BOND Implementation
and Evaluation

Further Exploration of WIC and EWIC Services

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Report Context

SSA's Benefit Offset National Demonstration (BOND) randomly assigned SSDI beneficiaries to treatment and control groups to estimate the impacts of alternative SSDI program rules governing work—including a benefit offset policy. BOND included two stages: a large nationally representative sample of beneficiaries in Stage 1 and a smaller sample of volunteers in Stage 2. Previous BOND reports presented findings from the process analysis, participation analysis, impact analysis, and cost benefit analysis of BOND.

SSA is interested in gaining additional insight into the delivery of incentives counseling services in BOND and which types of beneficiaries received services. This report describes how use of counseling during BOND varied by beneficiary characteristics, and whether knowledge of this variation could be used to target services effectively. The findings from this analysis are relevant to SSA's ongoing work incentives counseling program and its objectives to deliver services salient to beneficiaries' various needs.

Work Incentives Counseling (WIC)

BOND subjects randomly assigned to the treatment group needed work incentives counselors who could provide information relevant to their experimental benefit offset rules. SSA designed WIC to mimic traditional benefits counseling available to current-law SSDI beneficiaries. The only intended difference between counseling for current-law SSDI beneficiaries and WIC was that WIC content was based on the benefit offset work incentives rather than current-law work incentives.

For beneficiaries who volunteered to participate in BOND, the new analysis finds that WIC service users were more likely to be working, to have career goals, or to have been looking for work than beneficiaries who did not request WIC services.

Enhanced Work Incentives Counseling (EWIC)

Some Stage 2 volunteers randomly assigned to the benefit offset were also randomly assigned to receive EWIC instead of WIC. The primary difference between EWIC and WIC was that EWIC staff took a proactive approach to contacting beneficiaries on an on-going basis to inform them about the benefit offset. Compared to WIC, EWIC also included additional services not available through WIC.

Due to extensive outreach efforts to provide EWIC services to all who were eligible, service use patterns in EWIC do not provide evidence about the demand for EWIC services. Therefore, we examined variation in length of time spent with an EWIC counselor.

Compared to Stage 2 volunteers who spent less time with an EWIC counselor, Stage 2 volunteers who spent four or more hours in EWIC were more likely, at baseline, to have had any postsecondary education, been looking for work, have career goals, been in good health, and been more self-reliant with transportation.

Impact of EWIC on Subgroups Defined by Anticipated Demand for Counseling

We find that prediction models have some power to correctly classify whether a beneficiary will seek intensive counseling services, but that power is relatively weak.

Using these predictions, we find weak evidence that volunteers predicted to use counseling services only as a result of outreach were the most impacted by EWIC compared to WIC. This provides some support for targeting this group if there was a goal to increase VR and TTW use.

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List of Exhibits

Acronyms Used in This Report

BOND	Benefit Offset National Demonstration
BS&A	Benefits Summary and Analysis
BYA	BOND Yearly Amount (equal to $12 \times$ the monthly SGA level)
EN	Employment Network
EPE	Extended Period of Eligibility
ESP	Employment Support Plans
EWIC	Enhanced Work Incentives Counseling
I&R	Information and Referral
SGA	Substantial Gainful Activity
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
T1	Stage 1 treatment subjects (subject to the offset rules and offered WIC)
T21	Stage 2 treatment subjects (subject to the offset rules and offered WIC)
T22	Stage 2 treatment subjects (subject to the offset rules and offered EWIC)
TTW	Ticket to Work
TWP	Trial Work Period
WIC	Work Incentives Counseling
WIP	Work Incentives Plan
VR	Vocational Rehabilitation

1. Introduction

Gubits et al., 2018 analyzed work incentives counseling services in BOND, examining the proportion of BOND subjects who received work incentives counseling and the impacts of enhanced work incentives counseling relative to standard counseling. Croake et al., 2017 and Geyer et al., 2018 described work incentives counselors' caseloads and the proportion of BOND treatment subjects who received specific types of services. This report expands earlier analyses of work incentives counseling by providing detail on the most common combinations of counseling services received and the types of BOND subjects who received specific combinations of services. This introduction chapter describes work incentive counseling services in BOND, summarizes previous findings, and discusses the new analyses.
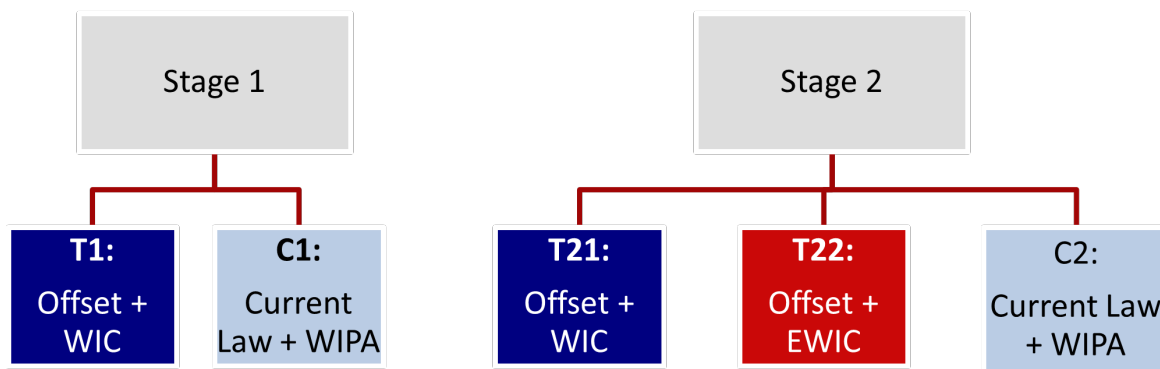
1.1. BOND Work Incentives Counseling

The Benefit Offset National Demonstration (BOND) tested changes to Social Security Disability Insurance (SSDI) program rules governing work and other supports. The key change was a $1-for- $2 benefit offset allowing beneficiaries to retain some of their monthly cash benefit while working. The policy objective of the $1 for $2 benefit offset was to encourage beneficiaries who can earn more than the substantial gainful activity (SGA) amount to increase their earnings and reduce their reliance on benefits. The benefit offset was expected to increase the earnings of some who would otherwise earn less than the SGA amount or might not work at all. If such individuals engaged in SGA under the benefit offset rules, their SSDI benefits would be partially reduced. The reduction from full benefits to partial benefits for these beneficiaries created the possibility that the benefit offset policy could reduce the total cost of the SSDI program.

BOND included two stages.

- *Stage 1* tested how a national benefit offset would affect earnings and program outcomes for the entire SSDI population. In this stage, the demonstration randomly assigned beneficiaries in April 2011 into either a treatment group "T1" (subject to benefit offset rules and offered Work Incentives Counseling [WIC], effective May 2011) or a current-law control group "C1".

- *Stage 2* tested the impact of the offset for those expected to be most likely to use the offset— recruited and informed volunteers. Compared to the national population of DI beneficiaries, volunteers were, on average, more likely to be working at baseline. In addition to the offset, Stage 2 also tested the extent to which enhanced work incentives counseling (EWIC) affects impacts. In Stage 2, the demonstration randomly assigned volunteers into one of three assignment groups: a treatment group "T21" (benefit offset rules and offered WIC), a second treatment group "T22" (benefit offset rules and offered EWIC), or a current-law control group "C2". The demonstration conduced outreach, recruitment, and enrollment for Stage 2 between March 2011 and September 2012.

SSA included work incentives counseling in BOND because lessons from the Benefit Offset Pilot Demonstration[1] suggested that treatment subjects were likely to have difficulty achieving a full understanding of how earnings affected benefits under the benefit offset rules. New rules tested in BOND were distinct from current law and were also complex. Even under current law, many beneficiaries have trouble understanding current-law SSDI work incentive rules; for example, Gubits et al., 2018 estimated that only 54 percent of Stage 1 control subjects provided responses consistent with a correct understanding of how earnings affect benefits under current-law rules. The design for the work incentives counseling for BOND subjects was built from the current-law model of SSA's Work Incentives Planning and Assistance (WIPA) program. Exhibit 1-1 displays the type of work incentives counseling available to each of the BOND random assignment groups.

Exhibit 1-1.   **Work Incentives Counseling Available to BOND Random Assignment Groups.**

WIPA. The Ticket to Work and Work Incentives Improvement Act of 1999 required that the Social Security Administration establish a community-based work incentives counseling program. Since 2006, SSA has met this requirement through the WIPA program. SSA awards cooperative agreements to community-based organizations called "WIPA projects" to deliver services in a defined area. Counselors called Community Work Incentives Coordinators (CWICs) at WIPA projects offer SSA disability beneficiaries information about the effects of work on benefits and SSA work incentives.

WIPA projects use a demand-driven model of service: they only offer service to SSDI and SSI beneficiaries who contact them. When contacted by the beneficiary, WIPA projects provide two types of services: information and referral (I&R) services and WIPA services. When a beneficiary first contacts a WIPA project, a CWIC begins by providing I&R services. I&R services consist of answering basic questions about types of benefits or work supports and determining if the beneficiary needs more intensive, ongoing support (Schimmel, O'Day, and Roche 2012). Beneficiaries who request more individualized, in-depth services can enroll in WIPA services to work with a CWIC on an ongoing basis. After enrolling in WIPA, the beneficiary usually works with a CWIC to complete a baseline assessment but may sometimes proceed directly to working with a CWIC to obtain a referral to employment support

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[1]   Weathers and Hemmeter (2011) summarize findings from the Benefit Offset Pilot Demonstration. The BOPD pilots operated in four states—Connecticut, Utah, Vermont, and Wisconsin from 2005 to 2008. The BOPD provided lessons about implementing a $1 for $2 benefit offset but were not designed to produce estimates of the effects of a national benefit offset program.

programs, such as state Vocational Rehabilitation (VR) agencies or Employment Networks (ENs) through the Ticket to Work program (TTW). For beneficiaries interested in understanding their benefits, CWICs offer Benefits Summary and Analysis (BS&A) services. CWICs may also work with a beneficiary to develop a Work Incentives Plan (WIP) to document the beneficiary's employment plans and a description of how earnings would affect their benefits.

WIC. Stage 1 treatment subjects and T21 subjects seeking work incentives counseling needed information about the BOND offset rules. Therefore, SSA offered WIC: a new work incentives counseling program developed specifically for BOND. SSA intended WIC to mimic WIPA in the type and intensity of services provided—baseline assessment, BS&A, WIP, and referrals. Similar to WIPA, WIC was demand driven—that is, treatment subjects who wanted work incentives counseling had to contact a counselor. The staff who provided WIC had the same certification as CWICs in the WIPA program. The only intended difference between WIPA and WIC was in the content, with WIC describing the benefit offset work incentives rather than current-law work incentives.

EWIC. Stage 2 volunteers assigned to the T22 group received EWIC. SSA designed EWIC services to be more intensive than WIC services. In addition to all of the services provided in WIC, EWIC featured several enhancements: a barriers and needs assessment; vocational skills assessment; employment support plan; pre-employment skills training; and ongoing support to use referral services.[2] Exhibit 1-2 summarizes the differences in counseling activities offered by WIC and EWIC.

The primary difference between EWIC and WIC was that EWIC staff took a proactive approach to contacting beneficiaries. SSA intended for EWIC staff to contact all T22 subjects within two weeks of random assignment and again monthly for at least 18 months. After the first 18 months, EWIC staff were to contact all engaged[3] T22 subjects at least quarterly, with monthly contacts for those deemed likely to use the offset. SSA set performance benchmarks for EWIC to incentivize counselors to reach a high percentage of T22 subjects and to deliver the EWIC enhancements to specified proportions of T22 subjects.

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[2]   WIC staff did not conduct the assessments of vocational skills and interests or develop the employment support plan that are both part of the EWIC design, though WIC providers may have referred beneficiaries to other providers to receive those types of services. To avoid cross-over treatment, counselors that provided EWIC to T22 subjects did not also provide counseling to T1 or T21 treatment subjects.

[3]   EWIC staff could designate a T22 subject as unengaged if the beneficiary was incarcerated, asked not to be contacted, was not responsive to repeated contact attempts, or if the beneficiary reported not being interested in employment. The BOND implementation team contacted unengaged beneficiaries twice per year to remind them of their BOND treatment status and the availability of EWIC services.

Exhibit 1-2.   Comparison of WIC and EWIC Services

	WIC	EWIC
	Provided to T1 and T21 (Intended to be identical to WIPA)	**Provided to T22**
Outreach and engagement	Counselors did not contact beneficiaries; they only responded to beneficiary-initiated contact.	Counselors contacted beneficiaries once per month for the first 18 months after random assignment, monthly thereafter if expected to use the offset, and quarterly if not expected to use the offset.
Information & Referral (I&R)	Counselors answered basic questions on benefits and work incentives and, if applicable, referred the beneficiary to additional work incentives counseling services.	Same as WIC.
Baseline assessment	Counselors collected information on the beneficiary's education and employment goals, employment status, and use of work incentives, benefits, and other services. Counselors also may have offered suggestions to use work incentives, benefits, and other services.	Same as WIC.
Benefits Summary and Analysis (BS&A)	Counselors worked with a beneficiary to analyze their individual benefits and work incentives.	Same as WIC.
Work Incentives Plan (WIP)	In a WIP, counselors documented a beneficiary's vocational goals, associated referral information, and description of how their benefits would respond to changes in earnings.	Same as WIC.
Work Focus: (1) Barriers and needs assessment	None	Counselors administered psycho-social needs assessment to identify employment barriers and needs, such as transportation, skill deficits, and childcare.
Work-Focus: (2) Skills assessment	None	Counselors administered assessment to determine aptitude, skill; and administered a separate assessment to match skills with occupational requirements, providing average wage data to help beneficiaries evaluate earnings potential.
Pre-Employment Skills Training	None	In partnership with existing service providers, counselors may have taught pre-employment skills, such as resume building and interviewing, to those who had identified acquisition of these skills in their ESP.
Developing an Employment Services Plan (ESP)	None	In addition to the BS&A and WIP, counselors were instructed to work with the beneficiary to develop an ESP that documented vocational goals and specific plans to achieve those goals, overcoming employment barriers. ESPs could include referrals to vocational rehabilitation (VR) or Employment Networks (EN) for vocational assessments, employment planning and support.

	WIC	EWIC
	Provided to T1 and T21 (Intended to be identical to WIPA)	**Provided to T22**
Referrals and Service Coordination	Counselors could refer beneficiaries to employment services, but did not monitor service receipt or completion.	Counselors could refer beneficiaries to employment assistance services documented in the ESP. These employment services included pre-employment skills development, job search assistance, and job placement. EWICs checked with beneficiaries regularly to monitor progress to completion.

Source: Gubits et al. 2018

1.2.   Previous Results

Gubits et al. (2018) found that WIC and EWIC implementation closely matched the intended design of these services. WIC was comparable to WIPA services. EWIC providers achieved the intensity benchmarks specified by SSA. The balance of this section describes work incentives counseling receipt for WIC and EWIC and summarizes earlier findings about the impact of EWIC compared to WIC.

WIC Services

Similar to the national beneficiary population's use of WIPA, few Stage 1 treatment group subjects sought work incentives counseling. As reported in Gubits et al., 2018, counseling use was slightly higher in the Stage 1 treatment (T1) group than in the national SSDI population. Approximately 1.1 percent of the national SSDI beneficiary population meeting BOND eligibility criteria[4] receives WIPA counseling in a typical year. [5] The percentage of T1 subjects receiving WIC services was highest in 2013, when 2.9 percent of T1 subjects received WIPA services. By 2016, this proportion decreased to 1.2 percent- closely matching the level of counseling receipt of beneficiaries under current law. Among the 5 percent of T1 subjects who received WIC services between 2011 and December 2016, 79 percent received more intensive WIC services than I&R. This rate is similar to the 80 percent of WIPA clients whom SSA expected to receive intensive counseling based on the standard in place until August 2015 (Hoffman et al., 2017).

More than one- third of Stage 2 treatment subjects assigned to T21 sought work incentives counseling. In all, 38.8 percent of T21 subjects received WIC through December 2016 (Gubits et al., 2018). Self-selection may explain the higher use of WIC for the T21 group compared to the T1 group. We would expect that recruited and informed volunteers would be more likely to seek WIC services compared to T1 subjects who did not volunteer for the demonstration. The majority (84 percent) of T21 subjects who received WIC services received counseling services more intensive than basic I&R.

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[4]   The Stage 1 sample is a nationally representative cross-section of the SSDI population under age 60 as of May 2011. At each site, the BOND sample included all current SSDI beneficiaries between ages 20 and 59 receiving benefits based on disability (disabled workers, disabled adult children, widow(er)s receiving disabled widow(er)'s benefits), and who were not part of another SSA demonstration.

[5]   SSDI beneficiaries' receipt of WIPA counseling is estimated based on published tabulations of national data on the WIPA program (Schimmel et al. 2013). A demonstration-related circumstance likely explains why T1 subjects use more counseling than do non-BOND SSDI beneficiaries: the demonstration included active BOND outreach to inform T1 subjects of their new benefit rules and the availability of work incentives counseling.

EWIC Services

As intended, almost all T22 beneficiaries (96 percent) had some contact with an EWIC counselor. The implementation of EWIC met its performance benchmarks. Exhibit 3-1 shows the proportion of T22 beneficiaries who received each type of EWIC service for the time period from enrollment in 2011 or 2012 through December 2016. More than 85 percent of T22 subjects received each of the following services: I&R, baseline assessment, and the EWIC-specific barriers and needs assessment, skills assessment, and ESP. More than half of the T22 subjects received a WIP, BS&A, and referral.

Gubits et al., 2018, reported that, compared to the standard counseling, enhanced counseling:

1) increased basic understanding of the offset rules (52 percent of T22 subjects correctly understood the offset rules compared to 48 percent of T21 subjects);

2) increased the use of employment services provided by state VR agencies (15.2 percent of T22 subjects used state VR services compared to 12.2 percent of T21 subjects); and,

3) increased the use of employment services through the TTW program (25.8 percent of T22 subjects used TTW services compared to 19.5 percent of T21 subjects).

However, the previous analysis found no evidence that EWIC led to different earnings, employment, and benefits outcomes compared to WIC. There was also no evidence that EWIC helped beneficiaries overcome employment barriers within the first three years after random assignment (Geyer et al., 2017). Among Stage 2 beneficiaries, the four most common self-reported unmet needs to overcome an employment barrier were training to learn a new job or skill (23 percent), help to find a job (22 percent); on-the-job training, coaching or support services (18 percent); and transportation assistance (17 percent).

In addition to the full sample analysis, Gubits et al., 2018, did not find evidence that, relative to WIC, EWIC affected impacts for pre-defined subgroups of interest (duration of SSDI receipt, employment at baseline, education, Medicaid Buy-In availability, age, primary impairment of major affective disorder, and primary impairment of back disorder).

1.3.   Topics addressed in this report

In a complement to previous analysis, this report offers new information about the use of WIC and EWIC in BOND. Specifically, this report addresses five research questions:

1. How did patterns of service use vary, by combinations of services received or by amount of time spent with a counselor?

2. Do Stage 2 volunteers with distinct service use patterns have different average baseline characteristics and different average outcomes?

3. Is it possible to predict who will intensively use counseling?

4. Did EWIC, compared to WIC, affect employment and benefits outcomes for beneficiaries who would not have engaged with counseling but for the proactive EWIC outreach efforts?

5. Did EWIC, compared to WIC, affect employment and benefits outcomes for beneficiaries who would have sought counseling services (WIC) even without the inducement of EWIC's proactive outreach?

Research questions one, two, and three deepen our understanding of what types of beneficiaries seek work incentives counseling. We addressed these research questions by using data from Stage 2 to examine links between baseline (pre-counseling) characteristics of employment-focused beneficiaries and the WIC services they sought. The findings from this analysis are relevant to WIPA and its objectives to deliver services salient to beneficiaries' various needs. WIC was demand-driven, just as WIPA is, so the observations about WIC service use indicate beneficiaries' needs or interests for specific service components. Using predictions about who will use counseling, we explored research questions four and five by investigating whether the proactive outreach and enhanced counseling in EWIC had a positive effect for some Stage 2 volunteers.

To address the research questions, this report details findings from three new analyses, described below:

> ➢ We tabulated the most common combinations of specific WIC services provided to T1 subjects and T21 subjects (Chapter 2) and the most common combinations of specific EWIC services provided to T22 subjects (Chapter 3).

> ➢ We analyzed whether Stage 2 volunteers with different service use patterns had different average baseline characteristics. We examined T21 subjects (Chapter 2) and T22 subjects (Chapter 3).

> ➢ We conducted regression analyses to determine whether beneficiaries' baseline characteristics predict Stage 2 treatment subjects' intensity of counseling receipt (Chapter 4).

> ➢ We estimated impacts of EWIC compared to WIC for groups of beneficiaries defined by whether or not they are likely to be a specific "type" of counseling service engager (Chapter 4).

This report draws on the same data sources that Gubits et al., 2018 used. We used BOND demonstration operations data, surveys of BOND subjects, and data from SSA administrative systems and demonstration staff. The Exhibit A-1 in the Appendix describes the data sources and the information they provide for this report.

2.   Service Use Patterns in WIC

This Chapter presents new information on service use patterns for WIC. Data collected to implement WIC make it possible to analyze combinations of services received. Data from Stage 2 also offer a unique opportunity to examine how baseline (pre-counseling) characteristics of employment-focused beneficiaries relate to the WIC services they sought. The findings from this analysis are relevant to WIPA and its objectives to deliver services salient to beneficiaries' various needs. WIC was demand-driven, just as WIPA is, so the observations about WIC service use indicate beneficiaries' needs or interests for specific service components.

2.1.   Patterns of Service Type Receipt

We examined all possible combinations of the following WIC services: I&R, baseline assessment, BS&A, WIP, and referral.[6] Exhibit 2-1 displays the most frequent combinations of services. For both T1 and T21 subjects, information and referral combined with a baseline assessment is more common than information and referral alone. For those with a baseline assessment, most go on to receive a BS&A. Those with a BS&A sometimes also receive a WIP. Roughly half of those who receive a referral receive a BS&A and most who receive a referral do not receive a WIP.

Exhibit 2-1.   Patterns of WIC Service Receipt Thru 2016

Combination	Percent of beneficiaries who received service combination		I&R[A]	Baseline Assessment	BS&A	WIP	Referral
	T1	T21					
A	95.4	60.6	No	No	No	No	No
B	1.3	10.1	Yes	Yes	No	No	No
C	0.9	5.6	Yes	No	No	No	No
D	0.8	7.0	Yes	Yes	Yes	No	No
E	0.4	3.4	Yes	Yes	Yes	Yes	No
F	0.4	3.8	Yes	Yes	No	No	Yes
G	0.3	3.0	Yes	Yes	Yes	Yes	Yes
H	0.2	2.5	Yes	Yes	Yes	No	Yes
I	.1	2.1	Yes	No	No	No	Yes
Other	<0.2	<2.0	Yes	All combinations not listed above			

Source: Beneficiary Tracking System data on T1 and T21 subjects.

[A] WIC data do not consistently indicate whether beneficiaries received I&R in combination with any other service. We interpret the data as indicating that a beneficiary received I&R if a beneficiary also received other activities listed here: baseline assessment, BS&A, WIP, referral.

Notes: Unweighted sample is 77,097 T1 subjects and 4,854 T21 subjects. For T1 percentages, weights are used to ensure that the BOND subjects who met analysis criteria are representative of the national beneficiary population in the month of random assignment. For T21 percentages, weights are used to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for study enrollment.

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[6]   We also examined total time spent with a counselor, which varies widely even for subjects who received the same combination of services. We chose to analyze groups defined by their combination of services received, because the description of services received is more informative for future approaches to work incentives counseling.

We also examined how much time beneficiaries spent with a counselor, by combination of services received. Exhibit 2-2 displays the median amount of time spent with a WIC counselor between random assignment and 2016, by type of service combination. For those who received all WIC services (combination "G"), the median total time spent with a WIC counselor was roughly 5 hours (5.4 for T1 subjects, 4.8 for T21 subjects). For all WIC services except referral, median total time spent was roughly 3 hours (2.9 for T1 subjects, 4.1 for T21 subjects).

Exhibit 2-2.   Time Spent with WIC Counselor, by Service Pattern

Combination	Median Total Time Spent With Counselors		I&R[A]	Baseline Assessment	BS&A	WIP	Referral
	T1	T21					
A	0	0	No	No	No	No	No
B	1.3	1.5	Yes	Yes	No	No	No
C	0.3	0.3	Yes	No	No	No	No
D	2.8	2.8	Yes	Yes	Yes	No	No
E	2.9	3.1	Yes	Yes	Yes	Yes	No
F	3.2	3.3	Yes	Yes	No	No	Yes
G	5.4	4.8	Yes	Yes	Yes	Yes	Yes
H	4.2	3.2	Yes	Yes	Yes	No	Yes
I	1.2	0.6	Yes	No	No	No	Yes
Other	2.0	2.3	Yes	All combinations not listed above			

Source: Beneficiary Tracking System data on T1 and T21 subjects.

[A] WIC data do not consistently indicate whether beneficiaries received I&R in combination with any other service. We interpret the data as indicating that a beneficiary received I&R if a beneficiary also received other activities listed here: baseline assessment, BS&A, WIP, referral.

Notes: Unweighted sample is 77,097 T1 subjects and 4,854 T21 subjects. For T1 percentages, weights are used to ensure that the BOND subjects who met analysis criteria are representative of the national beneficiary population in the month of random assignment. For T21 percentages, weights are used to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for study enrollment.

2.2.   T21 Subjects Who Sought WIC Services

The baseline survey administered to Stage 2 volunteers offers data that provide insight into the types of volunteers who sought services. Findings from the study of Stage 2 volunteers are not generalizable to the national beneficiary population, but they allow us to focus on a sample of beneficiaries who, on average, are expected to be more interested in using work incentives than the national beneficiary population because they have higher rates of employment and higher average earnings. Thus, this analysis is relevant for some of the beneficiaries who are interested in work incentives.

To analyze how volunteer characteristics were associated with WIC service use, we studied differences in average baseline characteristics for types defined by combination of WIC service receipt. For the combinations listed in Exhibit 2-1, we compared each type's average baseline characteristics to those of Type A (no WIC services requested). For simplicity, we did not study types "H", "I", and "Other", which each represent less than three percent of T21 subjects. Exhibit 2-3 displays the difference in average characteristics of T21 beneficiaries for each type. Stars indicate whether a type has a proportion that is statistically significantly different than the proportion for Type A (no WIC services received). There are many variables in the baseline dataset. Exhibit 2-3 only displays the baseline characteristics for which we found statistically significant differences (p<.10) between beneficiaries who did not receive WIC services

(Type A) and at least two types of beneficiaries who received a specific combination of WIC services (indicated by column title); we also included baseline characteristics if there was only one statistically significant difference but with very strong evidence, p <.01. Interesting, we did not find differences between those who did not receive WIC services (Type A) and any other type with respect to average mean annual earnings, monthly benefit amount, and the proportion who had been receiving DI for three years or fewer.

On average, the types of subjects who received some WIC services differed from those who did not. Compared to beneficiaries who do not seek WIC services, WIC users were more likely at baseline to be working, to have career goals, or to be looking for work. Among T21 subjects who engaged with WIC, those who did not receive referral services appear to have been the most work-ready in terms of already being employed or searching for a job, having means to independent transportation and earnings at or above 50 percent of the SGA level. In addition, T21 subjects who received WIC (but did not receive a referral) were more likely to have heard of the Trial Work Period (TWP) or Extended Period of Eligibility (EPE) at baseline (before they engaged with WIC) than volunteers that did not receive WIC.

In addition to examining how baseline characteristics varied with WIC service receipt, we also examined how the outcomes of T21 subjects varied with WIC service receipt. We hypothesize that anticipation of these outcomes may have influenced beneficiaries to seek specific WIC services, and therefore we do not interpret differences in average outcomes as the causal effects of service receipt. Exhibit 2-3 displays the difference in average outcomes for T21 subjects of each type defined by combination of counseling receipt (see Exhibit 2-1 for definition of types). Stars indicate whether the average outcome for a type is statistically significantly different from the average outcome for Type A (no WIC services received). The many statistically significant differences underscore that outcomes are correlated with WIC receipt. We include in Exhibit 2-3 all outcomes that we analyzed; unlike for our analysis of baseline characteristics, we did not have criteria for which outcomes to include in Exhibit 2-3.

We find that WIC service receipt is correlated with correct understanding of how the benefit offset works. This finding aligns with the fact that WIC helped beneficiaries to understand the benefits rules that applied to them, for example through BS&A and WIP services. We also find that WIC service receipt is correlated with use of TTW and VR, consistent with the fact that WIC provided referrals to EN and VR. Finally, we also find that WIC service receipt is correlated to employment, earnings, and offset use. Some beneficiaries may seek WIC services because they anticipate future employment and earnings, others may seek employment and earnings after learning about work incentives from WIC.

Exhibit 2-3.   Baseline Characteristics of T21 Subjects by Use of WIC Services

Baseline Characteristic	Type A	Type B I&R B.Assess	Type C I&R	Type D I&R B.Assess BS&A	Type E I&R B.Assess BS&A WIP	Type F I&R B.Assess Referral	Type G I&R B.Assess BS&A WIP Referral
Age over 50 years (%)	52.8	44.2***	46.2***	47.4*	48.8	50.5	45.7**
Currently enrolled in school or taking classes (%)	7.2	9.5	12.7***	9.2	9.4	9.0	9.9
Currently working at a job (%)	19.4	31.8***	25.8***	44.1***	51.2***	30.0***	27.8*
Currently looking for work (%)	25.0	37.7***	33.7***	40.0***	47.6***	37.9***	34.9*
Annual earnings: At or above 50% of annualized non-blind SGA (%)	10.1	18.9***	16.4***	32.1***	33.5***	20.3***	11.8
Usual mode of transportation: Own car, truck, or van (%)	70.1	75.7***	72.5	82.2***	80.7***	69.0	64.9*
Able to drive a car (%)	83.0	88.6***	87.0***	87.5**	88.6***	67.3	73.6**
Ever heard of trial work period (TWP) (%)	69.1	76.0**	74.2	83.1***	88.6***	67.3	73.6**
Ever heard of extended period of eligibility (EPE) (%)	17.1	22.4**	23.9***	27.0***	34.6***	16.9	19.6
Limited because afraid of losing disability benefits (%)	38.4	42.1	40.7	41.5	39.3	46.9*	48.0**
Limited because workplaces not accessible (%)	46.7	41.1**	42.1	37.7***	40.5	44.9	51.8
Limited because of lack of skills (%)	34.5	32.5	37.5	32.2	21.8***	34.4	38.7
Have career goals (%)	86.8	90.1**	91.6***	90.2	87.7	91.8*	95.9***
Primary impairment is mental disorder (%)	29.7	33.9*	35.8**	36.9	34.9	32.8	37.1
Primary impairment is severe visual impairment (%)	2.7	2.3	1.1*	2.9	2.3	2.5	5.3**

Source: Beneficiary Tracking System, SSA administrative records and the Stage 2 baseline survey.
Note: Sample size is 4,854. We compared each group's average baseline characteristics to those of Type A. This exhibit only displays the baseline characteristics on which we found statistically significant differences between beneficiaries who did and did not request WIC services (Type A).
*/**/*** Difference between type (column specific) and Type A is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test of regression coefficients of "type" fixed effects, also controlling for site fixed effects.

Exhibit 2-4.   Outcomes of T21 Subjects by Use of WIC Services

Outcome	Type A	Type B I&R B.Assess	Type C I&R	Type D I&R B.Assess BS&A	Type E I&R B.Assess BS&A WIP	Type F I&R B.Assess Referral	Type G I&R B.Assess BS&A WIP Referral
Understanding							
Correct understanding of benefit offset rule (36 month survey) (%)	48.0%	52.7%	47.3%	58.4%***	58.6%***	44.4%	48.8%
Service Use							
Indicator of having an assigned ticket in the TTW program in any year 2011 to 2015 (%)	14.7%	29.7%***	26.5%***	37.9%***	35.5%***	33.8%***	41.7%***
Indicator of Individualized Plan for Employment (IPE) at VR in any year 2012 to 2015 (%)	7.6%	16.6%***	16.1%***	18.3%***	25.6%***	24.5%***	23.2%***
Earnings and Employment							
Earnings in past 12 months (36 month survey)	$2,414	$6,867***	$3,972***	$9,242***	$10,235***	$5,377***	$8,183***
Any employment since demonstration entry (36 month survey) (%)	38.4%	67.8%***	52.8%***	82.1%***	82.8%***	57.6%***	78.2%***
Current weekly earnings above weekly equivalent of BYA (36 month survey) (%)	6.5%	17.7%***	9.8%	27.6%***	31.0%***	15.2%***	20.5%***
Current weekly earnings above 2 times weekly equivalent of BYA (%) (36 month survey) (%)	2.4%	8.7%***	3.4%	12.4%***	12.4%***	7.0%***	8.5%***
Current weekly earnings above 3 times weekly equivalent of BYA (%) (36 month survey) (%)	1.4%	4.1%***	2.9%*	4.8%***	6.9%***	4.4%**	0.9%
Benefits							
Total SSDI benefits due Jan 2012 - Dec 2015 (2011 dollars)	$49,077	$49,467	$47,438	$51,081	$49,884	$48,279	$49,609
At least one year or partial year of offset use during 2011 to 2016 (%)	8.7%	25.5%***	13.6%***	37.6%***	43.0%***	19.1%***	33.1%***

Source: SSA administrative records and the Stage 2 36-month survey.
Notes: We compared each group's outcomes to those of Group A. Benefit outcomes are based on benefits paid during the 2011-2015 period, corrected for retroactive adjustments made through 2017.
*/**/*** Difference between type (column specific) and Type A is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test of regression coefficients of "type" fixed effects, also controlling for site fixed effects.

In summary, to understand more about how BOND T1 and T21 subjects used WIC, we explored service use patterns. T1 and T21 subjects received many of possible combinations of the five WIC services enumerated in this chapter: I&R, baseline assessment, BS&A, WIP, and referral. The majority who contacted WIC received at least I&R and a baseline assessment. If a beneficiary received services beyond I&R and baseline assessment, they most often received a BS&A (though some received referrals without receiving a BS&A). To learn what beneficiary characteristics might determine need or interest for WIC

services, we analyzed baseline characteristics collected in the Stage 2 baseline survey. Findings from the study of Stage 2 volunteers are not generalizable to the national beneficiary population, but they inform us about a sample of beneficiaries that, on average, is more interested in using work incentives than the national beneficiary population. Prior to receiving WIC services (at baseline), T21 subjects who eventually received WIC services were more likely to be employed, looking for work, have access to private transportation, and have earnings above 50 percent of the SGA level. We also analyzed outcome data, finding that receipt of WIC services is correlated with understanding of the offset rules, employment, earnings, and offset use. Anticipation of these outcomes may have driven beneficiaries to seek WIC services. The next chapter examines whether similar patterns between baseline characteristics and counseling use appear among T22 subjects who had access to EWIC instead of WIC.

3.   Service Use Patterns in EWIC

The previous chapter analyzed the combinations of WIC services treatment subjects received and how service use varied by beneficiary characteristics. In this chapter we explore similar questions for EWIC. That is, which EWIC components did T22 treatment subjects use? How much time did treatment subjects spend with EWIC staff? And are beneficiary characteristics and outcomes correlated with time spent with EWIC staff?

3.1.   Patterns of Service Type Receipt

Because of the proactive outreach and performance benchmarks required in EWIC, we anticipated less variation in services received for treatment subjects offered EWIC compared to the variation in services received for those offered WIC. Our anticipation was confirmed by what we observed in the data. Due to the effort to provide all EWIC service components, service use patterns in EWIC do not provide evidence about the demand for specific EWIC service components. Exhibit 3-1 displays the EWIC benchmarks for each service and the percent of T21 subjects who received those services. Enumerating the combinations of EWIC services received by T22 subjects confirms EWIC counselors' adherence to the benchmarks but does not reveal T22 subjects' unique needs or requests.[7] In our investigations, we found few compelling differences in baseline characteristics of T22 subjects who engaged in different combinations of EWIC service components, except for differences between T22 subjects who refused service beyond I&R and/or a baseline assessment and all other T22 subjects (who received more services). Exhibit 3-2 displays the nine most common combinations of EWIC combinations received, and the median hours spent with an EWIC staff member conditional on combination of services received. As expected, the number of types of services received appears correlated with the number of hours spent receiving EWIC services.

Exhibit 3-1.   EWIC Service Performance Benchmarks and Delivery

	Benchmark (%)	T22 subjects who received service at some point between random assignment and Dec, 2016 (%)
Any contact last month	100	100
I&R assessment	90	90
Barriers and needs assessment	90	95
Skills assessment	90	87
ESP	90	89
Referrals and service coordination among those with documented need	80	79
Pre-employment skills training among those with documented need	80	86
Baseline assessment	75	87
BS&A	45	54
WIP	33	53

Source: Geyer et al., 2017, and additional calculations using Beneficiary Tracking System data.

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[7]   Roughly half of T22 subjects received all EWIC services and an additional 27 percent received all EWIC services except a BS&A or WIP.

Exhibit 3-2.   Patterns of EWIC Service Receipt Thru 2016

Percent of T22s Who Received Combination	Median Hours Spent with EWIC	I&R[A]	Baseline Assessment	# EWIC Assessments[B]	BS&A	WIP	ESP	Referral, Coordination, Pre-Employment Skills[C]
37.7	12.4	Yes	Yes	2	Yes	Yes	Yes	Yes
15.0	5.7	Yes	Yes	2	No	No	Yes	Yes
8.6	7.6	Yes	Yes	2	Yes	No	Yes	Yes
5.6	6.8	Yes	Yes	2	No	Yes	Yes	Yes
4.8	0.9	Yes	No	0	No	No	No	No
4.5	4.5	Yes	Yes	2	No	No	No	Yes
3.0	9.8	Yes	Yes	1	Yes	Yes	Yes	Yes
2.6	1.4	Yes	No	0	No	No	No	Yes
2.6	1.6	Yes	No	1	No	No	No	Yes
15.6	4.0	47 combinations not listed above, each less than 2.5 percent of T22 sample						

Source: Beneficiary Tracking System data on T22 subjects.

[A] EWIC data do not consistently indicate whether beneficiaries received I&R in combination with any other service. We interpret the data as indicating that a beneficiary received I&R if a beneficiary also received other activities listed here.

[B] This column indicates the number of EWIC-specific assessments a T22 subject received. The maximum is two: barriers and needs assessment and skills assessment.

[C] This column indicates that a beneficiary received at least one of: a referral, service coordination, pre-employment skills training.

Notes: Unweighted sample is 3,089 T22 subjects. Weights are used to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for study enrollment.

Instead, to understand more about how T22s used EWIC, we analyzed timing and length of interactions between T22 subjects and EWIC counselors. On average, T22 beneficiaries spent about 10 hours with their counselor in the first five years after random assignment. On average, beneficiaries spent more time with their counselors in the early parts of the demonstration, with time spent with counselors declining steadily over the course of the demonstration. The average beneficiary spent about 2.6 hours with their counselor in months 0-5 after random assignment. The proportion of T22 subjects who spent zero time with an EWIC counselor increased from 10 percent in 2012 to 70 percent in 2016.

We categorized T22 subjects into types based on the amount of the time they spent with their counselors (we also explored chronology but found that timing of receipt of services did not generate meaningful differences between types). We interpret time spent with a counselor as an indirect measure of beneficiary demand for, or interest in, EWIC services. Examining the quartiles of the distribution of time spent, we found three types that differed meaningfully in baseline characteristics. Roughly one quarter (26.5 percent) of T22 subjects spent up to four hours with an EWIC counselor. Roughly half (45.9 percent) of T22 subjects spent four to twelve hours with an EWIC counselor.[8] Finally, one quarter (27.6 percent) of T22 subjects spent more than twelve hours with an EWIC counselor.

Exhibit 3-3.   EWIC Service Performance Benchmarks and Delivery

	Spent less than 4 hours with EWIC	Spent 4-12 hours with EWIC	Spent more than 12 hours with EWIC
Proportion of T22 subjects (%)	26.5	45.9	27.6

Source: Beneficiary Tracking System data on T22 subjects.

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8   The second and third quartiles are very similar on baseline characteristics.

3.2.   T22 Subjects Who Sought EWIC Services

We expected that T22 subjects more inclined to work would spend more time with an EWIC counselor than those less inclined to work. Analysis of baseline characteristics for the three types defined above confirms this hypothesis. Exhibit 3-4 displays the differences in baseline characteristics between the T22 time-based EWIC engagement types. Exhibit 3-4 only displays the baseline characteristics for which we found statistically significant differences between beneficiaries who did and did not receive WIC services (Group A). Compared to T22 beneficiaries who spent less than 4 hours with an EWIC counselor, T22 beneficiaries who engaged with an EWIC counselor for more than 4 hours were more likely, at baseline, to have had any postsecondary education, been looking for work, been working, been in good health at baseline, and been more self-reliant for transportation. These differences are similar to the differences in WIC service user types presented in Chapter 2: the more work experience or interest in working, the more intensively they engaged in counseling services.

Exhibit 3-4.   Baseline Characteristics by Time-Based EWIC Engagement Type

Baseline Characteristic	Spent less than 4 hours with EWIC	Spent 4-12 hours with EWIC	Spent more than 12 hours with EWIC
Age	47.8	47.6	46.4***
Any postsecondary education (%)	51.8	60.2***	64.2***
Currently working toward degree, certificate, or license (%)	4.3	6.1	8.9***
Currently working at a job (%)	13.0	21.6***	36.1***
Currently looking for work (%)	19.9	33.8***	35.9***
Annual earnings: At or above 50% of annualized non-blind SGA (%)	7.0	12.8***	22.0***
Use of special equipment related to disability at work (%)	2.9	5.1	7.9***
Usual Mode of Transportation: Own car, truck, or van (%)	63.6	72.0***	75.4***
Usual Mode of Transportation: Friends or relatives (%)	61.6	52.6***	47.0***
Ever heard of trial work period (TWP) (%)	69.7	72.2	77.1***
Ever heard of extended period of eligibility (EPE) (%)	18.3	20.4	22.3***
Self-reported Health Status: Excellent, Very good, or Good (%)	27.6	36.5***	43.5***
Return to work limited due to lack of reliable transportation (%)	20.3	17.7	14.7***
Return to work limited due to caring for children or others (%)	11.9	8.6**	8.8
Return to work limited because afraid of losing disability benefits (%)	35.1	38.8**	41.3**
Primary impairment is back and musculoskeletal (%)	26.4	28.8	21.5**
Primary impairment is mental disorder (%)	28.2	26.7	35.9***

Source: Beneficiary Tracking System, SSA administrative records and the Stage 2 baseline survey.
Note: These characteristics are shown because there is at least one statistically significant difference between Type A and another type. Characteristics with no statistically significant differences are not shown.
*/**/*** Difference between type (column specific) and Type A is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test of regression coefficients of "type" fixed effects, also controlling for site fixed effects. Sample size is 3,081 T22 subjects. The sample includes T22 subjects where the counselor made contact with the beneficiary (logged as "Contact made" or "Accepted Outreach" by the counselor in the Beneficiary Tracking System contacts data). Excludes T22 subjects who did not have such contacts and excludes time spent on contacts where the counselor did not connect with the beneficiary (logged as "Beneficiary Letter Returned", "Beneficiary Not Available", "Busy", "No Answer / Voicemail", or "Wrong Phone Number").

We also examined outcomes for these three types of T22 subjects and find statistically significant differences. We do not interpret these differences in outcomes as the causal effects of time receiving EWIC services. Rather, we anticipate that some of the differences may be explained by selection: the anticipation of these outcomes may be the reason beneficiaries seek extra time (more than four hours) from EWIC. We find that EWIC service receipt is correlated with correct understanding of how the benefit offset works. This finding aligns with the fact that EWIC helped beneficiaries to understand the benefits rules that applied to them, for example through BS&A and WIP services. We also find that intensive EWIC service receipt is correlated with use of TTW and VR, consistent with the fact that EWIC provided referrals to EN and VR. Finally, we also find that EWIC service receipt is correlated to employment, earnings, and offset use. Some beneficiaries may seek intensive EWIC services because they anticipate future employment and earnings, others may seek employment and earnings after learning from EWIC about work incentives.

Exhibit 3-5.   Outcomes by Time-Based EWIC-Engagement Cluster

Outcome	Spent less than 4 hours with EWIC	Spent 4-12 hours with EWIC	Spent more than 12 hours with EWIC
Understanding			
Correct understanding of benefit offset rule (36 month survey) (%)	47.4	55.6*	55.8***
Service Use			
Any use of state VR agency services between 2012 and 2015 (%)	6.6	15.5***	23.7***
Assigned ticket to any EN service between 2011 and 2015 (%)	13.8	28.1***	44.3***
Earnings and Employment			
At 36 months after random assignment, earnings in the last 12 months	$1,033	$4,051***	$7,190***
At 36 months after random assignment, any employment in last 12 months (%)	23.7	49.9***	73.0***
At 36 months after random assignment, weekly earnings above weekly equivalent (%)	4.4	10.9***	21.1***
At 36 months after random assignment, weekly earnings above 2x weekly equivalent (%)	1.6	4.6**	7.8***
At 36 months after random assignment, weekly earnings above 3x weekly equivalent (%)	0.4	2.2%**	3.9***
Benefits			
Total SSDI Benefits Due Jan 2012 - Dec 2015 (2011 dollars)	$46,840	$50,152***	$49,799***
At least one year or partial year of offset use during 2011 to 2016 (%)	3.2	13.3***	31.3***

Source: SSA administrative records, the Stage 2 36-month survey, and baseline SSA administrative data.
Notes: Benefit outcomes are based on benefits paid during the 2011-2015 period, corrected for retroactive adjustments made through 2017.
*/**/*** Difference between group (column specific) and Group A is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test of regression coefficients of "type" fixed effects, also controlling for site fixed effects.
Sample size is 3,081 T22 subjects. The sample includes T22 subjects where the counselor made contact with the beneficiary (logged as "Contact made" or "Accepted Outreach" by the counselor in the Beneficiary Tracking System contacts data). Excludes T22 subjects who did not have such contacts and excludes time spent on contacts where the counselor did not connect with the beneficiary (logged as "Beneficiary Letter Returned", "Beneficiary Not Available", "Busy", "No Answer / Voicemail", or "Wrong Phone Number").

In summary, to understand more about how T22 subjects used EWIC, we explored service use patterns. We did not find variation in the combinations of services the T22 treatment subjects used. We attribute this finding to the design of EWIC, which encouraged providers to engage with all T22 subjects and to meet performance benchmarks to provide all of the EWIC service components to high proportions of treatment subjects. However, while T22 subjects received similar combinations of EWIC services, we found variation in the intensity of services received, with some T22 subjects receiving EWIC services for more time than others. The variation in intensity is associated with differences in baseline characteristics and in outcomes: T22 subjects who sought intensive services were more likely to have a post-secondary education, fair or better health status, interest in work, independent transportation, and—by the end of the first five years—higher earnings and use of services such as VR and TTW.

4.   Impact of EWIC

Chapters 2 and 3 presented evidence that WIC and EWIC service use varies by beneficiary characteristics. In this chapter, we use data from Stage 2 to explore whether it is possible to predict who will use counseling intensively. Using the results of those predictions, we then examine whether EWIC, compared to WIC, affected employment and benefits outcomes for subgroups defined by whether they would seek intensive counseling. The analysis addresses the research questions four, five, and six as listed in Chapter 1:

4.   Is it possible to predict who will use counseling intensively?

5.   Did EWIC, compared to WIC, affect employment and benefits outcomes for beneficiaries who would not have engaged with counseling but for the proactive EWIC outreach efforts?

6.   Did EWIC, compared to WIC, affect employment and benefits outcomes for beneficiaries who would have sought counseling services (WIC) even without the inducement of EWIC's proactive outreach?

When SSA targets services, such as in the current WIPA model that focuses WIPA services on beneficiaries who are working, self-employed, or about to begin work, SSA is implicitly predicting which beneficiaries would find the services most useful. The findings from this analysis provide insights into the possible success of targeting services to beneficiaries characterized by their predicted interest in work incentives counseling.

4.1.   Predicting Demand for Work Incentives Counseling

In the previous two chapters, we saw that beneficiaries with different patterns of counseling receipt differed on pre-counseling characteristics. In this chapter, we explore how accurately we can predict a beneficiary's level of counseling use based on their pre-counseling characteristics.

For the T21 group, we chose to predict whether a beneficiary would use services beyond I&R. As presented in Chapter 2, there were clear differences between beneficiaries who used services beyond I&R and those who did not use any counseling service. The differences between beneficiaries who received various combinations of WIC services were less stark, therefore we combined those beneficiaries into the "beyond I&R" category.

For the T22 group, we chose to predict whether a beneficiary would be a sustained counseling user (more than 12 hours of counseling service), moderate counseling user (4 to 12 hours of counseling service), or minimal counseling user (fewer than 4 hours). These categories align with the three categories identified in Section 3.2.

There are many approaches to prediction. Among these, we chose to use three logistic models. In all three models, we included all baseline covariates used by Gubits et al, 2018 when they estimated the impacts of the benefit offset in the Stage 2 impact analysis. In addition, we included covariates measured in the baseline survey on subjects' self-reported barriers to employment. The sample and dependent variables of the three logistic models we estimated were:

- Model A: For Stage 2 volunteers randomly assigned to T21, whether they received WIC services beyond I&R

- Model B: For Stage 2 volunteers randomly assigned to T22, whether they engaged with EWIC for more than 12 hours

- Model C: Among Stage 2 volunteers randomly assigned to T22 who are not predicted by Model B to engage with EWIC for more than 12 hours, whether they engaged with EWIC for fewer than 4 hours.

Each of the models produced a probability of whether a beneficiary is likely to engage with counseling services at a particular level. Classification requires one step further. For classification, we used the true proportion of volunteers known to be in each group. For example, 66.3 percent of T21 subjects did not engage in WIC services beyond I&R. With that knowledge, we ranked the model's predicted probabilities. We classified as unlikely to engage in WIC services beyond I&R the 66.3 percent of T21 subjects with the lowest predicted probabilities. Then, we classified as likely to engage in WIC services beyond I&R the 33.7 percent of T21 subjects with the highest predicted probabilities. Exhibit 4-1 and Exhibit 4-2 display how well the prediction models worked. The predictions are imperfect, with only (18.1/35.5 =) 51 percent of those predicted to receive more than I&R actually receiving more than I&R, and (48.9/64.5 =) 76 percent of those predicted to not receive more than I&R actually no receiving more than I&R. . However, these proportions are better than a random guess of which type of counseling user a person would be (p < .01 using a Chi-Square test). Model A correctly classified 67.0 percent of T21 subjects, and 59.4 of T22 subjects. These modest percentages underscore some risk in using predictions to target service delivery, especially when targeting an outreach service model instead of a demand-driven service model. While there may be statistically significant differences in average beneficiary characteristics with respect to the work incentives counseling they seek, statistically significant differences do not necessarily imply that those characteristics can accurately predict the type of all beneficiaries because the population of beneficiaries is large and their characteristics are broadly diverse.

Exhibit 4-1.   Classification Algorithm Assessment for T21

	Predicted to receive more than I&R	Predicted to not receive more than I&R	Total
Actually received more than I&R	18.1	15.6	33.7
Actually did not receive more than I&R	17.4	48.9	66.3
Total	35.5	64.5	100

Note: Sample is T21 subjects (N=4,854) with non-missing data. Chi-Square statistic is 354, p < .01, indicating that the prediction algorithm yields different proportions of subjects predicted to receive I&R for subjects, based on whether or not a beneficiary actually received services. Percentages in bottom row are not equal to the percentages in the right-most column because of weights applied to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for offset participation. The classification algorithm used unweighted counts to assign 33.7 percent of the 4,854 subjects to the group predicted to receive more than I&R.

Exhibit 4-2.   Classification Algorithm Assessment for T22

	Predicted to engage with EWIC < 4 hours	Predicted to engage with EWIC 4-12 hours	Predicted to engage with EWIC > 12 hours	Total
Actually engaged with EWIC < 4 hours	14.5	8.3	3.7	26.5
Actually engaged with EWIC 4-12 hours	9.1	28.8	7.6	45.9
Actually engaged with EWIC >12 hours	2.9	8.9	16.1	27.6
Total	26.5	46.0	27.4	100

Note: Sample is T22 subjects (N=3,081) with non-missing data on time spent with a counselor. Chi-Square statistic is 915, p < .01, indicating that the prediction algorithm yields different proportions of subjects predicted to receive a certain level of counseling, based on whether or not a beneficiary actually received that level of counseling. Percentages in bottom row are not equal to the percentages in the right-most column because of weights applied to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for offset participation. The classification algorithm used unweighted counts to assign 26.5 percent of the 3081 subjects to the group predicted to engage with EWIC for less than 4 hours (for example).

4.2.   Impact of EWIC on Stage 2 Volunteers Who Would Use EWIC, by Expected Interest in Using Counseling Intensively

Gubits et al., 2018, reported that, compared to the standard counseling, enhanced counseling:

1) increased basic understanding of the offset rules (52 percent of T22 subjects correctly understood the offset rules compared to 48 percent of T21 subjects);

2) increased the use of employment services provided by state VR agencies (15.2 percent of T22 subjects used state VR services compared to 12.2 percent of T21 subjects); and,

3) increased the use of employment services through the TTW program (25.8 percent of T22 subjects used TTW services compared to 19.5 percent of T21 subjects).

Gubits et al., 2018 also explored whether EWIC produced stronger behavioral effects than WIC within seven pairs of subgroups. They found no clear pattern of evidence that any of the subgroups had stronger behavioral effects of EWIC compared to WIC than their complementary subgroup. Each subgroup was defined by a single baseline characteristic.

- The first subgroup pair was defined by duration of SSDI benefit receipt at baseline, which was of interest because earlier research (Liu and Stapleton 2011) and program rules suggested that subjects who have been on the rolls for a *short duration* (defined here as three years or less at baseline) may respond to the benefit offset differently from those who have been on the rolls for a *long duration* (more than three years). In analysis for this report (Section 2.2 and 3.2), we did not find evidence that duration of SSDI benefit receipt at baseline was correlated with intensity of counseling receipt.

- The second, third, and fourth subgroup pairs were defined by employment status, age, and education at baseline, because it was expected that subjects who were employed, were younger, or had higher education at baseline face higher opportunity costs of not working and thus would be more likely to use the benefit offset. In analysis for this report (Section 2.2 and 3.2), we found that employment status and age were correlated with intensity of counseling receipt. We found that level of education was correlated with intensity of EWIC counseling receipt but not WIC.

- The fifth subgroup pair was defined by whether the participant lived in a state with a Medicaid Buy-In program at baseline because access to a Medicaid Buy-In program affects risk of losing health insurance when earnings change. In analysis for this report (Section 2.2 and 3.2), we did not find evidence that living in a state with a Medicaid Buy-In program at baseline was correlated with intensity of counseling receipt.

- The remaining two subgroup pairs are defined by specific disabilities: a primary impairment of major affective disorder and a primary impairment of back disorder, both at baseline. (Back disorder was correlated with intensity of EWIC receipt but not WIC receipt).

Instead of defining subgroups based on a single baseline characteristic, we defined subgroups using a combination of baseline characteristics. We estimated the impact of EWIC on subgroups of Stage 2 volunteers defined by a prediction of whether or not they would be inclined to engage intensively with work incentives counseling. We cannot know a beneficiary's type directly because we only observed a beneficiary in one random assignment group (for the beneficiaries assigned to T22, we do not know what kind of counseling they would have sought if assigned to T21). However, the predictions presented in Section 4.1 can combine to identify Stage 2 volunteers' types. We considered three types of beneficiaries: beneficiaries who would always engage in [relatively] intensive counseling (Type 1), sometimes engage in intensive counseling (Type 2), and never engage in intensive counseling (Type 3). Exhibit 4-3 enumerates these subgroups. Because categorization into subgroups is based solely on baseline characteristics rather than behavior after baseline, the estimated impacts within each type, or subgroup, are internally valid (Peck 2013). We used the same impact methodology used by Gubits et al., 2018, to estimate impacts for the three types of beneficiaries.

Exhibit 4-3.   Types of Stage 2 Volunteers, by Interest in Intensive Work Incentives Counseling

Type	If assigned to T22(EWIC), predicted to spend…	If assigned to T21(WIC), predicted to…	Percent of T22+T1 subjects estimated to be this type
1	More than 4 hours with EWIC counselor	Seek services beyond I&R	19%
2	More than 4 hours with EWIC counselor	Not seek services beyond I&R	44%
3	Fewer than 4 hours with EWIC counselor	Not seek services beyond I&R	28%

Note: The percentages do not sum to 100. Nine percent are classified as beneficiaries who would seek WIC services beyond I&R if assigned to T21 but would engage with an EWIC counselor for fewer than 4 hours if assigned to T22.

To have adequate sample sizes, we combined two categories of EWIC receipt: those with 4 to 12 hours of counseling, and those with more than 12 hours. We have also omitted a possible "type" of Stage 2 volunteer: one that would seek WIC services beyond I&R if assigned to T21 but would engage with an EWIC counselor for fewer than 4 hours if assigned to T22. Fewer Stage 2 treatment subjects are in this category (9 percent), so the sample size is inadequate for estimating impacts.

We interpret Type 1 volunteers as beneficiaries who would seek intensive work incentives counseling regardless of random assignment. Statistically significant impacts of EWIC compared to WIC for Type 1 would provide suggestive evidence that EWIC-specific services (absent outreach) can affect volunteers' outcomes over and above WIC services.

We interpret Type 2 volunteers as beneficiaries who were enticed by EWIC outreach efforts to recognize their interest in intensive work incentives counseling, because without EWIC they would not have

requested work incentives counseling services beyond I&R. Statistically significant impacts of EWIC compared to WIC for Type 2 would provide suggestive evidence that outreach, as well as EWIC-specific services, can affect volunteers' outcomes.

We interpret Type 3 volunteers as beneficiaries who are not interested in work incentives counseling. By our definition of Type 3, these beneficiaries would complete the minimum number of EWIC activities if randomly assigned to T22, likely only because they were complying with an EWIC counselor who was obliged to meet service delivery benchmarks. Statistically significant impacts of EWIC compared to WIC for Type 3 would provide suggestive evidence that outreach and minimum EWIC-specific services (typically including a barriers and needs assessment, skills assessment, and an ESP) can affect volunteers' outcomes even if they would not have sought counseling services on their own.

The focus of the analysis is on whether impacts differ according to beneficiary type (e.g., *across* subgroups) rather than whether impacts are detected within any particular subgroup defined by the type. If the impacts do not differ in a statistically significant manner, we conclude that impacts do not differ by type. Where impacts do not differ by type, our practice is to focus on the full sample impact estimates rather than any subgroup-specific impact estimate. This practice is common because full sample impact estimates are more precise (i.e., have smaller standard errors) and cannot confidently be improved upon as information about particular subpopulations (Bloom and Michalopoulos 2013). The right-most columns of Exhibit 4-4 indicate whether the statistical significance of the difference in impact for a subgroup and its counterpart and the corresponding standard error of the difference. We discuss the findings by outcome domain:

Knowledge. We anticipated that EWIC would have a larger impact on the proportion of Type 1 and Type 2 volunteers who responded correctly when asked how earnings would affect benefits, compared to the impact EWIC would have on Type 3 volunteers predicted to never seek work intensives counseling. We do not detect statistically significant variation in the impacts of EWIC compared to WIC across Types 1, 2, and 3.

Service Use. We anticipated that EWIC would have more impact on service use for volunteers for whom outreach would encourage them to seek intensive counseling (Type 2), compared to volunteers who would seek work incentives counseling regardless (Type 1) and volunteers who would never seek intensive counseling (Type 3) compared. We find that although the magnitude of the impacts on using VR or TTW services appears smaller for Type 1 compared to Type 2, the differences are not statistically significant. We find that the estimated impacts of EWIC on VR and TTW use are, indeed, larger for Type 2 compared to Type 3. We find that the magnitude of the impacts on using VR or TTW services are similar for Type 1 and Type 3; also, there are no statistically significant differences between them. We conclude that there is weak evidence that volunteers predicted to use counseling services only as a result of outreach were the most impacted by EWIC compared to WIC.

Earnings and Employment. We anticipated that subgroup impacts on earnings and employment would not vary because the full sample analysis found no impact of EWIC compared to WIC on earnings and benefits. Findings for Type 1 and Type 2 align with this expectation. For Type 3 volunteers, the impact of EWIC compared to WIC led to a decrease in the proportion with earnings above 2 or 3 times BYA compared to Type 1 and Type 2 beneficiaries. There is also weak evidence that for Type 3 volunteers, the impact of EWIC compared to WIC led to a decrease in average earnings compared to the impact for Type 2. For Type 3 beneficiaries who would otherwise not seek WIC services and would earn above two or three times BYA, it is possible that EWIC outreach alerted them to the possibility of using the offset as a

substitute for earnings. It is also possible that this finding is due to chance and repeats itself across three earnings outcomes because these earnings measures are highly correlated.

Benefits. We anticipated that subgroup impacts on benefits due would not vary because the full sample analysis found no impact of EWIC compared to WIC on benefits. As expected, we do not find evidence that the impacts of EWIC compared to WIC on benefits due and offset use vary across Types 1, 2, and 3.

In summary, we found that prediction models have some power to correctly classify whether a beneficiary will seek intensive counseling services, but this power is relatively weak. Using these predictions, we found weak evidence that volunteers predicted to use counseling services only as a result of outreach were the most impacted by EWIC compared to WIC. Full sample results from BOND showed that EWIC compared to WIC increased the proportion of volunteers who would engage in VR and TTW services. WIPA program budgets are constrained to serve beneficiaries who seek benefits counseling, and WIPA programming does not involve proactive outreach to beneficiaries. If any future outreach to SSDI beneficiaries seeks to increase the proportion of beneficiaries who take advantage of VR and TTW services, this outreach could efficiently be targeted to beneficiaries who are predicted (by a prediction model) to respond positively to the outreach.

Exhibit 4-4.   Impact of EWIC on Beneficiaries Who Would Always Seek Services (Type 1), Beneficiaries Who Would Only Seek Services As A Result of Outreach (Type 2), and Beneficiaries Who Would Never Seek Intensive Services (Type 3)

Outcome	Type 1			Type 2			Type 3			1 vs 2	1 vs 3	2 vs 3
	T22 Mean	T21 Mean	Impact Estimate	T22 Mean	T21 Mean	Impact Estimate	T22 Mean	T21 Mean	Impact Estimate			
Understands benefits would be reduced but not to zero if earnings exceed SGA aft	53.0	46.3	6.7 (4.1)	52.5	48.0	4.5 (2.7)	52.4	49.0	3.4 (3.4)			
Assigned ticket to any EN service between 2011 and 2015 (%)	34.0	29.8	4.2 (3.3)	28.9	18.6	10.4*** (2.0)	17.3	15.1	2.3 (2.0)			†††
Any use of state VR agency services between 2012 and 2015 (%)	19.3	15.7	3.5 (2.8)	14.8	8.6	6.2*** (1.5)	9.4	7.6	1.7 (1.5)			†
At 36 months after random assignment, earnings in the last 12 months	$6,770	$6,383	$387 ($883)	$3,038	$2,555	$483 ($408)	$1,082	$1,693	$-611* ($329)			†
At 36 months after random assignment, any employment in last 12 months (%)	51.8	51.7	0.1 (3.7)	31.2	28.7	2.5 (2.3)	15.7	18.7	-3.0 (2.3)			
At 36 months after random assignment, weekly earnings above weekly equivalent of SGA	20.6	18.9	1.6 (2.8)	8.1	6.4	1.7 (1.3)	4.1	4.5	-0.4 (1.2)			
At 36 months after random assignment, weekly earnings above 2x weekly equivalent of SGA	9.3	6.2	3.1* (1.7)	2.8	2.3	0.5 (0.8)	1.1	2.9	-1.8** (0.8)		††	†
At 36 months after random assignment, weekly earnings above 3x weekly equivalent of SGA	4.0	3.1	0.9 (1.2)	1.3	0.8	0.5 (0.6)	0.2	1.5	-1.4*** (0.5)		†	††
Total SSDI benefits due between 2012 and 2015	$48,004	$47,668	$336 ($1,287)	$52,040	$51,043	$997 ($877)	$45,698	$46,560	$-861 ($1,022)			
Any offset use between 2011 and 2016 (%)	25.8	25.2	0.6 (2.8)	9.7	10.5	-0.8 (1.3)	5.6	4.5	1.1 (1.2)			

Source: Analysis of BTS records, Stage 2 36-Month Survey, RSA-911 records, SSA administrative records from the DAF (2017), Stage 2 Baseline Survey and baseline SSA administrative data.

Notes: Means and impact estimates are regression-adjusted for baseline characteristics. Standard errors are in parentheses. Weights for sample selection, and—where appropriate—survey non-response, are used to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for offset participation. We used the same regression specification and covariates as Gubits et al., 2018, to estimate impacts.

Unweighted sample sizes: Type 1 T22 = 408, Type 1 T21 = 645, Type 2 T22 = 997, Type 2 T21 = 1,586, Type 3 T22 = 658, Type 3 T21 = 1,020.

/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test with 9 degrees of freedom (and with no multiple comparisons adjustment).

†/††/††† Difference in impact estimates is significantly different from zero at the .10/.05/.01 levels, respectively, using an F-test.

5.   Conclusion

This report expands Gubits et al, 2018 by taking a deeper look at how beneficiaries used the work incentives counseling offered in BOND. It explores service use patterns for WIC and EWIC to understand which types of beneficiaries used counseling in different ways. We also explored whether there are subgroups defined by service use for whom EWIC is more effective.

We examined service use patterns in WIC, which was designed to mimic standard work incentives counseling offered through SSA's WIPA program. Aligned with the design of standard work incentives counseling, the majority of T1 and T21 treatment subjects who contacted WIC received at least I&R followed by a baseline assessment. If a beneficiary received services beyond a baseline assessment, they most often received a BS&A (though some received referrals without receiving a BS&A).

We did not find variation in the combinations of EWIC services the T22 treatment subjects used, owing to the design of EWIC, which encouraged providers to engage with all T22 subjects and to meet performance benchmarks to provide all of the EWIC service components to high proportions of treatment subjects. However, while T22 subjects received similar combinations of EWIC services, we found variation in the intensity of services received, with some T22s receiving more total counseling time than others.

To learn what beneficiary characteristics might determine need or interest for work incentives counseling, we analyzed characteristics collected in the Stage 2 baseline survey. Findings from the study of Stage 2 volunteers are not generalizable to the national beneficiary population, but the provide insights about a sample of beneficiaries who, on average, are more interested in using work incentives than the national beneficiary population. Prior to receiving WIC or EWIC services, subjects who eventually received services were more likely to be employed, looking for work, have access to private transportation, have earnings above 50 percent of the SGA level, and a correct understanding of the benefit offset rules that applied to them. We also analyzed outcome data, finding significant correlations between service receipt and outcomes. Anticipation of these outcomes may have driven beneficiaries to seek work incentives counseling.

Full sample results from BOND showed that EWIC compared to WIC increased the proportion of volunteers who would engage in VR and TTW services (Gubits et al., 2018). If any future outreach to SSDI beneficiaries seeks to increase enrollment in TTW and VR programs, it could efficiently target beneficiaries who would volunteer to participate in BOND Stage 2. In this paper we found that prediction models have some power to correctly classify whether a Stage 2 volunteer will seek intensive counseling services, but that this power is relatively weak. Among Stage 2 volunteers, there is weak evidence that volunteers predicted to use counseling services only a result of outreach were the most impacted by EWIC compared to WIC. Therefore, future outreach efforts to increase enrollment in TTW and VR programs could efficiently target would-be volunteers who are predicted by a prediction model to only take up benefits counseling as a result of outreach.

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Appendix: Data Sources

Exhibit A-1.   Data Sources Used in this Report

Data Source	Description	Information Provided
From Demonstration Operations		
BOND Operations Data System (BODS) and Beneficiary Tracking System	• Data management system developed for BOND. • The Beneficiary Tracking System documents beneficiaries' contacts with the demonstration and information from SSA regarding SGA cessation and use of the benefit offset.	• Random assignment result • Use of work incentives counseling, including type of service provided, dates of service provided, time length of each contact • Use of offset
From BOND Subjects		
Stage 2 Baseline survey **March 2011 to September 2012** **(n = 12,660, 99 percent)**	• In-person survey (50 minutes) conducted immediately before random assignment. • Completed for the full sample of families randomly assigned.	• Education and training • Current employment status • Employment history from 12 months prior to random assignment • Transportation • Barriers to employment • Health and functional status • Health insurance • Demographic information *Used to study correlations between counseling receipt and pre-BOND characteristics.*
Stage 2 36-month survey **March 2014 to February 2016** **(n= 9,684, 76 percent response)**	• Telephone or in-person survey (60 minutes). • Conducted a median of 39 months after random assignment.	• Employment and earnings at time of survey • Knowledge of SSDI benefit rules/offset *Used to study correlations between counseling receipt and outcomes.*
From Administrative Data Systems		
Disability Analysis File (DAF)	• Longitudinal information on SSDI beneficiaries. • The DAF is updated annually and contains information extracted from a variety of SSA source files on all SSI and SSDI beneficiaries.	• Estimates of SSDI benefits due. *Used to study correlations between counseling receipt and benefits and earnings outcomes.*
Case Service Report (RSA-911)	• Individual-level data from state Vocational Rehabilitation (VR) agencies maintained by the Rehabilitation Services Administration (RSA) within the U.S. Department of Education.	• Use of VR services Used to study correlations between counseling receipt and VR service use.