (35 percent) were able to do so for 13 or months or longer. The average duration for the longest-held job was nearly 3 years (33 months).

The overall statistics obscure significant differences between EN clients and SVRA clients, which mirror the cross-sectional findings presented in previous studies and the longitudinal findings from the annual IRS earnings data described earlier. With one exception, EN clients outperformed SVRA clients with respect to all best-job features shown in Table 10. On average, EN clients worked more hours, had higher wages and

Table 10.
Characteristics of "best" jobs held by those reporting at least one job during 2003–2005, by provider type

Characteristic	All TTW	Provider type [a]	
		EN	SVRA
Percentage reporting at least one job 2003–2005	[b] 55	[b] 55	[b] 55
Percentage distribution by most hours worked per week:			
1–10	11	6*	12
11–20	29	23*	30
21–34	26	25*	26
35 or more	33	46*	31
Unknown	1	1*	1
Mean most hours worked per week	27	31**	26
Percentage distribution by highest hourly wage [c]			
$5.15 or less	2	0*	3
$5.16–$7.99	33	15*	35
$8.00–$14.99	49	63*	47
$15.00 or more	13	19*	12
Unknown	3	3*	3
Mean highest hourly wage ($) [c]	10.40	12.90**	10.10
Mean highest monthly pay ($) [c]	1,196	1,695**	1,123
Percentage who earned above SGA in at least 1 month [c]	59	76**	57
Percentage distribution by months with pay above SGA [d]			
0	41	23*	43
1–12	24	29*	23
13 or more	35	47*	34
Unknown	<1	2*	<1
Percentage distribution by maximum job duration			
1–6 months	17	20	17
7–12 months	15	19	15
13–24 months	20	15	21
25–36 months	19	18	19
37 months or more	28	26	28
Unknown	1	2	1
Mean maximum job duration (months)	33	27**	34

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Full sample size = 767; sample members who provided information about at least one job during 2003–2005 = 458.

Rounded components of percentage distributions do not necessarily sum to 100.

* = Significantly different from the distribution of SVRA clients at the 0.05 level, chi-square test.

** = Significantly different from SVRA clients at the 0.05 level, two-tailed test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

b. Values differ from those reported in Table 11. This table covers only repsondents who reported at least one job; Table 11 includes some employed respondents who omitted or provided incomplete job information.

c. In 2007 dollars.

d. Computed based on a comparison of unadjusted monthly pay values to the monthly SGA value corresponding to the calendar year of earnings.

monthly pay, and were more likely to earn above the SGA level than SVRA clients. The difference between the two groups in the likelihood of earning above SGA level in at least 1 month is particularly striking. Among EN clients, 76 percent earned above the SGA level in at least 1 month, compared with 57 percent of SVRA clients. The one exception was job duration: By 7 months, SVRA clients averaged longer maximum job durations than EN clients.

As has been discussed in previous TTW evaluation reports, the observed differences in outcomes between SVRA and EN clients might be explained by the

differences in the characteristics of clients seeking services from ENs versus SVRAs described above, and also by differences in the incentives for providers to serve particular clients depending on their likelihood to exit the disability benefit rolls because of earnings.[20] For example, based on the full 2004 NBS TTW participant sample, SVRA clients were significantly more likely than EN clients to be working in sheltered employment (39 percent versus 23 percent) and to use personal assistant services (27 percent versus 8 percent) (Thornton and others 2007). The higher earnings of EN clients might reflect the fact that, compared with SVRAs, ENs—because of differences in incentives—emphasize the attainment of earnings at a level that reduces benefits to zero. This is reflected both in the characteristics of the TTW participants they are willing to serve and the types of services they provide.

Reasons for Leaving Jobs

Among the approximately 60 percent of Phase 1 TTW participants who reported working at a job for 1 month or longer during 2003–2005, over half (58 percent) reported leaving one or more of those jobs (Table 11). Overall, the most common reason for leaving a job was disability onset or worsening, reported by nearly one-third of job leavers. A similar finding was reported by Hennessey (1996) in a study of new DI beneficiaries. EN clients were significantly more likely than SVRA clients to report poor health as the reason for leaving a job (44 percent versus 31 percent). Overall, dislike of specific job features followed closely behind poor health as a reason for leaving a job (31 percent), and the shares reporting this reason did not differ by provider type. Relative to EN clients, SVRA clients were significantly more likely to report that they left a job because the job was temporary (31 percent versus 17 percent).

To better understand the employment barriers among TTW participants who were employed at some time during 2003–2005, we examined the members of the subgroup who were no longer employed at the time of a subsequent NBS interview round, and the reasons why they were no longer employed (Table 12).[21] Even among these beneficiaries with work experience, health status played an important role. About 80 percent of those not working when interviewed reported that a physical or mental health condition prevented work. Inability to find

Table 11.
TTW participants leaving jobs and reasons for leaving, by provider type, 2003–2005

Job-leaving circumstance	All TTW	Provider type [a]	
		EN	SVRA
Percentage of participants working in 2003–2005 [b]	59	60	59
Participants who left a job, as a percentage of—			
All participants	34	38	34
Those working at any time 2003–2005	58	63	58
Main reasons for leaving a job (%) [c]			
Disability onset or worsening	33	44*	31
Disliked specific job features [d]	31	31	31
Job was temporary	29	17*	31
Fired	15	18	15
Laid off	14	12	14
Family/personal reasons	18	11	20
Moved, left for school, or took another job	16	14	17
Other/unknown	22	18	23

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Full sample size = 767; sample members who left at least one job during 2003–2005 = 307.

* = Significantly different from those assigned longest to SVRAs at the 0.05 level, two-tailed test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

b. Reflects working at least one job for 1 month or longer.

c. Components do not sum to 100 because respondents were permitted to report multiple reasons for leaving one or more jobs. However, a particular reason was counted only once per individual even if it was reported for multiple job terminations.

d. Job features include pay, benefits, duties, schedule, coworkers, location, advancement opportunities, and availability of accommodations.

Table 12.
Reasons for not working reported by those employed at any time during 2003–2005 and not employed at one or more interviews (in percent)

Reason	All TTW	Provider type[a]	
		EN	SVRA
Employed at any time 2003–2005 and not employed at one or more NBS interviews	39	43	39
Reasons for not working			
Physical or mental condition prevents work	81	81	81
Cannot find a job for which he or she is qualified	62	70*	60
Discouraged by previous work attempts	56	63	55
Employers will not give him or her a chance	53	63	52
Cannot find a job he or she wants	49	58*	47
Others do not think he or she can work	39	47*	37
Workplaces not accessible to people with his or her disability	38	40	37
Lacks reliable transportation to and from work	31	41*	30
Does not want to lose cash or health insurance benefits	27	27	27
Waiting to finish school or training program	25	27	25
Caring for someone else	12	11	12
Other	20	17	21

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Full sample size = 767; sample members who reported being employed at some time during 2003–2005 and were not employed at one or more interviews = 345.

* = Significantly different from SVRA clients at the 0.10 level, two-tailed test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

a job for which they were qualified, being discouraged by previous work attempts, and believing that employers would not give them a chance also were reasons reported by majorities of nonworking TTW participants who had worked at some point during 2003–2005. Several of the reasons for not working were reported more frequently by EN clients than by SVRA clients. EN clients were significantly more likely to report not being able to find jobs for which they were qualified, not being able to find jobs that they wanted, believing that others did not think they could work, and lacking reliable transportation to and from work.

Months off the Disability Rolls Because of Earnings

We used TRF administrative data to determine the share of TTW participants who left the SSA disability rolls because of earnings during 2004–2007. Being off the rolls because of work is defined as having cash disability benefits suspended or terminated for at least 1 month by reason of a beneficiary's own earnings.[22, 23] Overall, 19 percent of TTW participants were off the rolls because of work for at least 1 month during the 4-year period (Table 13). Of those whose cash benefits were discontinued for at least 1 month, about half were off for 12 or fewer months, and about half were off for 13 or more months. Relative to SVRA clients, EN clients were significantly more likely to have left the rolls for at least 1 month (27 percent versus 17 percent) and also were more likely to have done so for 13 or more months (17 percent versus 10 percent).

Discontinuing cash benefits because of work was generally uncommon among disability beneficiaries; during 2004–2007, only about 6 percent left the rolls for at least 1 month (Livermore, Roche, and Prenovitz 2009). In Table 13, we present the analogous statistics for all work-oriented beneficiaries to provide a point of comparison to the early cohort of TTW participants. Even compared with all disability beneficiaries who indicate having work goals or expectations, TTW participants were about twice as likely to leave the rolls for at least 1 month over the 4-year period analyzed. Although TTW participants were much more likely to discontinue cash benefits because of work, the share doing so was still fairly small in light of the requirements for providers to receive TTW outcome payments. The findings suggest that TTW outcome payments might be generated by about one-quarter of those served by ENs during the period analyzed.

Table 13.
Months off the SSA disability rolls because of work during 2004–2007 (in percent)

Months	All TTW	Provider type[a]		All work-oriented beneficiaries
		EN	SVRA	
0	81	73*	83	90
1–3	3	4*	3	2
4–12	5	6*	4	3
13–24	5	7*	5	2
25–48	5	10*	5	2

SOURCES: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds, with results matched to the 2007 TRF; and Livermore, Roche, and Prenovitz (2009), based on 2004 NBS national cross-sectional beneficiary sample results matched to the 2007 TRF.

NOTES: NBS Phase 1 longitudinal TTW sample size = 767; NBS national cross-sectional beneficiary sample size = 4,433.

Rounded components of percentage distributions do not necessarily sum to 100.

* = Significantly different from the distribution of SVRA clients at the 0.05 level, chi-square test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

Income and Poverty

Social Security disability beneficiaries receive assistance in the form of cash payments and also in noncash forms such as food stamps and energy and housing subsidies from a variety of sources. Other studies have documented the extent to which beneficiaries rely on different sources of income, and have also examined the extent to which these sources have changed over time (Martin and Davies 2003/2004; DeCesaro and Hemmeter 2008; Livermore, Stapleton, and Roche 2009). DI and SSI benefits are the largest source of family income for disability beneficiaries, representing 57 percent of total family income among all DI beneficiaries and 69 percent of total family income among SSI recipients in 2002 (DeCesaro and Hemmeter 2008). Earnings (including those of the beneficiary's family members) represented the next largest source of income, accounting for 29 percent of income among DI beneficiaries and 22 percent among SSI recipients. For many beneficiaries, SSI and DI eligibility and benefit levels are affected by earnings. If larger shares of TTW participants work and their earnings increase over time, we should expect to see changes in their income from DI and SSI as well as from other sources.

In Table 14, we examine changes in total monthly personal income of our early cohort of TTW participants as of the month before interview in 2004, 2005, and 2006. We also look at changes in three major components of personal income: DI and SSI benefits, non–Social Security benefits,[24] and earnings. Note that all income amounts represent personal rather than family income.

DI and SSI Benefits

The share of TTW participants receiving any benefits remained constant across the three NBS interviews, at 98 percent. The average monthly benefit amount also remained constant, at about $830. At both the 2005 and 2006 interviews, 10 percent of TTW participants experienced a decline in monthly benefits of $50 or more;[25] the average decline was substantial, at $245 to $301. At the same time, about an equal share of participants experienced an increase in benefits of $50 or more, and although the average increase in 2006 ($274) was similar in magnitude to the declines experienced by their counterparts, in 2005 it was lower ($199).

Non–Social Security Benefits

The shares of TTW participants receiving cash and in-kind support from sources other than SSA programs increased slightly from 2004 to 2006, from 40 percent to 44 percent. Average monthly benefits per recipient were between $255 and $275 each year. The relatively small changes overall mask some rather significant churning. Among those receiving non–Social Security benefits in 2005 and 2006, one-third or more experienced a decline of $50 or more from the previous interview (representing about 15 percent of all participants); among these individuals, the

Table 14.
Regular sources and amounts of personal income during month before interview in 2004, 2005, and 2006, and changes from prior interviews

Source	2004	2005	2006
DI and SSI benefits			
Received benefit (%)	98	98	98
Average among those receiving benefit ($)	825	830	834
Experienced decline of $50 or more from prior interview			
Percent of all	...	10	10
Percent of those receiving benefit at prior interview	...	6	10
Average decline among those with $50 or more decline ($)	...	301	245
Experienced increase of $50 or more from prior interview	...		
Percent of all	...	9	10
Average increase among those with $50 or more increase ($)	...	199	274
Non–Social Security sources of income and assistance			
Received income/assistance (%)	40	42	44
Average among those receiving income/assistance ($)	255	275	274
Experienced decline of $50 or more from prior interview			
Percent of all	...	14	16
Percent of those receiving income/assistance at prior interview	...	35	38
Average decline among those with $50 or more decline ($)	...	283	270
Experienced increase of $50 or more from prior interview			
Percent of all	...	15	14
Average increase among those with $50 or more increase ($)	...	346	324
Earnings			
Had earnings (%)	24	25	30
Average among those with earnings ($)	742	846	810
Experienced decline of $50 or more from prior interview			
Percent of all	...	8	7
Percent of those with earnings at prior interview	...	38	28
Average decline among those with $50 or more decline ($)	...	466	179
Experienced increase of $50 or more from prior interview			
Percent of all	...	6	7
Average increase among those with $50 or more increase ($)	...	459	420
Total monthly personal income			
Average ($)	1,090	1,142	1,178
Experienced decline of $50 or more from prior interview (%)	...	26	29
Average decline among those with $50 or more decline ($)	...	408	267
Experienced increase of $50 or more from prior interview (%)	...	31	29
Average increase among those with $50 or more increase ($)	...	497	546

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Sample size = 767.

Earnings are reported in 2007 dollars, adjusted using the SSA cost-of-living adjustment, based on changes in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

… = not applicable.

average decline was around $275 each year—a large amount, given that it is roughly equivalent to the average monthly benefit. Nearly an equal number of TTW participants experienced increases in monthly non–Social Security benefits of $50 or more over the previous year; the average increases among these individuals also were substantial, at more than $300 in both 2005 and 2006.

Earnings

At each of the first two interviews, about one-quarter of the TTW participants reported earnings during the previous month. By the third interview, a slightly higher percentage (30 percent) reported earnings. Average monthly amounts among those with earnings were $742 at the first interview in 2004, increased to $846 at the second interview, and declined slightly to $810 at the third interview in 2006. Only a small share of beneficiaries (6–7 percent) experienced an increase in monthly earnings of $50 or more from the prior interview, but among those affected, the average increase was relatively large, at more than $400 (about 50 percent of the average monthly earnings of all who were working). Among those with any earnings at the prior interview, earnings declines of $50 or more were more common at the second interview in 2005 than at the third interview in 2006 (38 percent versus 28 percent). The average earnings declines among those affected also were much larger in 2005 than in 2006 ($466 versus $179).

Total Personal Income

Overall, total monthly income remained stable, at about $1,100 each year. However, this stability in overall average income masks rather significant changes in income for a majority of TTW participants. At both the second and third interviews, about 30 percent of TTW participants reported an increase in income from the prior interview on the order of $500. At the same time, a similar percentage of TTW participants reported declines in income from the previous interview. The average declines were $408 in 2005 and $267 in 2006.

We suspect that much of the year-to-year changes in benefit levels were due to changes in earnings. We examined how average benefits changed across rounds for subgroups of beneficiaries who experienced round-to-round changes in earnings (not shown). Although the information available to us is somewhat limited for purposes of tying earnings changes to public benefit changes,[26] it suggests that DI and SSI benefits were more responsive to declines in earnings than to increases, and that the response was time-lagged. No clear correspondence between earnings changes and non–Social Security benefits was apparent. This is likely due to the large variation in the types of benefits considered (with some being more responsive to earnings changes than others) and to imprecision in the reporting of non–Social Security benefits by respondents.[27]

Poverty

High poverty rates have been documented among working-age people with disabilities, and among SSI and DI beneficiaries in particular (Martin and Davies 2003/2004; DeCesaro and Hemmeter 2008; She and Livermore 2009; Livermore, Stapleton, and Roche 2009). Poverty rates among SSI and DI beneficiaries based on NBS data are substantially higher than those based on Survey of Income and Program Participation (SIPP) data. For example, rates based on the 2002 SIPP reported in DeCesaro and Hemmeter (2008) were about 23 percent among DI beneficiaries and 49 percent among SSI recipients. Rates based on the 2006 NBS were 31 percent among DI-only beneficiaries and 71 percent among concurrent and SSI-only beneficiaries. The differences might in part reflect changes in the amount and sources of income over the 7-year period and differences in the sampling methods used in the two surveys,[28] but they also likely reflect differences in the manner in which the two surveys document income. The SIPP collects much more detailed information on income for all family members than is collected in the NBS. The NBS only collects data on income sources for SSI and DI beneficiaries, and the poverty rate is based on responses to a question regarding total family income and the number of family members, rather than on a detailed accounting of family member resources. Thus, the poverty rates measured in the NBS are likely to be less accurate than those based on the SIPP.

Despite the potential shortcomings of the poverty measure in the NBS, it was collected in a consistent manner across survey rounds and allows us to assess beneficiaries' personal income, especially earnings, over time. Although the poverty measure is based on the annual income of all family members, personal income may be the only income source for many TTW participants. In 2004, 43 percent of Phase 1 TTW participants were in living arrangements that qualified as single-person families for purposes of computing poverty status (Thornton and others 2006).[29] Thus,

changes in personal income that result from changes in earnings—and the consequences of earnings on benefits—potentially affect the likelihood of experiencing poverty for many TTW participants.[30]

In Table 15, we examine the poverty status of Phase 1 TTW participants during 2003–2005. Overall, the likelihood of having family income below the federal poverty level remained fairly stable, at about 50 percent over the 3 years, although there was a small decline in 2004 (49 percent) relative to 2003 and 2005 (53 percent). EN clients experienced a much greater decline from 2003 to 2004 (from 52 percent to 42 percent) than SVRA clients did (from 53 percent to 50 percent). The poverty rate for EN clients also remained lower in 2005 (at 45 percent) than that of SVRA clients (54 percent). In general, the percentages of TTW participants both entering and leaving poverty each year was between 10 percent and 15 percent. EN clients were the exception—in 2004, a larger share (22 percent) left poverty, which contributed to the marked decline in the poverty rate among those TTW participants in that year.

To see if there was a relationship between employment and poverty among TTW participants, we also examined poverty rates by employment status during the same years. Poverty rates among those who were employed at some point in each year were substantially lower (by about 10 to 15 percentage points) than the rates for those who were not employed, and these differences were statistically significant in 2 of 3 years analyzed. Although many factors contribute to a beneficiary's poverty status, employment appears to be correlated with lower poverty rates among TTW participants.

Table 15.
Poverty rates and changes in poverty status, 2003–2005 (in percent)

Poverty indicator	2003	2004	2005
All			
Household income below poverty level	53	49	53
Left poverty from prior year	…	14	10
Entered poverty from prior year	…	10	14
EN clients[a]			
Household income below poverty level	52	42*	45
Left poverty from prior year	…	22**	12
Entered poverty from prior year	…	12	15
SVRA clients[a]			
Household income below poverty level	53	50	54
Left poverty from prior year	…	13	10
Entered poverty from prior year	…	10	14
Employed during year			
Household income below poverty level	44***	43***	47
Left poverty from prior year	…	13	13
Entered poverty from prior year	…	12	18
Not employed during year			
Household income below poverty level	60	55	58
Left poverty from prior year	…	15	8
Entered poverty from prior year	…	9	11

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTES: Sample size = 767.

Poverty rates are based on the respondent's annual household income during the calendar year preceding the NBS interview, compared with the federal poverty standard for that year, household size, and household composition.

… = not applicable.

* = Significantly different from the corresponding 2003 value at the 0.05 level, two-tailed test.

** = Significantly different from SVRA clients at the 0.05 level, two-tailed test.

*** = Significantly different from those not employed during the year at the 0.05 level, two-tailed test.

a. Determined by the type of provider to which the participant's ticket was assigned the longest as of December 2006.

Experiences of Subgroups Defined by Employment Success

We have presented numerous statistics depicting the 3- to 5-year experiences of the early cohort of TTW participants. The findings indicate that over time, service use and unmet service needs declined, but the percentage employed remained fairly constant. The findings also indicate that a large share of participants experienced significant year-to-year changes in health status and income, that poor health might have contributed to disenrollment from TTW, and that employment is correlated with lower rates of poverty.

Here, we examine selected patterns of TTW participant service use, health status, employment, income, and poverty over the three survey rounds according to employment and earnings outcomes.[31] We do so to assess whether the patterns differed significantly among those who experienced varying degrees of employment success, and whether the patterns suggest factors that might be correlated with employment success among TTW participants.

For this analysis, we divided our sample of TTW participants into three subgroups:

1. Those who worked and had earnings above the SGA level for 12 or more total months during 2003–2005
2. Those who were employed at some point during 2003–2005, but who did not have 12 or more total months with earnings above the SGA level during that period
3. Those who did not report any employment during 2003–2005

The first subgroup comprises 20 percent of TTW participants (Table 16). Given that employment is the goal of the TTW program, and that earnings above the SGA level are required for providers to receive significant payments under TTW, this subgroup achieved a significant level of success under TTW. The second subgroup, comprising 39 percent of the participants, achieved some employment success over the 3-year period. The third subgroup, comprising the remaining 41 percent of participants, did not engage in any employment during 2003–2005 and thus had the least successful outcome.

Several of the 3-year patterns of TTW enrollment, service use, health, employment, income, and poverty differed significantly across the three subgroups. The findings suggest stylized, if perhaps oversimplified, characterizations of the three TTW subgroups:

- Subgroup 1**.** The large majority of the most successful TTW participants reported being in fair or better health, had steady employment, and also had relatively high personal income. The latter two factors might have contributed to their significantly lower poverty rates. Members of this group can potentially reduce their reliance on disability benefits and generate significant payments to TTW providers.
- Subgroup 2. These participants were somewhat more likely to report poor health than the first group. They were also the most likely of the three groups to have used TTW services. Although about two-thirds were employed at some time during each of the 3 years, only one-third were employed at each interview, suggesting that their employment was more sporadic or temporary than the first group's members. This unsteady employment might have contributed to their lower average personal income and higher poverty rates; the former did not differ from those who did not work at all, and the latter did not differ from the poverty rates among all beneficiaries. Members of this group might generate some TTW payments to providers and some might reduce their reliance on disability benefits, but they also appear to have greater service needs and more limited earnings capacity than the first group.
- Subgroup 3. A large share of those with no earnings during 2003–2005 reported being in poor or very poor health in each year, which probably contributed to their increased likelihood of leaving the TTW program, as well as to the lack of employment success during the 3 years analyzed. This group experienced the highest poverty rates, much higher even than the rates among all disability beneficiaries.[32] The very high poverty rates and poor health suggest the presence of significant barriers that must be overcome before employment is viable. This rather large group of TTW participants (41 percent of our sample) does not appear to have the potential to substantially reduce their reliance on disability benefits through employment, or to generate significant TTW payments to providers.

Discussion

As noted above, the early cohort of TTW participants followed in this analysis is a select group of Social Security disability beneficiaries who were sufficiently interested in pursuing employment that they assigned a ticket to a service provider to improve their ability to

Table 16.
Selected outcomes for TTW participant subgroups defined by degree of employment success during 2003–2005

Characteristic and year	All TTW Participants	Employed with earnings above SGA level— 12 months or more	Employed with earnings above SGA level— Fewer than 12 months	Not employed at any time
Total (weighted) (%)	100	20	39	41
Enrolled in TTW at interview (%)				
2004	91	91	[a] 96	87
2005	[b] 90	89	[a] 94	[b] 85
2006	[b] 87	[b] 88	[a,b] 91	[b] 83
Used any services (%)				
2003	61	64	[a] 66	54
2004	58	[b] 46	[a] 68	55
2005	[b] 52	[b] 49	[a] 60	[b] 46
Used 50 or more hours of service (%)				
2003	25	23	30	22
2004	24	20	29	22
2005	[b] 19	[b] 12	24	17
Self-reported health poor or very poor (%)				
2004	19	[a] 8	[a] 15	27
2005	21	[a] 11	[a] 17	29
2006	21	[a] 9	[a] 18	30
Employed during year (%)				
2003	46	[a] 90	[a] 71	0
2004	46	[a,b] 99	[a] 67	0
2005	45	[a,b] 99	[a] 65	0
Total personal income month before interview ($)				
2004	1,090	[a] 1,495	988	989
2005	[b] 1,142	[a] 1,647	1,009	1,019
2006	[b] 1,178	[a,b] 1,740	[b] 1,065	1,005
Poverty (%)				
2003	53	[a] 32	[a] 52	63
2004	49	37	48	[b] 56
2005	53	[a] 39	52	61

SOURCE: 2004 NBS Phase 1 longitudinal TTW sample members responding to all three NBS rounds.

NOTE: Sample size = 767.

a. Significantly different from those not employed at the 0.05 level, two-tailed test.

b. Significantly different from base year (2003 or 2004) value at the 0.10 level, two-tailed test.

work and increase their earnings. The findings suggest that they are exceptional, even among disability beneficiaries with work goals and expectations, in terms of their employment success. Based on IRS data, in each year from 2003 to 2007, about half of the TTW participants had earnings, and 75 percent had earnings in at least 1 of the 5 years. By comparison, research shows that annual employment rates among all beneficiaries who report work goals or expectations are about 25 percent, or about one-half the rate of TTW participants.

Although TTW participants are exceptional in terms of employment rates, only one-third were able to achieve at least 1 month of earnings above the SGA level during a 3-year period, and only one-fifth were able to do so for 12 months or more. Relative to the

employment experiences of SSI and DI beneficiaries in general, and given that all of these individuals have significant disabilities, these employment figures are remarkable. However, when viewed in the context of the requirements for provider payments under TTW, the employment success of these participants appears less remarkable. Although providers under the milestone-outcome payment system can receive some payments when their beneficiary clients return to work at levels below SGA, the bulk of the potential TTW provider payments accrue when beneficiaries work above the SGA level (and DI or SSI benefits go to zero) for an extended period. These findings suggest that only a minority of participants might be able to achieve employment at levels that would be considered significant under TTW.

Health factors appear to create significant barriers to work. Many TTW participants experienced significant changes in physical and mental health status from year to year, and "health conditions preventing work" was the most commonly cited employment barrier, reported by 80 percent of TTW participants who had been employed at some point during the 3 years they were followed in the survey.

In addition to instability in their health status, many TTW participants experienced great employment and income instability over the short period we observed them. At each interview, approximately as many participants lost employment as gained it. The changes in employment likely contributed to the large year-to-year changes in income experienced by many participants. A small group of participants achieved stable employment over several years. Just over one-quarter worked for 25 or more months of the 36 months observed in the survey. The IRS data indicate that a much greater share (about 60 percent) had earnings in 2 or more of the 5 years analyzed. However, far fewer participants worked at levels that reduced their disability benefits to zero; 19 percent did so for at least 1 month during a 4-year period, but only 10 percent did so for 13 months or longer.

The rather modest levels of service use by the participants in our sample (both inside and outside the auspices of the TTW program) call into question the degree to which TTW could be expected to have contributed to the success of the participants who became employed, or to potentially do so in the future. In each year, only 20–25 percent of participants received services at a level equivalent to about 1 or more hours per week (50 or more hours per year). Among EN clients, even fewer received that level of service. However, EN clients had much better employment outcomes than SVRA clients in terms of earnings and of leaving the disability benefit rolls because of work. It may be that TTW's expansion of access to services provided by ENs produced positive employment outcomes for a relatively small group of beneficiaries who otherwise might not have obtained services.

Previous studies provide evidence that TTW had a positive and significant impact on service enrollment (Thornton and others 2007; Stapleton and others 2008). However, many TTW participants might have achieved the same employment outcomes in the absence of the program. To date, studies have found no significant impacts of TTW on beneficiary employment. TTW, as originally structured, may have provided insufficient support to participants who, although highly motivated to work, faced substantial barriers. It remains to be seen whether the revised TTW payment systems, implemented in July 2008, will have a significant effect on the provision of services to and employment outcomes of disability beneficiaries.

This study's findings also suggest that earnings can reduce poverty among beneficiaries. For most individuals with or without disabilities, earnings obviously offer a primary avenue of escape from a life of poverty. SSA disability beneficiaries experience extremely high poverty rates relative to other working-age subpopulations.[33] However, for disability beneficiaries, earnings can affect benefit payments in such a way that increased earnings might not necessarily directly reduce poverty. This study finds that the poverty rate for TTW participants who worked was lower than that for participants who did not, and the poverty rate for those who sustained earnings above the SGA level for at least 12 months was significantly lower than that for participants who did not. Most of these TTW participants were still receiving at least some of their disability benefits. Although their earnings may not have been sufficient to allow many TTW participants to completely leave the disability rolls, it appears that employment was still an important means for reducing poverty.

The findings presented here are limited in that they are purely descriptive, do not examine potentially important differences in outcomes across subgroups of beneficiaries (such as DI beneficiaries, SSI recipients, and those working prior to TTW participation), and do not control for other factors affecting outcomes. Although we cannot assign causality to any of the

patterns or relationships observed, the findings provide an interesting and informative look at the longitudinal experiences of a select group of disability beneficiaries who work or seek employment support services. They also suggest avenues for future research aiming to disentangle the relative importance of specific characteristics, and of changes in service use, health, and income sources, on the economic well-being of SSI and DI beneficiaries who work.

Notes

[1] For example, compared with all work-oriented beneficiaries, the TTW participants studied here were much more likely to be employed at interview (32 percent versus 21 percent), and more likely to have cash benefits discontinue because of earnings for at least 1 month during 2004–2007 (19 percent versus 10 percent) (Livermore 2011).

[2] Holding all other characteristics constant, and conditional on TTW participation, SSI-only recipients are 70 percent more likely than DI beneficiaries to assign their tickets to an EN. The likelihood of assignment to an EN increases with age; those in the oldest age group (55 or older) are 4.7 times more likely than those in the youngest age group (18 to 24) to assign their tickets to an EN. Hispanics are 80 percent more likely than non-Hispanics to assign their tickets to an EN. Those with less than a high school education are 90 percent more likely than those who completed high school to assign their tickets to an EN; unmarried parents with children are 70 percent more likely than others to assign their tickets to an EN; and all parents with children younger than age 6 are 2.9 times more likely than others to assign their tickets to an EN (Thornton and others 2007).

[3] The 9 months need not be consecutive but must occur within a rolling 60-month period.

[4] During the 36 consecutive months following the completion of the trial work period, the beneficiary is eligible for full DI benefits in any month in which earnings fall below the SGA level. This is referred to as the extended period of eligibility. If a beneficiary works at the SGA level after completing the extended period of eligibility, benefits will be terminated. However, if that beneficiary's earnings then fall below SGA, expedited reinstatement provisions allow benefit resumption without filing a new application if certain criteria are met.

[5] Other programs and resources developed or enhanced in response to the act include the Work Incentives Planning and Assistance program, expedited reinstatement for SSI or DI, extended Medicare coverage, Area Work Incentive Coordinators, and state Medicaid Buy-In programs.

[6] Under the original milestone-outcome payment system, outcome payments made to an EN for a particular beneficiary were reduced based on the number of milestone payments made to the provider for that beneficiary (by an amount equal to $1/60^{th}$ of the milestone payments).

[7] In addition, SVRAs now could serve beneficiaries under the traditional cost-reimbursement system without requiring the beneficiary to assign the ticket. Both SVRAs and ENs could receive payment for serving a beneficiary sequentially (SVRAs under traditional cost reimbursement and ENs under the elected TTW EN payment system) after the SVRA closed the beneficiary's case and the ticket was subsequently assigned to an EN. However, ENs using the milestone-outcome system and accepting a ticket from a beneficiary for whom an SVRA already has been paid are only eligible for a subset of milestone payments.

[8] A fourth round of the NBS was administered in 2010.

[9] The Phase 1 states are Arizona, Colorado, Delaware, Florida, Illinois, Iowa, Massachusetts, New York, Oklahoma, Oregon, South Carolina, Vermont, and Wisconsin.

[10] Approximately 75 percent of the Phase 1 TTW longitudinal sample responded to all three rounds of the survey. The weights used for this sample account for nonresponse across the three survey rounds.

[11] Because access to the IRS data is restricted, the IRS-NBS record linkage and earnings data analyses presented in this report were performed by SSA staff.

[12] The primary source of information for the Master Earnings File is the W-2 form sent by employers directly to SSA. W-2 forms arrive at SSA continuously and the Master Earnings File is updated with new W-2 information on a weekly basis. The unposted detail segment contains detailed records of earnings not subject to FICA tax, such as deferred Medicare earnings, self-employment earnings, and earnings paid into retirement plans. Two variables from this detailed earnings record are used: W2_BOX5_WGE_MED, corresponding to the amount contained in Box 5 of the form W-2, which includes taxable tips; and SEI_MED, corresponding to any Medicare-covered self-employment. The detailed earning record includes multiple employers per year; for the analysis, these are summed to obtain total wages per year and total self-employment earnings per year. These total annual wage and self-employment values then are summed to obtain total earnings for the year.

[13] SSA cost-of-living adjustments are based on changes in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

[14] To meet the objectives of the survey efficiently, the sample design incorporates geographic primary sampling units and strata defined by TTW rollout phase and payment system. The relevant weights and primary sampling units and strata indicators must be used to produce statistics representative of Phase 1 TTW participants enrolled in the program during the first half of 2003 and to generate standard errors of the estimates that are adjusted for the sample design. See Bethel and Stapleton (2002) and Thornton and

others (2007, Appendix B) for detailed descriptions of the survey objectives and sample design.

[15] At the time this analysis was conducted, only administrative data through December 2006 were available. Analyses of employment and use of work incentives presented later in this article use administrative data through December 2007, as those data became available subsequently and allowed us to compare TTW participant outcomes with those of other work-oriented beneficiaries using data through December 2007 (Livermore 2011). We retained the December 2006 end date for the enrollment analysis as it corresponds to the calendar year in which the round 3 interviews were conducted.

[16] The fact that a large share of EN clients remained enrolled in TTW for fewer than 24 months seems not to be a factor in this outcome. Comparisons between EN clients enrolled in TTW for fewer than 24 months and their counterparts enrolled in TTW for 25 or more months (not shown) indicate that, across all years, both groups were equally likely to have used any services (67 percent and 68 percent, respectively). There were some differences in individual years, however. EN clients enrolled in TTW for the shorter period were less likely to use services in 2003 but more likely to use them in 2004, relative to those enrolled for the longer period. Both groups used services at equal rates during 2005.

[17] The eight items provide respondent ratings of their general health and the degree to which physical health, mental health, and bodily pain interfered with specific activities during the previous 4 weeks. A scoring algorithm is applied to the individual item respondent ratings to construct the PCS and MCS scores. The SF-8 questions and scoring algorithm were developed based on the longer SF-36v2 instrument. The SF-36v2 was originally developed by RAND as part of the Medical Outcomes Study, a multiyear, multisite study designed to explain variations in patient outcomes. Factor analyses identified eight items from the SF-36v2 that best discriminated between good and poor health in each of eight domains (general health, physical functioning, role physical, bodily pain, vitality, social functioning, mental health, and role emotional). Regression analyses based on data from large general population samples were used to develop scoring weights. Responses to the eight items in the SF-8 are weighted (using the scoring weights provided by QualityMetric, Inc.) and summed to derive the PCS and MCS scores. The weights norm the scores to a scale such that both the PCS and MCS have a mean of 50 and a standard deviation of 10 in the general adult population (based on testing in 2000), and make the SF-8 scores directly comparable to scores derived using the SF-36v2 instrument. The validity and reliability of the SF-8 and SF-36v2 instruments have been extensively tested, and the instruments are now widely used by researchers and others to monitor population health and to assess patient outcomes. For information about the development and interpretation of the SF-36v2, see Ware, Kosinski, and Keller (1994). For specific information about the SF-8, see Ware and others (2001).

[18] One-year changes in the SF-36v2 for a sample of Medical Outcomes Study patients with five chronic conditions (depression, congestive heart failure, diabetes, hypertension, and recent myocardial infarction) provide some context for interpreting the changes experienced by TTW participants. As noted above, the scoring algorithms used for the SF-8 and SF-36v2 make the average scores from the two instruments directly comparable (Ware and others 2001). The SF-36v2 findings reported by Ware, Kosinski, and Keller (1994) indicate that, among the sample of adults with chronic conditions, about 57 percent had no change in physical health, 23 percent experienced physical health decline, 62 percent had no change in mental health, and 16 percent experienced mental health declines. The change thresholds used were similar, but not identical, to those used here. The year-to-year changes experienced by TTW participants appear to be comparable to or even greater than those experienced by the Medical Outcomes Study's older (mean age = 61) population.

[19] For more detailed information comparing the assessment of current and previous year's health according to changes in PCS and MCS scores across rounds, see Appendix Table B-2 of Livermore, Roche, and Prenovitz (2010). The findings suggest that there is general consistency between self-reported health status changes and changes in PCS and MCS scores; however, the largest percentage of those who experienced changes in either the MCS or PCS scores, regardless of the direction of the change, reported their overall health to be the same as in the previous year. About 20–25 percent of those who experienced a change in a PCS or MCS score reported a change in health status in the opposite direction. This inconsistency may in part be because the general health assessment encompasses both physical and mental health status, while the PCS and MCS scores capture only one or the other. However, among the small subgroup of beneficiaries who experienced a change in both the PCS and MCS scores, similar percentages reported changes in health status that were inconsistent with the direction of the change in the scores.

[20] ENs can be more selective than SVRAs in choosing who they will serve. Although SVRAs are required to serve those with the most severe disabilities, they also have access to funds from other sources to pay for services if a client does not generate payments under TTW. ENs typically do not have alternative funding sources and so have incentives to serve clients who are most likely to work at levels that will generate TTW payments.

[21] Previous reports have presented similar statistics on the reasons for not working for the cross-sectional national beneficiary and TTW participant samples (Thornton and others 2006; Livermore, Stapleton, and Roche 2009). The statistics reported here differ in that they are for the subsample of Phase 1 TTW participants who were employed

at some point during 2003–2005 but not employed at one or more NBS interviews. Also, the statistics reported here reflect all reasons reported at any of the three NBS interviews.

[22] The TRF variables used to identify those whose cash benefits were discontinued because of work are monthly indicators based on administrative data showing that DI or SSI cash benefits were either suspended or terminated because of earnings. For concurrent beneficiaries to be classified as having discontinued cash benefits because of work, both SSI and DI cash benefits must have ceased in a given month, and the cessation in at least one of the programs must be due to work.

[23] Note that the TRF variables used to construct the indicators of leaving DI and SSI because of work may be imprecise for two primary reasons: work activity not reported by beneficiaries or not processed by SSA at the time the TRF file was created will not be reflected in the indicators; and, in some instances, the reason noted for benefit cessation may be other than work (for example, medical improvement) but employment could have been concurrent with or material to the documented reason for benefit cessation. Both factors will lead to underestimates of months off the rolls due to work.

[24] Non–Social Security benefits include pensions, private disability insurance, public cash assistance or welfare (other than DI and state and federal SSI), veterans' benefits, workers' compensation, unemployment insurance, and other nonearnings sources.

[25] We chose $50 as the threshold for income increases and declines for the statistics in Table 14 to reflect fairly significant changes in monthly benefits and ensure that observed changes were not an artifact of the adjustments we applied to convert the values to 2007 dollars.

[26] We were able to observe changes in monthly income for only two intervals: from the month before the round 1 interview to the month before the round 2 interview, and from the month before the round 2 interview to the month before the round 3 interview. Data on income for every month during 2004–2006 would have helped us associate specific changes in earnings to subsequent changes in benefit income.

[27] Information about non–Social Security benefits was based on respondent reports, whereas information about SSA benefits was based on administrative data.

[28] The SIPP includes only noninstitutionalized individuals in its sample. The NBS sample included beneficiaries regardless of where they resided, and proxy interviews were permitted for those who could not be contacted directly because they were institutionalized.

[29] They were living alone, living with friends or roommates, or living in a group setting with nonrelatives.

[30] As the NBS does not collect information on spousal or other family member earnings and income, it is not possible to assess how other sources might change with beneficiary earnings; for example, the extent to which spousal earnings might decline in response to an increase in beneficiary earnings. Thus, the findings presented are limited and purely descriptive, and cannot attribute causality to the associations observed.

[31] For outcomes measured over the calendar year prior to interview (service use, annual employment, and poverty) we present statistics for 2003–2005. For outcomes measured at interview or the month prior to interview (health status, employment, and personal income) we present statistics for 2004–2006.

[32] Based on the NBS national cross-sectional samples, poverty rates for all beneficiaries were 49 percent in 2003 (Thornton and others 2007), 47 percent in 2004 (Stapleton and others 2008), and 50 percent in 2006 (Livermore, Roche, and Prenovitz 2009).

[33] For example, the poverty rate among adults aged 18 to 64 in single female-headed households with children is about 33 percent (Census Bureau 2010) compared with a poverty rate of 50 percent among working-age SSA disability beneficiaries.

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