

# Supported Employment Demonstration

## Final Enrollment Analysis Report (Deliverable 7.4b)

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## List of Acronyms

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ACS	American Community Survey
ADHD	Attention Deficit Hyperactivity Disorder
CIDI	Composite International Diagnostic Interview (CIDI)
IPS	Individual Placement and Support
LPM	Linear Probability Model
MBR	Master Beneficiary Record
MHTS	Mental Health Treatment Study
MIS	Management Information System
PTSD	Post-Traumatic Stress Disorder
QCEW	Quarterly Census of Employment and Wages
RIM	Recruitment Information Meeting
SDR	Structured Data Repository
SED	Supported Employment Demonstration
SGA	Substantial Gainful Activity
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
SSR	Supplemental Security Record

# Executive Summary

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The Supported Employment Demonstration (SED) is a multi-component intervention offered by the Social Security Administration (SSA) to people who alleged a mental impairment on an unsuccessful application for disability benefits. SSA seeks to answer the primary question of whether offering the Individual Placement and Support (IPS) model of employment services integrated with behavioral health and other services and supports results in employment and clinical recovery that leads to less demand for disability benefits.

This enrollment report describes the population of eligible individuals who enrolled in the SED and compares this group to the greater study-eligible population of disability applicants alleging a mental impairment who received an initial denial of benefits. The enrollment analysis describes the types of individuals who enrolled, how they compare with non-enrollees, and the factors associated with enrollment. The findings contextualize factors associated with a decision to enroll and clarify the generalizability of outcomes to understand the SED's impact and resulting policy implications.

## Recruitment

The study design called for the selection of 30 community agencies in the U.S. as demonstration sites to provide treatment services to enrollees randomized to the Full-Service or Basic-Service treatment groups. Each site specified its catchment area, the geographical area for which it provides services. Westat identified 20 “large” sites and recruited 120 enrollees from each of those catchment areas, providing 2,400 enrollees, and 10 “small” sites with a target recruitment goal of 60 enrollees from those catchment areas, providing 600 enrollees, for a total of 3,000 enrollees.

The SED field team responsible for recruiting enrollees included 2 field directors; 3 field supervisors; 30 local field recruiters; and 13 traveling field recruiters. Westat developed and implemented a structured training program for all field staff that included standardized protocols, materials, and manuals. Westat received monthly recruitment files from SSA containing contact information for applicants denied benefits in the previous calendar month who lived within the site catchment areas. Westat applied additional screening criteria to identify individuals eligible for recruitment, created and assigned random IDs for each potential enrollee, organized the lists into groups of no more than 25 potential enrollees, and released the groups to the field recruiters in waves as they exhausted cases in the previous group.

The SED recruitment process began with Westat mailing a study invitation packet to potential enrollees. Five days later, a field recruiter attempted to contact each potential enrollee by phone and followed up in person if unable to make phone contact. The recruiter screened the potential enrollee for study eligibility by asking whether the potential enrollee had an interest in finding a job (or if already working, getting a better job) and if the potential enrollee currently received employment services. Eligible enrollees had to express an interest in working and could not already receive employment services from the demonstration site at the time of recruitment. The recruiter invited eligible enrollees to attend an in-person Recruitment Information Meeting (RIM) to get detailed information about the study to facilitate an informed decision about study participation, and administered a competency screener to those willing to participate to determine ability to give

informed consent. The recruiter obtained written consent from those who passed the competency screener, conducted a baseline interview, and provided enrollees with the results of their random assignment to the Full-Service, Basic-Service, or Usual Services (Control) group. After conducting wrap-up activities, the recruiter introduced treatment group enrollees to the Team Lead for their respective demonstration sites.

Westat received SSA records for 73,512 applicants denied disability benefits. SSA drew these records from lists of disability applicants who lived within one of the site catchment areas and met the study's age requirement of 18 to 49 years old. After removing 26,505 ineligible cases from the list using a programmed algorithm, 47,007 eligible cases remained. Westat randomly selected 21,003 applicants from the pool of eligible cases for recruitment and ultimately enrolled 3,000 participants in the SED.

## Enrollment Rate

We organized eligible applicants randomly selected for recruitment into one of three groups: *potential enrollees* (denied applicants who received a personal contact about joining the study excluding those deemed ineligible); *possible potential enrollees* (denied applicants for whom recruiters were unable to contact); or *not potential enrollees* (denied applicants who did not have an opportunity to enroll in the study because they were ineligible, deceased, outside of the catchment area, not randomly selected for recruitment, or deemed ineligible after enrolling into the study).

Among potential enrollees and possible potential enrollees, the overall enrollment rate was 23.0 percent. Considering only potential enrollees, the overall enrollment rate was 26.2 percent. Among those who completed an initial screener conducted by a recruiter, a large portion (4,143; 31.0 percent) indicated that they were not interested in working or, if working, in getting a new job. In some catchment areas, recruiters were unable to speak with 20 percent or more of the potential or possible potential enrollees. In other catchment areas, they encountered larger percentages of potential enrollees who did not pass the initial screener (due to death, living outside the catchment area, no interest in work, etc.). The initial screener removed almost half (44.1 percent; n=5,667) of the potential and possible potential enrollees. A smaller percentage (17.7 percent; n=2,280) were otherwise eligible for the SED, passed the initial screener, but did not attend a RIM. A small percentage (3.1 percent; n=400) of potential and possible potential enrollees attended a RIM but did not enroll.

Enrollment rates for the SED exceeded the rates of previous SSA demonstrations like the Mental Health Treatment Study (14 percent), Project NetWork (4.5 percent), and the New York WORKS project (2.4 percent). One reason for the recruitment success of the SED may include the fact that the SED recruited applicants denied benefits who cannot rely on disability payments for needed income as opposed to previous SSA demonstrations that attempted to recruit current beneficiaries. Applicants denied benefits may have a greater incentive to take advantage of an opportunity like the SED to help them return (or remain) in the labor force and earn income. Furthermore, the SED had a greater chance of randomization to a treatment group (two out of three) compared to randomized trials that included only one treatment group. That field staff could not locate or speak to more than one-third (36%) of the disability applicants they attempted to contact made recruitment more challenging compared to other studies. Challenges to locating and contacting potential enrollees included frequent address changes, homelessness, and lack of consistently working phone numbers.

Other challenges included lack of interest in finding a job (or finding a better job), and, for those who later received an approval, a small recruitment window before they began receiving disability benefits.

## **Reasons Potential Enrollees Decided to Enroll (or Not Enroll)**

Using qualitative information collected during site visits conducted in Years 1 and 2, we examined enrollees and non-enrollees descriptions of their responses to the invitation to join the SED. When first hearing of the study, both potential enrollees who enrolled as well as those who did not enroll expressed concern that the SED might not be real, questioning whether it was a scam. Enrollees reportedly verified the legitimacy of the demonstration based on their own online research or the recruiter's knowledge of their denial status. Other enrollees reported that their recruiters' persistence, patience, and kindness led to them deciding to hear more about the study.

Among those who chose to participate in the SED, we identified hopefulness and openness to receiving help as reported reasons for deciding to enroll. They felt hopeful that they could find a job and improve their health with support. Enrollees found psychotherapy and counseling services and the interview incentive payments enticing. The cash payments attracted some enrollees initially, but enrollees discovered that the program had more to offer.

Individuals declined SED participation for reasons including the perception that they could not work or improve their health due to impairments or other barriers. They felt overwhelmed and entrapped by multiple issues they faced related to housing, criminal records, childcare, domestic violence, and medical and psychological problems. Others did not make a considered decision about participation due to other preoccupations. A small group of non-enrollees reported satisfaction with their current work despite financial challenges.

## **Factors Associated with Enrollment**

**Analytic Strategy.** Our enrollment analysis applied a logistic regression model to determine the characteristics of denied applicants, and of the areas in which they resided, that significantly related to their decision to enroll or not enroll. We used a split sample approach to estimation, with exploratory regressions run on a test sample and hypothesis tests for our final model run on a validation sample. We tested a variety of explanatory variables for inclusion in the final exploratory regressions. Specific variables in our exploratory regressions included:

- *Timing Variables:* Number of days from the denial decision date to the date each person became available for recruitment; and date they became available for recruitment, date the site concluded recruitment efforts, and number of days between these dates;
- *Variables Based on the Census Tract Characteristics:* Percent of persons below 100% of poverty; percent of persons below 200% of poverty; percent commuting to work by auto; percent of residents with no health insurance coverage; and a 0-1 indicator for denied applicants residing in Medicaid expansion states;

- *Socio-Demographic Characteristics:* Age, gender, and level of education, including 0-1 indicators for college graduation and completing less than 9 grades of schooling; and a 0-1 variable indicating English-language deficits;
- *Local Labor-Market Characteristics:* Average weekly wage in the county for the year and quarter of the decision date closest to the date they became available for recruitment; average change per day in the average weekly wage from the decision date to the date available for recruitment; and a census-tract-level measure of the percentage of the local labor force unemployed;
- *Health Related Variables:* Number of ER visits and hospital inpatient admissions in the past 3 years; a 0-1 indicator for an alleged mental impairment; 0-1 indicators of those having a primary mental impairment and those having a secondary mental impairment; and, for some test regressions, self-reported height and weight information;
- *Self-Reported Job History Variables:* Number of jobs held in the last 15 years; duration of time since the last job held; number of years tenure in the last reported job; weekly earnings in the last job; and measures of weeks and hours of work at the last job; and
- *Measures Relating to SSA Determinations:* A 0-1 indicator of prior denial of benefits; 0-1 indicator of denial due to earnings in excess of substantial gainful activity (SGA) amount; 0-1 indicator that the applicant's disability did not preclude gainful employment; 0-1 indicators of SSI benefit receipt; 0-1 indicators of SSDI benefit receipt; and a 0-1 indicator of SSDI benefit termination.

After estimating and selecting the final set of variables from our test regressions, we re-estimated these regressions with the same estimation techniques using the data from our validation cases. We also ran several selected sensitivity tests of alternative regressions on our validation data, including four additional explanatory variables in one or more of the sensitivity analysis regressions.

**Differences Between Potential Enrollees and Possible Potential Enrollees.** Descriptive statistics for the dependent variable (enroll; not enroll) and explanatory variables reveal statistically significant differences between potential enrollees and possible potential enrollees in mean explanatory variable values. The window between the date of denial and the start of recruitment was 14 days longer for possible potential enrollees; potential enrollees had 14 percent more individuals whose recruitment began late in the recruitment process. In terms of local labor market trends, the average increase per day in average wages was nearly twice as large for possible potential enrollees. Potential enrollees also resided in census tracts with slightly higher unemployment rates.

## Predictors of Enrollment

The application of a split-sample design allowed us to obtain valid statistical tests of factors related to the probability that a denied applicant would enroll in the SED. Nearly all factors identified in the test regression phase were significant in the validation phase. The magnitudes and directions of their effects on the validation phase were also similar to the analogous results from our final test regressions. Significant factors included self-reported items in the initial SSA benefit application form relating to gender, education and work history. Consistent with findings from the general

labor-market literature on gender and educational differences in employment and market labor supply, results suggested that males, persons with more limited prior work experience or earnings, and persons with greater educational attainment were more likely to enroll. Among items from SSA administrative record data, denial due to evidence the applicant could find alternative work in the national economy was strongly and positively predictive of enrollment. Applicants initially denied who later received an approval for benefits within 210 days of initial recruitment were less likely to enroll. A strong explanation for this finding is that these denied applicants had appealed their denial by the time of recruitment and expected to receive an approval in the near future. Applicants from areas where unemployment was higher but average wages were increasing were more likely to enroll. Denied applicants that SSA determined were able to earn wages above SGA were also significantly more likely to enroll in the SED. Several local area labor market indicators were also significant, suggesting that denied applicants were more likely to enroll if their local unemployment rate was high and if their county's average wages rose more rapidly.

The regression analysis focused on the more than 12,000 combined potential enrollees and possible potential enrollees whom the recruiter contacted. It did not include the more than 60,000 not potential enrollees, of which more than 7,000 of whom were inaccessible. Systematic differences between these two groups caution against generalizing findings to denied applicants whom we could not contact.

**How to Enhance Enrollment.** If SSA were to implement an intervention similar to the SED in other geographic areas, the target populations for these areas would differ from those targeted for SED recruitment. The new populations may differ in terms of socio-economic and demographic characteristics, labor market experiences, local area economic conditions, and differences in the results of the disability adjudication process. The modeling results allow us to examine the potential implications of implementing the SED with different target populations using the strongest predictors of enrollment. The results indicate that there is a trade-off between the size of the target group and the predicted enrollment rate. Using a narrow definition to identify the eligible population, for example, results in higher enrollment rates but lower yields overall. These results could yield insight into potential enrollment rates and the efficiency of the enrollment process with different populations in different settings.

## **Implications of Enrollment Analysis Results on Generalizability**

Knowing the degree to which enrollees mirror the larger eligible population is critical to understanding the extent to which we can say with confidence that the study results would most likely have been the same for any sample of the 47,007 eligible denied applicant candidates. We compared the group of denied applicants randomly selected for contact to the broader set of denied applicant records received to examine the degree to which these findings generalize to a broader population. Comparisons between the sample selected for contact and the sample not selected for contact revealed the two groups were largely the same. The comparisons of general characteristics - age, gender, education level, number of jobs held in the past 15 years, and weekly pay (at most recent job) - revealed no differences between the group randomly selected for contact versus those not selected for contact. This finding is a good sign that the denied applicants selected for contact reflect the same characteristics as members of the non-selected sample.

We did find differences between those selected for contact and those not selected in terms of the determination step reached in the disability adjudication process and whether the applicants were previously denied for the same type of claim. The selected-for-contact group had 4.5 percent fewer cases than the not-selected-for-contact group who had a previous denial of a similar claim type. While the overall percentage of cases having a previous claim denial is small (about 13 percent of the overall target population), the finding is worth noting. We do not find the first difference to be anything more than a Type I statistical error, and we cannot find a good reason to be concerned over the difference. The other significant difference concerned at which level in the 5-step disability determination process each case received a denial. More cases in the selected-for-contact group received their denial at Step 5. However, it is important to note that over 60 percent of all cases in both groups received denials at Step 5, by far the largest group in the overall target population. A denial decision at Step 5 indicates that SSA determined that the applicant has the capacity to earn SGA in a job available in the national economy, but not necessarily work that the applicant performed in the past.

One final issue related to generalizability is the fact that recruiters were unable to locate more than a third of the denied applicants they attempted to contact. Homelessness and telephone access are major issues, suggesting that this population is highly transient. Preliminary analysis of our enrollment data suggests that there may be important differences between this group and the group of locatable candidates. We will consider this issue further in a special topics report on lessons learned from SED recruitment efforts.

# 1. Introduction

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The Supported Employment Demonstration (SED) is a multi-component intervention offered by the Social Security Administration (SSA) that aims to assist people with mental impairments achieve employment success. SSA seeks to answer the primary question of whether offering the Individual Placement and Support (IPS) model of employment services integrated with behavioral health and other services results in employment and clinical recovery that leads to less demand for disability benefits. This report describes who enrolled in the SED and compares this group to the larger study-eligible population of disability applicants alleging a mental impairment who received an initial denial of benefits.

SSA oversees two programs providing cash benefits to people with an eligible disability: Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI). The SSDI program provides benefits to disabled workers and their families. According to its FY2020 Congressional Justification (SSA, 2019a), SSA paid \$143.5 billion in SSDI cash benefits to almost 10.4 million disabled workers and their families in 2018. The SSI program guarantees a minimum level of income support to financially needy individuals who are aged, blind, or disabled. In 2018, SSA paid \$51.8 billion in SSI cash benefits to 8 million people between the ages of 18 and 64 who were blind or disabled. Of those beneficiaries noted in the two programs, 2.6 million of them receive cash benefits from both programs. While the two programs have different eligibility criteria, they share the same definition of disability. That definition takes into account the severity of a person's health condition, the chronicity associated with that health condition, and its predicted impact on the person's ability to engage in a base level of work activity, referred to as substantial gainful activity (SGA). SSA's Annual Statistical Supplements for the SSDI and SSI programs indicate that nearly 30 percent of those in the SSDI program, and about 28 percent of those in the SSI program are people with mental impairments (SSA, 2019b; 2019c).

Each year people struggling to maintain work in the face of declining health decide to apply for benefits through the two disability programs. These individuals believe they can no longer work or they simply cannot get work and give up trying. Thirty-five percent of the individuals who applied for benefits (including SSDI, SSI, and concurrent applicants) received awards at the initial determination level in 2018. Following the various levels of appeals for those who were denied, another 13 percent also received awards in 2018. Thus, in 2018, SSA awarded benefits to nearly half (48 percent) of disability applicants (SSA, 2019a).

SSA hypothesizes that the offer of evidence-based return-to-work services to disability applicants who receive a denial provides an opportunity to increase participation in the labor force, while decreasing the need for re-application or continued appeals of the initial denial. Presumably, these individuals can work, at least above SGA. They do not have a health condition that is sufficiently determinable to meet the statutory definition of disability. If these individuals continue to have health problems and labor market problems, over time they will continue with their appeals or later re-apply for disability benefits and receive an award. Effective intervention with these people at the time of denial of their initial application may delay or eliminate an appeal or the need to re-apply for

benefits. This report answers a number of key questions important to SSA about enrollment in the SED.

- What is the magnitude of the eligible population as defined by SSA?
- What proportion of those who were eligible enrolled?
- What do applicants denied for benefits report were their reasons for enrolling in the SED? What do non-enrollees report were their reasons for not enrolling in the SED?
- Are there definitive factors (personal or environmental characteristics) associated with enrollment? What factors might influence enrollment into a SED-like program?

SSA needs answers to these questions for two key reasons. First, in addition to understanding the extent of intervention impacts, SSA will want to understand the extent to which study results generalize to the larger eligible population. The analyses presented in this report speak to the extent to which we can say with confidence that the recruitment results would most likely have been the same for any subsample of the larger eligible population. Second, answers to some of these questions have important implications for SSA if the agency finds the SED effective and contemplates replicating the program on a larger scale.

Chapter 2 describes the multi-step strategy we used to recruit and enroll 3,000 SED study participants. Chapter 3 summarizes recruitment results for each step of the process, resulting in a classification scheme for those individuals eligible for the SED into one of three groups: potential enrollees, possible potential enrollees, or not potential enrollees. The analyses presented in Chapter 3 provide answers to research questions on the magnitude of the eligible population and the proportion who enrolled. Chapter 4 presents a qualitative view of recruitment outcomes from the perspectives of enrollees and non-enrollees. Findings from interviews conducted during the first 2 years of study implementation provide self-reported answers on reasons why potential enrollees decided to enroll or not enroll in the study.

The next three report chapters answer research questions related to the factors associated with study enrollment. Chapter 5 summarizes the data sources used to inform the analyses and compares demographic and other key characteristics among specific groups of the denied applicants eligible for the study. Chapters 6 and 7 describe our analytic approach and results of regression models to identify significant factors influencing enrollment. Chapter 7 also presents hypothetical recruitment strategies that may increase enrollment rates.

Finally, Chapter 8 provides a recap of these research questions, briefly summarizes the answers provided in the preceding chapters, and discusses the implication of these collective findings as they relate to generalizability. This understanding will provide clues as to who might agree to participate in a broader implementation of the intervention. The final chapter also discusses the extent to which savings to the disability program are possible with wider availability of services to individuals who might apply for disability benefits or appeal their denial in the future.

## 2. Recruitment Process

The SED enrolled 3,000 SSA disability applicants recently denied benefits to test the impact of providing these individuals with integrated employment, behavioral health, and other support services on employment and other outcomes. The study selected 30 community agencies from around the U.S. to provide treatment services to enrollees randomized to the Full-Service or Basic-Service treatment groups. Among the 30 selected demonstration sites, Westat identified 20 “large” sites and 10 “small” sites, with the intention of recruiting 120 enrollees in each of the 20 large sites providing 2,400 study enrollees, and 60 enrollees in each of the 10 small sites providing another 600 study enrollees.

### 2.1 Recruitment Preparation

**Identifying Catchment Areas.** Prior to the start of the demonstration, each site specified its catchment area – the geographical area for which the site typically provides services. Figure 2-1 below provides a map of the locations of the SED sites across the United States by SSA region. In cases where the catchment area covered a large (often rural) region (e.g., multiple counties) or the catchment area included an abundance of applicants recently denied disability benefits, sites specified a smaller “priority” catchment area from which we recruited enrollees.

Figure 2-1. Demonstration site locations across the United States



**Hiring and Training Field Recruiters.** The recruitment and enrollment of 3,000 study participants required a large team of qualified and trained staff members. The SED field team

included 2 field directors; 3 field supervisors; 30 local field recruiters; and 13 traveling field recruiters. The Westat-based field directors monitored the work of each field supervisor and the progress of enrollment among the recruiters. Each field supervisor supervised a team of 10 to 12 recruiters and closely monitored the daily activities of each member of their respective team via the study's Management Information System (MIS).

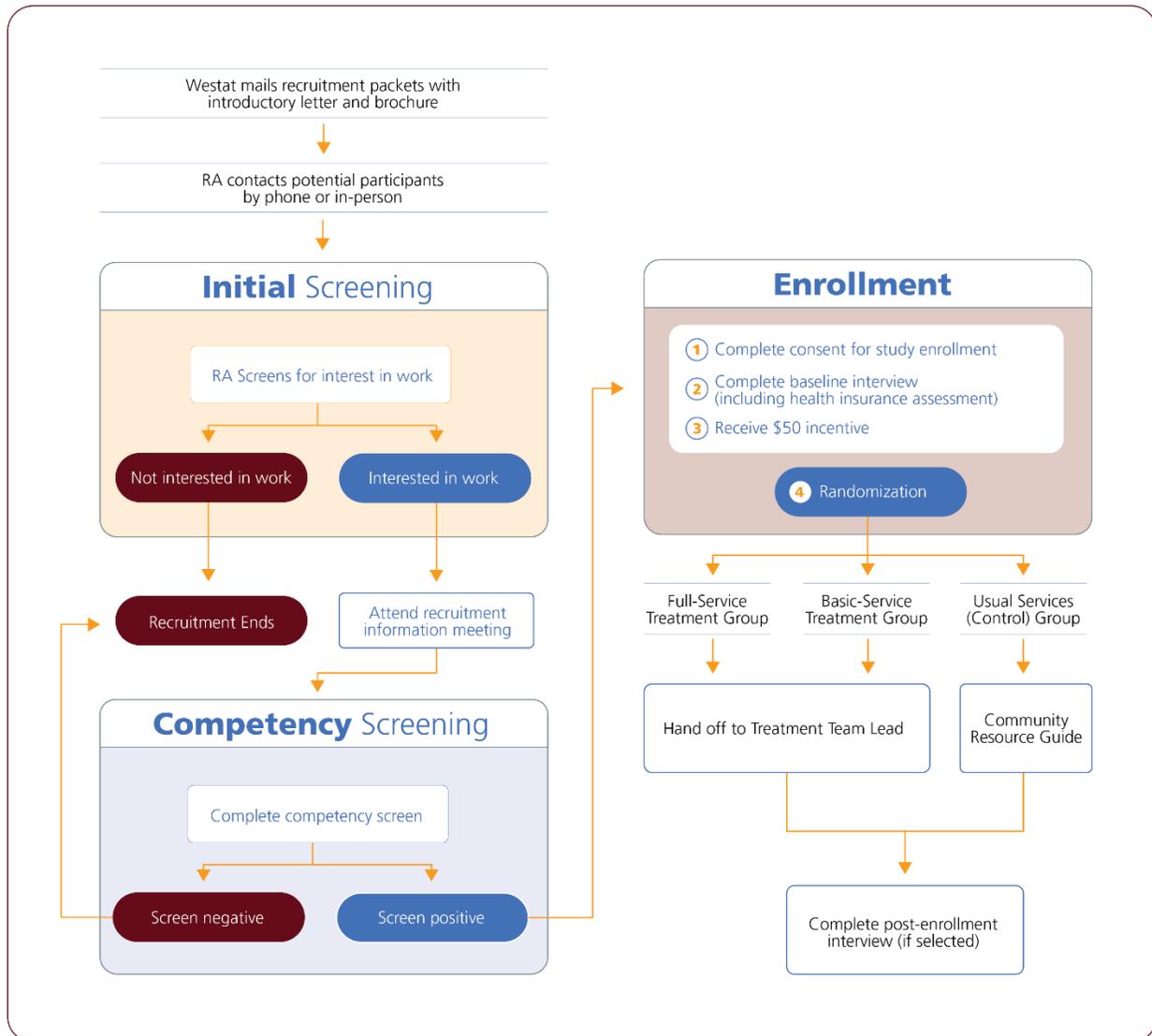
All SED field staff received extensive training and completed a comprehensive assessment prior to the start of recruitment. Westat developed and implemented a structured training program that included standardized protocols, materials, and manuals. This strategy ensured that each potential enrollee received the same information, whether conveyed in a group or individual setting and regardless of when the recruiters were trained.

**Preparing Sample Load Files.** Westat began the process of identifying potential enrollees by receiving from SSA the entire list of applicants denied benefits residing within the ZIP codes of the catchment areas of each demonstration site. Subsequently, we received monthly files from SSA containing the contact (and other) information of applicants denied in the previous month who lived within the catchment area. Upon receiving the monthly files, Westat applied additional screening criteria to identify those eligible for recruitment. Chapter 3 includes a detailed list of the screening criteria. Westat then organized and released the lists to the recruiters in waves using the MIS. We created a random ID for each potential enrollee and randomly assigned the IDs to release groups with no more than 25 potential enrollees per group. The recruiters worked only the cases provided within each release group. The field directors then released a new group to the recruiters once they exhausted the cases within the previous group.

## 2.2 Recruitment and Enrollment Process

To ensure that potential enrollees could make an informed decision about whether to participate in a complex demonstration like the SED, Westat designed a multi-step recruitment process that explained what study participation meant and the benefits and risks to participants. The process also provided multiple opportunities for the potential enrollee to ask questions, consider whether to participate, and refuse participation. Figure 2-2 depicts the entire SED recruitment and enrollment process.

**Figure 2-2. Overview of SED recruitment and enrollment process**



Recruitment began with Westat home office staff mailing a study invitation packet to potential enrollees. The packet included an introductory letter and brochure, which gave the potential enrollee an overview of the study and informed them that a local research assistant would contact them shortly. To allow enough time for the invitation packet to arrive, the recruiter attempted to contact each potential enrollee by phone 5 days after the mailing was sent. The recruiter followed up with an in-person visit if they were unable to reach the potential enrollee by phone.

During initial contact, the recruiter screened the potential enrollee for study eligibility. The eligibility screener consisted of three questions designed to ascertain whether the potential enrollee had an interest in finding a job or getting a better job, and if and where he or she currently received employment services. Potential enrollees met the study’s eligibility requirements only if they had an interest in working (or getting a better job) and did not currently receive services from the demonstration site (at the time of recruitment). Potential enrollees receiving employment services

elsewhere remained eligible for the study. If the screener deemed potential enrollees eligible, the recruiter invited them to attend a Recruitment Information Meeting (RIM), either immediately following the screener or at another time.

The RIM consisted of an hour-long meeting in which the recruiter described the SED in more detail using visual aids (i.e., study flip book and video). This meeting also provided the opportunity for the potential enrollee to ask questions and consider his or her options. For individuals willing to participate in the study, the recruiter arranged the next step of administering a competency screener to determine whether the potential enrollee had the mental capacity to provide informed consent. The recruiter then obtained written informed consent from those who passed the competency screener, conducted an hour-long baseline interview, and provided the enrollee with the results of his or her randomization assignment to either the Full-Service, Basic-Service, or Usual Services (Control) group.

Wrap-up activities included collecting the enrollees' insurance status information, assigning enrollees a reloadable study debit card, and providing them with other study-related materials. Additionally, for enrollees assigned to either the Full-Service and Basic-Service treatment groups, the recruiter called the demonstration site Team Lead on the enrollees' behalf to make an introduction. In some cases, the recruiter arranged an in-person meeting to hand off the new enrollee to the demonstration site. Finally, within 2 weeks of enrollment, the recruiter or Westat home office staff scheduled the enrollee for the Composite International Diagnostic Interview (CIDI) (if selected) and conducted the interview, either in person or by phone.

## 2.3 Management Information System

Westat built an integrated, web-based MIS to track the recruitment process and record and maintain all data collected for the SED in a secure, centralized database. The MIS serves as the control center for all SED operations, and includes dashboards for the multiple sub-systems used to monitor activities throughout the demonstration, including recruitment and enrollment; treatment and other intervention services; transition planning; and ongoing quarterly and annual interviews. The MIS captures and stores data on randomization results, health insurance coverage, service providers, and intervention services.

The recruitment and enrollment subsystem guides field recruiters through a complex and exacting potential enrollee engagement protocol. The primary data elements within the recruitment and enrollment subsystem included all information collected from or about potential enrollees until the point of randomization, as well as documentation of all contact attempts, scheduled appointments, and associated outcomes. The key features of this subsystem include:

- Tracking of cases individually and by demonstration site catchment area;
- Maintaining historical contact information;
- Recording each contact attempt and the outcome; and
- Scheduling appointments and tracking their outcomes.

## 3. Recruitment Outcomes

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This chapter summarizes the recruitment effort and reasons that applicants either did or did not enroll in the SED. Over the enrollment period, Westat received SSA records for 73,512 applicants who were denied disability benefits. SSA drew these records from lists of disability applicants alleging a mental impairment who lived within one of the ZIP codes of the site catchment areas and met the study's age requirement of 18 to 49 years old. After removing 26,505 ineligible applicants based on additional exclusion criteria (e.g., those who did not speak English or Spanish, those with an intellectual impairment, and those in jail or residing in a residential mental health treatment facility), Westat randomly selected 21,003 applicants from the list of 46,516 applicants eligible for the study. Following the steps described in Chapter 2, Westat attempted to contact these 21,003 selected applicants and, ultimately, 3,000 participants decided to enroll in the SED.

### 3.1 Recruitment Results

Figure 3-1 depicts the results of individual recruitment efforts and classifies each of the 73,512 denied applicants received from SSA into one of the three groups described below.

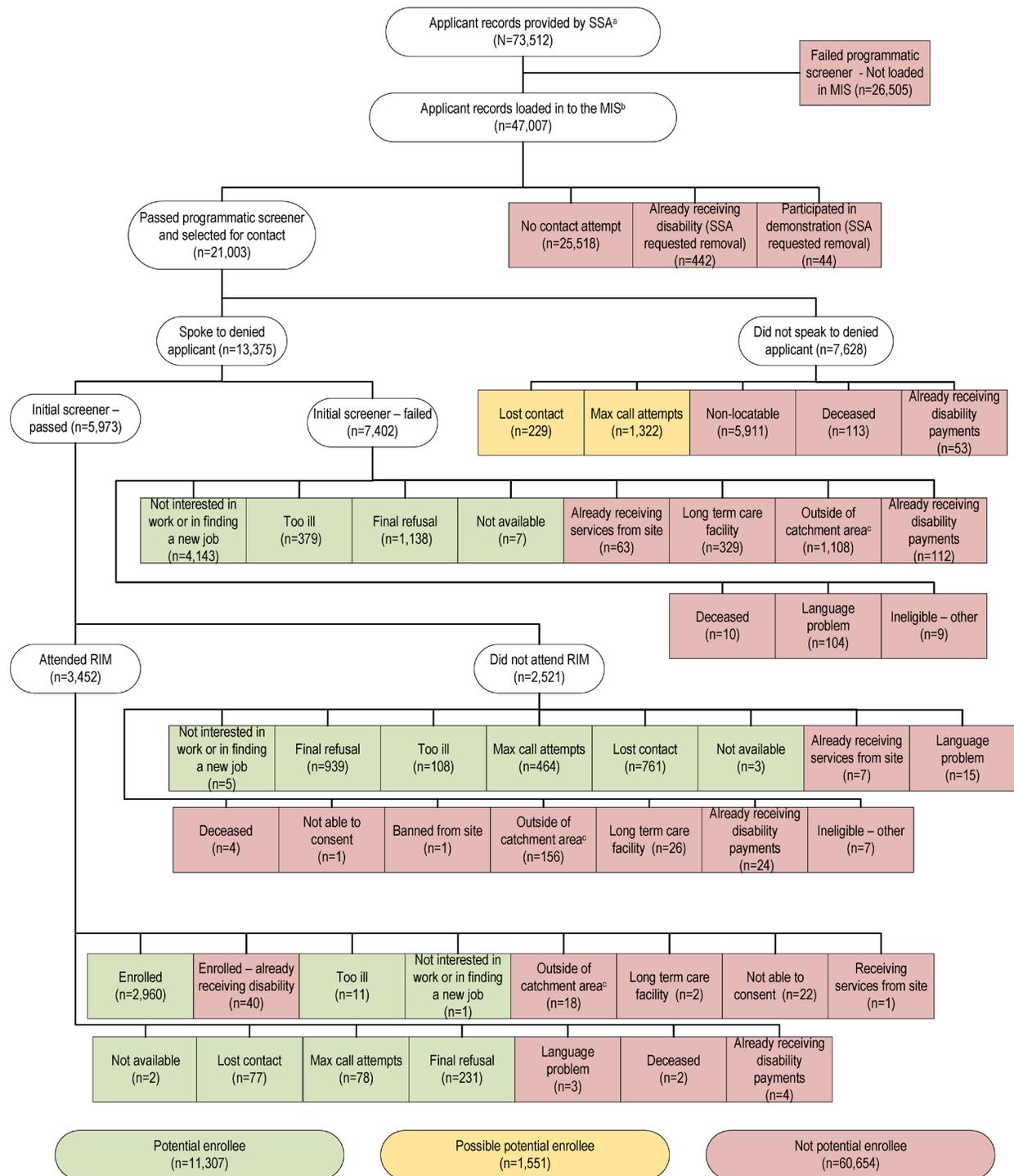
1. **Potential enrollees (n=11,307)** comprise denied applicants who received a personal contact about joining the study (at least either a phone call or in-person meeting), excluding those that Westat deemed ineligible during the recruitment process. For those ineligible individuals, the figure pinpoints the stage that we learned of their ineligibility. We categorized those who responded that they were not interested in work or in finding a new job as potential enrollees because these applicants were aware of the study but chose not to participate.
2. **Possible potential enrollees (n=1,551)** include denied applicants for whom clear evidence of a personal contact is missing. Westat sent a study invitation packet to these individuals but the recruiter was unable to contact them by phone or in person.
3. **Not potential enrollees (n=60,654)** include denied applicants who did not have an opportunity to enroll in the study because they were ineligible, deceased, outside of the catchment area, or not randomly selected for recruitment.

The overall enrollment rate among denied applicants who had a chance to learn about the study and were eligible for enrollment (11,307 potential enrollees + 1,551 possible potential enrollees) was 23.0 percent.<sup>1</sup> This enrollment rate exceeds that of many previous SSA demonstrations.

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<sup>1</sup> Westat learned after participant enrollment began that 40 enrollees were not eligible for the SED because they were already receiving disability benefits when the recruitment effort began. The remaining 2,960 enrollees are eligible for the study.

**Figure 3-1. Recruitment result among applicants denied disability**



SDR=Structured Data Repository; RIM=Recruitment Information Meeting; MIS=Management Information System

<sup>a</sup> Denied applicants provided by SSA include only those with an address in a SED site catchment area who were between the ages of 18-49 (inclusive) at the time of the earliest effective filing date with a primary, secondary, or alleged mental impairment.

<sup>b</sup> The team removed records for those who did not meet the eligibility requirements based on characteristics in the SSA data, those who had no contact information, and those who did not live in one of the catchment areas. In a small number of cases, the SSA records contained duplicate records (for example, if a denied applicant submitted more than one application). These duplicates were removed prior to loading records in to the MIS.

<sup>c</sup> In some cases, the team determined during the recruitment process that a denied applicant no longer resided in the catchment area for the site, either because the denied applicant moved to an address outside the catchment area, or the team restricted the initial catchment area for that site.

Notwithstanding, it is important to note that recruiters could not locate a substantial portion of the population targeted for the SED for reasons including inaccurate or out-of-date contact information; residential instability including homelessness and frequent address changes; gatekeepers who refused to connect recruiters with the applicant; and failure to return recruiter phone calls (field recruiters did not speak with 7,628 of the 21,003 applicants selected for contact). The difficulty in locating potential participants from this population presents a challenge for programs that seek to provide supports to applicants denied disability benefits.

The sections below describe the recruitment results in more detail for each stage of the recruitment process described in Chapter 2.

**Programmatic Screener.** SSA sent Westat monthly data files containing records of applicants denied disability benefits in the previous month. The data files included records for applicants denied disability benefits meeting the following eligibility criteria established by SSA:

- Determination (denial) date at the initial level of the adjudication process within two months before the start of recruitment and for each month of recruitment going forward,<sup>2</sup>
- Address within the ZIP codes of the catchment area for an SED site,<sup>3</sup>
- Aged 18 to 49 at the time of the earliest effective application filing date, and
- Primary or secondary mental impairment (assessed by SSA) or alleging a mental impairment on the disability application.

SSA flagged applicants denied disability according to certain characteristics indicating that the applicant was ineligible for the SED. Westat used these flags along with additional characteristics provided on the file to make further exclusions prior to recruitment. To form lists for recruitment, Westat staff identified and removed denied applicants from the data files on a monthly basis using the steps below. Beginning with monthly lists of applicants denied disability benefits fitting the criteria above (73,512 total records received),<sup>4</sup> Westat removed duplicate applicants previously

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<sup>2</sup> Westat received the first recruitment file in September 2017 for applicants denied for disability benefits in July and August 2017 (n=2,418). Contact attempts for this first group began in December 2017. On average, the disability decision for applicants received in September 2017 occurred 129 days before recruiters received these applicants' contact information for attempted recruitment, compared to an average of 62 days overall for all 21,001 applicants who received contact attempts.

<sup>3</sup> The ZIP codes that SSA used to identify potentially eligible participants covered areas larger than the catchment areas. Furthermore, some sites requested to prioritize recruitment within a smaller geographic area. Westat removed individuals residing outside of the priority catchment areas in a later step.

<sup>4</sup> Westat received a small number of duplicate records (i.e., records received for the same applicant in more than one monthly file). We removed duplicate records from subsequent files. The total represents the number of unique records after removing duplicates.

received, and then subsequently removed records for 26,505 applicants denied disability benefits using the following procedure:

1. Remove applicants denied disability benefits who are not eligible for SED participation from the recruitment file using characteristics provided by SSA (15,869 removed), for the following reasons:
  - A. Applicants without a determination – i.e., those with decisions only coded as “FN” (field office no determination) or “ND” (DDS no determination),
  - B. Applicants with an alleged intellectual impairment,<sup>5</sup> or
  - C. Applicants who do not speak English or Spanish.
2. Send a data file to LexisNexis for tracing to augment contact information for those with missing or incomplete address information. Review applicants’ residential addresses to determine whether it has a valid assignment to the catchment area of an SED site. Remove additional applicants based on the address information on file (10,636 removed), for the following reasons:
  - A. Residential address is either a jail or residential mental health treatment facility (509 removed), or
  - B. Residential address not within boundaries of a site catchment area (10,127 removed).<sup>6</sup>

This process resulted in 47,007 remaining applicants denied disability benefits who were potentially eligible for recruitment based on the results of the programmatic screener. Some additional exclusions became necessary prior to selection for recruitment. SSA notified Westat that 442 cases of applicants were already receiving disability benefits. In addition, 44 cases of applicants were ineligible because they previously participated in an SSA demonstration. After removing these records, Westat randomly selected 21,003 applicants from the remaining 46,516 records for recruitment, leaving 25,518 who were not randomly selected and subsequently labelled as “No contact attempt”. We then extracted contact information from the SSA records for those randomly selected, and loaded the information into the MIS.

**Initial Contact.** Recruiters attempted to contact the 21,003 applicants by telephone and assigned a final result code to each applicant selected for contact. Table 3-1 lists the final result codes. If recruiters succeeded in reaching an applicant, they conducted a phone screener to determine eligibility for and preliminary interest in the study. As Figure 3-1 shows, recruiters spoke to and conducted a phone screener with 13,375 denied applicants.

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<sup>5</sup> SSA flagged these individuals using a keyword search of the allegation description from the disability application.

<sup>6</sup> Although initial addresses from SSA included ZIP codes that fell within a catchment area, updated addresses from the tracing process or subsequent changes to the catchment areas requested by the sites meant that some applicants denied disability no longer resided within the catchment area boundaries.

**Table 3-1. Result code definitions**

<b>Result code</b>	<b>Definition</b>
Max call attempts	The maximum number <sup>a</sup> of unsuccessful attempts has been made to contact the potential participant.
Non-locatable	The recruiter has exhausted all efforts to locate the potential participant and tracing could not be done or was unsuccessful. Probable inaccurate contact information.
Deceased	Deceased (verified using SSA administrative records)
Not interested in work or getting a new job	Applicant failed the initial screener because he or she was not interested in work or in finding a new job.
Language problem	The potential participant does not speak English or Spanish.
Ineligible-receiving services from site	The potential participant is already receiving services from SED site.
Ineligible-long term care facility	The potential participant is not able to participate because he or she is a resident of a long-term care facility.
Ineligible-outside catchment area	Prior to recruitment attempts, the potential participant moved and the new address falls outside of the catchment area. Alternatively, the site may have requested a reduction to the initial catchment area, and the potential participant's address falls outside the revised catchment area. In either case, the potential participant is ineligible for the study.
Too ill	Potential participant indicated that he or she was too ill to participate in the SED.
Final refusal	The potential participant has refused participation in a hostile manner or several times.
Ineligible – not able to consent	The potential participant is not able to provide informed consent based on the answers provided to the competency screen.
Banned from site	The potential participant was banned from the SED site due to a prior incident and, therefore, not able to receive treatment services.
Ineligible – participated in SSA demonstration	Already participated in an SSA demonstration
Ineligible – already receiving disability	Already receiving SSA disability benefits
Not available at time of recruitment	The potential participant is not available to participate in the study during the recruitment year.
Lost contact <sup>b</sup>	Recruiter made some form of initial contact but was not able to resume contact to complete enrollment
Enrolled	Enrolled and eligible for the SED
Enrolled – already receiving disability	Enrolled but ineligible because already receiving disability benefits at the time of recruitment

<sup>a</sup> Recruiters coded a case as “max call attempts” if they made five calls (and left two voicemail messages) directly to potential participants over the course of several days of the week and across different times of day. Field supervisors subsequently reviewed the contact attempts to determine if the recruiters had efficiently worked the case. In most instances, recruiters would follow up unreturned calls with two in-person visits to the potential participant’s home. Field supervisors then assigned a final code of “max call attempts” if all these attempts resulted in no contact with the potential participant.

<sup>b</sup> The “lost contact” code includes potential participants who started the recruitment process but did not complete enrollment in spite of additional contact attempts by recruiters to complete enrollment before recruitment ended for that site.

Of the 7,628 denied applicants that recruiters were not able to speak with, the majority (5,911) were “non-locatable,” meaning that the contact information for these applicants was likely inaccurate and recruiters were unable to verify the accuracy of the phone number and address. For example, recruiters coded an applicant as “non-locatable” if the phone number was disconnected or incorrect and an accurate phone number was never found. It was not possible to determine if the “non-locatable” applicants were aware of the study. When recruiters obtained a valid phone number but could not reach the applicant (e.g., left multiple voicemails the applicant never returned), they coded these cases as “max call attempts.” It is possible that those coded as “max call attempts” at the initial contact stage had heard of the study, but chose not to return the phone call. Alternatively, the applicant may never have received the voicemails.

Although recruiters attempted to contact applicants as quickly as possible, in some cases there was a longer delay between the denial decision and the first attempted contact. After recruitment ended, Westat examined the relationship between the length of time between the denial decision and the first contact attempt. Our analyses indicate that recruiters experienced more difficulty contacting applicants if they waited to attempt contact more than 200 days after the denial decision. This difficulty could be because the applicant’s contact information changed, or the applicant found a more stable work situation and felt that he or she did not need the SED services, or the applicant decided to appeal the SSA denial decision. However, recruiters also had more difficulty contacting applicants if they attempted the initial contact less than 100 days after the denial. Rather, the most successful window for contact was between 130 and 183 days after the denial decision. Chapter 7 of this report addresses this in more detail and provides an analysis comparing those we successfully contacted to those we did not contact.

**Initial Screener.** A total of 7,402 denied disability applicants (35.2 percent of attempted contacts) failed the initial screener for the SED. The majority of these (4,143 applicants; 56.0 percent of those who failed the initial screener) indicated that they had no interest in work or in finding a new job. The next most common reason that applicants failed the initial screener was a “final refusal,” indicating that the applicant refused to participate in the demonstration but did not provide a specific reason (1,138 applicants; 15.4 percent of those who failed the initial screener). A substantial number (1,108 applicants; 15.0 percent of those who failed the initial screener) were not able to take part in the SED because they moved and no longer resided in the catchment area of their demonstration site.

**RIM.** If applicants passed the initial screener, recruiters then scheduled them to attend a RIM. Of the 5,973 who passed the initial screener, 2,521 (42.2 percent) did not attend a RIM. More than one third of these decided not to participate (“final refusal”; n=939). Recruiters lost contact with a substantial number of the remaining applicants who made it to this stage of the recruitment process (761 “lost contact”; 464 “max call attempts”). Recruiters also learned that some of the applicants who did not attend a RIM were in fact ineligible, mainly because they had moved outside of the catchment area (“outside the catchment area”; n=156).

A total of 3,542 applicants attended the RIM, and 3,000 of these applicants enrolled in the SED. At this stage, a small number decided not to enroll (“final refusal”; n=231). In addition, Westat learned that a small number who attended the RIM were ineligible for the study. Specifically, 40 applicants who enrolled in the SED were already receiving SSDI or SSI payments at the time the recruitment process started (i.e., prior to the initial contact attempt). In addition, Westat learned after enrollment

that one enrolled applicant had already participated in an SSA demonstration, making that person ineligible for the study.

## 3.2 Enrollment Rates

Among potential enrollees (eligible potential participants who had heard of the study) and possible potential enrollees (potential participants who may have heard of the study), the overall enrollment rate was 23.0 percent (2,960 eligible enrollees).<sup>7</sup> Considering only potential enrollees, the overall enrollment rate was 26.2 percent. Among the 9,898 remaining potential enrollees and possible potential enrollees who did not enroll, the majority (57.3 percent; n=5,667) indicated that they did not have an interest in work or finding a new job.

Table 3-2 shows a summary of the enrollment rates among potential and possible potential enrollees overall and by site, including the percentages who ended the recruitment process at each stage. Recruiters experienced varying levels of success in recruiting at different sites. At some sites recruiters were unable to speak with 20 percent or more of the potential or possible potential enrollees. At these sites, a larger portion of applicants did not return phone calls and did not make themselves available for the initial screener. Although we cannot know whether the applicant knew about the study, at least a portion of these “possible potential enrollees” received voice mails and other contact attempts and decided not to return the call.

The initial screener removed almost half (44.1 percent; n=5,667) of the potential and possible potential enrollees. As Figure 3-1 shows, the majority of those who failed the screener did so because they refused to participate, with no interest in working or finding a new job as the most common reason. Some sites encountered larger percentages of potential enrollees who did not pass the initial screener. For example, two-thirds of the applicants who heard of the study or potentially heard of the study at one site did not pass the initial screener.

A smaller percentage (17.7 percent; n=2,280) were otherwise eligible for the SED, passed the initial screener, but did not attend the RIM. Only a small percentage (3.1 percent; n=400) of potential and possible potential enrollees attended the RIM but did not enroll.

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<sup>7</sup> The 2,960 eligible enrollees exclude the 40 enrollees that we learned were not eligible for the study after enrollment.

**Table 3-2. Recruitment by site and stage recruitment ended among “potential enrollees” and “possible potential enrollees”**

Site	Did not speak to applicant denied disability		Failed initial screener		Passed initial screener but did not attend RIM		Attended RIM but did not enroll		Eligible enrolled		All N
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	
<b>All sites</b>	1,551	(12.1)	5,667	(44.1)	2,280	(17.7)	400	(3.1)	2,960	(23.0)	12,858
<b>Full sites</b>											
1	37	(7.6)	192	(39.6)	107	(22.1)	15	(3.1)	134	(27.6)	485
2	4	(1.0)	228	(57.1)	43	(10.8)	1	(0.3)	123	(30.8)	399
3	43	(8.0)	210	(39.0)	117	(21.7)	45	(8.4)	123	(22.9)	538
4	17	(4.0)	162	(37.9)	72	(16.8)	56	(13.1)	121	(28.3)	428
5	21	(4.5)	208	(44.4)	107	(22.9)	12	(2.6)	120	(25.6)	468
6	53	(11.3)	176	(37.5)	94	(20.0)	26	(5.5)	120	(25.6)	469
7	56	(10.6)	218	(41.4)	126	(23.9)	7	(1.3)	120	(22.8)	527
8	97	(19.4)	186	(37.2)	79	(15.8)	19	(3.8)	119	(23.8)	500
9	91	(14.1)	315	(48.9)	91	(14.1)	28	(4.3)	120	(18.6)	644
10	46	(7.6)	246	(40.4)	150	(24.6)	49	(8.0)	119	(19.5)	609
11	63	(12.8)	221	(45.0)	70	(14.3)	18	(3.7)	119	(24.2)	491
12	47	(10.6)	161	(36.2)	111	(24.9)	8	(1.8)	118	(26.5)	445
13	31	(7.1)	182	(41.5)	102	(23.2)	6	(1.4)	118	(26.9)	439
14	25	(4.3)	304	(51.7)	115	(19.6)	26	(4.4)	118	(20.1)	588
15	32	(7.1)	211	(46.9)	89	(19.8)	2	(0.4)	116	(25.8)	450
16	163	(19.7)	408	(49.3)	133	(16.1)	8	(1.0)	116	(14.0)	828
17	70	(24.6)	57	(20.0)	43	(15.1)	0	(0.0)	115	(40.4)	285
18	237	(34.3)	280	(40.6)	54	(7.8)	10	(1.4)	109	(15.8)	690
19	57	(9.8)	282	(48.3)	132	(22.6)	5	(0.9)	108	(18.5)	584
20	5	(1.8)	110	(39.6)	56	(20.1)	6	(2.2)	101	(36.3)	278
<b>Half sites</b>											
21	0	(0.0)	61	(33.7)	42	(23.2)	4	(2.2)	74	(40.9)	181
22	105	(24.2)	193	(44.5)	54	(12.4)	10	(2.3)	72	(16.6)	434
23	2	(1.1)	67	(37.0)	35	(19.3)	5	(2.8)	72	(39.8)	181
24	62	(21.3)	148	(50.9)	17	(5.8)	4	(1.4)	60	(20.6)	291
25	9	(5.7)	53	(33.3)	36	(22.6)	1	(0.6)	60	(37.7)	159
26	35	(9.1)	257	(66.6)	34	(8.8)	1	(0.3)	59	(15.3)	386
27	37	(16.4)	115	(51.1)	14	(6.2)	0	(0.0)	59	(26.2)	225
28	59	(18.7)	113	(35.8)	76	(24.1)	9	(2.8)	59	(18.7)	316
29	5	(2.0)	134	(53.8)	49	(19.7)	7	(2.8)	54	(21.7)	249
30	42	(14.5)	169	(58.5)	32	(11.1)	12	(4.2)	34	(11.8)	289

Source: SED MIS

Note: “Potential Enrollees” include applicants for whom staff had a confirmed contact and were not otherwise ineligible. “Possible Potential Enrollees” were sent a letter explaining the study but staff never spoke to the applicant and could not confirm if they had heard of the study.

### 3.3 Discussion

We learned several key lessons from the SED recruitment outcomes. The overall enrollment rate for potentially eligible and possible potentially eligible enrollees was 23.0 percent, and the enrollment rate among potentially eligible enrollees alone was 26.2 percent. These rates exceed those of previous SSA demonstrations. For example, the Mental Health Treatment Study (MHTS) recruited SSDI beneficiaries with mental disorders. The enrollment rate among those potential enrollees was 14 percent (Salkever et al., 2014). The SED enrollment rate was also well above that of other SSA recruitment efforts for randomized trials, including Project NetWork (4.5 percent) and the New York WORKS project (2.4 percent) (Burststein et al., 1999; Ruiz-Quintanilla et al., 2006).

Enrollment rates may have exceeded previous studies for several reasons. The SED recruited applicants who were denied disability benefits, as opposed to previous SSA demonstrations, which attempted to recruit current beneficiaries. Denied applicants may have a greater incentive to attempt to utilize the treatment services offered and attempt to work given they cannot rely on disability payments to make ends meet. Furthermore, the SED implemented an improved process of engaging potential participants by assigning local recruiters dedicated to recruiting denied applicants for a specific site.

Another reason that the SED enrollment rate exceeded that of previous studies may have been that there is a greater chance of randomization (two out of three) into a study arm in which the participant receives a level of treatment (Full- or Basic-Service) compared to other studies that utilize only a single treatment and a control study arm (where chance for treatment is one out of two). In addition, enrollment rates were very high (88 percent) among potentially eligible enrollees who attended a RIM. Thus, scheduling and completing an in-person meeting with potential enrollees should be the top priority of early-stage recruitment efforts.

Despite these successes, at least one factor made recruitment for the SED more challenging compared to other studies. Namely, recruiters could not locate or speak to more than one-third ( $([5,911 \text{ non-locatable applicants} + 1,551 \text{ max call or lost contact applicants}] / 21,003 \text{ attempted contacts}) = 35.5 \text{ percent}$ ) of the denied applicants they attempted to contact. They encountered multiple challenges locating and contacting potential enrollees, including frequent address changes, homelessness, and lack of a consistently working phone number. This problem probably proved more challenging than in earlier studies that recruited beneficiaries given addresses for sending checks to beneficiaries would naturally be more up-to-date and these individuals may have more stable living situations than applicants denied benefits.

Other challenges with SED recruitment included a lack of interest in finding a job or in finding a better job among applicants denied disability benefits. Among those who completed an initial screener, a large portion (4,143; 31.0 percent) indicated that they were not interested in work or in getting a new job. Furthermore, the window to recruit some applicants denied disability benefits into a demonstration such as SED before he or she begins receiving benefits is small if they submit an appeal shortly after receiving the denial. In the SED, some applicants initially denied disability benefits later received an approval and began receiving disability benefits shortly after the denial. Furthermore, denied applicants who are out of work become further detached from the workforce as time goes on.

## 4. Qualitative Information: Reasons Potential Enrollees Said They Enrolled or Did Not Enroll

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We examined how enrollees and non-enrollees described their responses to the invitation to join the SED to provide further understanding of the quantitative enrollment results. Non-enrollees discussed their reasons for not joining the SED during individual person-centered interviews with site visitors conducted at convenient community locations in the first and second years of the demonstration period. Basic- and Full-Service enrollees described their reasons for enrolling during focus groups held for each of the treatment arms at demonstration sites in Year 1.

Through our interviews with enrollee and non-enrollees, we identified some differences in how they reacted to the offer of help in the form of SED services. We identified hopefulness and openness to receiving help among individuals who chose to participate in the SED. People who declined SED participation did so for a number of different reasons, including:

- The perception that they could not find and succeed in employment due to their impairments or other barriers;
- Failure to make a considered decision at the time of the recruiter's initial contact; or
- Satisfaction with their current work.

As described in Chapter 2, Westat sent potential enrollees a study invitation packet containing an introductory letter and brochure describing the study, 5 days after which the recruiter followed up with a call or in-person visit. Some non-enrollee interviewees and focus group participants said they did not receive the letter until after the recruiter called, and others said they never received the letter. Delayed and missed letters may be due to (what we later learned was) the unstable housing circumstances in which some eligible individuals lived; others simply may have failed to read the letter.

### 4.1 Sources of Data

We analyzed qualitative data from Year 1 focus groups with enrollees and person-centered interviews with non-enrollees. (The latter are eligible individuals who declined SED enrollment in response to recruitment efforts.) We conducted focus groups with enrollees, and interviews with non-enrollees as part of site visits to each of the 30 demonstration sites. Techniques for the analysis of qualitative data collected from focus groups and person-centered interviews are outlined in the Evaluation Design Report (Deliverable 7.2b), pages 6-17 to 6-20.

**Focus Groups.** During Year 1, we held two focus groups with enrollees at each site; one for Basic-Service enrollees and one for Full-Service enrollees. The focus groups enabled site visitors to speak with up to 10 enrollees from each treatment group about their employment history and goals for the future, physical and mental health, disability applications, and SED service usage and experiences. Site visitors stopped soliciting potential focus group participants once 10 enrollees agreed to be in

each group. In practice, site visitors frequently called every treatment-arm enrollee at the site and left messages when possible. In more than a few cases, enrollees who had not agreed to attend the focus group because they had never answered the phone or returned a phone call, showed up for the focus group based on messages left by a site visitor.

Across a total of 60 focus groups, attendance ranged from 1 to 7 enrollees, with an average of 3 SED enrollees per group. We scheduled focus groups for 1.5 hours, but, in practice, they ran from one hour to two hours. Table 4-1 provides the number of focus group participants by type of group.

**Table 4-1. Focus group enrollees by full-services and basic-services**

Enrollee group	Number
Full-Service enrollees	89
Basic-Service enrollees	93
Total	182

**Person-Centered Interviews.** For site visits in both years, we conducted person-centered interviews with up to two eligible individuals who declined to enroll in the SED. We designed the interview to last about one hour. These interviews aimed to learn about employment history, mental and physical health, applications for disability income, and their goals for the future. Site visitors spoke with interviewees in natural settings that the interviewees chose. Interview locations included interviewee homes or somewhere in the community, such as a public library or coffee shop.

In Year 1, we randomly selected interviewees. The goal was to interview two individuals who chose not to enroll in the study. When an interviewee scheduled early in the week and subsequently did not show up for the interview, site visitors attempted to schedule another interviewee from the same category as a replacement. However, in some cases, it was not possible to schedule a replacement interviewee in the remaining available time.

One aim of the person-centered interviews in Year 2 was to interview as many of the same individuals as possible from the previous visit. Visitors were not able to reach all former interviewees, but no interviewee reached from Year 1 declined a second interview. As in Year 1, we made efforts to reschedule or identify a new interviewee if a cancellation occurred during the week of the site visit. In total, site visit teams interviewed 31 individuals in Year 1 and 20 individuals in Year 2.

## 4.2 Eligible Individuals Had Concerns over Whether SED Was Real

A common reaction of both enrollees and non-enrollees to learning about the SED was to question whether it was a scam. Interviewees, similar to most cell phone customers, are used to receiving multiple phone calls each day offering goods or services that seems too good to be true, which turn out to have hidden costs, exaggerated benefits, or involve the consumer in fraud. Focus group participants explained that they first thought the call from the recruiter was “a hoax,” “a joke,” “a junk phone call,” “a scam kind of thing,” or “Is this some gimmick you’re trying to pull?” Likewise, non-enrollee interviewees said they thought it was “some type of BS,” or “I don’t answer nothing

that says California, Maryland...” or reported that they found recruiters’ verbal description of the SED “confusing” and were leery of joining.

### 4.3 Enrollees Discussed What They Hoped to Gain from SED

Eligible individuals who decided to enroll said they were open to learning more about the study before making a final decision. Dialogue similar to that of the Full-Service focus group participants below was common:

Facilitator: When you got the letter, what made you think, “Huh, maybe I’ll do this, or I’ll find out more?”

Enrollee 1 (female): I thought it was a hoax at first.

Enrollee 2 (male): Me too. I thought this is too good to be true. It sounds like a scam or something.

Enrollee 1: So I called and I wanted to ask questions about it. I spoke to [the recruiter]. I’m like, “I want to know what this is.” And she’s like, “Do you want to come in for an appointment and we can talk about it.” I was like, “Is this real? Can you tell me if it’s real or not?” So we talked on the phone for maybe, like 30 minutes. And then I was like, “Okay, I’ll come. We’ll make an appointment.” And she’s very helpful also.

Enrollee 2: Yeah. She’s funny. I think I called too because I didn’t believe it was real. I’m like, “I’ll schedule an appointment and check you guys out.” And then as soon as she started talking, I’m like, “Oh yeah.” I was definitely down for it.

Other enrollees who were leery of enrolling described other ways they verified the legitimacy of the demonstration. One enrollee said he conducted some online research about the project. Another reasoned that because the recruiter knew he had applied for disability benefits and that SSA had denied his application, the offer of help must be real. Yet other enrollees, who reported receiving multiple phone calls from their recruiters, noted the recruiters’ persistence, patience, and kindness, and decided to hear them out.

Many of those who joined the focus groups we conducted in the first year of the demonstration had only met with SED direct services staff at their site once or twice. Even so, most focus group participants expressed the hope that the demonstration would help them find a job they liked and succeed in it. As one enrollee said, “Maybe there could be a job out there that I could find that would work. Who knows?” Some reported that they had made repeated attempts to find suitable employment with little success. For example, one said, “Being denied twice on disability—it’s like they’re saying, ‘Okay there’s a job out there for you, given all your limitations.’”

When asked what they wanted most from the SED, enrollees emphasized wanting support. For example, an enrollee explained,

So when they [the recruiter] approached me—I'm open to pretty much anything and everything. They told me the study would help me. If I did get a job, they would be there to support me. And—I don't know—I just felt like I needed that extra help.... Because I don't really have, like, family support like that. So I felt like... this is like my other little family here.

Other services the enrollees found enticing were psychotherapy and counseling services. The incentive payment for completing the study interviews was also attractive. As one enrollee succinctly explained, “I want a job and a therapist. And also to get paid from you guys. On my ATM card. ‘Cause I'm strapped.” Other enrollees expressed upfront that the cash payments were the feature of the SED that initially attracted them, but then discovered that the program had more to offer than easy money: “The only reason I signed the line... is because of the 440 bucks. I'm not going to lie. I had nothing, so this was the only way I could get a little something or some kind of help. But there was more help involved so I'm really glad I got into the program.”

#### **4.4 Non-Enrollees Who Did Not Believe They Could Work**

The majority of non-enrollees with whom we spoke with felt deeply pessimistic about their capacity to work or improve their health. They did not believe they could work, overcome their pain, anxiety, or depression, let alone make it through a workday when simple activities of daily living exhausted them. Others felt overwhelmed and entrapped by the multiple issues they faced related to persistent housing; criminal justice; childcare; domestic violence; medical; and psychological problems. These individuals expressed no hope that their circumstances could change.

Some non-enrollees felt so worn down by pain and fatigue that they could not imagine being able to tolerate any employment. None of these individuals believed their pain or fatigue would lessen over time. For example, a non-enrollee who had to quit her IT job of 25 years after a stroke, said fatigue made the idea of returning to work impossible: “I am so tired all the time and I was worried that I was going to over-exhaust myself when I'm trying very hard to do other things.” Another non-enrollee said she had “depression” and “bipolar,” as well as musculoskeletal problems and pain after a recent shoulder surgery. With her mobility limitations and pain, coping with the demands of a job was too much when simply putting on her clothes and tying up her hair were effortful. Another non-enrollee said she had no problem finding work, and was working 5 hours per week as a sign-holder when we spoke with her, but “I can't even complete those tasks because I start hurting too much.” Additionally, one non-enrollee who declined to participate described her deep pessimism that she would survive her depression, anxiety, and musculoskeletal pain. Even her doctor's optimism did not seem to mitigate her resignation:

And then, poor Doctor X—when I go in to see him—he hears an earful because I tell him all about it. And he's like, “It'll get better; it'll get better. It just takes time.” I keep telling him, “Time. I don't know if I have time... I'm not looking forward—ahead—because I don't know if there is an ahead with the way everything's going.

Some non-enrollees lacked the confidence that they would succeed at a job interview and maintain a job successfully. Some non-enrollees expressed the belief that they were not worthy of a job. For example, one eligible individual told us:

[Company A] is a big company, so let's say I apply there and they don't give me the job. That makes me think, "Nobody's not gonna hire me." So that's the train-thought, like, "Nobody's not gonna hire you, you're not gonna be good enough because [Company A] didn't wanna hire me"... If I don't get hired at Golden Corral, what makes me think I'm gonna get hired for a secretary job? If I can't get a job here, I'm gonna think that I'm not worthy to get a job anywhere else.

Other non-enrollees were convinced that they had tried everything possible to secure employment and had failed, and they did not believe anyone or anything could help. For example, we spoke with a non-enrollee who self-described a history of attention deficit hyperactivity disorder (ADHD), post-traumatic stress disorder (PTSD), and bipolar disorder that he said began as a child, necessitating placement in special classes for children with emotional problems. He witnessed and was a victim of abuse growing up. He had a drinking problem and was recovering from liver failure when we met with him. He said he could not find a job because of a previous conviction for writing bad checks. He explained, "It's impossible for me to find a job...I've tried everywhere" and "applying to SSI meant that I gave up." For this non-enrollee, his disability application to SSA marked his resignation.

## **4.5 Non-Enrollees Who Did Not Make a Considered Decision about SED Enrollment**

Another group of non-enrollees simply did not give much thought to their decision to decline enrollment into the SED. Some non-enrollees interviewed by site visitors said they were preoccupied at the time the recruiter called them and did not make a considered decision about participation. For example, this non-enrollee reported barely listening to the recruiter before abruptly ending the phone call:

I don't even recall that phone call [from the recruiter]. I don't even know what she said. I think she just said something about supported employment and I was like, "I don't know what the hell are you talking about?" And I just hung up.... I don't get phone calls often. And when I do, it's always about some type of BS and so I'm like, "What are you calling me for?"

This non-enrollee had the same initial concern about potential fraud as other individuals who eventually enrolled. However, she did not take the next step of gathering more information about the study. Another non-enrollee, who had applied to a vocational rehabilitation program through the Veterans Administration, explained that she was so preoccupied with crises in her life when the recruiter called that she did not have the capacity to think carefully about the recruiter's proposal: "I was very busy at the moment and they tried to explain it."

Other non-enrollees, when called for interview by the site visitor, said they did not remember ever receiving a letter or phone call from the recruiter, even though our records showed that the recruiter had contacted them and they had declined enrollment. While we did not systematically collect data

on how non-enrollees responded to site visitors' requests for interviews, more than half of site visitors who made these calls remembered speaking with at least one non-enrollee who did not recall the study, suggesting it was not an infrequent occurrence. Their failure to recall the study at all suggests they had not given their decision much thought or attention.

In sum, we found three reasons why non-enrollees did not make a considered decision about the SED. Some non-enrollees did not recall the study; others remembered it, but were too preoccupied or stressed to pursue enrollment; and still others did not explore it further because they thought it was a scam.

## **4.6 Non-Enrollees with Financial Challenges Who Were Satisfied with Their Current Employment**

Among the non-enrollees interviewed by site visitors, two interviewees said they were satisfied with their current employment. Both individuals had applied for disability income because they felt their earnings did not sufficiently cover their basic expenses. When interviewed in Year 1, one young man was enrolled part-time in a local community college working 16 hours per week at a work-study job on campus. He had no interest in finding different work until after graduation, and had applied for disability income because he feared not being able to afford his medical treatments. His stepfather had lost his job during the 2008/2009 recession and “we had to go to bankruptcy and went to all these different doctors and a lot of them didn’t take insurance and just drained us dry.” He worried about the financial consequences of being uninsured or inadequately insured.

The second interviewee, a woman in her late forties with multiple sclerosis (MS), works full-time in an administrative department of a local hospital, for 30 years. As her MS progressed, she needed to take more and more days of medical leave from work—up to six months per year. She expected that she would not be able to work full-time in the near future and worried about losing her health benefits as a result. She found her job satisfying and did not want a different one. She hoped that SSA could provide financial assistance and Medicare to supplement her dwindling income.

## **4.7 Discussion**

To supplement our discussion of the observed differences among enrollees and non-enrollees, we examined the reasons they gave for enrolling or not enrolling in the SED. We suggest that those who enrolled in the SED felt hopeful that they could find a job and improve their health with support. In contrast, many potential enrollees who declined enrollment thought they would not find a job or improve their health even with support. We do not know if this difference is due to trait or state differences between enrollees and non-enrollees (Stevens et al., 2014); that is, is enrollees’ hopefulness due to a stable, personal characteristic (trait), or is it mutable in times of greater stress (state)? Similarly, is the pessimism of non-enrollees a stable characteristic, or does it decrease under more favorable circumstances? The present data do not allow us to answer these questions.

While enrollees felt hopeful, most non-enrollees said they declined enrollment because they did not believe they could work or improve their health even with support. Another group of non-enrollees appeared not to have thought carefully about their enrollment decision, and declined without

understanding what the SED offered. Lastly, we found that a few non-enrollees were satisfied with their work and had no intention of searching for new employment.

No doubt, decisions about enrollment are multi-determined, and interviewees may have only partial awareness of their motivations. Further, retrospective accounts of the decision to enroll are inevitably subject to revision as enrollees learned more about the study after enrollment. Non-enrollees may have revised their justifications for not joining based on information about SED they learned in conversation with the site visitors. Social desirability may have influenced the answers of both groups as well.

Both enrollees and non-enrollees expressed concern that the SED might not be real. If SSA were to scale-up an intervention similar to the SED for denied applicants, we have two suggestions to mitigate worry about fraud. First, SSA should consider including information about a supported employment program available for denied applicants in the official decision letter. Second, we recommend that SSA create a web page on their official website that individuals can find easily using simple keywords, such as: “disability application;” “SSI application;” “support;” “employment;” “job;” “health care;” and “therapy.” Enrollees commonly used these words to describe the study to site visitors.

## 5. Sources of Data and Descriptive Characteristics

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Disability claimants begin the application process by completing a Disability Report (SSA-3368-BK), either online or on paper. Applicants provide basic demographic information including age and highest level of formal education; job history, education and training; and medical conditions, treatment, and treatment history. SSA's Structured Data Repository (SDR) stores information from each submitted Disability Report.

SSA provided information from the SDR for each of the 73,512 unique applicants denied disability who met the initial criteria for recruitment into the SED. This larger data set allows for comparisons between applicants denied disability benefits from the catchment areas with the applicants who were selected for contact. These comparisons provide insight into the generalizability of the pool of applicants selected for contact to the broader pool of applicants denied disability benefits alleging a mental impairment. Furthermore, this information can be used to compare the characteristics of enrollees to groups who were contacted but did not enroll in the study.

### 5.1 Sources of Data

The quantitative analyses and findings in this report are based on six data sources. The primary data sources included the SDR and the SED MIS (described in Chapter 2). The SDR is the source of data for disability applications, initial decisions (denials), and key applicant characteristics. The MIS provides recruitment and enrollment information on all denied applicants that SSA conveyed to Westat. Additional sources of data include the Master Beneficiary Record (MBR), the Supplemental Security Record (SSR), the American Community Survey (ACS), and the Quarterly Census of Employment and Wages (QCEW). Below we provide basic information about each data source and the contributing data used for the multivariate analyses.

**SDR.** The SDR is the database created (populated) by data from each applicant's Disability Report. This database also includes data pertaining to decisions about each application, including awards, denials, appeals, etc. Table 5-1 presents the variables of interest from the SDR related to the claims process, demographics, work, earnings, and health-related information on enrollees and non-enrollees when they initiated the application process (i.e., filed a Disability Report).

**Table 5-1. SDR program data variables**

Claim process
Claim type (Title: SSDI/SSI)
Number of weeks/months since initial application
Number of weeks/months since initial denial
Prior denial claim
Demographic
Date of birth
Sex
Number of miles from residence to the demonstration site
Highest level of education
Spoken English
Employment
Number of jobs held in last 15 years before became unable to work
Number of hours worked per day at most recent job
Number of days worked per week at most recent job
Tenure of most recent job (in months)
Business type at most recent job
Whether applicant is currently working
Years since last job
Earnings
Annual earnings from job if currently working
Health and medical
Primary impairment
Secondary impairment
Number of emergency room visits in past 12 months
Number of inpatient stays in past 12 months
BMI (derived from height and weight)

**MBR.** The MBR maintains data on the current (and historical) beneficiary status, including denials, of individuals in the Old Age, Survivors and Disability Insurance program (OASDI). For our analyses, interest in the MBR concerns the beneficiary status of denied applicants referred to the SED by SSA, specifically SSDI applicant status following the initial denial until the end of recruitment at each SED demonstration site. Variables of interest included whether the denied applicant began receiving SSDI benefit payments and the date those payments began.

**SSR.** The SSR maintains data on the current (and historical) status, including denials, of individuals who apply for the SSI program. Our interest in the SSR concerns the beneficiary status of denied applicants referred to the SED by SSA. For the enrollment analysis, our specific interest is SSI applicant status following the initial denial until the end of recruitment at each SED demonstration site. Variables of interest included whether the denied applicant began receiving SSI benefit payments and the date those payments began.

**ACS.** Conducted each month of every year by the U.S. Census Bureau, the ACS provides data about the U.S. population and their communities. The survey provides comprehensive information covering demographic characteristics of the population, information about peoples' jobs and occupations, and housing, among many other vital topics. State and local authorities use this information to guide community planning for infrastructure, e.g., hospitals and schools; and services, such as school lunch programs and health services.

For the purposes of this report, Westat accessed data from the ACS on the 2014 to 2018 5-year estimates. These data provide census tract level information that can be matched to disability applicant home (contact) addresses. We used these data to impute key variables missing from the SDR applicant files or create other variables needed for the analysis, such as average education level and average household income level.

**QCEW.** The QCEW provides quarterly and annual counts of employment and wages reported by employers of all jobs at the county, Metropolitan Statistical Areas (MSA), state, and national levels. Covering more than 95 percent of all jobs, the QCEW provides these data by detailed industry codes. Using county level data, we linked these data to the denied applicants using the date of the denial decision and their county of residence.

## 5.2 Characteristics of Applicants Who Passed the Programmatic Screener

SSA provided to Westat all denied applicants aged 18 to 49 years with addresses in the identified catchment areas. Westat then applied a programmatic screener (discussed in Chapter 3) to further remove denied applicants who did not meet the study criteria (e.g., had an intellectual impairment, resided in a custodial institution such as a nursing home, jail, or residential treatment facility). After conducting the programmatic screener to remove applicants based on data available from SSA and making additional exclusions for applicants already receiving disability or who participated in a previous SSA demonstration, 46,521 (63.3 percent) of the denied applicants remained. From this group, we randomly selected 21,003 applicant records to pursue recruitment.

Westat did not attempt to contact the remaining reserve group of 25,518 applicants denied disability benefits who passed the programmatic screener. It is important to note that although these applicants passed the programmatic screener, some were likely ineligible for the study. For the group of 21,003 selected for contact, Westat learned through the process of recruitment that 8,145 (38.8 percent) were ineligible for the SED based upon a further competency screen or other information learned during the recruitment process. We do not know how many of the 25,518 denied applicants not selected for contact in the reserve group would have been identified as ineligible during the recruitment process given we made no attempt to contact them. However, we surmise that the number is likely quite close to the number subsequently noted in the contact group.

We do not expect differences between those selected for contact and those not selected. To assess the degree to which the group selected for contact represents the larger group of denied applicants, we provide a comparison between those selected for contact and those not selected in Table 5-2. The data suggest that the group of applicants with no contact attempt are similar with regard to basic demographics (age, gender, and education level) to the group selected for contact. Among those who passed the programmatic screener, the applicants are more than half female (56.2 percent) and an average of 35.7 years old. More than one in five (22.8 percent) did not complete high school or earn a GED. However, a comparable 22.2 percent held an Associate's Degree or higher.

**Table 5-2. Comparison of applicants selected for contact to those not selected for contact, among applicants residing in catchment areas who passed the programmatic screener**

Variable	No contact attempt (25,518)		Selected for contact (21,003)		All (46,521)		p-value
	n	Mean	n	Mean	n	Mean	
<b>Age (Years)</b>							0.47
Mean	25,518	35.7	21,003	35.6	46,521	35.7	
<b>Age Group</b>	n	%	n	%	n	%	0.81
18 - 34	11,217	44.0	9,256	44.1	20,473	44.0	
35 and above	14,301	56.0	11,747	55.9	26,048	56.0	
<b>Gender</b>	n	%	n	%	n	%	0.26
Male	11,247	44.1	9,145	43.5	20,392	43.8	
Female	14,271	55.9	11,858	56.5	26,129	56.2	
<b>Education</b>	n	%	n	%	n	%	0.43
Less than high school	5,861	23.0	4,756	22.7	10,617	22.8	
High school or GED	11,839	46.4	9,685	46.1	21,524	46.3	
Some college or technical	2,088	8.2	1,812	8.6	3,900	8.4	
Associates degree or higher	5,645	22.1	4,674	22.3	10,319	22.2	
Missing	85	0.3	76	0.4	161	0.4	
<b>Number of jobs held in the past 15 years</b>	n	%	n	%	n	%	0.29
0	1,611	6.3	1,334	6.4	2,945	6.3	
1	4,078	16.0	3,413	16.3	7,491	16.1	
2-5	15,833	62.1	12,879	61.3	28,712	61.7	
6 or more	3,886	15.2	3,302	15.7	7,188	15.5	
Not answered	110	0.4	75	0.4	185	0.4	
<b>Weekly pay (most recent job)</b>	n	Mean	n	Mean	n	Mean	0.16
Mean	22,540	\$416	18,459	\$410	40,999	\$413	
<b>Applicant alleged a mental impairment</b>	n	%	n	%	n	%	0.11
Yes	22,852	89.6	18,904	90.0	41,756	89.8	
No	2,666	10.4	2,099	10.0	4,765	10.2	
<b>Step reached in disability determination process<sup>a</sup></b>	n	%	n	%	n	%	0.01
Step 1: Financial screen	488	2.1	451	2.1	939	2.1	
Step 2: Medical screen	2,990	13.0	2,791	13.3	5,781	13.2	
Step 4: Ability to work (past job)	536	2.3	392	1.9	928	2.1	
Step 5: Ability to work (any job)	14,053	61.2	12,765	60.9	26,818	61.0	
Other <sup>b</sup>	4,903	21.3	4,576	21.8	9,479	21.6	
<b>Previously denied for same type of claim</b>	n	%	n	%	n	%	<0.01
Yes	3,925	15.4	2,343	11.2	6,268	13.5	
No	21,593	84.6	18,660	88.8	40,253	86.5	

Source: SSA SDR

Notes: The analysis uses the chi-square test to calculate the p-value for the group difference on categorical characteristics.

<sup>a</sup> Excludes applicant records with a missing value for the step reached in the determination process (n=2,576). Those missing a step are missing a regulation basis code in the SDR database.

<sup>b</sup> The step may have a code of “other” if the regulation basis code did not fit into one of the defined steps. Examples of denied applicants coded as “other” include those denied for technical or administrative reasons, such as failure to follow a prescribed treatment, failure to submit to consultative exam, and the applicant does not want to continue claim development.

With regard to job history, the group selected for contact and the reserve group held similar numbers of jobs in the fifteen years prior to completing the Disability Report; the majority (approximately six in ten) in each group held between two and five jobs in this time frame. The average weekly pay rate reported by the applicants for their most recent job of the two groups did not differ significantly (\$416 for the group not selected for contact, and \$410 for the group selected for contact). Approximately nine in ten alleged a mental impairment on the application. The remaining 10 percent received a diagnosis of a mental impairment from the SSA during the determination process but did not allege a mental impairment on the application.

The applicants selected for contact differ from those not selected for contact in terms of the step reached in the disability determination process. A higher percentage in the group selected for contact were denied at Step 2 in the determination process (13.3 percent) than the reserve group (13.0 percent).<sup>8</sup> Receiving a denial at Step 2 indicates that SSA determined that the applicant's impairment was not severe enough to receive an approval or the impairment did not have a sufficient duration. A higher percentage in the reserve group reached Step 4 (2.3 percent) compared to the group selected for contact (1.9 percent). Receiving a denial at Step 4 indicates that SSA determined that the applicant was capable of working a prior job. For both those selected and not selected for contact, just over 60 percent received a denial after reaching Step 5 in the determination process. Receiving a denial decision at Step 5 indicates that SSA determined that the applicant has the capacity to earn SGA in a job available in the national economy, but not necessarily work that the applicant performed in the past (Wixon & Strand, 2013).

The SSA data also indicate whether the applicant received a denial previously for the same type of claim. A higher percentage in the group not selected for contact (15.4 percent) received a denial previously for the same type of claim compared to the group selected for contact (11.2 percent).

### **5.3 Characteristics of Applicants Selected for Contact by Recruitment Outcome**

Table 5-3 shows the characteristics of applicants who were selected for contact by recruitment outcome. The table divides applicants selected for contact into five groups based on the categories described in Chapter 3: 1) not potential enrollees, 2) possible potential enrollees, 3) potential enrollees not interested in work or in finding a better job; 4) potential enrollees who did not enroll for reasons other than no interest in work; and 5) eligible enrollees.<sup>9</sup>

The ages and formal education of the groups are similar. Among the entire set of applicants selected for contact (n=21,003), a substantial portion (22.7 percent) have less than a high school education, and almost half (46.1 percent) have no more than a high school education (diploma or GED). However, about one in five (22.3 percent) have an Associate's Degree or higher. The number of jobs the applicant held in the past fifteen years before applying for disability also did not differ

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<sup>8</sup> No applicants received a denial at Step 3 ("Meets or equals listings") because the adjudication process at Step 3 can only result in an allowance or a decision to continue to Step 4.

<sup>9</sup> Table 5-2 does not provide bivariate statistical comparisons between the groups based on the recruitment outcome. The regression models presented in Chapters 6 and 7 provide a more robust test of the effects of applicant characteristic on enrollment.

substantially across the groups displayed in Table 5-2. Among the entire set of applicants selected for contact, the majority (61.3 percent) held between two and five jobs in the past fifteen years. Only 6.4 percent indicated they did not hold a job in the past 15 years.

The average weekly pay among those selected for contact was \$410. Among the groups defined by recruitment outcome, the eligible enrollees reported the lowest average weekly pay of \$382. Potential enrollees who decided not to enroll in the SED reported the highest average weekly pay on their applications (\$434). More than half of the applicants in each group reached Step 5 in the disability determination process. Eligible enrollees had the highest proportion (67.0 percent) reaching Step 5, whereas not potential enrollees had the lowest proportion (53.3 percent) reaching this final step in the initial determination process. While Table 5-3 provides descriptive comparisons of the characteristics of specific subgroups of eligible applicants selected for contact, the regression analyses presented in Chapters 6 and 7 will examine the significance of the relationship between applicant characteristics and the decision to enroll in the SED, and identify factors associated with study enrollment.

Table 5-3. Characteristics of applicants denied disability benefits by recruitment outcome, among those selected for contact

Variable	Recruitment outcome											
	Not potential enrollees (8,145)		Possible potential enrollees (1,551)		Potential enrollees: Not interested in work (4,149)		Potential enrollees: Did not enroll for other reasons (4,198)		Eligible enrollees <sup>a</sup> (2,960)		All (21,003)	
	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean
<b>Age (Years)</b>												
Mean	8,145	35.3	1,551	35.4	4,149	36.3	4,198	35.8	2,960	35.4	21,003	35.6
<b>Age Group</b>	n	%	n	%	n	%	n	%	n	%	n	%
18 - 34	3,737	45.9	689	44.4	1,708	41.2	1,790	42.7	1,332	45.0	9,256	44.1
35 and above	4,408	54.1	862	55.6	2,441	58.8	2,408	57.4	1,628	55.0	11,747	55.9
<b>Gender</b>	n	%	n	%	n	%	n	%	n	%	n	%
Male	3,887	47.7	682	44.0	1,612	38.9	1,683	40.1	1,281	43.3	9,145	43.6
Female	4,258	52.3	869	56.0	2,537	61.2	2,515	59.9	1,679	56.7	11,858	56.5
<b>Education</b>	n	%	n	%	n	%	n	%	n	%	n	%
Less than high school	1,989	24.4	346	22.3	873	21.0	944	22.5	604	20.4	4,756	22.7
High school or GED	3,803	46.7	743	47.9	1,898	45.8	1,857	44.2	1,384	46.8	9,685	46.1
Some college or technical	697	8.6	131	8.5	351	8.5	368	8.8	265	9.0	1,812	8.6
Associates degree or higher	1,628	20.0	327	21.1	1,005	24.2	1,015	24.2	699	23.6	4,674	22.3
Missing	28	0.3	4	0.3	22	0.5	14	0.3	8	0.3	76	0.4
<b>Number of jobs held in the past 15 years</b>	n	%	n	%	n	%	n	%	n	%	n	%
0	599	7.4	104	6.7	214	5.2	230	5.5	187	6.3	1,334	6.4
1	1,360	16.7	258	16.6	698	16.8	670	16.0	427	14.4	3,413	16.3
2-5	4,863	59.7	940	60.6	2,571	62.0	2,651	63.1	1,854	62.6	12,879	61.3
6 or more	1,294	15.9	245	15.8	645	15.6	633	15.1	485	16.4	3,302	15.7
Not answered	29	0.4	4	0.3	21	0.5	14	0.3	7	0.2	75	0.4
<b>Weekly pay (most recent job)</b>	n	mean	n	mean	n	mean	n	mean	n	mean	n	mean
Mean	7,102	\$396	1,367	\$409	3,663	\$434	3,714	\$434	2,613	\$382	18,459	\$410
<b>Applicant alleged a mental impairment</b>	n	%	n	%	n	%	n	%	n	%	n	%
Yes	7,390	90.7	1,419	91.5	3,711	89.4	3,748	89.3	2,636	89.1	18,904	90.0
No	755	9.3	132	8.5	438	10.6	450	10.7	324	10.9	2,099	10.0

**Table 5-3. Characteristics of applicants denied disability benefits by recruitment outcome, among those selected for contact (continued)**

Variable	Recruitment outcome											
	Not potential enrollees (8,145)		Possible potential enrollees (1,551)		Potential enrollees: Not interested in work (4,149)		Potential enrollees: Did not enroll for other reasons (4,198)		Eligible enrollees <sup>a</sup> (2,960)		All (21,003)	
	n	%	n	%	n	%	n	%	n	%	n	%
<b>Step reached in disability determination process<sup>b</sup></b>												
Step 1: Financial screen	158	1.9	37	2.4	119	2.9	91	2.2	46	1.6	451	2.1
Step 2: Medical screen	1,118	13.7	189	12.2	563	13.6	512	12.2	409	13.9	2,791	13.3
Step 4: Ability to work (past job)	119	1.5	23	1.5	113	2.7	78	1.9	59	2.0	392	1.9
Step 5: Ability to work (any job)	4,335	53.3	897	58.0	2,729	65.8	2,825	67.4	1,979	67.0	12,765	60.9
Other <sup>c</sup>	2,406	29.6	401	25.9	623	15.0	684	16.3	462	15.6	4,576	21.8
<b>Previously denied for same type of claim</b>	n	%	n	%	n	%	n	%	n	%	n	%
Yes	911	11.2	221	14.3	487	11.7	373	8.9	351	11.9	2,343	11.2
No	7,234	88.8	1,330	85.7	3,662	88.3	3,825	91.1	2,609	88.1	18,660	88.8

Source: SSA SDR

- <sup>a</sup> The SED enrolled 3,000 participants. After enrollment, a subsequent review of SSA records revealed that 41 enrollees were ineligible to participate in the demonstration because they were receiving disability payments prior to recruitment start, or they participated in a previous SSA demonstration. The “eligible enrollees” includes only participants who enrolled in the SED and were eligible to participate.
- <sup>b</sup> Excludes applicant records with a missing value for the step reached in the determination process (n=28). Those missing a step are missing a regulation basis code in the SDR database.
- <sup>c</sup> The step may have a code of “other” if the regulation basis code did not fit into one of the defined steps. Examples of denied applicants coded as “other” include those denied for technical or administrative reasons, such as failure to follow a prescribed treatment, failure to submit to consultative exam, and the applicant does not want to continue claim development.

## 5.4 Summary

Applicant responses submitted as part of the SSA Disability Report provide useful information about the denied applicants living within the catchment areas of the SED sites who alleged a mental impairment on the application or received a primary diagnosis of a mental impairment. SSA also maintains data recorded as part of the determination process for each applicant. This information paints a picture of the applicants in terms of basic demographic characteristics, medical and job history, and reasons for denial.

After completing a programmatic screener, Westat randomly selected applicants for attempted contact. The applicants selected for contact did not differ significantly from those not selected for contact in terms of basic demographics (i.e., age, gender, education, and job history). A substantial portion of the applicants denied disability benefits from the catchment areas had very little formal education (22.8 percent did not complete high school or a GED), and nearly half (46.3 percent) did not complete education beyond high school (the remaining 30.9 percent completed some college or received a college degree). Approximately two-thirds of the applicants reached the fifth step in the disability determination process, indicating that SSA found that the applicant was not earning SGA, but that the applicant was capable of performing a job available in the national economy.

We also used the Disability Report data to compare groups of applicants selected for contact by the outcome of the recruitment process. The regression analyses presented in the following chapters of this report will examine the relationship between these characteristics and information available from other data sources and the likelihood that the applicant enrolled in the SED.

## 6. Regression Modeling Analytic Approach

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The purpose of our multivariate enrollment analysis was to apply a logistic regression model to find the characteristics of denied applicants, and of the areas in which they resided, that significantly related to their decision to enroll or not enroll in the SED. Of course, for any relationship between one of these characteristics and the enrollment decision to be other than purely random, we need to presume that the denied applicants have to in fact be aware of: (1) the general nature of the intervention; and (2) the possibility that they could enroll.

As discussed in Chapter 3, we attempted to contact 21,003 denied applicants who passed the programmatic screener but only spoke with 13,375 of them. Of these, 2,068 were found to be ineligible and therefore the enrollment decision only pertained to the remaining 11,307 eligible denied applicants, whom we designated as potential enrollees. Among the 7,628 denied applicants who passed the programmatic screener but recruiters were unable to speak with them, 6,077 were either ineligible or could not have been aware of the possibility of enrolling in the SED because we could not find valid contact information (i.e., addresses or phone numbers) for them. Thus, there remained 1,551 denied applicants whose contact information appeared valid but the recruiter could not make contact with them. Because we could not assume that they were either aware or unaware of the SED and the option to enroll, we designated them as possible potential enrollees to indicate that we cannot rule out the possibility that they saw the study invitation packet mailed to them. Hence, the regression analyses presented in this report include potential enrollees and possible potential enrollees.

### 6.1 Statistical Methods

As described in Chapter 5, we assembled data for each denied applicant from a variety of sources. The large number of different characteristics in these data sources that were potentially relevant to the enrollment decision, and the absence of literature on similar randomized trial interventions for applicants denied disability benefits, necessitated an exploratory approach to the analysis. In order to implement this exploratory approach while avoiding the greatly elevated risk of Type I errors resulting from estimating numerous regressions on a single data set, we used a split sample approach, with numerous exploratory regressions run on a test sample and hypothesis tests for our final model run on a validation sample.

To allow for both exploratory analyses and testing of enrollment models developed in the exploratory process, we randomly split the 12,856 cases into a test sample of roughly one-third ( $n=4,321$ ) and a validation sample of roughly two-thirds ( $n=8,535$ ). In the test sample, exploratory analyses involved estimation of logit multiple regression models of enrollment probability with a variety of explanatory variables and functional forms.<sup>10</sup>

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<sup>10</sup> This split-sample approach has been widely recommended in the applied econometrics literature (e.g., Kennedy, 2008, Chap. 5). It was previously used in an earlier assessment of enrollment into the Mental Health Treatment Study randomized trial (Salkever et al., 2014).

We estimated exploratory logistic regressions separately on all 4,321 test cases as well as on the subset of these test cases (n=3,793) designated as potential enrollees only. We applied three different maximum likelihood or pseudo-maximum likelihood estimation methods that varied only in their specification of the properties of the regression disturbances: (1) models with errors assumed to be correlated across persons in the same demonstration site (using the Stata command “vce (cluster site)”); (2) errors that contained a site-specific Gaussian random intercept error (the “random effects estimator”); and (3) errors that contained a site-specific fixed error component (the “fixed-effects” estimator).

Additionally, we tested a variety of explanatory variables for inclusion in the final exploratory regressions. In most cases, we entered these variables in linear form, but we did also test some potential explanatory variables in non-linear form (either quadratic or logarithmic). Our principal criterion for inclusion of a variable in the final exploratory models, which were replicated in the validation analyses, was the 2-tailed p-value test on the null hypothesis associated with each continuous or categorical variable. Given the occasional instability in our results across specifications of the test sample regressions, and the fact that the validation sample is twice as large as the test sample, we used a relatively lax criterion (2-tailed p-value  $\leq 0.3$ ) for allowing specific variables to remain in our test models. Because we did not view a priori expectations about regression coefficient signs as clearly indicating either positive or negative effects on probability of study enrollment, we gave no consideration to one-tailed hypothesis tests.

## 6.2 Explanatory Variables Tested

In our exploratory regressions, specific variables pertained to the following categories:

1. **Timing Variables.** These included the date on which each person became available for recruitment, the date on which recruitment efforts ended for demonstration sites, the number of days from the date on which the person became available for recruitment to the date when recruitment activities ended for that respective site, and the number of days from the date of the denial decision to the date on which the person became available for recruitment. It is important to note that because the records for some eligible applicants included multiple decision dates, we chose the decision date closest to (but not after) the date-available-for-recruitment date to use in our analyses.
2. **Variables Based on the Characteristics of the Census Tract Where the Denied Applicant Resided.** Data on these characteristics were obtained from the 2014-2018 ACS 5-year file. These variables included the percent of persons below 100 percent of poverty, percent of persons below 200 percent of poverty, percent commuting to work by auto, and percent of residents with no health insurance coverage. We also tested a 0-1 indicator for denied applicants residing in Medicaid expansion states.
3. **Socio-Demographic Characteristics of Each Denied Applicant.** These included age, gender, and level of education. Besides the highest grade completed, other education variables tested included 0-1 indicators for college graduation and for completing less than 9 grades of schooling. We also included a 0-1 variable indicating whether or not the denied applicant had English-language deficits in speaking, in writing, or reading.

4. **Local Labor-Market Characteristics.** County-level variables included: (a) the average weekly wage in the denied applicant’s residence county for the year and quarter of the decision date closest to (but not after) the date he or she became available for recruitment, and (b) the average change per day in this average weekly wage from the decision date to the date available for recruitment. Data for these items were taken from the QCEW of the Bureau of Labor Statistics. We also included a census-tract-level measure from the ACS of the percent of the labor force that was unemployed.
5. **Health Related Variables.** Tested variables included the following items from the applicants Disability Report submitted to SSA: the number of ER visits in the past 3 years, the number of hospital inpatient admissions in the past 3 years, and a 0-1 indicator of a mental impairment (non-intellectual) alleged by the applicant. We also included 0-1 indicators from the disability examiner of both the applicant having a primary mental impairment, and those having a secondary mental impairment. In addition, some test regressions included self-reported height and weight information from the submitted disability application.
6. **Self-Reported Job History Variables from the Denied Applicant’s Application (Disability Report).** We tested the variables including the number of jobs held in the last 15 years; duration of time since the last job held; number of years tenure in the last reported job; weekly earnings in the last job; and measures of weeks and hours of work at the last job.
7. **Measures Relating to SSA Determinations Based on Benefit Applications.** Variables we tested included: a 0-1 indicator of prior denial of benefits, a 0-1 indicator of denial due to earnings in excess of SGA amount, a 0-1 indicator that the applicant’s disability did not preclude gainful employment, 0-1 indicators of SSI benefit receipt, 0-1 indicators of SSDI benefit receipt, and a 0-1 indicator of SSDI benefit termination. Note that the indicators relating to benefit receipt or termination were defined for the period **after** the date when the denied applicant became available for recruitment.

## 6.3 Explanatory Variables Included in Final Test Regressions

Table 6-1 lists the 13 explanatory variables that we identified for inclusion in our final test regressions. Note that data on some items were missing due to either skip patterns in the application form (Disability Report), skip patterns in the evaluation and/or reporting procedures of the disability examiners, or omissions by the applicant. Because the fraction of cases with missing data on these items was non-negligible (i.e., 10 percent or more of the denied applicants under study), we coded these items as equal to zero when missing and included a 0-1 dummy variable in our exploratory regressions when the item was missing for a particular applicant. Thus, for each variable with non-negligible numbers of missing values, we initially included both the variable itself (with the 0 recodes) along with the missing data dummy for that variable in our exploratory regressions. In cases where only one of these two variables had p-values that consistently satisfied our inclusion rules, we excluded the other variable of the pair (i.e., the insignificant original variable or the insignificant missing-data dummy) from our final test regressions.

**Table 6-1. Explanatory variables identified by the final test regressions with the 0-1 enrollment dependent variable – variable names, definitions, and sources**

Variable name	Definition	Source*
recruitlag	7 + gap in days from the decision date closest to the date-available-for-recruitment date. <sup>1</sup> The 7 days were added to allow for the time involved in making the first initial letter and contact attempt with the denied applicant.	SDR, MIS
recruitlag <sup>2</sup>	= the square of <b>recruitlag</b> .	SDR, MIS
FEM	The 0-1 indicator of gender; = 1 for female denied applicants, 0 for males	SDR
SSIinRecruit	Variable =1 if the denied applicant received an approval for SSI benefits within 210 days <b>after</b> the date the applicant was available for recruitment ; = 0 otherwise. <sup>2</sup>	SSR
SSDIinRecruit	Variable =1 if the denied applicant received an approval for SSDI benefits within 210 days after the date the applicant was available for recruitment ; = 0 otherwise. <sup>3</sup>	MBR
CountyWageGrowth	Variable = {[average weekly wage in the denied applicant’s residence county (from QCEW data) for the year and quarter of their date available for recruitment] – [the analogous average weekly wage for the year and quarter of their decision date]} / [ <b>recruitlag</b> minus 7]. <sup>4</sup>	QCEW
WorkPotential	Variable = 1 if any of the denial decision basis codes in the denied applicant’s record = N32, 0 otherwise.	SDR
MissingBasisCodes	Variable = 1 if no data on denial decision basis codes are in the denied applicant’s record, 0 otherwise**	SDR
HighestSchoolGrade	The highest grade level completed for the denied applicant, coded for the variable HEDULVL_CD in the SDR data. (“GED” recoded as completed 11 grades, “K” and missing data recoded as completed 0 grades).	SDR
PctUnempl	The unemployment rate in the denied applicant’s residence census tract from the 5-year ACS census tract file.	ACS
ALLGN_IMP_MNTL	Variable =1 if the applicant alleged a mental impairment on the application; 0 otherwise	SDR
WEEKLY_PAY1	Variable = weekly rate of pay from last job; coded as = 0 for all cases with missing data	SDR
weeklypaymiss	Variable = 1 if weekly pay data is missing; 0 otherwise	SDR
lastjobtenmiss	Variable = 1 if data on tenure in years on last job held is missing; = 0 if otherwise	SDR

\* SDR=Structured Data Repository; ACS=U.S. Census American Community Survey (2013-2017 5-year estimates); QCEW=Quarterly Census of Employment and Wages (Bureau of Labor Statistics); MIS=Management Information System (SED recruitment data recorded by recruiters); MBR=Master Beneficiary Record; SSR=Supplemental Security Record.

\*\*This code indicates the SSA finding that, relevant past work aside, the applicant was not currently earning SGA but did have the capacity to do a job in the national economy.

<sup>1</sup> Note that in 2,138 cases of potential or possible potential enrollees, more than 1 decision date was recorded in the data supplied by SSA. In these cases, the value of recruitlag was calculated based on the decision date that was closest to, but not after, the date the applicant was available for recruitment.

<sup>2</sup> Note that denied applicants who were approved for benefits prior to their date available for recruitment were deemed ineligible for the study. 210 days was the minimum length of time in our data between the individual’s date available for recruitment and the date on which updated benefit receipt information was extracted from the SSA’s administrative data files on benefit receipt.

<sup>3</sup> The exclusion in note 4 above also applies to SSDI benefits.

<sup>4</sup> This is just the increase in dollars per day in the average wage over the [**recruitlag** minus 7] period of days. This per day increase measure was used to avoid confounding the wage rate increase variation with the variation in **recruitlag**.

## 6.4 Descriptive Comparisons of Test and Validation Samples

Although we randomly split our data on the combined potential and possible potential enrollees into test and validation samples, our selection of the specific set of explanatory variables shown in Table 6-1 could have resulted in some non-negligible differences between the test and validation data sets. This result is particularly concerning for dummy variables where mean values are very close to 0 or 1 and continuous explanatory variables with skewed distributions and small numbers of either very large or very small “outliers.” To check for this possibility, we compared mean values between test and validation data sets for all of the explanatory variables in Table 6-1 and our outcome (enrollment) variable. Similarly, because we included several additional explanatory variables in sensitivity tests on our validation data (see Table 6-2 below), we also compared mean values for these variables between test and validation data sets.

**Table 6-2. Additional explanatory variables included in test and validation sensitivity analysis regression appendix**

Variable name	Definition	Source
SSIinLateRecruit	Variable =1 if the denied applicant received an approval for SSI benefits <b>more than 210 days</b> after as of October 2019;= 0 otherwise.	SSR
SSDIinLateRecruit	Variable = 1 if the denied applicant received an approval for SSI benefits more than 365 days after the date available for recruitment; = 0 otherwise.	MBR
Laterecruit	Variable =1 for all cases whose date available for recruitment was less than 210 days before the date on which the SSA benefit receipt flags were pulled (October 2019). <sup>1</sup> For cases where laterecruit=1, there were less than 210 days of “exposure” to the possibility that a benefit receipt could be reported by SSA.	MIS
LAST_JOB_TNR_YRS	= tenure in years on last job held; missing values recoded to zero.	SDR

<sup>1</sup> Note that in 2,138 cases of potential or possible potential enrollees, more than 1 decision date was recorded in the data supplied by SSA. In these cases, the value of recruitlag was calculated based on the decision date that was closest to, but not after, the date the applicant was available for recruitment.

We present descriptive statistics for our dependent variable and explanatory variables for the combined total sample (n=12,856), test sample (n=4,321), and validation samples (n=8,535) in Tables 6-3 through 6-5, respectively. In Table 6-3, we see a few clear differences between the potential enrollees and the possible potential enrollees in mean explanatory variable values.<sup>11</sup> For example, we note the difference for recruitlag, which indicates that the delay from the decision date to the start of recruitment was 14 days longer for possible potential enrollees. We also note that 14 percent more potential enrollees than possible potential enrollees began recruitment late in the recruitment process.

<sup>11</sup> The first line of all 3 tables reports the means for enrollment rates which, of course, appear as 0 for the possible potential enrollees given recruiters never spoke directly to them.

**Table 6-3. Sample descriptive statistics for regression variables**

Variable name	Potential and possible potential enrollees (n=12,856)		Potential enrollees only (n=11,305)		Possible potential enrollees (n=1,551)	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Enrolled	0.230	0.421	0.262	0.440	0.000	0.000
recruitlag	69.548	48.502	67.844	49.503	81.972	38.246
FEM	0.591	0.492	0.595	0.491	0.560	0.497
SSIinRecruit	0.009	0.094	0.009	0.094	0.008	0.091
SSDIinRecruit	0.016	0.126	0.017	0.129	0.010	0.101
SSIinLateRecruit	0.027	0.163	0.028	0.164	0.025	0.157
SSDIinLateRecruit	0.036	0.187	0.036	0.187	0.035	0.185
latererecruit	0.162	0.368	0.179	0.383	0.039	0.194
CountyWageGrowth	0.216	1.505	0.196	1.541	0.366	1.201
WorkPotential	0.370	0.483	0.373	0.484	0.346	0.476
MISSINGBASISCODES	0.131	0.337	0.133	0.340	0.114	0.318
HighestSchoolGrade	12.107	2.174	12.121	2.187	12.008	2.071
PctUnempl	7.570	4.911	7.612	4.947	7.270	4.635
ALLGN_IMP_MNTL	0.896	0.305	0.893	0.309	0.916	0.278
WEEKLY_PAY1	370.268	412.498	371.593	405.995	360.612	457.138
weeklypaymiss	0.118	0.322	0.118	0.322	0.119	0.323
LAST_JOB_TNR_YRS	2.719	4.750	2.729	4.741	2.650	4.816
lastjobtenmiss	0.116	0.320	0.116	0.321	0.112	0.315

**Table 6-4. Test sample descriptive statistics for regression variables**

Variable name	Potential and possible potential enrollees (n=4,321)		Potential enrollees only (n=3,793)		Possible potential enrollees (n=528)	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Enrolled	0.239	0.427	0.272	0.445	0.000	0.000
recruitlag	68.919	46.630	66.997	47.287	82.720	38.947
FEM	0.591	0.492	0.597	0.491	0.553	0.498
SSIinRecruit	0.010	0.098	0.009	0.097	0.011	0.106
SSDIinRecruit	0.018	0.133	0.019	0.136	0.013	0.114
SSIinLateRecruit	0.027	0.161	0.027	0.161	0.027	0.161
SSDIinLateRecruit	0.035	0.184	0.036	0.185	0.030	0.172
Latererecruit	0.160	0.366	0.177	0.382	0.034	0.182
CountyWageGrowth	0.207	1.515	0.193	1.560	0.311	1.137
WORKPOTENTIAL	0.367	0.482	0.372	0.483	0.331	0.471
MISSINGBASISCODES	0.134	0.341	0.139	0.346	0.102	0.303
HighestSchoolGrade	12.128	2.174	12.141	2.192	12.034	2.038
PctUnempl	7.531	4.855	7.621	4.923	6.888	4.286
ALLGN_IMP_MNTL	0.888	0.316	0.883	0.321	0.919	0.274
WEEKLY_PAY1	363.779	381.019	363.444	379.226	366.184	394.021
weeklypaymiss	0.117	0.322	0.118	0.323	0.112	0.315
LAST_JOB_TNR_YRS	2.738	4.741	2.74	4.715	2.729	4.93
lastjobtenmiss	0.117	0.321	0.120	0.325	0.097	0.296

**Table 6-5. Validation sample descriptive statistics for regression variables**

Variable name	Potential and possible potential enrollees (n=8,535)		Potential enrollees only (n=7,512)		Possible potential enrollees (n=1,023)	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Enrolled	0.226	0.418	0.256	0.437	0.000	0.000
recruitlag	69.867	49.422	68.271	50.583	81.586	37.892
FEM	0.591	0.492	0.594	0.491	0.564	0.496
SSInRecruit	0.008	0.091	0.009	0.093	0.007	0.082
SSDInRecruit	0.015	0.122	0.016	0.126	0.009	0.093
SSInLateRecruit	0.028	0.165	0.028	0.166	0.024	0.154
SSDInLateRecruit	0.037	0.189	0.037	0.188	0.038	0.192
latererecruit	0.163	0.370	0.180	0.384	0.042	0.201
CountyWageGrowth	0.221	1.500	0.197	1.531	0.395	1.233
WORKPOTENTIAL	0.372	0.483	0.374	0.484	0.353	0.478
MISSINGBASISCODES	0.129	0.336	0.131	0.337	0.120	0.325
HighestSchoolGrade	12.097	2.174	12.111	2.185	11.995	2.088
PctUnempl	7.590	4.940	7.607	4.959	7.467	4.795
ALLGN_IMP_MNTL	0.900	0.300	0.898	0.303	0.914	0.281
WEEKLY_PAY1	373.553	427.536	375.707	418.826	357.736	486.681
weeklypaymiss	0.118	0.322	0.117	0.322	0.122	0.328
LAST_JOB_TNR_YRS	2.709	4.755	2.723	4.755	2.609	4.758
lastjobtenmiss	0.115	0.319	0.114	0.318	0.119	0.324

There were also differences in labor market trends, with the average increase per day in average wages being about twice as large for possible potential enrollees. To some extent, this finding probably reflects the economy-wide slowdown in wage growth for workers that became more pronounced over the 2017-19 period (Salkever, 2020), along with the finding that the mean beginning date of recruitment for potential enrollees was somewhat later than that for possible potential enrollees. Potential enrollees also resided in census tracts with slightly higher unemployment rates, though it is also noteworthy that the average census tract unemployment rate for all denied applicants in our regressions, at 7.57 percent, was relatively high compared to the 2019 national U.S. employment rate of 3.6 percent.

Tables 6-4 and 6-5 show essentially the same differences between potential enrollees and possible potential enrollees noted above for both the test and validation samples. It is also useful to compare test versus validation characteristics within the two groups of potential enrollees and possible potential enrollees. Interestingly, the enrollment rate within the potential enrollee group is slightly higher for the test sample than for the validation sample. In other respects the test and validation samples look quite similar. As a final check for possible differences between test and validation samples, we ran 2-tailed t-test comparisons on all relevant continuous variables and chi-square comparisons on all binary variables between all test sample members and all validation sample members. Table 6-6 reports the results of these comparisons. The only significant difference observed was for a higher proportion of cases that alleged a mental impairment on the application (ALLGN\_IMP\_MNTL = 1) for the test sample.

**Table 6-6. Tests for differences in variable means: overall test vs. validation samples**

Variable	Validation	Test	P-value
<b>Binary (0-1) variables</b>			
ALLGN_IMP_MNTL			0.033
0	854	485	
1	7,681	3,836	
laterecruit			0.033
0	7,142	3,631	
1	1,393	690	
SSIinLateRecruit			0.677
0	8,297	4,206	
1	238	115	
SSDIinLateRecruit			0.574
0	8,220	4,170	
1	315	151	
SSDIinRecruit			0.231
0	8,405	4,243	
1	130	78	
SSIinRecruit			0.463
0	8,463	4,279	
1	72	42	
FEM			0.952
0	3,493	1,766	
1	5,042	2,555	
lastjobtenmiss			0.761
0	7,553	3,816	
1	982	505	
weeklypaymiss			0.929
0	7,529	3,814	
1	1,006	507	
<b>Continuous variables</b>			
PctUnempl			0.515
Mean	7.590	7.531	
WEEKLY_PAY1			0.188
Mean	373.553	363.779	
LAST_JOB_TNR_YRS			0.743
Mean	2.709	2.738	
CountyWageGrowth			0.634
Mean	0.221	0.207	
HighestSchoolGrade			0.442
Mean	12.097	12.128	
<b>recruitlag</b>			
	69.86702	68.91854	0.2858

## 6.5 Approach to Validation Regressions

After estimation and selection of our final set of variables from the test regressions, we re-estimated these same regressions, with the same estimation techniques, using the data from our validation sample. Because a few of the explanatory variables had significant coefficient estimates in our final test regressions but had insignificant coefficients in our validation regressions, we also re-estimated the validation regression with these few variables deleted as a sensitivity test on the coefficient

estimates for the remaining significant variables in our validation regressions.<sup>12</sup> We also ran several other selected sensitivity tests of alternative regressions on our validation data. We included the four additional explanatory variables listed in Table 6-2 above in one or more of these sensitivity analyses.

We present all validation regression analyses in Chapter 7 of this report. Appendix A reports the results for the test regressions. Also note that we ran all regressions—test, validation, and sensitivity analyses— twice, once with potential enrollees only and once with potential plus possible potential enrollees.

The validation regressions focus on the results of two of the three estimation approaches we applied, namely, (1) logistic regression with standard errors based on the assumption of clustering of error within each of the 30 demonstration sites; and (2) logistic regression with site-level fixed effects. We estimated these regressions in Stata with the “logit, vce (cluster site)” and “xtlogit, fe” commands. Appendix B presents coefficient estimates using these approaches, as well as coefficient results for our third estimation approach, random effects regression using the Stata “xtlogit, re” command. Results from all three estimation methods were similar for both qualitative and quantitative estimates of coefficients and marginal effects for almost all explanatory variables.

Using the regression results presented in Appendix B, we implemented Stata “margins” commands to obtain estimates of the average marginal effects of a 1-unit change in each of our explanatory variables holding all other explanatory variables on the probability that a denied applicant would enroll *ceteris paribus* (i.e., holding constant the values observed for each applicant of all other explanatory variables). This procedure also provides us with estimated standard errors and 2-tailed *p*-values for each value for the null hypothesis that the average marginal effect of that variable on the probability of enrollment is 0. Note that in logistic regression and other non-linear models, the marginal effect of a 1-unit change in any variable on the probability of enrollment for each denied applicant will not in general be equal to the corresponding marginal effect for other denied applicants. By contrast, if we had estimated enrollment probabilities using a linear probability model (LPM), the marginal effect of any variable would simply equal the estimated coefficients of that variable and would be the same for all denied applicants. Note also that when an explanatory variable enters either a linear or logistic model in both linear and quadratic forms (i.e.,  $x$  and  $x^2$ ), the marginal effect of a 1-unit change in that variable on the probability of enrollment will vary with the value of that variable. This point is relevant for our analysis given one of our variables, *recruitlag*, also enters our final test and validation regressions as *recruitlag*<sup>2</sup>. The reason for this specification is that this variable has a small number of large observed values that occurred in the first batch of denied applicants submitted for inclusion in our analysis. We specifically wanted to allow for the possibility that this long delay would have a large negative effect on probability of enrollment. We provide further evidence on this point, relating to the probability of recruiters actually speaking to the denied applicant, in Chapter 7.

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<sup>12</sup> In the re-estimated validation regressions, we assumed, in effect, that the coefficients for the few deleted variables (with insignificant coefficients in our first validation regressions) were in fact equal to zero.

## 7. Regression Modeling Results

This chapter summarizes the results of the regression analyses. The first section (7.1) presents a summary of the significant factors related to enrollment. The results focus on the marginal effects of the validation regressions, which indicate the significance and magnitude of the relationship between each variable and the likelihood of enrollment in the SED. The analyses reveal that several self-reported items collected by SSA in the Disability Report form as well as several local area labor market indicators had a significant impact on the probability of enrollment.

Section 7.2 uses the regression results to simulate hypothetical recruitment strategies that may increase enrollment rates. The results of these analyses may suggest worthwhile strategies to improve the efficiency of the recruitment process and encourage potential enrollees to participate.

### 7.1 Predictors of Enrollment

We report estimates of the marginal effects of specific explanatory variables on the probability of enrollment in Table 7-1 for potential enrollees only and Table 7-2 for potential plus possible potential enrollees. The two sets of test sample models differ slightly between the two tables due to the fact that one explanatory variable, ALLGN\_IMP\_MNTL (alleged a mental impairment on the application), met our *p*-value criterion for inclusion in the test regressions with both potential and possible potential enrollees but not in our test regressions that included potential enrollees only.

Considering first the results in Table 7-1, we see that the two sets of results for the test regressions are very similar to one another in terms of significance, direction, and magnitude for each of the estimated average marginal effects. The same findings result from the validation regressions for “Clustered Model 1” vs. “Fixed Effects Model 2.” Thus, the estimation methods (i.e., clustered robust vs. site-specific fixed effects) appear to yield substantially equivalent results.

**Table 7-1. Validation sample logistic regression estimates of marginal effects on probability of enrollment – potential enrollees**

Variable name	Clustered (n=7,512) Model 1		Clustered alt (n=7,512) Model 1-a		Fixed Effects (n=7,512) Model 2	
	dy/dx	P < z	dy/dx	P < z	dy/dx	P < z
recruitlag	3.5E-04	0.051	3.4E-04	0.056	3.8E-04	0.162
FEM	-0.033	0.008	-0.033	0.008	-0.041	0.002
SSInRecruit	-0.157	0.052	-0.156	0.053	-0.167	0.057
SSDInRecruit	-0.055	0.153	-0.055	0.147	-0.061	0.273
CountyWageGrowth	0.008	0.002	0.008	0.002	0.011	0.010
WORKPOTENTIAL	0.028	0.047	0.026	0.05	0.035	0.012
MISSINGBASISCODES	0.008	0.602	–	–	0.008	0.711
HighestSchoolGrade	0.005	0.015	0.005	0.02	0.007	0.021
PctUnempl	0.003	0.022	0.003	0.022	0.003	0.024
WEEKLY_PAY1	-7.4E-05	<0.001	-7.5E-05	<0.001	-9.2E-05	<0.001
weeklypaymiss	-0.054	0.020	-0.054	0.019	-0.069	0.005
lastjobtenmiss	0.042	0.005	0.042	0.004	0.054	0.017

**Table 7-2. Validation sample logistic regression estimates of marginal effects on probability of enrollment – potential + possible potential enrollees**

Variable name	Clustered (n=8,535) Model 1		Clustered alt (n=8,535) Model 1-a		Fixed Effects (n=8,535) Model 2	
	dy/dx	P < z	dy/dx	P < z	dy/dx	P < z
recruitlag	-1.1E-04	0.472	-1.2E-04	0.439	-4.3E-04	0.030
FEM	-0.025	0.022	-0.025	0.019	-0.035	0.009
SSIinRecruit	-0.135	0.070	-0.134	0.073	-0.166	0.063
SSDIinRecruit	-0.035	0.341	-0.035	0.333	-0.039	0.490
CountyWageGrowth	0.005	0.022	0.005	0.022	0.009	0.045
WORKPOTENTIAL	0.029	0.026	0.027	0.028	0.041	0.004
MISSINGBASISCODES	0.009	0.517	–	–	0.012	0.568
HighestSchoolGrade	0.005	0.006	0.005	0.010	0.007	0.025
PctUnempl	0.003	0.022	0.003	0.022	0.003	0.026
ALLGN_IMP_MN'TL	-0.007	0.633	–	–	-0.006	0.798
WEEKLY_PAY1	-6.0E-05	0.001	-6.1E-05	0.001	0.000	<0.001
weeklypaymiss	-0.047	0.033	-0.047	0.032	-0.068	0.006
lastjobtenmiss	0.034	0.007	0.035	0.006	0.045	0.050

In terms of direction and significance for specific variables in the validation regressions, we note that the marginal effect of recruitlag (the recruitment delay variable) is actually positive, indicating that longer delays increase the probability of enrollment. This finding is somewhat misleading, however, given we entered this variable in both linear and squared forms, so one should recognize that the marginal effect of a 1-day increase in delay will vary depending upon the length of delay. Marginal effect estimates for the fixed effects model are significantly negative in all three validation regressions and the size of the estimates indicate that women have an enrollment probability, *ceteris paribus*, that is about 0.03 less than that for men. The estimates for the benefit receipt dummies (SSIinRecruit and SSDIinRecruit) are borderline significant and less-than-borderline significant respectively based on their 2-tailed *p*-values in all three validation models. The magnitudes of these estimated effects, however, are large relative to the overall enrollment rate suggesting that the small minority of denied applicants who were approved for benefits within 210 days of initial recruitment were much less likely to enroll. Given that none of these people were receiving benefits prior to attempted recruitment, a plausible explanation for the strong negative marginal effects is that these denied applicants had appealed their denials and had at least some expectation of receiving benefits in the near future. However, data on pending appeals of the denied applicants in the study were not available as of the date of this report.<sup>13</sup>

Other results in Table 7-1 indicate that applicants from areas where unemployment (PctUnempl) was higher but average wages were increasing (CountyWageGrowth) were significantly more likely to enroll, as were persons who completed more grades of schooling (HighestSchoolGrade). The average effect of higher weekly wages in the applicant’s last job, however, was significantly negative. It is also interesting that denied applicants deemed able to earn wages above the SSA SGA limit (i.e., WORKPOTENTIAL=1) were significantly more likely to enroll in the SED (*ceteris paribus*). The missing value indicators, lastjobtenmiss and weeklypaymiss, were significant. In general, the positive effect of lastjobtenmiss can be viewed as representing a composite of multiple characteristics,

<sup>13</sup> Also note that results for other included variables were not substantially altered when our regression models were run with SSIinLateRecruit and SSDIinLateRecruit excluded. See Appendix VI.

meaning that those with younger age, shorter work history, and fewer years following most recent job experience (for those with any prior jobs) were more likely to enroll compared to other denied applicants. Appendix C discusses the results for the `weeklypaymiss` and `lastjobtenmiss` dummy variables in more detail.

Turning to the validation results when we combine potential enrollees with possible potential enrollees, Table 7-2 shows at least a few interesting differences from the analyses using only the potential enrollees. First, the estimated average marginal effect for the post-denial recruitment delay (`recruitlag`) that was positive in Table 7-1 now becomes negative. Second, we observe a difference between the results in the clustered models versus the fixed effect model for this variable, with smaller, less significant results for the former models and a fairly large and more significant negative estimate from the fixed effects model. The difference between the results in the two tables for this variable is possibly related to the fact that the mean delay for the possible potential enrollees (82 days) is considerably longer than for the potential enrollees (68 days), as Table 7-1 showed earlier. Third, we see slightly smaller but still significant average marginal effects for the county wage trend variable (`CountyWageGrowth`) in Table 7-2 compared to 7-1.

In general, the magnitudes of the average marginal effects seem small, but should be viewed in relation to the observed enrollment probability, which was only approximately 0.25. Thus, while an average marginal effect for the variable `FEM` is only about -0.035, this implies a substantial relative reduction in the probability of enrollment from the mean of 0.25 to 0.215.

Comparing magnitudes of estimated marginal effects across variables within the same model, it is important to bear in mind that the marginal effects pertain to a 1-unit change in each explanatory variable. A 1-unit change for each of the binary variables is a change from 0 to 1; but in the case of the continuous variables (`recruitlag`, `CountyWageGrowth`, `HighestSchoolGrade`, `PctUnempl`, and `WEEKLY_PAY1`), a 1-unit change may signify a quite small or large change relative to the mean value of the variable in question. For example, a 1-unit change in the value of `CountyWageGrowth` is a substantial change relative to the mean value of that variable (i.e., approximately 0.2 in Tables 5-3 or 5-4 above); by contrast, a 1-unit change in `WEEKLY_PAY1` is quite small relative to its mean value of approximately \$370. To get a better sense of the relative magnitudes of these estimated marginal effects for continuous variables, consider the results in Table 7-3. Each column labeled “MExSD” is the product of the average marginal effect and of a 1-unit change in the relevant variable and the sample standard deviation of that variable. Thus, one could interpret such a figure as the estimated average marginal effect of a 1-s.d. change in that variable on the probability of enrollment. For example, the MExSD value for `HighestSchoolGrade` in the fixed effects models indicates that the difference in enrollment probability between a denied applicant with a value of 8 for `HighestSchoolGrade` and one with a value of 16 is approximately  $4 \times 0.015 = 0.06$ .

**Table 7-3. Marginal effects x standard deviations for continuous variables and validation samples**

Variable Name	Potential enrollees			Potential + possible potential enrollees		
	Std.Dev.	Clustered Model 1	Fixed Eff. Model 2	Std.Dev.	Clustered Model 1	Fixed Eff. Model 2
		MExSD	MExSD		MExSD	MExSD
recruitlag	50.583	0.0177041	0.014022	49.422	-0.00559	-0.02132
CountyWageGrowth	1.531	0.0118669	0.01653	1.5	0.0080949	0.012942
HighestSchoolGrade	2.185	0.0114332	0.015042	2.174	0.0107774	0.015311
PctUnempl	4.959	0.0135549	0.015491	4.94	0.012431	0.015454
WEEKLY_PAY1	418.826	-0.0312025	-0.038574	427.54	-0.025652	-0.03677

Appendices D and E provide the results of sensitivity analyses generated from modified regressions of the likelihood of enrollment. Appendix C provides regression results using specifications involving the missing weekly pay indicator and the missing last job tenure. Appendix D presents the results of sensitivity tests adding longer-term benefit receipt indicators (SSIinLateRecruit, SSDIinLateRecruit, and laterecruit).

## 7.2 Using Regression Results to Develop Strategies for Increasing Enrollment Rates

The SED recruitment effort was costly and, in many cases, time-consuming. Field recruiters spent substantial time attempting to contact potential enrollees, explaining the study, and scheduling and conducting RIMs. Data presented earlier indicated that as a result of these efforts, the SED achieved an enrollment rate of 26.2 percent ( $= 2,960 / 11,307$ ) for denied applicants designated as potential enrollees and 23.0 percent ( $= 2,960 / 12,858$ ) for potential and possible potential enrollees combined.

If SSA implemented an intervention similar to the SED in other geographic areas than used for this study, it is probable that the target populations for these other areas would show some differences in characteristics from those reported here. Thus, the overall enrollment rates reported above could differ from those in future extensions and replications of the SED for a variety of reasons, including:

- Differences in target population socio-economic and demographic characteristics,
- Differences in their past labor-market experiences,
- Differences in local area economic conditions, and
- Differences in the results of reviewing their denied disability claims.

The specific results of our regression analyses can be used to examine the implications of these possible differences on enrollment outcomes in future replications of the SED. In this section we illustrate how the results of our recruitment analysis could be used for this purpose.<sup>14</sup>

As a simple way of assessing the implications of these possible differences on recruitment outcomes in SED replications, we used our regression results to generate predicted enrollment rates for groups of possible enrollees defined by the characteristics most strongly related to positive recruitment outcomes. Tables 7-4 and 7-5 exemplify the projected enrollment yield from various groups of denied applicants, one for potential enrollees and one for potential plus possible potential enrollees. In each case, the regression models used to generate the predicted enrollment rate for each group were based on a slightly modified version of one of the validation sample regressions. Appendix E presents the results of these two modified regressions. The modification to the regressions was that the variables *SSIinRecruit* and *SSDIinRecruit* were deleted on the grounds that the values for these variables would not be observable for target populations of denied applicants in new geographic areas until **after** recruitment had begun, while the purpose of projecting enrollment in potential new geographic areas is to select the area for recruitment **before** recruitment begins. Note, however, that the results for all other variables included in the two modified regressions in Appendix E are almost identical to the results previously reported for analogous regressions that also included the *SSIinRecruit* and *SSDIinRecruit* variables.

Tables 7-4 and 7-5 also compare results for a number of different denied applicant groups chosen for illustrative purposes. The tables also reflect the obvious fact that there is a trade-off between the **size** of the applicant group (based on the data for the current study) and the predicted enrollment rate. Some narrowly defined groups may be much more likely (at least according to our results) to enroll but the sizes of these groups imply a much smaller yield of actual enrollees than other groups that were not so narrowly defined.

The factors describing denied applicants' characteristics and circumstances that we use in these examples relate to: regulation basis code for their denial, gender, education, weekly earnings in prior jobs, local labor market conditions (unemployment rate and rates of pre-recruitment average wage increases), and the time span in days from the date of the denial to the date of the beginning of recruitment. Table 7-4 illustrates these results with potential enrollees only. Note the two pairs of rows (1 and 1-a; 17 and 17-a) in boldface type. Each pair contrasts results with and without gender in the group definition. The comparisons suggest that male-only groupings result in a small addition to our observed enrollment rates (2 percent to 3 percent) but only comprise less than half of the enrollment outcomes from comparable groups not restricted by gender. For example, looking only at the results for males, we do see a substantial increase in the enrollment rate (e.g., 36.39 percent in Row 1 versus the rate with both genders in Row 18 of 26.17 percent). The yield of enrollees for this group (the column labeled "n" in the table), however, is small. A broader definition of denied applicants as potential enrollees yields a predicted enrollment rate of more than 32 percent (as in Rows 11 and 12) and a yield of enrollees that is 10 times larger.

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<sup>14</sup> For previous examples of this sort of application of a regression model of recruitment, (albeit in the context of targeting enrollment efforts), see Frey et al., 2011 (especially Chapter 3 and its appendices), and Salkever et al., 2014.

Table 7-4. Illustrative recruitment examples with potential enrollees

Row #	group n	% of all eligibles enrolled	predicted # of enrollees	predicted % enrolled	basis code N32=1	FEM=0	Wkly Pay	HighestSchoolGrade	% Unemp	Avg Wage Tot Diff	recruitlag
1	33	0.29	12	36.39	x	x	>0, & <180	>11	>6.4	>0	
1-a	97	0.86	32	33.1	x		>0, & <180	>11	>6.4	>0	
2	37	0.33	13	35.9	x	x	>0, & <200	>11	>6.4	>0	
3	57	0.50	20	35.35	x	x	>0, & <200	>10	>6.4	>0	<210
4	58	0.51	20	35.3	x	x	>0, & <200	>10	>6.4	>0	
5	26	0.23	9	34.96	x	x	>0, & <200	>10	>6.4	>0	>90 & <181
6	80	0.71	28	34.55	x	x	>0, & <300	>10	>6.4	>0	<210
7	113	1.00	38	33.98	x	x	>0, & <400	>10	>6.4	>0	<210
8	126	1.11	42	33.14	x	x	>0, & <500	>8	>6.4	>0	>70 & <210
9	188	1.66	62	33.06	x	x	>0, & <500	>8	>6.4	>0	<210
10	292	2.58	95	32.57	x	x	>0, & <500	>8	>4	>0	<210
11	331	2.93	107	32.35	x	x	>0, & <500	>8	>3	>0	<240
12	358	3.17	115	32.15	x	x	>0, & <600	>8	>3	>0	<240
13	392	3.47	125	31.99	x	x	>0, & <700	>8	>3	>0	<240
14	665	5.88	209	31.38	x	x	>0, & <400	>10			<210
15	812	7.18	252	31.08	x	x	>0, & <500	>8	>4		<240
16	868	7.68	268	30.88	x	x	>0, & <500	>10			<210
17	1,015	8.98	312	30.71		x	>0, & <500	>8			<210
17-a	2,761	24.42	793	28.72	x		>0, & <500	>8			<210
18	2,960	100.00	2,960	26.17							

Table 7-5. Illustrative recruitment examples with potential + possible potential enrollees

Row #	group n	% of all eligibles enrolled	predicted # of enrollees	predicted % enrolled	basis code N32=1	FEM=0	Wkly Pay	HighestSchoolGrade	% Unemp	Avg Wage Tot Diff	recruitlag
1	43	0.33	13	30.47	x	x	>-0.00001, & <180	>11	>6.4	>0	<180
1-a	114	0.89	32	28.35	x		>-0.00001, & <180	>11	>6.4	>0	<180
2	44	0.34	13	30.38	x	x	>-0.00001, & <180	>11	>6.4	>0	
3	63	0.49	19	29.54	x	x	>-0.00001, & <180	>11	>4	>0	<180
4	65	0.51	19	29.43	x	x	>-0.00001, & <180	>11	>4	>0	
5	116	0.90	33	28.86	x	x	>-0.00001, & <180	>8	>4	>0	
6	143	1.11	40	28.3	x	x	>-0.00001, & <400	>11	>4	>0	< 240
7	276	2.15	76	27.67	x	x	>-0.00001, & <400	>8	>4	>0	< 240
8	559	4.35	154	27.59	x	x	>0, & <500	>11	>3		<240
9	621	4.83	170	27.42	x	x	>0, & <500	>11			< 240
10	898	6.99	245	27.33	x	x	>0, & <400	>8			< 180
11	1,130	8.79	306	27.05	x	x	>-0.00001, & <400	>8			< 180
12	1,155	8.98	311	26.95	x	x	>0, & <500	>8			< 180
12-a	3,129	24.34	795	25.41	x		>0, & <500	>8			< 180
13	12,856	100.00	2,960	23.02							

Table 7-5 illustrates analogous results with potential plus possible potential enrollees. The same general findings apply as in the preceding table. Comparing rows 1 vs. 1-a and 12 vs. 12-a, we see that exclusion of gender from the criteria for denied applicant group definition implies a small decline of several points in the predicted enrollment rate but a 2.5 or 3-fold increase in the number of predicted enrollees.

### 7.3 Concluding Observations on the Regression Analysis

The application of a split-sample design in our regression analysis allowed us to obtain valid statistical tests of a number of factors related to the probability that a denied applicant would enroll in the SED. Almost all of the factors identified in the test regression phase were significant in the validation phase and the magnitudes and directions of their effects on the validation phase were generally quite similar to the analogous results from our final test regressions.

These significant factors included a number of self-reported items collected by SSA in the initial benefit application form (Disability Report) relating to gender, education, and work history. Specific results for these factors suggested that males, persons with more limited prior work experience or earnings, and persons with greater educational attainment were more likely to enroll in the program. The specific results on gender and educational attainment could be viewed as consistent with the findings from the general labor-market literature on gender and educational differences in employment and market labor supply.

Among the data items from SSA administrative records available for the study, the denial of the application due to evidence the applicant could find alternative work in the national economy was strongly and positively predictive of enrollment. Several local area (i.e., census tract and county) labor market indicators were also significant, suggesting that denied applicants were more likely to enroll if their local unemployment rate was high and if average wages in their county were rising more rapidly.

Finally, an important qualification to our analysis is that we have focused here on more than 13,000 denied applicants who passed the SED programmatic screening inclusion criteria and who were contacted by the study recruiters. As explained earlier in the report, recruiters were unable to contact more than 7,000 denied applicants. We do not know the reasons these denied applicants were not locatable; therefore, one should exercise caution in generalizing our findings for contacted denied applicants to those whom we could not contact.

## 8. Discussion and Implications

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This report provides answers to several key research questions concerning who enrolled in the SED:

- What is the magnitude of the eligible population as defined by SSA?
- What proportion of those who were eligible enrolled?
- What do applicants denied for benefits report were their reasons for enrolling in the SED? What do non-enrollees report were their reasons for not enrolling in the SED?
- Are there definitive factors (personal or environmental characteristics) associated with enrollment? What factors might influence enrollment into an SED-like program?

We provide a brief summary of the answers to these questions below, and then discuss the implications for generalizability and replication if the intervention tested in the SED proves to be effective.

### **What is the Magnitude of the Eligible Population as Defined by SSA?**

SSA sent 73,512 denied applicant cases to Westat that met the following criteria: the applicant was between the ages of 18 and 49, alleged a mental impairment, and their address of record fell within one of 30 catchment areas. Of this group, 26,505 cases failed the programmatic screener eligibility criteria for reasons including, but not limited to: did not speak English or Spanish, alleged or diagnosed with an intellectual impairment, and residing in a residential mental health treatment facility. This process left 47,007 eligible cases to contact for recruitment. Westat selected for contact a random sample of 21,003 cases from the pool of 47,007 eligible cases in the 30 demonstration sites.

### **What Proportion of Those Who Were Eligible Enrolled?**

The study enrolled between 23.0 and 26.2 percent of the eligible target population, depending upon the denominator used to calculate the rate. Potential enrollees knew about the study and that they were eligible to enroll. Possible potential enrollees may have known about the study, but there is no evidence to indicate that they did or did not know about it. If we combine the potential with the possible potential enrollees, the enrollment rate is 23.0 percent. Among only those we know actually knew about the study, the enrollment rate is 26.2 percent.

If an eligible candidate never knows the study is available to him or her, then he or she has no way of enrolling in the study. Unfortunately, we cannot assess precisely whether all potentially eligible candidates knew about the study unless we actually engage them. There were two ways the candidate could learn about the study; from the packet of information we mailed and from direct telephone or in-person contact by the recruiter. If the recruiter actually engaged the individual, we can reasonably assert that the individual knew about the study and could decide whether or not to enroll. However, if the recruiter could not personally engage the individual, then the only other option is to assume

that unreturned letters may have reached the potential candidate; but we never actually know if that happened in many cases. Recruiters did reach many candidates who told them they had not seen the written packet of materials. For these reasons, we believe it is useful to assert the potential range of enrollment is between 23.0 and 26.2 percent.

### **What Do Applicants Denied for Benefits Report Were their Reasons for Enrolling in the SED? What Do Non-Enrollees Report Were their Reasons for Not Enrolling in the SED?**

Interviews we conducted retrospectively with enrollees and non-enrollees during the first years of study implementation provide more insight into understanding who chose to enroll and who chose not to enroll. A point that stands out among both enrollees and non-enrollees, is the fact that many of them at their first reading about the study from the mailed packet, or those first listening to the recruiter talk about the study thought it was a “scam”, a “joke”, or “hoax”. Only when the recruiter was able to spend time with the potential candidate did the concern alleviate, regardless of whether the potential candidate enrolled. This initial impression can clearly diminish enrollment rates, as many people who feel that way are not likely to allow the recruiter a second chance at explaining the reality and value of the demonstration.

Many enrollees who were interviewed explained that they enrolled in the study because they hoped the offer of help might make a difference in their lives. However, it is notable that the financial incentives attached to completing research interviews were also very attractive to enrollees, with some indicating they enrolled in the study for the money offered to complete the periodic interviews.<sup>15</sup> For individuals with little money, the extra income can be a strong incentive. Social desirability bias may have led other enrollees to underreport the influence of the cash incentives on their enrollment decisions.

Finally, the interviews with non-enrollees revealed three general reasons for not enrolling in the study. The largest group of non-enrollees said they were not interested in finding a job (per the enrollment analysis in Chapter 3). However, among the group participating in the qualitative interviews, the largest group of non-enrollees said they believed they cannot work or their health precluded them from working. Other non-enrollees admitted that they probably failed to make a considered decision about enrolling into the study. Finally, as one might expect, there were a few candidates that already had work and said they were happy with their current work situation.

### **Are there Definitive Factors (Personal or Environmental Characteristics) Associated with Enrollment? What Factors Might Influence Enrollment into an SED-Like Program?**

Related to the question of the enrollment rate is the question of who did enroll in the study and whether there is anything particularly discernable about them, such as their demographics, their local environment, or their case disposition at SSA. The answer is there are. The regression models revealed that eligible candidates were more likely to enroll if they were male, had less prior work experience or less earnings, or had higher educational attainment. They were also more likely to enroll if the economy in their locale had higher unemployment (a surprising 7 percent in some areas) or average wages in their county were rising. Finally, they were more likely to enroll if they received a

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<sup>15</sup> Participants receive forty dollars for the baseline and each annual interview, and \$25 for each quarterly interview.

denial at Step 5 of the decision process, meaning that their denial forecasted an ability to take on alternative work in the national economy. As noted in the report, the personal characteristics associated with study enrollment are generally consistent with labor-market literature on gender and educational differences in employment and market labor supply.

The other characteristics of enrollees are not surprising. Candidates enrolled more often if their local unemployment rates were higher and local wages were on the rise, indicating they recognized the need for and chance to profit from assistance. Further, SSA more often denied enrollee applications at the final step of the decision process (Step 5), suggesting to applicants that they should be able to take another job in the national economy.

Based on the data from our sample, we predict that enrollment rates in future replications of the SED could differ from those reported here. The characteristics of the denied applicants in these replications will impact observed recruitment outcomes. The regression results from the analysis of potential and possible potential enrollees suggest that using data from the Disability Report and local unemployment rates may also help to identify those more likely to enroll into a similar program in future replications.

### **To What Extent Will the Results of the Study Generalize to the Larger Eligible Population Provided in the Contact Information Given to Westat by SSA?**

Knowing the degree to which enrollees mirror the larger eligible population is critical to understanding the extent to which we can say with confidence that the study results would most likely have been the same for any sample of the 47,007 eligible denied applicant candidates. Comparisons between the sample selected for contact and the sample not selected for contact revealed the two groups were largely the same. The comparisons of general characteristics - age, gender, education level, number of jobs held in the past 15 years, and weekly pay (at most recent job) – revealed no differences between the group randomly selected for contact versus those not selected for contact. This finding is a good sign that the denied applicants selected for contact reflect the same characteristics as members of the non-selected sample.

We did find differences between the two groups for two factors: (1) previous denial for a similar claim and (2) the adjudication level of the 5-step decision process for which the claim was denied. The selected-for-contact group had 4.5 percent fewer cases than the not-selected-for-contact group who had a previous denial of a similar claim type. While the overall percentage of cases having a previous claim denial is small (about 13 percent of the overall target population), the finding is worth noting. We do not find the first difference to be anything more than a Type I statistical error, and we cannot find a good reason to be concerned over the difference. It may be true that potential enrollees that have a prior denial are more likely to “give up” and move on, but it is not clear that they would be more likely to enroll. In fact our modeling results suggest they were not.

The second difference concerned at which level in the 5-step disability determination process each case received a denial. More cases in the selected-for-contact group received their denial at Step 5. Over 60 percent of all cases in both groups received denials at Step 5, by far the largest group in the overall target population.

One final issue concerns the large percentage (more than a third) of candidate enrollees that we failed to locate. Homelessness and telephone access are major issues, suggesting that this population is highly transient. Preliminary analysis of our enrollment data suggest that there may be important differences between this group and the group of locatable candidates. We discuss this issue in greater detail in the special topics report on lessons learned from SED recruitment efforts.

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