

# **Results from Three of the Initial Models of the SSA Medicare Part B Buy-in Demonstration**

Prepared for  
**Social Security Administration**

Prepared by

**The Lewin Group**  
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## ACRONYMS AND ABBREVIATIONS

AAPCC	Adjusted Average Per Capita Cost
BIC	Beneficiary Identification Code
CHIP	Children's Health Insurance Program
CMS	Centers for Medicare & Medicaid Services
CR	Claims Representative
DHHS	Department of Health and Human Services
DID	Difference in Difference (analysis)
DOB	Date of Birth
DOWR	District Office Workload Report
DPA	State Department of Public Assistance
DRC	Delayed Retirement Credit
DSU	Direct Service Unit (Social Security Administration, Baltimore, Maryland)
HCFA	Health Care Financing Administration
HIC	Health Insurance Claim
MBP	Monthly Benefit Payable
MBR	Master Beneficiary Record (data)
MEC	MassHealth Enrollment Center
MIS	Management Information System
MSA	Metropolitan Statistical Area
NA	Not Available
PIA	Primary Insurance Amount
QC	Quality Control
QDWI	Qualified Disabled and Working Individual
QI-1	Qualified Individual 1
QI-2	Qualified Individual 2
QMB	Qualified Medicare Beneficiary
PBMO	Part B Medicare Only
P/E	Post Entitlement
RFP	Request for Proposal
SHINE	Serving Health Information Needs of Elders (program)
SLMB	Specified Low-Income Beneficiary
SR	Service Representative
SSA	Social Security Administration
SSI	Supplemental Security Income
SSN	Social Security Number



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## EXECUTIVE SUMMARY

Low-income senior citizens and individuals with disabilities who are enrolled in Medicare might be eligible for Buy-in assistance, which uses Medicaid funds towards Medicare Part B premiums and, in some instances, covered Medicare co-payments and deductibles.<sup>1</sup> Beneficiaries receive different levels of assistance depending on their income and resources. Specifically, the Qualified Medicare Beneficiary (QMB) program uses Medicaid funds to pay the Part B premiums, Part A and Part B deductibles, and co-payments for Medicare beneficiaries living at or below the poverty guideline. Beneficiaries with incomes between 100 percent and 120 percent of the poverty guideline can participate in the Specified Low-Income Medicare Beneficiary (SLMB) program, which uses Medicaid funds to pay the Part B premium only. Beneficiaries with incomes between 120 and 135 percent of the poverty guideline can participate in the Qualifying Individual (QI-1) Program, which pays the Part B premium for beneficiaries. Unlike QMB and SLMB benefits, the QI-1 program is not an entitlement but is funded from a federal block grant to the states; qualified applicants are approved on a first come, first served basis. All three programs generally limit resources to twice the Supplemental Security Income (SSI) resource limit.<sup>2</sup>

Estimates indicate low participation in the Buy-in program. One study estimated that between 3.3 million and 3.9 million of low-income senior citizens and disabled individuals eligible for QMB and SLMB benefits did not receive them in 1998 – a participation rate of less than 60 percent. The same study estimated that another 1.6 million individuals potentially eligible for QI-1 benefits did not receive them.<sup>3</sup>

### I. Overview of the Buy-in Demonstration

In 1998, Congress mandated the Social Security Administration (SSA) to conduct a Medicare Buy-in Demonstration to determine how best to increase participation in the three Buy-in programs. In March 1999, SSA, in conjunction with its state partners, implemented four models – screening, co-location, application, and widow(er)s models – in 11 sites around the country and the state of Massachusetts. In September 1999, SSA expanded the demonstration to include the peer assistance model in five sites considered by this evaluation; in April 2000, it implemented the decision making model in four sites. The text box provides a brief discussion of each model, categorized by implementation period.

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<sup>1</sup> Medicaid regulations permit certain providers to charge a small beneficiary co-payment for the use of services. These co-payments are not covered Medicare co-payments; they remain the responsibility of the beneficiary.

<sup>2</sup> The 1999 resource limits for Buy-in benefits are \$4,000 for individuals and \$6,000 for couples. The federal resource limits generally do not change over time; however, some states deviate from the federal resource limits. For example, Florida allows an extra \$1,000 in resources for individuals.

<sup>3</sup> Families USA (1998). *Shortchanged: Billions Withheld from Medicare Beneficiaries*. Washington, D.C.

## Demonstration Models and Time of Implementation

### March 1999 to December 1999

**Screening Model.** This model tested the use of a Buy-in eligibility screening mechanism administered by SSA. Letters were sent to Medicare beneficiaries, and brochures, posters, and other outreach materials directed potential Buy-in participants to call a special toll-free number at SSA's Direct Service Unit (DSU) or to visit their local welfare, social services, medical assistance, or Social Security office. An SSA worker, using a PC-based program, screened individuals who called the DSU or visited the local Social Security office. If the beneficiary appeared eligible for QMB, SLMB, or QI-1 based on the screening, SSA attempted to set up an appointment to submit an application with the state Medicaid agency. This model was tested in two Pennsylvania sites (Carlisle and Lebanon).

**Co-location Model.** This model tested the use of an SSA office, rather than a state Medicaid agency, for Buy-in eligibility application intake. Like the screening model, beneficiaries received letters and were directed to call the DSU or contact their local SSA field office to be screened. If the beneficiary appeared eligible based on the screening, SSA staff set up an application appointment with a Medicaid agency employee located at the local SSA office. The co-location model was implemented in Oklahoma (Muskogee and Oklahoma City) and Pennsylvania (West Chester and Uniontown).

**Application Model.** This model tested application completion by SSA employees rather than by Medicaid agency staff. It began similar to the screening and co-location models, but with this model, if the beneficiary appeared eligible based on the screening, SSA set up an application appointment with an SSA employee at the local SSA office. The SSA employee then completed the state's application form for Buy-in, accepted and copied evidence provided at the time of the application, and forwarded the completed application form and evidence to the Medicaid agency for further development (if necessary) and eligibility determination. The application model was implemented in Texas (Corpus Christi), Florida (Orlando and Miami), Kentucky (Lexington), and Indiana (Evansville).

**Widow(er)s Model.** This model tested an intervention without extraordinary publicity, in which beneficiaries were to be screened for potential Buy-in eligibility when they contacted a designated SSA office to report the death of a spouse. This model evolved over time, which is discussed below. The widow(er)s model was implemented in Massachusetts (state-wide).

### September 1999 to March 2000

**Peer Assistance Model.** This model was similar to the screening model, except Medicare beneficiaries who contacted a toll-free number were usually not immediately screened, but left their name, telephone number, and times when they were most likely to be at home. An AARP volunteer, rather than an SSA worker, called the beneficiaries later and screened them for Buy-in eligibility. This model was designed to test an intervention primarily independent of SSA, with the exception of mailing the letters. The peer assistance model was implemented in California (Los Angeles), Missouri (St. Louis), Nebraska (Omaha), North Carolina (Asheville), and Pennsylvania (Pittsburgh).<sup>4</sup>

**Modification of Widow(er)s Model.** In September 1999, the widow(er)s model was modified in response to a low volume of screenings. The field offices began reviewing death reports from funeral directors as leads and sending outreach letters to appropriate clients for screening.

### April 2000 to December 2000

**Decision Making Model.** This model was a variation of the application model. However, SSA staff not only took the application at the SSA office, they also reviewed the application and made an initial eligibility determination. State agencies still retained ultimate responsibility for the eligibility determination and adjudication, but SSA helped streamline the process. This model involved coordination at the regional office level, but also involved significant time and effort at the SSA field offices. The decision making model was implemented in California (San Francisco), Pennsylvania (Philadelphia), and Texas (Dallas and San Antonio).

**Further Modification of Widow(er)s Model.** In May 2000, field offices began accepting applications from beneficiaries and forwarding them to the state Medicaid agency.

<sup>4</sup> SSA implemented a variation of the peer assistance model in six other sites in Fall 2000 (in Arkansas, Kentucky, Missouri, North Dakota, New Hampshire, Oregon, and Washington).

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This report presents results from the screening, co-location, and application models. Future reports will present results from the peer assistance, decision making, and widow(er)s models.

## II. Outreach Effort

### A. SSA Mailed More Than 200,000 Letters between March and August 1999

Starting in March 1999, SSA sent letters to Medicare Part A beneficiaries in the demonstration areas who were identified as single and whose monthly Title II Social Security benefits were less than \$947, and married and whose monthly Title II benefits combined with their spouses' were less than \$1,265. Only individuals not currently enrolled in the Buy-in program were sent letters. Letters were also sent to individuals meeting the above criteria who would be entitled to Medicare in the following month because they turned age 65 and individuals who received 24 consecutive months of disability insurance benefits.

SSA sent 239,048 letters to individuals living in the initial demonstration areas staggered in nine separate batches. In addition to the letters, SSA made posters, brochures, public service announcements, and articles for print media available to the field offices. SSA field offices engaged in varying degrees of outreach, including placing posters at the post office, the Office of Aging, senior citizen centers, and the local Medicaid agency; holding question and answer radio shows; and, in field offices serving large Hispanic populations, engaging in outreach specifically targeted to Hispanic beneficiaries.

The letters were considered by far to be the most effective form of outreach. The screener data confirmed that a large majority of those screened (about 86 percent) heard about the program through the SSA outreach letter.<sup>5</sup>

### B. Analysis Files for this Report Used an Improved Determination of Marital Status

SSA linked individuals' records for a limited number of couples to assess combined Title II income. Approximately three percent of letters were sent to couples using the couple income criteria. The Lewin Group, however, conducted further analyses to identify married beneficiaries and determined that approximately 23 percent of all intended letter recipients were married.<sup>6</sup>

Using a more complete match of married spouses had important ramifications for the analysis presented in this report because we excluded approximately 11 percent of the records. These records belong to married beneficiaries who were sent a letter and whose income combined with his or her spouse's income exceeded the limit for couples. We excluded these beneficiaries from the analyses because they presumably were not eligible for Buy-in benefits and would bias the participation results downward. However, it may be appropriate to include these individuals in any mailings because targeting them errs on the side of inclusiveness. Restricting our analyses to

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<sup>5</sup> The Lewin Group (2000). *Initial Results and Evaluation Design for the SSA Medicare Part B Buy-in Demonstration*. Report prepared for the Social Security Administration, June 2000.

<sup>6</sup> This analysis still underestimates the total number who are married because it does not include those who have their own accounts and are not dually entitled (i.e., qualify for Title II benefits based on their own work history and do not receive a higher benefit as the spouse of another primary beneficiary).

“intended” letter recipients resulted in 14 percent of those sent letters categorized as married, among 216,288 in our analysis files.

### **C. Characteristics of Individuals Sent Letters**

Data from the Master Beneficiary Record (MBR) provided basic information on intended letter recipients’ gender, age, and Title II income. Examining the characteristics of the intended letter recipients in the screening, co-location, and application models found:

- **Almost two thirds (63 percent) of the intended letter recipients were female.** This varied by site, with Miami and Muskogee intended letter recipients more evenly distributed between men and women (52 and 57 percent were women, respectively) and West Chester and Evansville having a higher percentage of women (69 and 67 percent, respectively).
- **The average age varied little across sites.** Not surprisingly, the vast majority of intended letter recipients (87 percent) were age 65 or over. Pennsylvania residents who were sent letters were older on average while residents in Orlando, Corpus Christi, and Lexington (sites in the application model) were, on average, slightly younger.
- **Over half (52 percent) of those intended letter recipients in Miami expressed a preference for receiving letters in Spanish, significantly higher than any other site.** Corpus Christi had the next highest percentage of nine percent.
- **Half of the intended letter recipients’ Title II monthly income was below 100 percent of the poverty guidelines.** This varied by site. Fewer intended recipients in the Pennsylvania sites and Evansville had Title II income below poverty, while the percentage was highest in Miami.

### **III. Participation and Enrollment Results**

We followed the intended letter recipients from the beginning of the demonstration through December 1999, when the demonstration ended for these three models. We examined whether they were screened, and if so, whether they were determined to be potentially eligible. We also analyzed the percent that received Buy-in benefits.

#### **A. From Letter to Enrollment**

*Exhibit ES.1* shows the screening and enrollment status of all intended letter recipients as of December 1999. The following findings emerged.

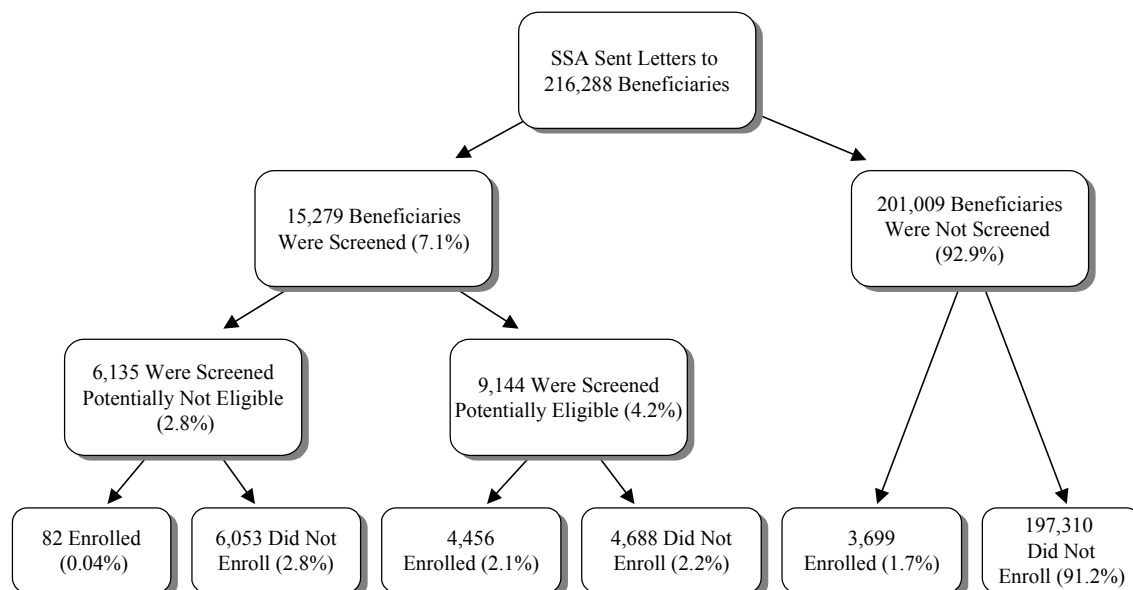
- **About seven percent responded to the letter.**

The letters generated a response rate of about seven percent. That is, among the letters sent to individuals with Title II income less than 135 percent of the poverty guideline, 15,279 (or 7.1 percent) contacted SSA to be screened.<sup>7</sup>

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<sup>7</sup> This response rate differs from the response rate presented in the Preliminary Report (6.3 percent). As discussed above, in preparing this report, we excluded 11 percent of letters mailed from this analysis because the beneficiaries’ combined monthly Title II income exceeded the limits, although they were included in the previous analysis. In addition, couples who together received one letter were counted as two individuals.

**Exhibit ES.1**  
**Outcomes for Beneficiaries Sent Letters (as of December 1999)**  
**(Percentage of those sent letters)**



**Note:** Rounding may cause slight discrepancies in aggregating percents.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

- **More than half who responded to the letter (i.e., were screened) were determined to be potentially eligible.**

Over half of all individuals (60 percent) who were sent letters and were screened were determined to be potentially eligible. In the screening sites, Carlisle and Lebanon, the percent screened potentially eligible was lower than other sites, perhaps reflecting the less disadvantaged population in these areas. The share determined to be potentially eligible was highest in Corpus Christi, followed by Miami and Lexington, all of which were application sites.

- **About four percent of those sent letters enrolled.**

Of the potentially eligible group, 4,456, or approximately 48 percent of individuals screened potentially eligible, actually enrolled in the Buy-in program (which accounted for 2.1 percent of the letter-targeted group). Another 3,699 letter targeted individuals who were not screened enrolled (1.7 percent of the letter-targeted group). A small number of those screened potentially not eligible (82) also enrolled.<sup>8</sup> As a result, the overall enrollment rate among letter targeted individuals was 3.8 percent. Again, the application sites had the highest overall enrollment rates: Miami enrolled 8.5 percent of those sent letters, Corpus Christi enrolled 6.9 percent, Evansville enrolled 4.4 percent, and Lexington enrolled 4.2 percent.

<sup>8</sup> Their financial circumstances may have changed after being screened or information relayed during the screening process was inaccurate.

Almost half of the letter-targeted individuals who enrolled in the program did not go through the SSA screening process. Individuals may have by-passed the screening process for a number of reasons. Some of these individuals could have gone directly to the state Medicaid agency, an option provided in the letter, while others may have already been in the process of applying for benefits. For example, many hospitals, community health centers, and nursing homes will advertise benefits and encourage enrollment processes if the provider is more likely to be paid as a result. This suggests that those individuals who might receive more benefits from applying may have initiated the process through other channels.

A higher proportion of those enrolled who were not screened compared to those who enrolled after being screened potentially eligible were disabled (49 percent versus 43 percent). A higher percent of Medicare beneficiaries under age 65 receive SSI benefits and Medicaid because many enrolled in these programs during their two-year waiting period for Medicare benefits. Compared to elderly Medicare beneficiaries, the higher enrollment rate among individuals under age 65 may be the result of states or SSA automatically enrolling SSI recipients in the Buy-in program when they become eligible for Medicare.<sup>9</sup>

### ***B. Non-response Analysis***

A telephone survey was conducted of 924 individuals sent letters who did not respond to the letter to assess the reasons for non-response. Only about 50 percent of the survey sample were reached and agreed to answer the interviewer's questions, so it cannot be assumed that the responses from this survey are representative of all non-responders. Most individuals (66 percent) did not respond because they believed they were not eligible based on their income or resources. Another 10 percent had contacted the SSA office, Medicaid office, or welfare office about the Buy-in program, and five percent were not interested in participating.

## **IV. Probability Analysis**

We conducted a probability analysis to provide information about the effect of individual characteristics on the likelihood of being screened and enrolling. In conducting the probability analysis, we estimated the independent effect of each characteristic, holding all other characteristics constant.

*Exhibit ES.2* presents the odds ratios of being screened and enrolling among all intended letter recipients, as well as the odds ratios of enrolling among individuals screened potentially eligible. The odds ratio provides an estimate of the probability of the event occurring for someone who has a given characteristic versus someone who does not (i.e., relative risk). Results by site and model are presented in the full report.<sup>10</sup>

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<sup>9</sup> For 32 (auto-accrete) states, SSA automatically accretes SSI recipients to the Buy-in rolls; in the remaining states, SSA identifies SSI recipients who are eligible for Medicare and the state makes its own accretion determination.

<sup>10</sup> It is important to emphasize that the probability analysis presented in this section applies to individuals living in the demonstration sites, and that these sites may not be nationally representative.



**Exhibit ES.2**  
**Odds Ratios of Being Screened and Enrolling**

Variable	Among Intended Letter Recipients		Among Potentially Eligible
	Screened	Enrolled	Enrolled
Intercept	0.079***	0.020***	0.991
Title II	1.000***	0.993***	1.000
Age	0.993	1.007***	0.993*
Disabled	1.636***	19.790***	0.968
Disabled and Age	0.999***	0.969***	1.002
Spanish Preference	2.143***	1.927***	0.965
Married	1.146***	1.112***	0.914
Female	1.049	0.960***	0.910*
Widow(er)	1.124***	1.634***	1.129**
Non-White	1.636**	1.519***	0.836***
Medicare + Choice	1.842***	1.448***	1.119**
Co-location	0.826***	0.952	1.223***
Application	1.020	1.273***	1.543***

<sup>a/</sup> Title II income is equal to the individual's Title II income for single persons and the sum of a couples and is expressed as a percentage of 100 percent of the poverty guideline.

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

**A. Probability of Being Screened and Enrolling Among Intended Letter Recipients**

The following findings emerged:

- **Those with higher Title II income were as likely to be screened but were less likely to enroll as individuals with lower income.** Individuals with Title II income between 100 percent and 135 percent of poverty were slightly less likely to enroll than individuals with lower Title II income, presumably because they were more likely to have other income that made them ineligible.
- **Disabled individuals were significantly more likely to be screened and to enroll than non-disabled individuals, even when age is taken into account.** Intended letter recipients under age 65 (with the exception of those who are within one month of turning 65) are disabled and a small fraction of individuals over age 65 received disability insurance benefits. Thus, it is important to distinguish between the effect of age and the effect of the disability on enrollment. Disabled individuals were more likely to be screened and to enroll, even after controlling for age. Disabled individuals may be more knowledgeable about the health care system and public assistance programs, because they generally have been in frequent contact with both for a long time. In addition, depending

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upon the state, SSA or states enroll SSI recipients in the Buy-in program after they become eligible for Medicare.

- **Widow(er)s were significantly more likely to be screened and to enroll than non-widow(er)s.** Widow(er)s rely on their Social Security benefits to a greater extent than do couples. An analysis of the Current Population Survey (CPS) found that among individuals age 55 and older, 62 percent of widows' total income and 68 percent of widowers' total income comes from Social Security Title II benefits, in comparison with 54 percent of all individuals age 55 and older.<sup>11</sup> Thus, widow(er)s were less likely to have other income that would make them ineligible, which might have encouraged them to be screened and enroll.
- **Non-whites and individuals with a preference for Spanish materials were much more likely to be screened and to enroll.** Non-whites were 1.6 times more likely to be screened and 1.5 times more likely to enroll than whites, even after controlling for Title II income. Similarly, intended letter recipients with a Spanish language preference were 2.1 times more likely to be screened and 1.9 times more likely to enroll than those without a Spanish language preference.
- **Beneficiaries enrolled in Medicare+Choice managed care programs were significantly more likely to be screened and to enroll than beneficiaries enrolled in traditional Medicare.** Beneficiaries enrolled in a Medicare+Choice program were 1.8 times more likely to be screened and 1.5 times more likely to enroll than beneficiaries enrolled in traditional Medicare. These beneficiaries might have been more aware of their health care choices (including the Buy-in program) as a result of the Medicare+Choice plan activities.

### **B. Probability of Enrolling Among Individuals Screened Potentially Eligible**

We also estimated the probability of enrolling among intended letter recipients who were screened and found potentially eligible. These beneficiaries were likely to be eligible, but needed to follow through with the application process and be approved by the state Medicaid office. The analysis found that beneficiaries who were widow(er)s were more likely to take the next step necessary in the enrollment process than their counterparts. As discussed above, widow(er)s are more dependent on Social Security for their income, and may be more in need of the Buy-in benefits. The increased likelihood of enrolling in the co-location and application models compared to the screening model suggests that individuals who had appointments at an SSA office were more likely to enroll relative to those who had appointments with the state Medicaid office. Finally, individuals enrolled in a Medicare+Choice managed care plan and screened potentially eligible were significantly more likely to enroll than those not in these programs. Individuals that enroll in Medicare+Choice plans likely have done so, in part, to reduce their out-of-pocket spending. Therefore, these individuals may be more likely to follow through with a Buy-in application for the same reason.

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<sup>11</sup> The Social Security Administration (2000). *Income of the Population 55 or Older, 1998* (SSA publication number 13-11871). Washington, DC.

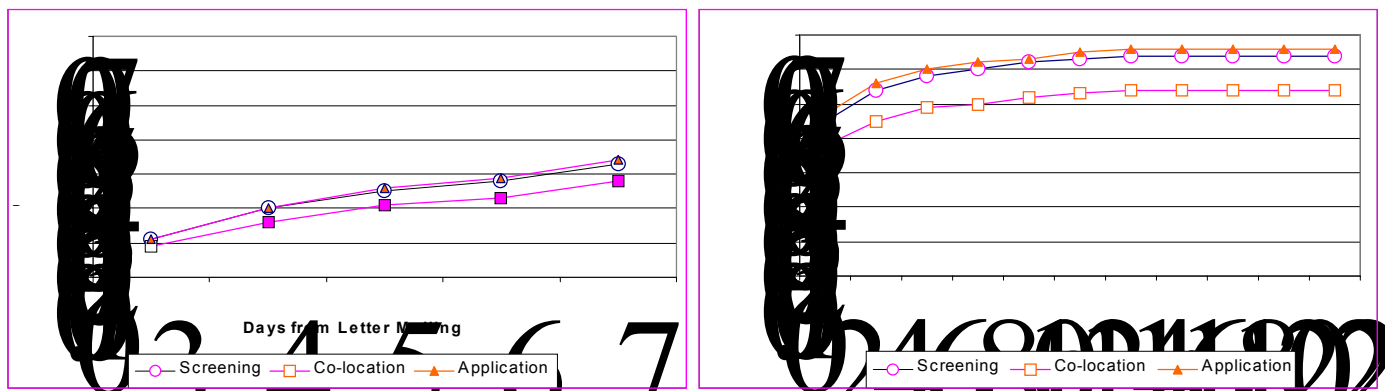
## V. Hazard Analysis

The hazard analysis provides information on the effects of particular characteristics on the length of time between the steps in the process – from letter mailing to screening and from screening to enrollment. This information can be used to inform SSA about staffing needs and appropriate timing and volume of mailings if the models are replicated in other sites.

### A. Duration: Letter Mailing to Screening

The application model was associated with increased odds of being screened over time relative to the screening and co-location models (See *Exhibit ES.3*). At 16 weeks, the probability of being screened was 0.066 for the application model, 0.064 for the screening model, and .054 for the co-location model. The higher response rate in all models occurred primarily within the first week after the mailings, when the highest volume of screenings tended to occur.

**Exhibit ES.3**  
**Probability of Being Screened Over Time By Model**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

### B. Duration: Screening Potentially Eligible to Enrollment

We also examined the probability of enrolling over time among those screened potentially eligible. Restricting our analysis to this subgroup, we found that, at every point in time, the predicted probability of enrolling was higher in the application model, followed by the co-location model, and then the screening model. There did not appear to be much difference in enrollment patterns over time among the models.

## VI. Impact Analysis

The evaluation strives to measure whether the demonstration increased Buy-in enrollment, over and above what would have occurred in the absence of the demonstration. Examining the change in enrollment over time in a demonstration area captures the effect of the demonstration, but also includes an increase in enrollment unrelated to the demonstration. For example, virtually all states experienced an increase in enrollment in the Buy-in program from March 1999 to December 1999; nationally, enrollment increased by 2.5 percent.

In order to assess whether the demonstration had an effect on Buy-in enrollment, we first calculated the increase in enrollment among residents in the demonstration area who appeared to qualify, based on their Title II income or disability status.<sup>12</sup> We then compared this increase to the increase in enrollment among residents meeting the same criteria in another area in the same state. We selected comparison areas that were similar to the demonstration areas in terms of the economic and demographic characteristics of the residents. However, because differences in characteristics between the two areas remained, we refined the analysis by adjusting the comparison estimates to reflect the characteristics of the individuals in the demonstration area.

We refer to the increase in enrollment in the demonstration less the increase in enrollment in the selected comparison area as the difference-in-difference (DID) estimate, or “impact”, of the demonstration. The greater the difference, the larger the estimated effect of the demonstration.

Key findings from this analysis include the following:

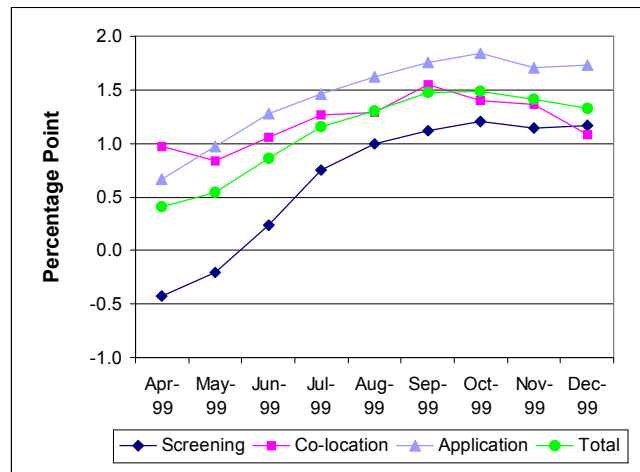
- **The application model produced a larger impact than the screening and co-location models.**

*Exhibit ES.4* presents the DID estimates by model over time. The DID over the demonstration period can be thought of as the cumulative effect of the demonstration on the percent of potential eligibles enrolled. The screening model sites increased enrollment by a maximum of 1.2 percentage points; the co-location model sites increased participation by a maximum of 1.5 percentage points; and the application model increased enrollment by a maximum of 1.8 percentage points.

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<sup>12</sup> We used the same criteria used to define the letter-target population in the previous analysis, although for this analysis we retained individuals already in the Buy-in program.

### Exhibit ES.4 Difference-in-Difference Estimates by Model



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A.

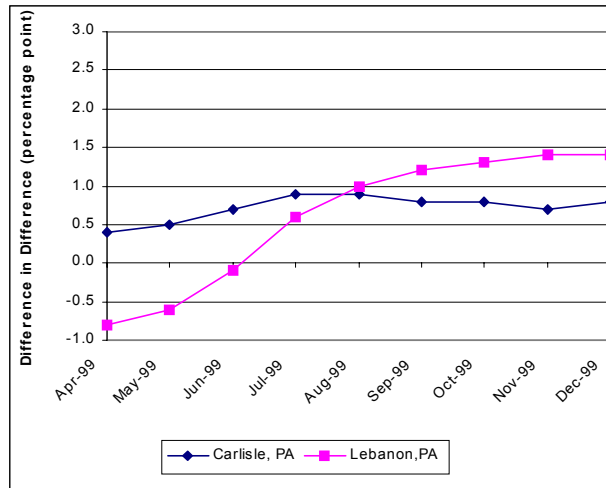
- **Over time, the demonstration increased enrollment in the Buy-in program in all sites. However, several sites were more successful in increasing enrollment.**

Examining the DID by site (*Exhibit ES.5*) suggests that the larger change for the application sites was driven in part by the experience in Corpus Christi and Miami, which had maximum DIDs that exceeded 2.5 percentage points. Muskogee stands out among the co-location sites for also increasing enrollment by more than two percentage points.

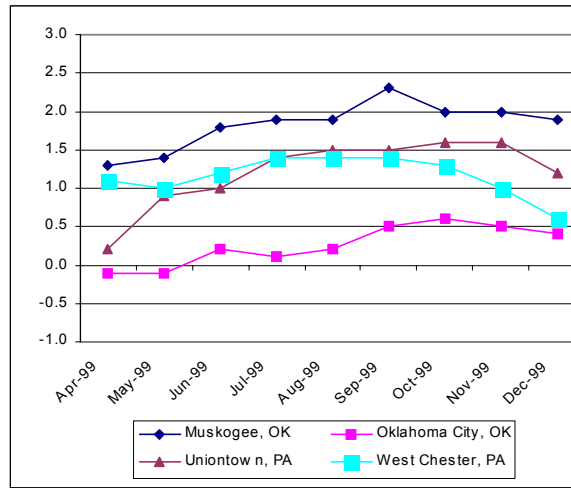
For six of the sites, there was little difference between the changes in enrollment at the demonstration and comparison sites in the early part of the period, which is consistent with both the staggered timing of the mailings and the time necessary to process applications.

### Exhibit ES.5 Difference-in-Difference Estimates by Site and Model

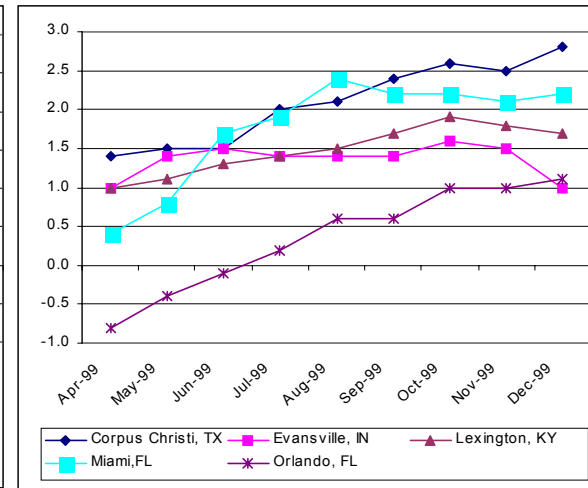
#### Screening



#### Co-location



#### Application



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A.

- **Overall, the demonstration increased enrollment by approximately 10 percent.**

The maximum DID overall (across all sites) was 1.5 percentage points. The increase in enrollment as a percent of the pre-period enrollment translates into approximately a 10 percent increase in overall participation rates.<sup>13</sup> Alternatively, the impact can be measured in terms of increased Buy-in enrollment per 1,000 letters mailed by model as follows:

**Exhibit ES.6**  
**Additional Enrollment per 1,000 Letters Mailed**

Screening	15
Co-Location	18
Application	23
All three models	19

This implies that the co-location model had a 20 percent greater impact than the screening model on enrollment and that the application model had a more than 50 percent greater impact than the screening model and a 28 percent greater impact than the co-location model.

In general, these results must be viewed with some caution because they are based on a limited number of sites within each model and there may be site-specific variation for which we were unable to account for explicitly in our analysis. For example, Orlando had a much smaller increase than the other application model sites. We speculated that this might be the result of the longer travel distance to the central office location, which may have discouraged potential applicants. Also, among the co-located sites, the large DID increases in Muskogee relative to the other sites, may have been the result of the extra involvement of the co-located worker in actually conducting the screens. In particular, definitive conclusions regarding the screening model are hampered by having only two sites in the same state upon which to base the analysis.

## **VII. Lessons and Policy Implications**

Two findings from this study have important policy implications for SSA if they were to implement one of these approaches nationwide.

- **All sites, regardless of the model, increased enrollment in the Buy-in program by the end of the demonstration period. However, the application model, which involved SSA staff to a greater extent than the other models, had the greatest impact on Buy-in enrollment, followed by the co-location model, and the screening model.**

<sup>13</sup> The percentage point change and the percent enrolled should not be viewed as a participation rate among potential eligibles because the letter criteria were restricted to using only Title II income and many of those sent letters would not qualify for Medicare Buy-in because their income and resources exceeded the limits. Based on the non-responders survey, we estimate that roughly half of those in the impact analysis file would likely not qualify for Buy-in based on income and assets. This would mean that among true eligibles, the percentage point increase may be closer to 3.0 (1.5 divided by 0.5).

The application model generated a greater increase in participation than the other models, even after controlling for differences in characteristics across the sites. All models strove to increase awareness of the program, and both the application and co-location models reduced the need to travel to the state Medicaid office. The application model went further by employing SSA staff to accept and help beneficiaries complete the Buy-in application. This suggests that increasing SSA's involvement in the application process would increase enrollment among eligible Medicare beneficiaries.

- **A large percentage of those sent letters likely had income and resources that exceeded the eligibility criteria for Buy-in. As a result, SSA might want to conduct additional efforts to more finely target the population of potentially eligible beneficiaries to reduce the costs of the outreach effort.**

The demonstration sites were chosen in part based on the cooperation and willingness of the state partners and the SSA field offices and regional offices. In future demonstration efforts, or if outreach were to be conducted nationwide, planners may want to: 1) consider matching couple's Title II income to the extent possible to eliminate those whose combined Title II income exceeds the couple limits;<sup>14</sup> 2) possibly target low income areas because individuals living in these areas would be less likely to have other resources that exceed the criteria for Buy-in eligibility; 3) target areas with large Hispanic populations because it appears that the letter outreach was particularly effective among this group; and/or 4) explore matching MBR data to IRS 1099 data and tax returns to gain a more complete picture of income.

By targeting the potential eligible population more finely, SSA would reduce mailing costs, staff time spent screening couples not eligible because of their Title II income, and expectations for increased benefits not realized among some couples.

### **VIII. Next Reports**

This report is the second of four reports on the results of the demonstration. Lewin's first report examined the initial implementation of the first four models and presented descriptive analyses of the individuals targeted for the program. This report focuses on the screening, co-location, and application models, providing additional descriptive analyses of the targeted population, statistics on their level of participation in the Buy-in program, information on the reasons for the lack of response to the intervention, and the impact and effectiveness of the models. The third report will describe the implementation of the two new models, the decision making and the peer assistance models, and the changes that took place in the widow(er)s model in 2000. The fourth and final report will analyze the impact and effectiveness of the peer assistance, decision making, and the widow(er)s models, as well as provide comparisons of key results across all demonstration models.

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<sup>14</sup> SSA might first wish to compare the mailing addresses of spouses (not available for this report) to ensure that married couples were living together. Separated couples are subject to the single limits.



## CHAPTER 1: INTRODUCTION

All Medicare beneficiaries are responsible for several Medicare cost-sharing items, such as deductibles, co-insurance, and Part-B premiums. Part-B premiums are routinely deducted from Social Security benefits. There are programs to assist beneficiaries with limited income and resources with their cost-sharing expenses.

Specifically, the Qualified Medicare Beneficiary (QMB) program uses Medicaid funds to pay the Part B premiums, Part A and Part B deductibles, and co-payments for Medicare beneficiaries living at or below the poverty guideline.<sup>15</sup> Beneficiaries with incomes between 100 percent and 120 percent of the poverty guideline can participate in the Specified Low-Income Medicare Beneficiary (SLMB) program, which uses Medicaid funds to pay the Part B premium. Beneficiaries with incomes between 120 and 135 percent of the poverty guideline can participate in the Qualifying Individual (QI-1) Program, which pays the Part B premium for beneficiaries. Unlike QMB and SLMB benefits, the QI-1 program is not an entitlement, but is funded from a federal block grant to the states; qualified applicants are approved on a first come, first served basis. All three programs generally limit resources to twice the Supplemental Security Income (SSI) resource limit.<sup>16</sup>

Estimates indicate low participation in the Buy-in program. One study estimated that between 3.3 million and 3.9 million of low-income senior citizens and disabled individuals eligible for QMB and SLMB benefits did not receive them in 1998—a participation rate of less than 60 percent. The same study estimated that another 1.6 million individuals potentially eligible for QI-1 benefits did not receive them.<sup>17</sup> In response to low participation levels, Congress directed the Social Security Administration (SSA) to conduct a research demonstration to determine how best to increase participation.<sup>18</sup> In 1999, SSA implemented four models in selected communities across the country to test different methods for increasing participation. In late 1999 and early 2000, it expanded the demonstration to include two new models.

SSA contracted with The Lewin Group to evaluate the demonstration. This report is the second of four reports on the results of the demonstration. Lewin's first report examined the initial implementation of the first four models—the screening, co-location, application, and widow(er)s models—and presented descriptive analyses of the individuals targeted for the program.<sup>19</sup> This report provides additional descriptive analyses of the populations targeted for the screening, co-location and application models, statistics on their levels of participation in the Buy-in program

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<sup>15</sup> Note that there is considerable overlap between the QMB and Supplemental Security Income (SSI) programs, so that the SSI recipients with Title II income who meet the age or receipt of 24 months of disability benefits requirements also meet the QMB requirements.

<sup>16</sup> The 1999 federal resource limits for Buy-in benefits are \$4,000 for individuals and \$6,000 for couples. These limits do not usually change over time; however, some states deviate from the federal resource limits. For example, Florida allows an extra \$1,000 in resources for individuals.

<sup>17</sup> Families USA (1998). *Shortchanged: Billions Withheld from Medicare Beneficiaries*. Washington, D.C.

<sup>18</sup> PL 105-277; October 21, 1998.

<sup>19</sup> The Lewin Group (2000). *Initial Results and Evaluation Design for the SSA Medicare Part B Buy-in Demonstration*. Report prepared for the Social Security Administration, June 2000.

following implementation of the demonstration, information on the reasons for the lack of response to the interventions, and the impact and effectiveness of the models.

The third report will describe the implementation of the two new models—the peer assistance and decision making models—and the changes that took place in the widow(er)s model in year 2000. The fourth and final report will analyze the impact and effectiveness of the peer assistance, decision making, and the widow(er)s models, as well as provide comparisons of key results across all demonstration models.

## **I. An Overview of the Medicare Part B Buy-in Program**

The Medicare Catastrophic Coverage Act of 1988 mandated that starting in 1989, state Medicaid programs share in the health care costs of low-income Medicare beneficiaries, a group including individuals age 65 or older and certain persons with disabilities. As discussed above, beneficiaries receive different levels of benefits depending on their incomes and resources.<sup>20</sup> The states administer the Buy-in programs, with funding shared by the states and the federal government.

*Exhibit 1.1* lists the 1999 income and resource limits for the three Buy-in programs included in the demonstration. The exhibit also demonstrates the considerable overlap between eligibility for full Medicaid benefits and Buy-in benefits.

Three other Buy-in programs assist Medicare beneficiaries. While these programs are not targeted by this demonstration or evaluation, we describe them here because they may also have been affected by the outreach. The Qualified Disabled and Working Individuals (QDWI) program assists individuals with incomes at or below 200 percent of the federal poverty guideline and resources that do not exceed twice the limit for SSI eligibility, who lost their Medicare Part A benefits because they returned to work. Medicaid pays their Medicare Part A premiums only. Qualifying Individuals 2 (QI-2) program benefits are available to individuals with incomes between 135 and 175 percent of the poverty guideline, subject to the availability of funds. Medicaid pays a portion of QI-2 beneficiaries' Part B premiums, which in calendar year 1999 amounted to \$2.23 per month. Finally, the Medicaid Only Dual Eligibles benefits are available to individuals who are not eligible as a QMB, SLMB, QDWI, QI-1, or QI-2 participant but who qualify for full Medicaid benefits because of their high health care costs.<sup>21</sup> These individuals spend down (i.e., have incomes minus out-of-pocket health care expenses that are below defined income limits and have resources less than the limits) to qualify for these benefits. Because these three programs are not part of the demonstration, the remainder of the report focuses only on the QMB, SLMB, and QI-1 programs and the models being implemented in the demonstration to increase participation in them.

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<sup>20</sup> The 1988 legislation enacted benefits for QMBs beginning in 1989; 1990 legislation added eligibility for SLMBs, beginning in 1991; and, the Balanced Budget Act of 1997 added eligibility for QI-1s, beginning in 1998.

<sup>21</sup> The definition for Medicaid only is based on CMS's specifications. At the state's option, individuals listed as Medicaid only can actually have income that meets the SLMB or QI limits, but as a result of high medical expenses, qualify for full Medicaid benefits as a result of "spenddown".

**Exhibit 1.1**  
**Medicare Buy-in Income and Resource Limits, 1999**

Program	Monthly Income Limits <sup>a/</sup>	Resource Limits <sup>b/</sup>	Benefits <sup>c/</sup>
	1999		
<b>SSI</b> <b>IN, KY, TX</b> <b>FL</b> <b>OK, PA</b>	Fed SSI (74% Poverty) State SSI Supp (90% Poverty) 100% Poverty level	\$2,000 Individual or \$3,000 Couple	Full Medicaid Benefits
<b>QMB</b> <b>(100% Poverty)</b>	\$707 Individual or \$942 Couple	\$4,000 Individual or \$6,000 Couple	Premiums, deductibles, and coinsurance
<b>SLMB</b> <b>(120% Poverty)</b>	\$844 Individual or \$1,126 Couple	\$4,000 Individual or \$6,000 Couple	Medicare Part B premiums
<b>QI-1</b> <b>(135% Poverty)</b>	\$947 Individual or \$1,265 Couple	\$4,000 Individual or \$6,000 Couple	Medicare Part B premiums

Note: Income limits apply to all states except Alaska and Hawaii which have higher limits to account for higher cost of living.

<sup>a/</sup> Income includes earnings, Social Security benefits, pensions, wages, interest payments, dividends on stocks and bonds, and other income received regularly. They are based on percentages of the Department of Health and Human Services (DHHS) poverty guidelines and include the \$20 general income exclusion. QMB is 100 percent, SLMB is less than 120 percent and QI-2 is less than 135 percent of the poverty guideline. Couple limits are for married units where *both* husband and wife qualify (i.e., are entitled to Medicare Part A).

<sup>b/</sup> Countable resources include bank accounts, stocks, bonds, and the face value of the individual's life insurance policy(ies), if the face value is \$1,500 or more. The value of the individual's owned primary place of residence, one automobile, burial plots, home furnishings, and personal jewelry are not included. Florida uses Buy-in countable resources limits of \$5,000 of singles and \$6,000 for couples to bring the Buy-in limits into concert with its medically needy resource limits.

<sup>c/</sup> The monthly Medicare Part B premium was \$45.50 per month in 1999 and in 2000.

## II. Demonstration Models

Several possible reasons have been offered for the low participation in the Buy-in program including: a lack of knowledge about the program, a lack of familiarity with the local Medicaid agency, the additional time and transportation required to travel to a different location, the welfare stigma associated with Medicaid benefits, and the complexity of the Medicaid application form. The initial four models were designed to address some of these barriers.

- **Screening Model.** This model tested the use of a Buy-in eligibility screening mechanism administered by SSA. In selected communities, letters were sent to Medicare beneficiaries, and brochures, posters, and other outreach materials directed potential Buy-in participants to call a special toll-free number<sup>22</sup> at SSA's Direct Service Unit (DSU) or to visit their local welfare, social services, medical assistance, or Social Security office. An SSA worker, using a PC-based program, screened individuals who called the DSU or visited the local Social Security office. If the beneficiary appeared eligible for QMB, SLMB, or QI-1 based on the screening, SSA attempted to set up an appointment to

<sup>22</sup> This number is different from SSA's nationwide 800 number.

submit an application with the local Medicaid agency. This model was tested in two Pennsylvania sites (Carlisle and Lebanon).

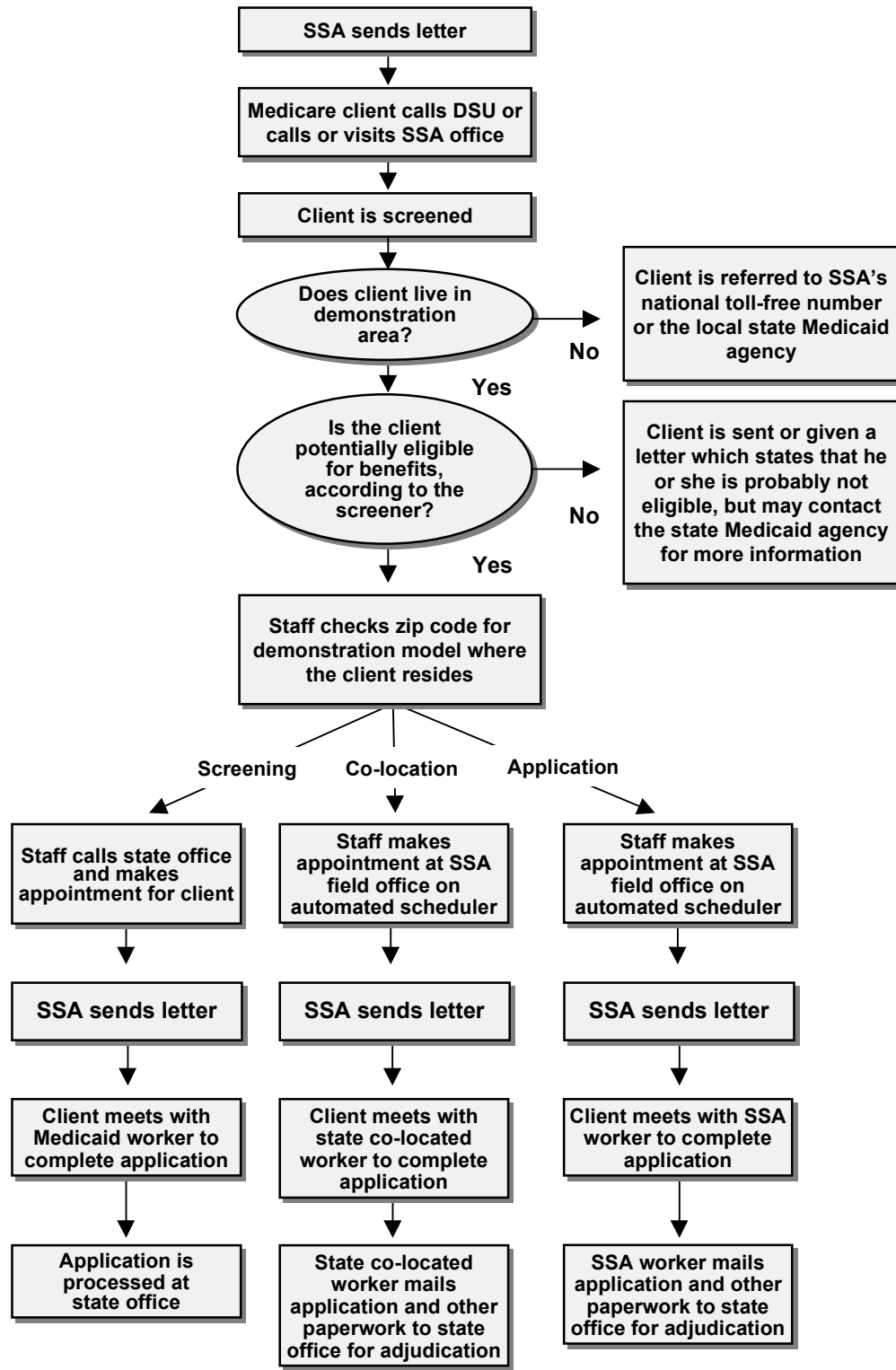
- **Co-location Model.** This model tested the use of an SSA office, rather than a state Medicaid agency, for Buy-in eligibility application intake. Like the screening model, beneficiaries received letters and were directed to call the DSU or contact their local SSA field office to be screened. If the beneficiary appeared eligible based on the screening, SSA staff set up an application appointment with a Medicaid agency employee located at the local SSA office. The co-location model was implemented in Oklahoma (Muskogee and Oklahoma City) and Pennsylvania (West Chester and Uniontown).
- **Application Model.** This model tested application completion by SSA employees rather than by Medicaid agency staff. It began similar to the screening and co-location models, but with this model, if the beneficiary appeared eligible based on the screening, SSA set up an application appointment with an SSA employee at the local SSA office. The SSA employee then completed the state's application form for Buy-in, accepted and copied evidence provided at the time of the application, and forwarded the completed application form and evidence to the Medicaid agency for further development (if necessary) and eligibility determination. The application model was implemented in Texas (Corpus Christi), Florida (Orlando and Miami), Kentucky (Lexington), and Indiana (Evansville).
- **Widow(er)s Model.** This model tested an intervention in which beneficiaries were to be screened for potential Buy-in eligibility when they contacted a designated SSA office to report the death of a spouse. This model evolved over time to include active outreach through letters to recent widow(er)s and later, the intake of applications of the SSA field offices. The widow(er)s model was implemented in the entire state of Massachusetts.

After the start of the demonstration, SSA added two new models:

- **Peer Assistance Model.** This model was similar to the screening model, except Medicare beneficiaries who contacted a toll-free number were not immediately screened, but left their name, telephone number, and times when they were most likely to be at home. Then, an AARP volunteer rather than an SSA worker called the beneficiaries later and screened them for Buy-in eligibility. This model was designed to test an intervention primarily independent of SSA, with the exception of mailing the letters. The Peer Assistance model sites included in this evaluation were implemented in California (Los Angeles), Missouri (St. Louis), Nebraska (Omaha), North Carolina (Asheville), and Pennsylvania (Pittsburgh). This model also included other sites outside the scope of the evaluation.
- **Decision Making Model.** This model was a variation of the application model. However, SSA staff not only took the application at the SSA office, they also reviewed the application and made an initial eligibility determination. State Medicaid agencies still retained ultimate responsibility for the eligibility determination and adjudication, but SSA helped streamline the process. This model involved coordination at the regional office level, but also involved significant time and effort at the SSA field offices. The decision making model was implemented in California (San Francisco), Pennsylvania (Philadelphia), and Texas (Dallas and San Antonio).

The remainder of the report focuses on three of the initial models of the demonstration – the screening, co-location, and application models. *Exhibit 1.2* illustrates the planned sequence of events after beneficiaries learned of the program. These models are similar in that they begin with outreach efforts made by SSA staff, and rely on Medicare beneficiaries to contact either the DSU or the local SSA office. These models build on each other; each is designed to remove additional obstacles from the application process. The screening model aims to increase beneficiaries’ awareness of the program; the co-location model aims to reduce problems associated with the separate location of the Medicaid agency (e.g., the lack of familiarity and the time and transportation requirements); and the application model aims to reduce interaction with the welfare office, which might lessen the welfare stigma associated with receiving Medicaid benefits.

**Exhibit 1.2  
Intended Sequence of Events  
for Screening, Co-location, and Application Models**



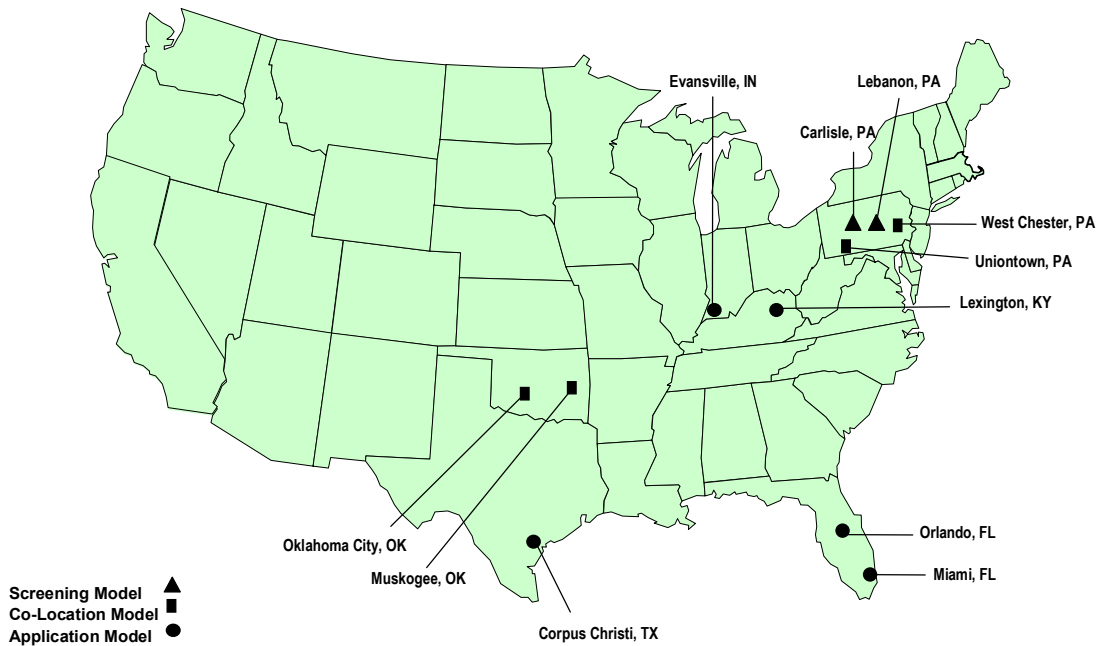
**III. Demonstration Sites**

*Exhibit 1.3* lists the demonstration sites, as they are referenced in this report, and the areas covered by the demonstration. (See *Exhibit 1.4* for a map showing the initial demonstration sites.)

**Exhibit 1.3  
Buy-in Demonstration Sites**

Model/Site	Main Demonstration Area
<b>Screening Model</b>	
Carlisle, Pennsylvania	Cumberland and Perry Counties
Lebanon, Pennsylvania	Lebanon County
<b>Co-location Model</b>	
Muskogee, Oklahoma	Adair, Cherokee, McIntosh, Muskogee, and Wagoner Counties
Oklahoma City, Oklahoma	Oklahoma County
Uniontown, Pennsylvania	Fayette County
West Chester, Pennsylvania	Chester County
<b>Application Model</b>	
Corpus Christi, Texas	Nueces County
Evansville, Indiana	Vanderburgh County
Lexington, Kentucky	Fayette County
Miami Central, Florida	Little Havana, Miami (Dade County)
Orlando, Florida	Osceola and Orange Counties

**Exhibit 1.4  
SSA Offices**



The communities selected for the demonstration comprise a geographically diverse mix of urban and small metropolitan/rural sites. The sites vary in economic and demographic characteristics of their elderly populations. *Exhibit 1.5* summarizes the economic and demographic characteristics of the population age 65 or older living in each site. These data are drawn from the 1990 Census.<sup>23</sup> The sites, while diverse, are not representative of the entire U.S.

**Exhibit 1.5**  
**Economic and Demographic Characteristics**  
**of 1990 Population Age 65 or Older, by City or County**  
**(percent with characteristic)**

Site	In Poverty	Black	Hispanic	Female	Live Alone	With Self-Care Limits	Own Home	Own Vehicle
<b>Screening Model</b>								
Carlisle	6.8	0.6	0.3	60.0	29.5	14.9	77.9	84.3
Lebanon County	8.7	0.2	0.2	60.3	32.0	16.1	73.6	77.8
<b>Co-location Model</b>								
Chester County	6.1	5.6	0.6	58.8	24.9	16.1	76.2	83.4
Fayette County	14.5	3.6	0.2	60.1	32.4	24.5	79.9	73.7
Muskogee	18.2	15.2	0.2	62.1	39.0	21.7	72.8	78.5
Oklahoma City	13.1	10.8	1.1	61.7	35.0	20.7	78.2	83.0
<b>Application Model</b>								
Fayette County	13.2	12.5	0.3	62.7	32.7	21.3	69.9	75.7
Miami	32.2	11.9	73.1	60.9	27.3	27.4	40.5	54.3
Nueces County	20.2	5.0	36.0	59.0	29.4	22.9	74.5	81.2
Orlando	16.1	16.7	5.3	62.6	34.1	20.6	65.3	73.7
Vanderburgh County	11.6	5.3	0.2	63.2	35.9	21.4	74.7	76.6
<b>U.S. Total</b>	<b>12.8</b>	<b>8.0</b>	<b>3.4</b>	<b>59.9</b>	<b>30.5</b>	<b>20.1</b>	<b>75.0</b>	<b>77.7</b>

**Source:** The Lewin Group tabulations of 1990 Decennial Census (most recent data available at the zip code level).

**Note:** For Miami, the tabulations are for the entire City of Miami, whereas the demonstration included only a part of the city (Little Havana).

Miami is the most disadvantaged community among the demonstration sites. It has the highest percentage of elderly living in poverty, the lowest percentage who own a home or a car, and the highest share of senior citizens with self-care limitations. Hispanics make up a sizable portion of the senior citizens in Miami and Nueces County, Texas. Chester County, and, Carlisle (Cumberland and Perry counties), in Pennsylvania, have relatively low shares of seniors living in poverty, higher percentages owning homes and cars, and lower percentages with self-care limitations. Across all sites, about one-third of the senior citizens live alone. About 60 percent of the elderly are female.

<sup>23</sup> The 1990 Census is the only source of zip code/county level data and information about the percentage in poverty, living arrangements and other information for individuals age 65 and over.



## IV. Implementation of the Initial Models

This section briefly describes the outreach efforts and application process in the initial demonstration sites. Much of the information presented in this section is covered in more detail in Lewin's initial report.

### A. Outreach Efforts

In the screening, co-location, and application models, the success of the demonstration was contingent on Medicare beneficiaries' learning about the program and contacting SSA. The outreach efforts involved sending letters to single Medicare Part A beneficiaries in the demonstration areas whose monthly Title II income (i.e., Social Security benefits) was less than \$947 and identified married beneficiaries whose combined income was less than \$1,265 and who were not currently enrolled in the Buy-in program.<sup>24</sup> Letters were also sent to individuals who would be entitled to Medicare in the following month (i.e., were age 64 years and 11 months or in their 24<sup>th</sup> consecutive month of receiving disability insurance benefits), if their Title II benefits fell below the income limits.<sup>25</sup>

A total of 239,048 letters staggered in nine separate batches were sent to individuals living in demonstration areas. In addition to the letters, SSA made posters, brochures, public service announcements, and articles for print media available to the field offices. SSA field offices engaged in varying degrees of outreach, including placing posters at the post office, the local Office of Aging, senior citizen centers, and the local Medicaid agency; holding question and answer radio shows; and, in field offices serving large Hispanic populations, engaging in outreach specifically targeted to Hispanic beneficiaries.

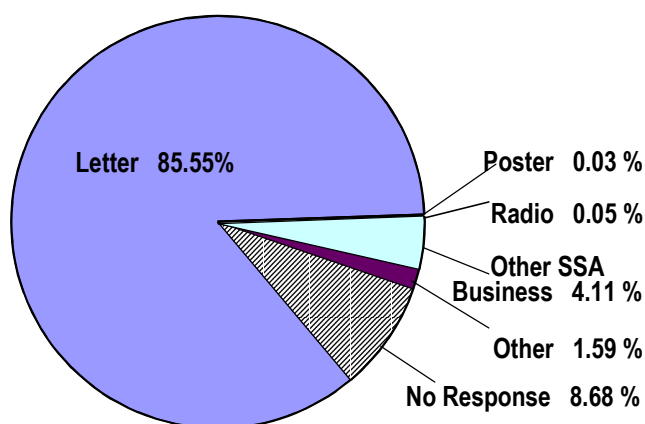
In all sites where SSA used targeted letters to reach potential clients, the letters were considered by far to be the most effective form of outreach. The screener data confirm that a large majority of those screened heard about the program through the SSA outreach letter. Approximately 86 percent reported that the letter from SSA was the source through which they had heard about their potential eligibility (see *Exhibit 1.6*).

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<sup>24</sup> Initially, for the first four mailings, SSA used the 1998 limits to identify potential Buy-in participants (\$926 for single beneficiaries and \$1,241 for married couples). The June 1999 mailing captured those who should have been included in the previous mailings. All subsequent mailings used the 1999 limits.

<sup>25</sup> Letters were not sent to individuals in Corpus Christi, Texas who had received letters from CMS as part of a separate outreach effort.

**Exhibit 1.6**  
**Method in which Screened Individuals Learned**  
**about the Buy-in Program**



Source: The Lewin Group tabulations of screener data.

## **B. Application Process**

### **1. Differences Across Models**

Although all models used the same basic approach for outreach and initial screening, the models used different paths to get the beneficiary from screening to the completion of a Buy-in application. The screening model referred potential eligibles to the state Medicaid agency, the co-location model referred them to the SSA office to meet with a co-located state worker, and the application model referred them to the SSA office to meet with an SSA worker.

Because the application model involved the use of a non-state worker to take an application for a state program, it had the greatest potential to create problems for the state's adjudication process. Clear communication is most critical in the application model sites because the SSA field office had to understand what the state needed to efficiently adjudicate applications. Application model sites reported good relationships between the SSA field office and the state Medicaid agency and that the demonstration brought the field office and the state Medicaid agency closer together. Demonstration staff believed that the application model worked well and ran smoothly, although the sites experienced some early missteps as the SSA field office learned how to meet the state's application requirements.

### **2. Site-Specific Differences**

In addition to differences in application processes across models, there were state-specific application processes that possibly affected enrollment. The following differences were documented in the initial Lewin report:

- **Shorter applications.** All of the demonstration states except those in Oklahoma used a short application form for at least a portion of the demonstration period, which might have increased enrollment (Corpus Christi had been using a shortened application before

the demonstration). In addition, some sites (Corpus Christ and the two in Florida) reduced the level of evidence or verification required, which may also have increased participation.

Florida and Pennsylvania are among the states that elected to exceed the SSI income standard to define the categorically eligible population under the option in 1902(m) of the Social Security Act. That option permits a state to use a limit up to 100 percent of the poverty guideline for income added to the SSI resources limit as the categorically needy financial eligibility limits for aged and disabled beneficiaries. Pennsylvania uses a “long-form” application for those who may meet categorically needy eligibility limits and a “short-form” application for those who may be eligible only for Buy-in. The categorically needy eligibility limit in a state may also correspond to the limits for other programs, such as food stamps and housing assistance, and these other programs may require additional verification of eligibility.

- **Intra- and inter-agency coordination.** The models required different coordination efforts among the SSA field office, state Medicaid agency, and DSU to ensure that clients who were screened potentially eligible completed an official Buy-in application. Such coordination brings with it the possibility for communication problems among offices. For example, the DSU staff needed to be cognizant of the site within each model in order to determine whether to schedule an appointment on SSA’s electronic scheduling calendar (co-location and application sites) or with the state Medicaid agency (screening sites). In addition, differences existed in the ways that field offices used SSA’s scheduling system. As a result, several field offices reported the DSU was not properly scheduling appointments.
- **Volume of appointments.** Most sites reported a backlog of appointments following the mailings, and several sites had to add application appointment slots to accommodate the demand. This was particularly true for application model sites, which were responsible for handling the applications themselves.
- **Attitudes regarding welfare.** Clients’ attitudes about welfare and the agency that administers programs they consider to be welfare can strongly affect their decision to seek benefits from that agency. Interviews with SSA field office and state Medicaid agency staff provided substantial anecdotal evidence to support the existence of negative views of welfare benefits in at least some communities. These feelings appeared to be strongest in the screening model sites.

## **V. Methods and Data Sources**

We obtained data from a variety of sources to describe and document the outreach efforts, the screening process, and enrollment. Sources include screener data, Master Beneficiary Record data, and Third Party Billing records.

### **A. Screener data**

The outreach efforts of the screening, co-location, and application models directed potential Buy-in participants to call the toll-free number at the DSU or visit their local welfare, medical assistance, or Social Security office. If a potential participant called the DSU or visited the local

Social Security office, the individual was screened using a PC program. The screening process is discussed briefly here and more thoroughly in the initial Lewin report.

The screening program began with basic questions about the individual's Social Security number (SSN), first and last names, mailing address, spouse's name and SSN, residence zip code, gender, and Spanish language preference (yes/no). If the individual's zip code were outside of a demonstration area, the screening was terminated. The interviewer explained to the individual that his or her area of residence was outside the scope of the demonstration and that the screening would not continue. The individual would be referred to the local Medicaid office or SSA's national toll-free number.

If the individual's zip code were in a demonstration area code, the screening continued with questions concerning how the individual learned about the Buy-in program, as well as his or her resources and income. If the individual were deemed potentially eligible (i.e., his or her Title II benefit, resources, and income fell below the required amount and he or she met the other necessary criteria), the interviewer was prompted to make an application appointment, and the individual was sent an appointment letter. The PC program saved the information and created a record for each individual.

If the individual lived in the demonstration area, but the individual was deemed potentially ineligible if he or she: 1) was not entitled to Medicare Part A; or 2) paying the Medicare Part A premium as a disabled working individual, the screening program automatically terminated. Automatic termination and potential ineligibility also occurred if the individual's or couple's 1) monthly Title II income was too high; 2) resources exceeded the resource limits; or 3) income exceeded the income limits.

Every two weeks, the DSU and SSA field offices downloaded the screening records and sent a file with data from the previous two weeks to a central location, where the files were merged. Files were then sent to The Lewin Group for analysis.

The screener data used for this report cover the period from March 16, 1999 through December 31, 1999 and include a total of 16,208 individual-level records (following the deletion of duplicates).

### ***B. Master Beneficiary Record (MBR) Letter Data***

SSA used its MBR data to determine which individuals and couples might be eligible for the Medicare Buy-in program based on Title II income. An extract of the data set provided a list of 239,110 letters sent to primary beneficiaries or couples (if auxiliaries – i.e., spouses – were matched to the primary). Each record from the letter file contains several demographic variables as well as variables concerning the individual's beneficiary status. For much of the descriptive analysis presented in the first report, married couples, in which both partners received benefits based on the primary claimant, were treated as one unit and all characteristics analyzed drew on the primary beneficiary's information. For example, when age was reviewed, the primary beneficiary's date of birth was used and the spouse's was disregarded. For the analysis presented in this report, the analysis follows each individual on the file, separating the primary from the auxiliary.

### **C. Master Beneficiary Record (MBR) Analysis Data**

SSA provided Lewin with an extract from the MBR data that included information on all beneficiaries eligible for Medicare Part A residing in the states where a demonstration took place in January 1999. Each MBR record contains names, mailing addresses, demographic information, information on the type and amount of Title II benefits, information on whether beneficiaries received their Title II benefits by mail or direct deposit, and other account numbers if the beneficiary was entitled to benefits from other accounts.

### **D. Third Party Billing Records**

The Centers for Medicare & Medicaid Services (CMS, formerly known as Health Care Financing Administration, or HCFA) provided files from the Third Party Billing system which tracks the billing of Medicare premiums from third parties that pay Medicare Part A or Part B premiums on behalf of beneficiaries. Buy-in enrollment records are those in which the third party is a state Medicaid agency paying the Medicare Part B premium. The files covered enrollment from March 1998 to December 1999.

CMS obtains data for the Third Party Billing System from the state Medicaid agencies and SSA:

- **States** inform CMS after making an eligibility determination for Buy-in benefits. At that point, CMS will accrete (i.e., enroll) the eligible individuals and bill the states for premium payments. These states are considered “alert” states, because CMS will alert states that individuals are receiving SSI and might be eligible. It is up to the state to make a determination of eligibility and inform CMS. Indiana and Oklahoma are alert states.
- **SSA** automatically enrolls eligible Supplemental Security Income (SSI) recipients in the Buy-in program if the individual lives in an *auto-accrete* state, which has a 1634 agreement with SSA.<sup>26</sup>

One limitation of the Third Party Billing records is that the reason for Buy-in eligibility (i.e., the program category) is not considered reliable. (The program category is not required for the purposes of payment.) States are requested to use a code designating the program as QMB, SLMB or QI-1, although states have the discretion to use other codes.

### **E. State Data**

All states included in this report provided SSA with individual-level enrollment data for both the pre- and post-demonstration periods. At the minimum, the six states provided: Social Security number; name; date of birth; zip code; date of enrollment (Florida, Indiana, Kentucky,

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<sup>26</sup> In states that have entered into a 1634 agreement, almost all SSI recipients eligible for Medicare are eligible for Medicaid and therefore eligible for Part B Buy-in benefits. Because there are certain Medicaid-only eligibility criteria that must be met, it is theoretically possible that an SSI recipient in an auto-accrete state could be ineligible for Medicaid, in which case there should be no automatic accretion to Part B Buy-in.

Pennsylvania, Oklahoma) and/or disposition (Florida QMB, Kentucky, Texas); and Medicaid program category (QMB, SLMB, QI-1).<sup>27</sup>

Data reliability issues arose. State data were based on their own eligibility files. In theory, states should be the authority regarding individuals enrolled in their Medicaid programs. However, a number of issues caused us to question the reliability of the state-provided files or at least the utility of the data for our analyses. These included:

- The states that have chosen to have SSA *auto-accrete* SSI recipients may not consistently update their own eligibility files or may not consider these individuals to be Buy-in recipients in their own data systems. Four of the six demonstration states (Florida, Kentucky, Pennsylvania, and Texas) were auto-accrete states.
- Two of the six states maintained separate data systems for different groups of Buy-in recipients either based on geography or eligibility type. In addition, one state used a department other than Medicaid to make eligibility determinations and maintain the enrollment files. This caused some confusion in creating complete statewide files.
- Four of the six states sent incomplete data because their systems either lacked categorical eligibles (individuals enrolled in the full Medicaid program, as well as Buy-in), included new enrollees or current enrollees only, and/or did not retain the start or end date.

We used data from the Third Party Billing system rather than the state-provided data because the latter were incomplete. Additionally, Third Party Billing record data provided estimates that more closely aligned with other data sources. Finally, while at least one state provided near complete data, we opted to use a consistent data source for all states, which allowed for more accurate comparisons across sites and models.

#### **F. Group Health Plan Data**

The Group Health Plan extract, provided by CMS, included information on all beneficiaries who were enrolled in a Medicare health maintenance organization (HMO), at or before the time of the data pull. If a beneficiary was not in the extract, this meant that that beneficiary had never enrolled in a Medicare HMO at the time of the data pull. Each Group Health Plan record contains names, demographic information, information on the type of Title II benefits, whether the beneficiary was currently enrolled in a Medicare HMO, and an identifier for the Medicare HMO the beneficiary was enrolled in.

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<sup>27</sup> In addition, Florida, Kentucky, and Pennsylvania also provided SSA with application information for the state; Indiana provided for the demonstration area. However, Florida collected application information for QMB records only, and the Indiana and Pennsylvania application data did not merge well with the enrollment records (i.e., many enrollment records did not have a corresponding application record and approved application records did not have a corresponding enrollment record). Indiana's application data covered only a subset of enrollment in Vanderburgh County.

## G. Data Matching

Developing the databases for analyses involved matching across all five data sources available: the MBR letter file, the MBR analysis extract for Medicare Part A eligibles in each state, the screener file, Third Party Billing records, and Group Health Plan data.

The hazard and probability analyses followed the individuals on the MBR letter file. Thus, records that included both a primary and auxiliary were divided into two records, which were merged to the screener data (records that included couples were separated before merging), the MBR state data, and the third party data. We retained only records that merged to the MBR analysis extract file for the probability and hazard analyses. We also excluded individuals who were sent letters that we determined had Title II income above 135 percent of the poverty guideline.

The impact analysis followed all individuals on the MBR analysis data files who we predicted would have been eligible for Buy-in benefits based on age or disability status, Title II income, and Medicare Part A enrollment. Unlike the hazard and probability analyses, the impact analysis included all individuals meeting this criteria in the state, including individuals already receiving Buy-in benefits. We used the zip code on file in 1999 to determine whether they were residing in the state and whether they were residing in the demonstration area or in a selected comparison area. In some cases, the 1999 zip code was not available and we used the zip code in the system at the time the file was extracted (March 2000).<sup>28</sup>

We had limited information on which to match the files and we considered some of the data elements more reliable than others from the different files (see *Exhibit 1.7*). The key information not included on the screening file was date of birth and first name of spouses. Absent reliable names on the screener data, we had to rely primarily on SSNs for matching purposes. We assumed that SSNs in the screener file, but not in the letter file, belonged to individuals who received no letter. Approximately 3,000 of the 19,245 individuals screened did not match to the letter file. We assumed that SSNs in the letter file, but not in the screener file, belonged to individuals who were not screened. We have no method for estimating the extent to which we did not match correctly because of data entry errors.

For the impact analysis, the MBR was merged with the Third Party Billing records data, using the Claimant Account Number (CAN), which is the primary's SSN, and the Beneficiary Identification Code (BIC), which represents the type of beneficiary (e.g., primary claimant, aged wife, or aged widow), because the Third Party file does not include the beneficiary's SSN. In doing so, we were unable to match about 15 percent of the Third Party file to the MBR. Possible reasons for not matching records include; the individual moved into the demonstration state after the MBR file was extracted; the CAN or BIC changed after the MBR file was extracted (e.g., an aged wife became an aged widow); or the CAN or BIC were incorrect.

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<sup>28</sup> In all states except Texas, 1999 zip codes were available for about 97 percent of the records. In Texas, about 60 percent of the records were missing a 1999 zip code but had a current zip code.

**Exhibit 1.7**  
**Availability and Reliability of Data Elements Available for Matching**

Data Element for Matching	MBR Letter Extract	MBR Analysis Extract	Screener	Third Party Billing Records
<b>Social Security Number</b>				
Available	X	X	X	X <sup>c/</sup>
Considered reliable	⊙	⊙	↷	⊙
<b>Last Name</b>				
Available	X <sup>a/</sup>	X	X	X
Considered reliable		⊙	↷	⊙
<b>First Name</b>				
Available	X <sup>a/</sup>	X	X <sup>b/</sup>	X
Considered reliable		⊙	↷	⊙
<b>Beneficiary ID Code (BIC)</b>				
Available	X	X		X
Considered reliable	⊙	⊙		⊙
<b>Date of Birth</b>				
Available	X	X		X
Considered reliable	⊙	⊙		⊙
<b>Zip Code</b>				
Available	X	X	X	X
Considered reliable	↷	↷	⊙	⊙
<b>Mailing Address</b>				
Available	X		X	
Considered reliable	↷			

⊙ Considered reliable.

↷ Considered less reliable.

a/ The MBR letter extract included names in label format (e.g., Mr. John Doe all in one field) which made any direct matches to this file based on name prohibitively difficult. We were able to gain a formatted name field for most individuals in the MBR letter extract through matching to the MBR analysis extract using SSN.

b/ Not available for spouses.

c/ Each record includes primary's SSN only.

**Notes:** We assessed the SSN as less reliable than the MBR and Third Party Billing record data because of potential keying errors. We assessed the first and last name to be less reliable on the screener again because of potential keying errors. We assessed the zip code and mailing address from the MBR extracts to be less reliable because beneficiaries who have direct deposit have no imperative need to provide updated addresses to SSA.

**Exhibit 1.8** highlights the results of the matching and editing process and the final counts used for our analyses among those sent letters in the screening, co-location, and application sites. The total number of letters sent was 239,110. We removed 44 records that appeared to be exact duplicates based upon beneficiary account number, last name, and date of birth. Another 62 letters inadvertently sent to individuals living in one zip code in Uniontown, Pennsylvania that was not served by the Uniontown field office were also removed. We added 6,391 individuals when we split up SSA identified couples into individuals for the analysis files.

We also performed matches within the MBR analysis extract to generate a couple Title II income variable for analysis. In the SSA-generated MBR letter extract, Title II income was combined only for individuals who received their benefit wholly based on their spouse's earnings history (i.e., they did not qualify for Title II benefits based on their own work history) and had the same



mailing address (approximately three percent of the MBR letter extract file). Many members of a married couple were primary beneficiaries, but were also dually entitled (i.e., they qualified for Title II benefits based on their own work history, but received a higher benefit as the spouse of another primary beneficiary). We attempted to match up dually entitled married beneficiaries so that we had a more accurate estimate of Title II income for eligibility purposes. Once this match was completed, an additional 18 percent of the MBR letter extract were categorized as married. We then determined if the combined Title II income for these couples exceeded 135 percent of the poverty guideline. We excluded 26,617 of these individuals (11 percent of the initial letter file) from the final analysis file because they were not eligible and would bias the results downward.<sup>29</sup>

### Exhibit 1.8 Sample Sizes

	Added/Excluded Individuals	Analysis File
<b>Sent letter</b>		<b>239,110</b>
Same individual received two letters	-44	239,066
Zip code not in Uniontown PA included in screener	-62	239,004
Couples split to individuals	+6,391	245,395
No match to MBR extract	-1,647	243,748
Title II income exceeded couple limit	-26,617	217,131
Title II income exceeded single limit	-843	216,288
<b>Screened</b>		<b>19,245</b>
No match to MBR Letter Extract	-3,037	16,208
No match to MBR extract	-146	16,062
Title II income exceeded couple limit	-731	15,531
Title II income exceeded single limit	-52	15,279
<b>Enrolled among those sent letters</b>		<b>8,246</b>
Title II income exceeded couple limit	-70	8,176
Title II income exceeded single limit	-21	8,155
No match to screened file on SSN	-3,699	4,456

**Source:** The Lewin Group analysis of match Master Beneficiary Record, screener and Third Party Billing record data.

Another 843 single individuals who had Title II income over 135 percent of the poverty guideline as of January 1999 were also excluded. The majority of these individuals received two SSA checks and their total benefits exceeded the limit (i.e., they should not have received a letter).<sup>30</sup>

<sup>29</sup> Among this group, we found that 45 individuals enrolled. These individuals could have enrolled for several reasons, including: 1) changes in their circumstances caused them to be eligible; 2) enrolled due to mistakes made by applicant or staff in the application process; or 3) enrolled due to fraud (although this may be difficult because most states verify Title II income with SSA). Alternative explanations are that data were incorrectly matched or mistakes were made in entering data for some of these cases.

<sup>30</sup> Beneficiaries dually entitled to benefits from the retirement and disability trust funds receive two checks, because checks from the two different trust funds cannot be combined. This occurs less than one-half of one percent among those mailed letters.

In combining the letter extract to the screener data, slightly more than 3,000 (16 percent) were screened but failed to match to the MBR letter file. Possibly, these individuals learned of the Buy-in demonstration through word of mouth, posters, brochures, or publicity efforts. An additional 783 (4 percent) were excluded from the final analysis file because Title II income exceeded 135 percent of the poverty guideline.

To match to the Third Party Billing records data (enrollment data), we restricted the enrollment dates for QMBs to the first of the month following the mailing by site and four months prior to that month for SLMBs and QI-1 to account for retroactive enrollment for these programs.<sup>31</sup> We also restricted enrollment to no later than December 31, 1999.

Approximately 45 percent (3,699 of 8,246) of those enrolled do not appear to have been screened. We discuss potential reasons for this outcome in Chapter 3.

### ***H. Non-responder Survey***

To determine the lack of response to SSA's outreach effort, SSA conducted a telephone survey of individuals who received letters, but who were not screened. SSA attempted to contact 924 individuals during the period from September 1999 to January 2000, and achieved a completion rate of approximately 50 percent. SSA developed a database program that interviewers used to key in responses.

We encountered several substantial problems in analyzing the survey data. First, survey answers were often inconsistent because the database program did not automatically skip to the appropriate next question, depending on the client's response. In some cases, individuals were asked the wrong questions. For example, an individual who replied he or she was single, should have been asked if his or her income and resources were below the limit for single people, but instead was asked questions pertaining to married individuals. Twenty-five survey participants, or five percent of those completing the survey, were discarded because inconsistent answers made it impossible to classify them appropriately.

Another difficulty with the survey data was that interviewers did not use consistent methods to record the responses of those who did not wish to complete the survey, partly because the survey was not designed to fully account for these occurrences in a consistent manner. In some records, a "not interested" response was recorded in a comment section, which may or may not have also included details as to why the respondent was not interested (e.g., did not want to divulge information over the phone or income or resources were too high for the Buy-in program.) Other records had some early survey questions completed, but the data then skipped to the "Why are

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<sup>31</sup> SLMB and QI-1 payments for premiums can be paid up to three months retroactively from the date of approval if the individual meets the income and resource criteria during the retroactive time period. We were able to examine the frequency of this practice using the disposition and enrollment dates available on the Kentucky-provided data. We found that between 30 and 50 percent of SLMB and QI-1 awards began in the month eligibility was determined and between 20 and 40 percent began three months prior to the month eligibility was determined. Approximately 10 percent began four months prior to determination. Retroactive enrollment is not at the state's discretion if an individual meets all eligibility criteria (1902(a)(34) of the Social Security Act). However, in practice, our interviews revealed that some states may not verify eligibility for the retroactive period, and as a result, avoid paying retroactive benefits.

you not interested?” question, with set categories of reasons for lack of interest. When possible, we classified the free-response reasons noted into one of the fixed categories. However, for the less-detailed “not interested” responses, it was often difficult to determine whether the respondent understood the program and was not interested in participating or whether he or she simply did not want to complete the telephone survey. We used the specific language of the interviewer notes to try to determine whether each of these individuals should be counted as “Not Interested” in the program or “No Response” to the survey. However, these classifications are not necessarily reliable because the correct interpretation was clear in only a small number of cases.

In addition, we found further inconsistencies when matching the survey data with the screener data. For example, some survey participants were screened following the survey despite having indicated that their income or resources were above program limits, and two of these actually screened eligible. Some of those surveyed who did not indicate they had responded to the letter had actually been screened prior to the survey. In categorizing survey responses for the tables in Chapter 4, we used screener data in the event of a contradiction between survey and screener data. For example, if a survey participant did not indicate that he or she responded to the letter, but was screened prior to being surveyed, we counted that individual as having responded to the letter. Survey respondents who indicated that their income or resources were above the limit but then screened potentially eligible were counted as being potentially eligible for the program.

Finally, an important goal of the survey was to determine if many of those being targeted for the Buy-in program were ineligible due to the program income or resource limits, and if non-responders were self-screening for this reason. The inconsistencies in the survey and screener data also made it difficult to calculate the extent of this problem. As noted above, we used screener data to determine income and resource levels whenever possible. When screener data were not available, we used survey responses to the specific income and resource questions, disregarding all respondents who were asked the wrong question. We also included those not completing the survey for whom interviewer notes mentioned income or resources being above the limit as a reason for non-response. However, these responses may be less reliable than the other categories being counted because respondents were not reminded of the program limits at the time of the question.

## **VI. Contents of the Report**

The remainder of this report focuses on results from the screening, co-location and application models. The report is organized as follows:

- Chapter 2 describes the outreach efforts and the response to these efforts.
- Chapter 3 describes issues surrounding the application intake process and presents enrollment rates.
- Chapter 4 examines the time from letter receipt to screening and from screening to enrollment.
- Chapter 5 examines the impact of the demonstration models on enrollment.

Additional detail regarding process aspects and beneficiary characteristics is available in the Lewin initial report.

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## CHAPTER 2: PARTICIPATION FROM OUTREACH

This chapter focuses on outreach efforts. It begins by describing the intended letter recipients. It then presents the screening rates and the characteristics of screened beneficiaries. Next it examines the probability of being screened. Finally, the chapter discusses results from the non-responder survey.

### I. Who Received Outreach Letters?

#### A. Timing and Volume

Starting in March 1999, letters were sent to potential participants living in selected zip codes, who met the following criteria:

- Single and receiving individual monthly Title II Social Security benefits of less than \$947 or married and receiving combined benefits of less than \$1,265 (equivalent to 135 percent of the poverty guideline plus the \$20 general income inclusion);

-AND-

- Entitled to Medicare Part A benefits; *or*
- Attained the age of 64 and 11 months or had received 24 consecutive months of disability insurance benefits;

-AND-

- Not receiving Buy-in benefits at the time the letters were generated.

SSA staggered the mailing of the 239,110 letters in nine separate batches according to the terminal digit of the intended recipient's Social Security number (SSN) and demonstration model. After adjustments discussed in Chapter 1, the total number of letters sent was 216,288 (see *Exhibit 2.1*).

**Exhibit 2.1**  
**Number of Letters Mailed to Medicare Beneficiaries, by Model and Date**

Mailing Date	Screening	Co-location	Application	Total by Mailing Date
March 17	7,332			7,332
April 8	7,263	14,707		21,970
April 23	4,900	14,695	22,352	41,947
May 14	4,930	14,649	22,046	41,625
June 7	779	9,527	13,029	23,335
June 21		7,730	11,450	19,180
July 12		7,690	11,265	18,955
July 22		7,665	11,365	19,030
August 9			22,914	22,914
<b>Total</b>	<b>25,204</b>	<b>76,663</b>	<b>114,421</b>	<b>216,288</b>

**Source:** The Lewin Group tabulations of Master Beneficiary Record data for SSA letter-targeted individuals.

SSA sent the first batch of letters on March 17 to beneficiaries living in the screening model communities (Carlisle and Lebanon, Pennsylvania). The second batch, mailed on April 8, included beneficiaries living in the co-location model areas as well as the screening model areas. Individuals living in the application model areas began receiving letters with the April 23 mailing.

### ***B. Improved Determination of Marital Status***

As discussed above, SSA single beneficiaries, with Title II income below \$947, and beneficiary couples with combined Title II income below \$1,265, received letters. However, SSA administrative data (MBR) maintain separate records on each Social Security beneficiary. Therefore, spouses' records must be linked to each other to determine combined income and apply the higher couple standard.

A beneficiary identification code (BIC) identifies the record as a primary beneficiary (retired or disabled worker), or a survivor or dependent beneficiary (a spouse, widow or widower, children, or parents). If a person is entitled to both a primary benefit and another benefit type, then he or she is said to be *dually entitled* when marital status is not a factor of Social Security entitlement. Dually entitled individuals receive the higher of the benefits to which they are entitled. For example, a woman may be entitled to benefits from her own earnings history and also from her husband's earnings history. If the benefit based on her own earnings history is higher, she will receive a benefit from her own account. If her benefit based on her husband's earnings history is higher, she will receive a benefit both from her own account and her husband's account. The MBR provides information to link two types of cases: (1) primary beneficiaries to auxiliaries (usually spouses); and (2) dually entitled primary beneficiaries to their spouses' primary accounts. These linkages cannot be accomplished with 100 percent certainty, though. In addition, the MBR cannot link spouses to each other if both are primary beneficiaries and are receiving the maximum benefits from their own account (i.e., are not dually entitled). That is, if the spouse is eligible for both her own retirement benefits and for benefits as a spouse, then SSA will pay her own benefits first. If the benefits from her own account equal the maximum allowed (\$1,433 per month in 1998 for individuals who retired at age 65) then she will not be eligible for benefits from her husband, as well.

SSA chose to send letters to as broad a group of potential Buy-in participants as possible. It linked primary beneficiaries to auxiliary spouses (type (1) above), adding the criteria that both had the same mailing address. Using this criteria, just under three percent of all letters sent were determined to be eligible based on the married income limits (i.e., almost six percent of the individuals).

We conducted another analysis of the intended letter recipient MBR file, classifying as married all primary beneficiaries linked to dependent spouses (not limiting it to only those with the same address) and all primary beneficiaries linked to dually-entitled, married beneficiaries. Using this new criteria, approximately 23 percent of all those mailed letters should have had the married income limits applied to their combined income. This analysis still underestimates the total number who were married because it does not include those who have their own accounts and are not dually entitled.

*Exhibit 2.2* categorizes mailed letters by whether they were sent to singles or couples and whether our analysis captures intended recipients as single or married (i.e., includes as married those who are dually-entitled).<sup>32</sup>

**Exhibit 2.2**  
**Percent of Individuals Mailed Letters**  
**by Type of Letter Sent and Marital Status**

Site	Received Single Letter		Received Couple Letter		Total
	Single	Married (including dually-entitled)	Single	Married (including dually-entitled)	
<b>Screening Model</b>	<b>75.8</b>	<b>19.0</b>	<b>0.3</b>	<b>4.8</b>	<b>100</b>
Carlisle	74.9	19.0	0.4	5.7	100
Lebanon	77.0	19.1	0.3	3.7	100
<b>Co-location Model</b>	<b>75.5</b>	<b>18.8</b>	<b>0.3</b>	<b>5.4</b>	<b>100</b>
Muskogee	75.1	16.9	0.3	7.7	100
Oklahoma City	77.9	17.2	0.3	4.7	100
Uniontown	73.3	18.7	0.4	7.5	100
West Chester	73.4	22.8	0.2	3.5	100
<b>Application Model</b>	<b>77.5</b>	<b>16.8</b>	<b>0.2</b>	<b>5.5</b>	<b>100</b>
Corpus Christi	72.9	17.6	0.4	9.0	100
Evansville	78.3	18.2	0.2	3.3	100
Lexington	79.4	15.7	0.2	4.8	100
Miami	81.0	13.3	0.3	5.4	100
Orlando	77.7	17.0	0.2	5.1	100
<b>Total</b>	<b>76.6</b>	<b>17.8</b>	<b>0.3</b>	<b>5.3</b>	<b>100</b>

**Source:** The Lewin Group tabulations of Master Beneficiary Record data for SSA letter-targeted individuals.

Some individuals were mailed letters because SSA assumed they were single and their individual monthly Title II income fell below the single limit for Buy-in eligibility (\$947). However, their monthly Title II income, combined with their spouses', exceeded the married limit (\$1,265). *Exhibit 2.3* shows the number of individuals and percent of the total sample who were mailed a letter, but who appear to have been ineligible due to their combined Title II income. If SSA had used a more targeted approach, they would have excluded these 26,617 individuals from the letter mailings. This represents approximately 11 percent of the total letters mailed and nearly half of all identified married individuals. Because of their probable ineligibility, future participation analyses exclude these individuals – there is little expectation of enrolling this group into the Buy-in program.<sup>33</sup> We note, however, if the desire is to be as inclusive as possible

<sup>32</sup> In addition, it includes linked spouses who have mailing addresses that differ from the primary beneficiaries'.

<sup>33</sup> Married individuals separated for at least one month should be counted as single for eligibility purposes, and perhaps should be included in the analysis, if their income fell below the single limit. Our files do not distinguish between married and separated individuals. We could assume that married couples with different mailing addresses were separated, although we only have addresses for those who received a letter, and not the entire sample (i.e., those who met the income or other criteria for letter eligibility). We conducted an analysis to determine the extent to which married individuals had different addresses and were unnecessarily being excluded

in the mailings, these individuals could be included in future mailings. The primary cost is only the additional postage because very few of these individuals responded to the letter.

**Exhibit 2.3**  
**Married Individuals Sent Single Letters and Whose**  
**Title II Income Was at or Above Couple Income Limits**

Site	Combined Title II is At or Above Income Limits	Percent of Total Letters Mailed	Percent of Married (including dually-entitled)
<b>Screening Model</b>	<b>3,487</b>	<b>12.1</b>	<b>50.8</b>
Carlisle	1,819	11.5	46.5
Lebanon	1,668	12.9	56.5
<b>Co-location Model</b>	<b>10,777</b>	<b>12.3</b>	<b>50.8</b>
Muskogee	1,309	7.6	30.8
Oklahoma City	3,876	10.8	49.5
Uniontown	1,334	11.4	43.5
West Chester	4,258	18.5	70.3
<b>Application Model</b>	<b>12,353</b>	<b>9.7</b>	<b>43.6</b>
Corpus Christi	1,637	8.5	31.7
Evansville	2,174	13.6	63.3
Lexington	1,667	10.4	50.9
Miami	382	4.6	24.5
Orlando	6,493	9.6	43.5
<b>Total</b>	<b>26,617</b>	<b>10.9</b>	<b>47.2</b>

Source: The Lewin Group analysis of Master Beneficiary Record data for letter-targeted individuals.

### ***C. Characteristics of Intended Letter Recipients***

*Exhibit 2.4* provides basic information on intended letter recipients' gender, age, and Title II income. As this exhibit shows:

- Almost two-thirds (63 percent) of the individuals mailed letters were female. This varied by site, with individuals sent letters in Miami and Muskogee more evenly distributed between men and women (52 and 57 percent were women, respectively) and West Chester and Evansville having a higher percentage of women (70 and 67 percent, respectively).
- The average age varied little across sites. Not surprisingly, the vast majority in all sites was age 65 or over (87 percent). Pennsylvania residents who were sent letters were older on average while residents in Orlando, Corpus Christi, and Lexington (sites in the application model) were, on average, slightly younger.

from the larger analysis. Examining a sample of 300 married individuals who received a letter, we had addresses of only 136 of their spouses (i.e., for the remaining 164, their spouse did not receive a letter). Of the 136 individuals, all but one had the same address as their spouse. Thus, while we might be excluding some married, but separated, individuals whose income fell below the single limit, we believe this is a small number.



**Exhibit 2.4**  
**Characteristics of Individuals Mailed Letters by Site and Model**

Site	Average Age	Under Age 65 (%)	Female (%)	Spanish Letter Preference (%)	MBC Below Poverty Guideline (%)	MBC as a Percent of Poverty Guideline	Average MBC (\$)	Married (%)	Non-White (%)	Widow(er) (%)	Disabled (%)	Medicare+ Choice (%)
<b>Screening Model</b>	<b>73.7</b>	<b>7.8</b>	<b>64.9</b>	<b>0.1</b>	<b>44.0</b>	<b>98.7</b>	<b>647.5</b>	<b>13.4</b>	<b>1.7</b>	<b>27.5</b>	<b>19.3</b>	<b>13.5</b>
Carlisle	73.5	7.6	65.1	0.0	46.9	96.5	629.9	15.0	2.0	26.7	18.6	12.7
Lebanon	73.9	8.2	64.8	0.1	40.3	101.4	669.3	11.4	1.2	28.5	20.2	14.4
<b>Co-location Model</b>	<b>72.7</b>	<b>11.9</b>	<b>64.1</b>	<b>0.1</b>	<b>46.0</b>	<b>97.8</b>	<b>642.2</b>	<b>13.6</b>	<b>11.4</b>	<b>27.4</b>	<b>25.0</b>	<b>19.3</b>
Muskogee	71.8	14.3	56.8	0.0	50.8	95.2	615.0	18.5	11.0	23.3	28.4	6.1
Oklahoma City	72.5	11.5	64.7	0.1	50.8	94.0	620.7	12.4	15.1	25.1	22.5	15.1
Uniontown	73.6	11.2	63.5	0.0	39.7	102.4	663.6	16.8	4.0	34.7	29.8	28.1
West Chester	73.4	10.7	69.5	0.2	37.0	103.9	690.2	9.7	9.5	30.8	23.6	32.9
<b>Application Model</b>	<b>71.2</b>	<b>15.4</b>	<b>61.0</b>	<b>7.3</b>	<b>48.5</b>	<b>97.1</b>	<b>637.7</b>	<b>14.0</b>	<b>13.6</b>	<b>24.6</b>	<b>27.3</b>	<b>36.4</b>
Corpus Christi	71.1	16.0	57.6	8.8	51.8	93.9	607.1	19.9	9.1	25.8	27.5	36.9
Evansville	71.9	14.9	66.9	0.0	39.4	102.6	682.9	9.1	7.4	31.0	28.8	12.4
Lexington	71.2	16.3	65.1	0.0	51.3	94.8	627.3	11.3	15.7	26.6	28.3	0.4
Miami	72.4	10.1	52.4	52.5	62.4	89.6	585.1	14.9	14.5	15.7	17.0	61.2
Orlando	70.9	15.9	60.8	4.4	47.2	98.4	645.7	13.9	15.6	23.5	28.0	46.8
<b>Total</b>	<b>72.0</b>	<b>13.3</b>	<b>62.5</b>	<b>3.9</b>	<b>47.1</b>	<b>97.5</b>	<b>640.4</b>	<b>13.8</b>	<b>11.4</b>	<b>25.9</b>	<b>25.5</b>	<b>27.6</b>

**Source:** The Lewin Group analysis of Master Beneficiary Record data for letter-targeted individuals.

- Over half (52 percent) of the individuals mailed letters in Miami expressed a preference for receiving letters in Spanish, significantly higher than any other site.
- For half of the individuals mailed letters, the Monthly Benefit Credited (MBC), or monthly Title II income, was below 100 percent of the poverty guideline. This varied by site, with the Pennsylvania sites having fewer letter-targeted individuals with Title II income below poverty and Miami having more.
- Fourteen percent of the individuals mailed letters were determined to be married from the MBR.<sup>34</sup> That is, seven percent were individuals receiving benefits wholly or partially on their spouse's account. A smaller percentage of intended letter recipients in West Chester and Evansville were married (probably because higher percentages of married individuals had combined Title II income above the couple limit), while Muskogee and Corpus Christi had a higher percentage than the average.

#### **D. Undelivered Letters**

Only 1.3 percent of the letters mailed as part of the demonstration were returned. The screening model sites had the lowest returned mail rate, with an average of 0.44 percent, while the application model sites had an average of 1.55 percent returned. Miami had the highest returned letter rate (2.8 percent). This may be because Miami had the highest share of intended recipients who were Hispanic. Nationally, rates of moving between 1998 and 1999 were lower for non-Hispanic whites (14.4 percent) than for people of Hispanic origin (19.5 percent). Among individuals age 65 and over, the rates of moving were 4.7 percent for non-Hispanic whites and 6.6 percent for Hispanics.<sup>35</sup>

We hypothesized in the preliminary report that areas with a high percentage of intended letter recipients with direct deposit checking accounts result in a greater likelihood of an inaccurate address because the beneficiary need not have an accurate address for delivery of checks. We were unable to test this hypothesis directly because we were not provided individual level identifying information for those letter-targeted individuals for whom letters could not be delivered. On average, 81 percent of those sent a letter had their benefits deposited directly into an account. The correlation between the percent of letters that were returned and the percent of letters sent to beneficiaries with direct deposit is shown in *Exhibit 2.5*. It was only 0.39 and was statistically insignificant.<sup>36</sup> This evidence suggests that a higher percentage of those sent letters with direct deposit increased the percentage of letters that were returned. However, due to the small sample size (11 sites) and the inability to directly link returned letters to individual's direct deposit status, it is not possible to be definitive on this point.

<sup>34</sup> This is less than the 23 percent cited earlier because those with combined Title II income exceeding 135 percent of the poverty guideline plus \$20 were excluded from the analysis file.

<sup>35</sup> U.S. Census (1999). *Geographic Mobility March 1998 to March 1999*. Washington, DC.

<sup>36</sup> The significance test is based on the statistic  $\log[(1+r)/(1-r)]/2$  which is distributed normal with mean 0 and variance  $1/(n-3)$  where  $n$  is the number of observations in the sample and  $r$  is the estimated correlation.

**Exhibit 2.5**  
**Correlation Between Undelivered Letters and**  
**Direct Deposit of Title II Checks**

Site	Percent of All Letters Undelivered	Percent of All Letters Sent to Beneficiaries With Direct Deposit
<b>Screening Model</b>	<b>0.44</b>	<b>75.7</b>
Carlisle	0.43	76.4
Lebanon	0.46	74.9
<b>Co-location</b>	<b>1.28</b>	<b>79.4</b>
Oklahoma City	1.59	84.4
Muskogee	1.44	73.4
Uniontown	0.61	64.6
West Chester	1.00	83.9
<b>Application</b>	<b>1.55</b>	<b>82.6</b>
Corpus Christi	1.57	76.6
Evansville	1.06	78.5
Lexington	1.45	77.7
Miami	2.79	79.2
Orlando	1.52	86.9
<b>All Sites</b>	<b>1.32</b>	<b>80.7</b>
<b>Correlation</b>		<b>0.39</b>

**Source:** The Lewin Group analysis of undelivered letters and Master Beneficiary Record data for letter-targeted individuals.

## II. Screening Rates

*Exhibit 2.6* shows the number of intended letter recipients and screened beneficiaries by site and model. Of the 216,288 Medicare beneficiaries mailed letters whose Title II income was less than 135 percent of the poverty guideline, 15,279 were screened as of December 31, 1999, resulting in a response rate of 7.1 percent. As this exhibit shows, Miami screened the highest percent of the intended letter recipients, followed by Corpus Christi. As discussed in Chapter 1, these two sites had higher shares of their populations age 65 and older who were Hispanic; in addition, the two sites had higher shares of their seniors living in poverty, relative to the other sites. The Pennsylvania sites (Carlisle, Lebanon, West Chester, and Uniontown) screened relatively few intended letter recipients and had lower percentages of the elderly living at or below the poverty level.

**Exhibit 2.6**  
**Screened Beneficiaries by Site and Model**

Site	Number Sent Letter	Total Number Screened	Percent Screened
<b>Screening Model</b>	<b>25,204</b>	<b>1,470</b>	<b>5.8</b>
Carlisle	13,959	810	5.8
Lebanon	11,245	660	5.9
<b>Co-location Model</b>	<b>76,663</b>	<b>4,258</b>	<b>5.6</b>
Muskogee	15,917	1,069	6.7
Oklahoma City	31,801	1,748	5.5
Uniontown	10,327	596	5.8
West Chester	18,618	845	4.5
<b>Application Model</b>	<b>114,421</b>	<b>9,551</b>	<b>8.3</b>
Corpus Christi	17,667	1,666	9.4
Evansville	13,768	934	6.8
Lexington	14,301	1,060	7.4
Miami	7,913	1,000	12.6
Orlando	60,772	4,891	8.0
<b>Total</b>	<b>216,288</b>	<b>15,279</b>	<b>7.1</b>

**Source:** The Lewin Group analysis of matched screener and Master Beneficiary Record data for letter-targeted individuals with Title II income less than 135 percent of the poverty guideline.

### III. Characteristics of Screened Beneficiaries

Compared to intended letter recipients, screened beneficiaries were younger by two years, one and a half times as likely to be under age 65 (21 percent versus 13 percent), and twice as likely to have a Spanish language preference (nine percent versus four percent).

*Exhibit 2.7* provides basic information on screened beneficiaries' gender, age, marital status, language preference, and Title II income. As this exhibit shows:

- The average age of screened beneficiaries varied little across sites. About one-fifth of screened beneficiaries were under age 65. Miami had the lowest percentage of screened beneficiaries under age 65 (11 percent), while Lexington had the highest (27 percent).
- Almost two-thirds (62 percent) of screened beneficiaries were female. Miami and Corpus Christi had a lower than average percentage of screened beneficiaries who were female, consistent with having a lower percentage of intended letter recipients who were female.
- Miami had the highest percentage of screened beneficiaries who expressed a Spanish language preference (66 percent), followed by Corpus Christi (15 percent), and Orlando (10 percent). This pattern was consistent with the percentage of intended letter recipients who expressed a Spanish language preference.

**Exhibit 2.7**  
**Characteristics of Screened Beneficiaries by Site and Model**

Site	Average Age	Under Age 65 (%)	Female (%)	Spanish Letter Preference (%)	MBC Below Poverty Guideline (%)	MBC as a Percent of Poverty Guideline	Average MBC (\$)	Married (%)	Non-White (%)	Widow(er) (%)	Disabled (%)	Medicare+ Choice (%)
<b>Screening Model</b>	<b>72.4</b>	<b>12.5</b>	<b>66.3</b>	<b>0.2</b>	<b>42.5</b>	<b>100.3</b>	<b>652.6</b>	<b>15.4</b>	<b>2.5</b>	<b>29.7</b>	<b>27.3</b>	<b>20.7</b>
Carlisle	72.0	13.2	65.6	0.1	43.7	99.2	641.2	17.3	2.8	27.8	27.5	19.1
Lebanon	72.9	11.7	67.3	0.3	40.9	101.6	666.6	13.0	2.1	32.1	27.0	22.6
<b>Co-location Model</b>	<b>70.9</b>	<b>18.9</b>	<b>65.2</b>	<b>0.2</b>	<b>46.3</b>	<b>98.3</b>	<b>647.5</b>	<b>12.7</b>	<b>19.2</b>	<b>30.2</b>	<b>36.4</b>	<b>25.7</b>
Muskogee	70.7	18.2	58.7	0.0	50.2	96.6	622.0	18.3	14.6	25.4	35.9	9.5
Oklahoma City	70.5	20.4	67.1	0.3	47.4	97.3	649.7	9.4	26.7	29.5	36.1	24.8
Uniontown	71.7	16.8	63.4	0.0	40.4	101.5	656.0	19.0	5.7	34.6	39.1	30.0
West Chester	71.4	18.1	70.7	0.4	43.1	100.1	669.3	7.8	18.9	34.6	35.6	44.7
<b>Application Model</b>	<b>69.1</b>	<b>22.8</b>	<b>60.1</b>	<b>14.9</b>	<b>50.9</b>	<b>96.5</b>	<b>632.3</b>	<b>14.5</b>	<b>20.4</b>	<b>22.7</b>	<b>36.9</b>	<b>53.2</b>
Corpus Christi	68.9	24.1	53.7	14.7	52.1	95.5	609.0	23.7	11.8	22.0	37.5	52.2
Evansville	70.3	21.3	68.7	0.0	39.9	102.5	685.2	7.6	12.6	35.9	41.0	15.9
Lexington	68.4	27.4	65.0	0.2	52.1	95.7	643.3	7.2	28.1	29.0	41.9	0.0
Miami	71.5	11.3	50.7	66.4	63.6	88.5	566.7	19.7	15.3	11.1	16.8	75.5
Orlando	68.6	23.9	61.4	10.4	49.7	97.4	641.1	13.1	24.3	21.4	39.0	67.6
<b>Total</b>	<b>69.9</b>	<b>20.7</b>	<b>62.1</b>	<b>9.4</b>	<b>48.8</b>	<b>97.3</b>	<b>638.5</b>	<b>14.1</b>	<b>18.4</b>	<b>25.5</b>	<b>35.8</b>	<b>42.4</b>

**Source:** The Lewin Group analysis of matched Master Beneficiary Record and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guideline.

- Almost half of the screened beneficiaries' Monthly Benefit Credited (MBC), or monthly Title II income, was below the federal poverty guideline. This is consistent with the percentage of intended letter recipients with Title II income below the federal poverty guideline. Miami had the highest percent of individuals in this category (67 percent).
- Fourteen percent of screened beneficiaries were married according to MBR data.

#### IV. Probability of Being Screened

##### A. Methodology

In this section, we estimate the probability of being screened as a function of individual characteristics. The probability model provides information about the effect of individual characteristics on the likelihood of being screened. The dependent variable (being screened) is a qualitative variable that only takes the values 0 (not screened) and 1 (screened). To account for the qualitative nature of the dependent variable, we use a logistic regression to conduct the probability analysis. Because the dependent variable only takes two values, we use a binomial logit model in the estimation.<sup>37</sup>

By estimating the probability of being screened, we can investigate how participation in the demonstration varies with respect to demographic characteristics and Title II income. If certain populations are more likely to respond to outreach, future replication or expansion efforts can benefit from this information. Note that the probability model for being screened applies to demonstration sites and cannot be assumed to hold for the entire country.

The probability of being screened is estimated using the following equation:

$$P = \frac{\exp(\beta x)}{1 + \exp(\beta x)}$$

In this equation, P represents the probability of being screened, X represents the explanatory variables (individual characteristics) that are used to model the probability of being screened, and  $\beta$  represents the coefficients of the explanatory variables. The coefficients of not being screened are normalized to zero. The explanatory variables that are used in the model are the following:

- individual's age in years (Age);
- indicator variable for whether the individual was disabled (Disabled);
- interaction variable between disabled and age (Disabled x Age);
- indicator variable for whether the individual was female (Female);

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<sup>37</sup>Qualitative choice models are commonly used when the dependent variable represents a qualitative outcome, such as labor force participation (in the labor force/not). Binary choice models are used when the dependent variable takes two values. A logit model is preferable to a linear regression model. A logit model produces predicted probabilities between zero and one, whereas a linear probability model could produce predicted probabilities below zero or above one. A logit model is also preferred to a probit model, because the two models yield similar results, but the logit model is easier to interpret.

- indicator for whether the individual had a Spanish language preference (Spanish Preference);
- individual's (if single) or couple's (if married) Title II income as a percentage of the poverty guideline (Title II);
- indicator for whether the individual was enrolled in a Medicare+Choice managed care plan (Medicare+Choice);
- indicator for whether the individual was married (Married);
- indicator for whether the individual was a widow or widower (Widow(er)); and
- indicator for whether the individual was not white (Non-white).

The ratio of the probability of being screened for individuals with a given characteristic to the probability of those without that characteristic is called the odds ratio. The coefficients of the logit model can be interpreted as follows: the effect of a unit change in an explanatory variable is to increase the odds of being screened multiplicatively by the factor  $\exp(\beta)$  – called the odds or risk ratio – controlling for all the other explanatory variables in the model. If the odds ratio is greater than one, the odds of being screened are higher for an individual with a one unit increase in the explanatory variable. Conversely, if the odds ratio is less than one, the odds of being screened are lower for an individual with a one unit increase in the explanatory variable. Also,  $100 \times (\exp(\beta) - 1)$  gives the percent change in the odds of being screened for a one-unit increase in the explanatory variable. Because  $\exp(0)=1$ , the sign of the coefficient estimate indicates whether an increase in the explanatory variable increases (positive coefficient) or decreases (negative coefficient) the odds of being screened.

### **B. Probability of Being Screened**

For the overall sample, all explanatory variables except “Title II” and “Disabled x Age” had a significant effect on the probability of being screened (see *Exhibit 2.8*). With the exception of “Age”, all significant variables had a positive effect on the probability of being screened. This indicates that the excluded categories (male, white, single, non-widow(er), non-disabled, no Spanish preference, and not enrolled in a Medicare+Choice plan) had a lower probability of being screened.

Specifically, we found that:

- Being female was significantly and positively related to the odds of being screened, with an odds ratio of 1.05. Other research suggests that women tend to make health care decisions for families. Women are also more likely to use health care, which may spirit a response to the health-related outreach activity.<sup>38</sup>
- Being enrolled in a Medicare+Choice managed care organization was also significantly and positively related to the odds of being screened, with an odds ratio of 1.9. This may

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<sup>38</sup> Women make three-fourths of the health care decisions in American households and spend almost two of every three health care dollars, approximately \$500 billion annually. (Smith Barney Research (1997). *The New Women's Movement: Women's Healthcare*, April.)

be because beneficiaries enrolled in managed care organizations were better informed about their health care choices, possibly as a result of outreach by the managed care organization.

- Spanish language preference was significantly and positively related to the odds of being screened. Spanish language preference increased the odds of being screened more than two-fold (with an odds ratio of 2.3). This suggests that this form of outreach was particularly effective among those who speak Spanish.<sup>39</sup>
- Being widowed was significantly and positively related to the odds of being screened (with an odds ratio of 1.1). Widows are more likely to be financially disadvantaged than non-widows, relying on their Social Security benefits to a greater extent than do couples, which might explain the higher screening rate. An analysis of the Current Population Survey (CPS) found that among individuals age 55 and older, 62 percent of widows' total income and 68 percent of widowers' total income comes from Social Security Title II benefits, in comparison with 54 percent of all individuals age 55 and older.<sup>40</sup>
- Being non-white was significantly and positively related to the odds of being screened (with an odds ratio of 1.6). Non-whites are more likely to be financially disadvantaged than whites, which might explain the higher screening rate.
- Being married was significantly and positively related to the odds of being screened (with an odds ratio of 1.1).
- For all beneficiaries, age was significantly and negatively related to the odds of being screened, with an odds ratio of 0.99. This means that with each increase of one year in age, the odds of being screened decreased by one percent. This may be because older, elderly individuals were more likely to be frail or cognitively impaired and may have difficulty responding to the letters. For the disabled, the incremental effect of age was not significant.

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<sup>39</sup> The Spanish language preference variable might be picking up other characteristics of the Spanish speaking population that are not accounted for in our analysis (such as low income). In addition, it is likely that not all Spanish speakers requested SSA forms in Spanish, therefore inferences drawn based on this variable only apply to the population who requested SSA forms in Spanish, not to the entire Spanish-speaking population.

<sup>40</sup> The Social Security Administration (2000). *Income of the Population 55 or Older, 1998* (SSA publication number 13-11871). Washington, DC.



**Exhibit 2.8  
Odds of Being Screened**

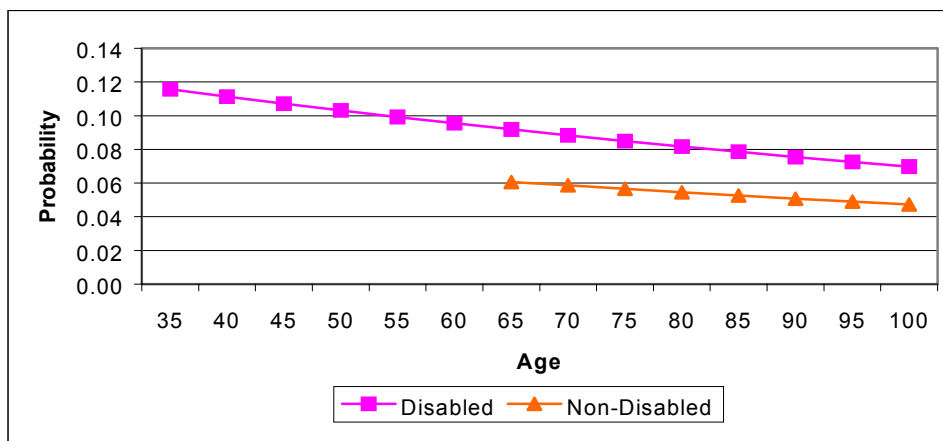
Variable	Overall		With Model Designators	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio
Intercept	-2.589***	0.075***	-2.542***	0.079***
Title II	0.000	1.000	0.000***	1.000***
Age	-0.008***	0.992***	-0.007	0.993
Disabled	0.513***	1.670***	0.492***	1.636***
Disabled x Age	-0.001	0.999	-0.001***	0.999***
Spanish Preference	0.821***	2.273***	0.762***	2.143***
Married	0.136***	1.146***	0.136***	1.146***
Female	0.044**	1.045**	0.048	1.049
Widow(er)	0.115***	1.122***	0.117***	1.124***
Non-White	0.493***	1.637***	0.492**	1.636**
Medicare+Choice	0.640***	1.896***	0.611***	1.842***
Co-location			-0.191***	0.826***
Application			0.020	1.020

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

- The “Disabled” variable was significantly and positively related to the odds of being screened, with an odds ratio of 1.7. This may be because disabled individuals are more knowledgeable about the health care system and public assistance programs, and because they have been in frequent contact with the health care system for a long time. The “Disabled” variable should be interpreted in conjunction with the “Age” and “Disabled x Age” variables. *Exhibit 2.9* below displays the probability of being screened by age for disabled individuals, and for non-disabled individuals age 65 and older. Even when the effect of age is taken into account, disabled beneficiaries were still more likely to be screened than non-disabled beneficiaries.

**Exhibit 2.9  
Probability of Being Screened by Age and Disability Status**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

To compare the odds of being screened across the three models, we also estimated a logit model with dummy variables for the different models. We included the other explanatory variables so that comparisons could be made between models, controlling for individual-level characteristics. (The dummy variable for the screening model was the left-out category). As *Exhibit 2.8* shows, the co-location model was associated with decreased odds of screening with an odds ratio of 0.83, so that the odds of screening were reduced by about 17 percent for the co-location model relative to the screening model. We would not expect the probability of being screened to differ by model, because all of the letters and initial contact processes were the same across models. This finding might be a result of the implementation timing. Over 50 percent of the letters were sent in smaller batches to the screening sites prior to the larger mailings that included the co-location sites. Also, by the time letters were sent to the application model sites, the DSU staff were more experienced and fewer letters per mailing meant a shorter wait time when beneficiaries called the DSU. Therefore, it is possible that callers from the screening and application sites were less likely to hang up before being screened.

In order to confirm the robustness of the results at the site and model level, we also estimated the odds ratios for the probability of being screened, by site and model (see *Exhibit A.1* in *Appendix A*). When the probability of being screened was estimated by model, “Married”, “Non-white”, and “Medicare+Choice” were significant in all three models, “Widow(er)” was significant in the screening and co-location models, “Disabled” was significant in the screening and application models, and “Age” was significant in the co-location and application models. The signs of the significant coefficients were consistent across the three models and the coefficients by model had the same sign as the overall coefficient.

When the probability of being screened was estimated by site, most explanatory variables with the exceptions of “Medicare+Choice”, “Widow(er)”, and “Non-white” lost their significance. This finding indicates that the sample sizes in most sites do not support a probability analysis. This is perhaps due to the low percentage of intended letter recipients who were screened (7.1 percent).

## **V. Results from Non-responder Survey**

SSA tried to survey 924 individuals who did not respond to the letter to assess the reasons for the lack of response. Of the 924 individuals targeted for the survey, 193 (21 percent), did not have telephone numbers available through the MBR or on the Internet. Another 57 phone numbers (six percent) could not be verified because the household was not contacted in five attempts. Of those who were successfully contacted, many refused to complete the survey, and others gave inconsistent or incomplete answers. As a result, the response rate was approximately 50 percent.

Also, it is important to note that the survey was not consistently administered and some individuals did not complete the entire survey.<sup>41</sup> Some refused to answer all questions, but

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<sup>41</sup> The DSU administered the survey using a database program that did not “skip” to the correct question depending upon the responses from the previous question and allowed survey takers to key in responses in an unformatted comment section.

provided information as to the reason they did not call the toll-free number. For example, some did not answer the specific question regarding their income, but did inform the interviewer that they were not interested because their income was too high. This type of response was included in the analysis.

**Exhibit 2.10** shows the results for the 461 individuals who either offered a response as to why they did not respond to the letter or were screened as a result of the survey. In the case that more than one possible reason was given (e.g., a respondent reported having contacted someone about the letter, and then later reported income or resources above the limit), answers were prioritized in the order listed in the exhibit. As this exhibit shows, 10 percent of those surveyed reported that they had responded to outreach efforts, either by contacting the SSA office, Medicaid office, or welfare office about the Buy-in program. (More detail about this group is presented in **Exhibit 2.12**). The largest group of individuals (66 percent) did not respond because they were not eligible based on their income or resources. Approximately five percent gave answers suggesting that they were simply not interested in the program, although in many cases it was difficult to distinguish between those not interested in the program and those who did not wish to complete the survey.

**Exhibit 2.10**  
**Possible Reasons for Not Responding to Letter**

Reason	Responses	Percent
Deceased	17	3.7
Already Receiving Buy-In Benefits	10	2.2
Already Responded to Outreach <sup>a/</sup>	45	9.8
<i>Income or Resources Above Limit</i>	18	3.9
<i>Income and Resources Below Limit</i>	8	1.7
No Reason Given—Proceeded to Screener <sup>b/</sup>	46	10.0
<i>Income or Resources Above Limit</i>	18	3.9
<i>Income and Resources Below Limit</i>	27	5.9
Income or Resources Above Limit	305	66.2
No Part B Coverage	16	3.5
Not Interested	22	4.8
<i>Total Indicating Income or Resources Above Limit<sup>c/</sup></i>	341	74.0
<b>Total Valid Responses</b>	<b>461</b>	<b>100.0</b>

<sup>a/</sup> Individuals could have contacted SSA between the time the non-responder sample was drawn and the survey was administered because the survey was conducted between September 1999 and January 2000. Ten of those who indicated that they had already responded to the outreach had been screened prior to the survey call.

<sup>b/</sup> One individual that proceeded to the screener had a zip code that was outside the demonstration area.

<sup>c/</sup> This figure was calculated by summing all survey respondents indicating that they had income or resources above program limits, regardless of reason for non-response, including: 18 of those who had already responded to the outreach, 18 of those who proceeded to the screener, and 305 with survey answers who had not responded to the outreach or been screened.

**Notes:** This table does not include responses from 438 individuals who were either not reached or who did not wish to complete the survey and 25 individuals who responded with inconsistent answers regarding the reason for non-response.

**Source:** The Lewin Group analysis of SSA non-responder survey data.

About 75 percent of the 461 survey respondents answered a question that directly asked about income and resources, although some who refused to continue with the survey mentioned that they did not respond because their income or resources were too high. *Exhibit 2.11* includes only those who either responded to the survey questions regarding income and resources particular to their marital status or completed the screener for the program.<sup>42</sup> As this exhibit shows, of those for whom data were available, a higher percent of those who were married had income above the limit, as compared with single respondents. This result is consistent with the finding, discussed earlier in this chapter, that some married individuals with combined income above the couple limit received letters because their individual Title II income was below the single-person program limit.

**Exhibit 2.11**  
**Ineligibility by Marital Status**  
**(Percent Whose Income or Resources Exceed Limits)**

	Single	Married	Total
<b>Income or Resources Above Limit</b>	73.2	91.6	83.6
Income	60.3	88.8	76.4
Resources	72.3	82.6	77.6

**Source:** The Lewin Group analysis of SSA non-responder survey data

As *Exhibits 2.10* and *2.11* show, the overwhelming majority of those surveyed (66 to 84 percent) correctly screened themselves out of the project because their income and/or resources exceeded the program eligibility limits. Given the low completion rate for this survey, we cannot conclude that the same is necessarily true for all individuals who did not respond to SSA mailings. *Exhibit 2.12* presents information on the characteristics of all intended letter recipients, all intended letter recipients who were not screened (from which the non-response survey sample was drawn), the survey sample, survey respondents and survey non-respondents. As this exhibit shows, there was little difference in characteristics between the intended letter recipients sample not screened and the non-response survey sample.<sup>43</sup> However, the survey respondents were less likely to be female, and had higher incomes than non-respondents.<sup>44</sup>

<sup>42</sup> This table also includes respondents who did not have an answer recorded about their marital status, but had answers recorded for one set of income/resource questions. The questions answered were used to classify them as married or single.

<sup>43</sup> A z-test was applied to differences between groups. Differences between the letter recipients not screened and the survey sample were not statistically significant at the 10 percent level.

<sup>44</sup> These differences were statistically significant at the 5 percent level.

**Exhibit 2.12**  
**Characteristics of Intended Letter Recipients and**  
**Individuals in the Non-Responder Sample**

Site	N	Average Age	Under Age 65 (%)	Female (%)	Spanish Letter Preference (%)	Single/ Couple MBC Below Poverty Guideline (%)	Single/ Couple MBC as a Percent of Poverty Guideline	Average MBC (\$)	Couple (%)
Intended Letter Recipients	245,395	72.6	10.4	64.4	3.7	44.2	103.4	636	23.2
Not Screened	229,187	72.8	9.6	64.5	3.2	43.5	104.1	636	23.7
Non-response Survey	922	72.5	11.5	64.9	2.4	44.3	103.3	633	22.9
Survey Respondents	461	72.4	10.8	60.7	2.4	39.3	106.4	648	24.8
Already has buy-in	10	68.7	30.0	60.0	0.0	50.0	88.9	612	10.0
Deceased	17	78.1	11.8	64.7	0.0	58.8	90.9	555	11.8
Responded to letter	45	74.4	4.4	60.0	0.0	40.0	106.7	692	24.4
No reason given: proceeded to screener	46	68.5	26.1	47.8	10.9	56.5	95.9	625	15.6
Ineligible: income/ resources too high	305	73.0	7.5	63.3	0.7	34.8	109.7	655	27.2
No Part B	16	61.9	50.0	43.8	12.5	68.8	75.0	531	6.7
Not Interested	22	73.8	0.0	63.6	9.1	22.7	124.1	685	40.9
Survey Non-Respondents	461	72.7	12.1	69.0	2.4	49.2	100.2	617	21.0
No response	436	72.7	12.8	69.5	2.5	50.5	98.7	617	18.6
Bad data	25	73.0	0.0	60.0	0.0	28.0	127.6	625	64.0

**Source:** The Lewin Group analysis of matched Master Beneficiary Record (MBR) and screener data and matched MBR screener and non-responder survey data.

*Exhibit 2.13* presents outcomes for the 10 percent of the survey sample that appears to have responded in some way to the SSA mailing. This group includes all survey participants who were screened prior to the date on which they were surveyed, as well as those who said they had responded to the letter in some way.<sup>45</sup> As this exhibit shows, 22 percent of those who responded to the letter were screened, with 70 percent of those screening potentially eligible. Eleven percent of this sample either said that they had already filed or that they had been found eligible and had taken an application. Thirteen percent were unable to get their questions answered when they responded to the letter.

**Exhibit 2.13**  
**Outcomes for Members of the Non-Respondent**  
**Survey Sample Who Responded**

	Responses	Percent
Screened Prior to Survey	10	22.2
<i>Income and Resources Below Limit</i>	7	15.6
<i>Income or Resources Above Limit</i>	3	6.7
Self-Reported (not screened):	35	77.8
<i>Already Filed</i>	3	6.7
<i>Could Not Get Questions Answered</i>	6	13.3
<i>Potential Eligibility Not Determined</i>	1	2.2
<i>Potentially Eligible, Application Taken</i>	2	4.4
<i>Potentially Ineligible, Application Taken</i>	1	2.2
<i>Potentially Ineligible, No Application Taken</i>	11	24.4
<i>Other or Unknown</i>	11	24.4
<b>Total</b>	<b>45</b>	<b>100.0</b>

**Source:** The Lewin Group analysis of matched Master Beneficiary Record data and non-responder survey data.

<sup>45</sup> As in the two previous exhibits, screener data is given priority over survey data in the event of inconsistencies, so survey participants who were screened before they were surveyed are included in this exhibit even if survey data did not indicate that they had responded to the letter.

## **CHAPTER 3: APPLICATION AND ENROLLMENT IN THE BUY-IN PROGRAM**

In this chapter, we examine application intake and enrollment. Specifically, we discuss some of the reasons screened individuals fail to apply, present enrollment rates in the demonstration areas, and describe the characteristics of enrollees. We also explore the reasons why applications are denied. Information on application intake is drawn from our previous report. The findings on enrollment are based on an analysis of the Third Party Billing Records. We begin by describing the potential reasons why screened beneficiaries did not keep application appointments.

### **I. Failure to Keep Application Appointments**

We found that some individuals who completed the screening process did not apply for Buy-in benefits. They either failed to keep or cancelled their scheduled appointments. In the preliminary report, we presented anecdotal evidence of higher no-show rates in the screening model sites than in the other model sites. We hypothesized that the no-show rates might be higher for the screening model sites because of beneficiaries' reluctance to visit the state Medicaid agency. We noted that several factors could prevent the beneficiaries from applying for benefits or complicate the administrative picture for the agencies involved. These factors include:

- Communication problems between screening staff and application staff;
- Backlog or unavailability of application appointments;
- Lack of transportation or mobility; and
- Clients' feelings about the state Medicaid agency and receipt of welfare, including apprehension arising from unfamiliarity with the state Medicaid agency, fear of estate recovery, and a desire to avoid stigma associated with welfare receipt that clients might link with the state Medicaid agency or the Buy-in benefit.

#### **A. Communication Problems**

The models required different coordination efforts among the field office, the state Medicaid agency, and the Direct Service Unit (DSU) to ensure that clients who screened potentially eligible completed an official Buy-in application. These coordination requirements increased the possibility of communication problems among offices and of missed opportunities to take applications. For example, the field offices cited some difficulties related to the scheduling of appointments by DSU staff.

#### **B. Scheduling Difficulties and Unavailability of Application Appointments**

Most demonstration sites reported a large volume of application appointments following mailings, resulting in appointment backlogs of up to one month. Lebanon, Pennsylvania did not report such an effect, despite a similar volume of Buy-in inquiries. This might be the result of high no-show rates.

Several sites had to add application appointment slots to accommodate the demand. This was particularly true for application model sites, which were responsible for scheduling and handling the applications themselves. In addition, the Evansville, Indiana field office reported that many

of their clients who had called the Spanish line at the DSU could not get application appointments.

It is possible that clients who are forced to wait a considerable period of time between screening and application might be less likely to actually apply than those whose applications are taken immediately or soon after they are screened. If so, the backlogs and scheduling difficulties reported by many demonstration sites might have reduced the proportion of clients who would have eventually received Buy-in benefits.

***C. Alternative Means of Applications for Individuals Lacking Transportation or with Limited Mobility***

Almost half of the demonstration sites reported that their areas lacked adequate public transportation. A lack of public transportation might make it harder for seniors and disabled Medicare beneficiaries to get to a field office or state Medicaid agency for an application appointment. All sites indicated that they accommodate clients who cannot travel to an in-person interview in some way. Depending on how accommodating the states are (e.g., restrictive or permissive policies regarding taking applications by phone or through home visits), the combination of transportation limitations and state application requirements could dissuade clients from completing their applications.

***D. Clients' Attitudes about the State Medicaid Agency***

Clients' attitudes about welfare receipt and the agencies they perceive as linked to welfare administration could strongly affect their decision to seek benefits from these agencies. Many Medicare beneficiaries might have a negative view of welfare receipt, which could discourage them from accepting assistance they think of as welfare or that requires them to apply through a welfare office. Others might not want to interact with an unfamiliar agency. Some may fear that the state would take their homes through estate recovery efforts.

Interviews with field office and state Medicaid agency staff provided anecdotal evidence that these attitudes and fears were present in a number of communities. Field office staff at most demonstration sites reported some degree of ill feeling on the part of clients toward benefits associated with welfare or with the possibility of having to interact with the state Medicaid agency. These feelings seemed strongest in the screening model sites. Both screening model field offices reported that clients were generally unhappy to learn that they had to go to the state welfare office to apply for the benefit. The Carlisle, Pennsylvania, site reported that several clients actually turned around and left after discovering this. The co-location and application models may alleviate the effect of these attitudes because the application is accepted at an SSA office.

***E. Interaction of State Application Requirements and Other Barriers to Application for Buy-in Benefits***

Certain combinations of state application requirements might create particular problems or opportunities for specific model approaches. For example, if it is true that clients have misgivings about going to the state Medicaid agency to apply for Buy-in benefits, we would predict the screening model to be less successful, because clients are required to visit the state



Medicaid agency in person. Also, if clients have strong misgivings about contact with the state Medicaid agency or about receiving welfare, even allowing telephone interviews with the state Medicaid agency might not persuade them to apply. However, if a state developed a simple short-form application that could be filled out without supervision or assistance and mailed to the state Medicaid agency, the screening model might work well, given the little contact required with the agency. Short-form, telephone, and mail-in applications might also increase beneficiary follow-through in the co-location and application models, because they streamline the process and make it more accessible.

Conversely, if clients are allowed to mail in the standard application without supervision (and the application has not been simplified), clients might be discouraged from applying at all, particularly elderly or infirm clients in need of greater assistance. This would be true for all three models.

**F. Evidence**

In order to examine whether models may have produced different rates of follow-through on appointments, we reviewed appointment logs and other ledgers that track no-shows and cancellations. Four sites maintained such records (i.e., appointments made and cancellations): the two screening model sites, one co-location site, and one application site. *Exhibit 3.1* presents the proportion of no show or cancelled appointments based on the logs, where available, and based on estimates of field office representatives where they could provide an educated guess. We consider the estimates based on logs to be more reliable than the educated guesses. These estimates indicate that the screening model no show rates (40 percent) were higher than the co-location model (26 percent in West Chester) and the application model (16 percent in Miami).

**Exhibit 3.1  
No Show and Cancellation Rates for Appointments by Site, 1999**

Site	Did not keep appointment (percent)	Source of estimate
<b>Screening Model</b>	<b>40.1</b>	
Carlisle	31.9*	Perry and Cumberland Counties Department of Public Assistance logs
Lebanon	50.0	Lebanon County Department of Public Assistance logs
<b>Co-location Model</b>		
Oklahoma City	NA	If did not show for appointment, mailed out application. Oklahoma County, Department of Human Services
Muskogee	NA	Logs were kept, but not retained by Department of Human Services
Uniontown	5-10	Fayette County, Department of Public Assistance
West Chester	25.5	Co-located worker logs through 5/28/99
<b>Application Model</b>		
Corpus Christi	~10	SSA field office
Evansville	~10	SSA field office
Lexington	~20	SSA field office
Miami	15.6	SSA logs
Orlando	~5-10	SSA field office

## II. Enrollment Rates

Among the 216,288 letters sent to individuals with Title II income less than 135 percent of the poverty guideline, 8,155 (3.8 percent) enrolled by the end of 1999 (see *Exhibit 3.2*).<sup>46</sup> Among those screened, 4,456 enrolled (48.7 percent of those screened potentially eligible and 2.1 percent of the letter-targeted group). Another 3,707 letter-targeted individuals who were not screened (1.7 percent) also enrolled.

Miami had the highest overall enrollment rate among those sent letters at 8.5 percent, followed by Corpus Christ (6.9 percent), Evansville (4.4 percent), Lexington (4.2 percent), and Muskogee (4.1 percent). Miami also had the highest percent screened (12.6 percent).

## III. Enrollment in the Demonstration Sites without Screens

More than two out of five of the letter-targeted individuals who enrolled in the program did not go through the SSA screening process. Individuals may have bypassed the screening process for a number of reasons. SSA field office staff may not have conducted the Buy-in screen for SSI-eligible individuals, particularly in states where there is an agreement with SSA so that an SSI application is also a Medicaid application and an SSI decision is also a categorically needy Medicaid decision (with rare exceptions). In these jurisdictions, SSA takes Medicaid-related actions for SSI recipients as if it were a state agency. Thus, SSI beneficiaries who are also Medicare beneficiaries in these jurisdictions are automatically enrolled in Medicare Buy-in by SSA (giving rise to the term “auto-accrete states”). Staff were not explicitly instructed to conduct Buy-in screens for SSI-eligible individuals and the screen did not add any information to the SSI application process; therefore, most probably chose not to conduct a screen. Among the demonstration sites considered in this report, Florida, Kentucky, Pennsylvania, and Texas are auto-accrete states.

In addition, some individuals might have gone directly to the state Medicaid agency after receiving the letter. Others might have already been in the process of applying for benefits. An analysis of the state-provided files indicated that a higher percentage of those not screened were QMB beneficiaries. This suggests that those who might receive more benefits from applying may have initiated the process through other channels including:

- **Contact with the medical system.** Many hospitals and community health centers, nursing homes and some physicians will make patients aware of benefits and encourage enrollment if the provider is more likely to be paid as a result.

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<sup>46</sup> For our analyses, we narrowed the letter-targeted sample to include only those individuals who should have received a letter (i.e., had income less than 135 percent of the poverty guideline and not receiving Buy-in benefits). We excluded 11.1 percent of the letter-targeted sample because when they were appropriately linked to their spouse’s records, their combined Title II income exceeded the maximum income limits for Buy-in benefits. See the Data and Methodology section of Chapter 1, Section V, for a full discussion of this issue.

- **Other outreach efforts.** As part of their Government Performance Review Act (GPRA) goals, CMS has been encouraging many outreach efforts to enroll Buy-in eligibles. *Exhibit 3.3* documents activities related to grants provided by the Health Resources and Services Administration (HRSA) for outreach and enrollment in the demonstration sites and State Health Insurance Program (SHIP) activities.
- **Medicare conversions.** Individuals may have already been in a state's Medicaid system when they became eligible for Medicare benefits. A higher proportion of those enrolled who were not screened were under age 65 (30 percent versus 24 percent) and thus disabled. The higher enrollment rate without screening among those who receive Social Security benefits on the basis of disability may be the result of conversions from SSI Medicaid receipt to Medicare eligibility and QMB status.<sup>47</sup>

Lebanon (screening model) and Evansville (application model) had higher percentages of individuals who enrolled without being screened than did other sites with the same model. We contacted the field office managers in these sites to inquire why this might be the case. The Lebanon field office manager noted a number of publicity outreach efforts that she undertook using the posters and the brochures. However, these materials did not advise the beneficiaries to contact the welfare office; they only included the toll-free number for the DSU. She also participated in two radio shows and a public service announcement that might have steered people to the welfare office. She indicated that the staff that conducted the screens diligently entered the data. The field office manager in Evansville noted a significant state effort at outreach that included radio ads and television commercials. He instructed staff to complete the screen because that was how credit for any effort was captured. He speculated that early on some individuals may not have been screened, but that once the staff were familiar with the process, everyone should have been screened.

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<sup>47</sup> In Florida, Kentucky, Pennsylvania, and Texas, SSA automatically enrolls SSI recipients in Buy-in programs; in Indiana and Oklahoma, SSA alerts states to the fact that the individuals are eligible for benefits.

**Exhibit 3.2**  
**Number of Beneficiaries Screened and Enrolled in Buy-in**

Site	Intended Letter Recipients	Persons Screened	Persons Screened Potentially Eligible		Enrolled and Screened		Enrolled and Not Screened		Total Enrolled	
			Total	Percent	Total	Percent	Total	Percent	Total	Percent
<b>Screening Model</b>	<b>25,204</b>	<b>1,470</b>	<b>673</b>	<b>2.7</b>	<b>271</b>	<b>1.1</b>	<b>391</b>	<b>1.6</b>	<b>662</b>	<b>2.6</b>
Carlisle	13,959	810	371	2.7	171	1.2	143	1.0	314	2.2
Lebanon	11,245	660	302	2.7	100	0.9	248	2.2	348	3.1
<b>Co-location Model</b>	<b>76,663</b>	<b>4,258</b>	<b>2,560</b>	<b>3.3</b>	<b>1,152</b>	<b>1.5</b>	<b>1,086</b>	<b>1.4</b>	<b>2,238</b>	<b>2.9</b>
Muskogee	15,917	1,069	628	3.9	297	1.9	356	2.2	653	4.1
Oklahoma City	31,801	1,748	1,097	3.4	456	1.4	365	1.1	821	2.6
Uniontown	10,327	596	353	3.4	187	1.8	173	1.7	360	3.5
West Chester	18,618	845	482	2.6	212	1.1	192	1.0	404	2.2
<b>Application Model</b>	<b>114,421</b>	<b>9,551</b>	<b>5,911</b>	<b>5.2</b>	<b>3,033</b>	<b>2.7</b>	<b>2,222</b>	<b>1.9</b>	<b>5,255</b>	<b>4.6</b>
Corpus Christi	17,667	1,666	1,172	6.6	775	4.4	448	2.5	1,223	6.9
Evansville	13,768	934	569	4.1	261	1.9	340	2.5	601	4.4
Lexington	14,301	1,060	684	4.8	334	2.3	268	1.9	602	4.2
Miami	7,913	1,000	646	8.2	387	4.9	287	3.6	674	8.5
Orlando	60,772	4,891	2,840	4.7	1,276	2.1	879	1.4	2,155	3.5
<b>Total</b>	<b>216,288</b>	<b>15,279</b>	<b>9,144</b>	<b>4.2</b>	<b>4,456</b>	<b>2.1</b>	<b>3,699</b>	<b>1.7</b>	<b>8,155</b>	<b>3.8</b>

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

**Exhibit 3.3  
Other Outreach Efforts during the Demonstration Period by Site**

Site	Community Health Centers		SSA Outreach Beyond Posters	Other Non-SSA Outreach
	HRSA Grantee	Special Buy-In Activities		
<b>Screening Model</b>				
Carlisle				
Lebanon			<ul style="list-style-type: none"> <li>• Two Spanish radio Q&amp;A shows</li> <li>• Press release in local newspaper</li> <li>• Booth at local health fair</li> </ul>	
<b>Co-location Model</b>				
Muskogee				<ul style="list-style-type: none"> <li>• Co-located worker since 10/98 for State Children’s Health Insurance Program (S-CHIP) outreach</li> </ul>
Oklahoma City			<ul style="list-style-type: none"> <li>• Press releases in the newspapers</li> <li>• Public service announcements on the radio</li> </ul>	<ul style="list-style-type: none"> <li>• Co-located worker since 10/98 for S-CHIP outreach</li> </ul>
Uniontown			<ul style="list-style-type: none"> <li>• Two Q&amp;A radio programs</li> <li>• Press releases to two newspapers</li> </ul>	
West Chester			<ul style="list-style-type: none"> <li>• Discussion with local congressman</li> <li>• Visits to the Office of Aging and the Office of Mental Retardation</li> <li>• Presentation at Community Service Council</li> </ul>	
<b>Application Model</b>				
Corpus Christi				<ul style="list-style-type: none"> <li>• CMS mailing throughout Texas to newly Medicare eligible with Title II income less than 100 percent of the poverty guideline in January 1999</li> </ul>
Evansville	X	No		<ul style="list-style-type: none"> <li>• State effort that was not supposed to be implemented in demo area until demo concluded</li> </ul>
Lexington	X	No	<ul style="list-style-type: none"> <li>• Radio announcements</li> </ul>	<ul style="list-style-type: none"> <li>• Mentions at various councils (e.g., social worker groups, hospital staff groups, Council on Aging) and at senior citizen centers</li> <li>• Discussions with employee groups on retirement issues</li> </ul>
Miami	X	N/A		<ul style="list-style-type: none"> <li>• Educating staff of Little Havana Activity Center (Spanish speaking senior center) about Buy-in</li> </ul>
Orlando			<ul style="list-style-type: none"> <li>• Press releases to local radio, newspapers, and television, including Spanish news media</li> </ul>	<ul style="list-style-type: none"> <li>• Contacted representatives of Hispanic groups</li> <li>• Discussion of Buy-in programs in group speaking engagements</li> </ul>

**Source:** The Lewin Group interviews with SSA field office staff, CMS outreach efforts documented at [www.hcfa.gov/medicaid/dualelig/decoact.htm](http://www.hcfa.gov/medicaid/dualelig/decoact.htm), HRSA outreach grants documented at [www.bphc.hrsa.gov/databases/fqhc/](http://www.bphc.hrsa.gov/databases/fqhc/), and phone calls with HRSA grantees.

#### IV. Characteristics of Enrollees

*Exhibits 3.4* and *3.5* provide demographic and Title II benefit information on intended letter recipients who enrolled. *Exhibit 3.4* provides information on enrollees who were screened and found potentially eligible and *Exhibit 3.5* provides information on enrollees who were not screened. Beneficiaries who were not screened bypassed the screening process and visited the local welfare or medical assistance office directly. We therefore refer to them as direct enrollees.

Direct enrollees were younger, had lower Title II income, and were more likely to be female and under age 65 than screened enrollees. Compared to intended letter recipients, both screened and direct enrollees were younger, had lower Title II income, and were more likely to be female and under age 65. As *Exhibits 3.4* and *3.5* show:

- **Direct enrollees were younger on average.** Overall, direct enrollees average 67 years in age versus 68 years in age for screened enrollees. Direct enrollees were more likely to be under age 65 (35 versus 27 percent). Overall, enrollees were younger on average than intended letter recipients and two to three times more likely to be under age 65 (13 percent for intended letter recipients, 27 percent for screened enrollees, and 35 percent for direct enrollees).
- **Direct enrollees were less likely to have a Spanish language preference than screened enrollees** (7 percent versus 10 percent). This was predominantly the case in Miami, where 51 percent of direct enrollees and 67 percent of screened enrollees have a Spanish language preference. In the other two sites with a significant number of enrollees who have a Spanish language preference, Orlando and Corpus Christi, the percentages were similar for screened and direct enrollees. Overall, enrollees were more likely to have a Spanish language preference than intended letter recipients, implying that those mailed letters with a Spanish language preference were more likely to enroll.
- **Direct enrollees had lower Title II income than screened enrollees.** Sixty-five percent of direct enrollees and 51 percent of screened enrollees had monthly Title II benefits that were below the poverty guideline. On average, direct enrollees have monthly Title II benefits that were \$53 less than screened enrollees. Direct enrollees were also more likely to enroll in QMB than screened beneficiaries, implying that direct enrollees had lower income on average.

**Exhibit 3.4**  
**Characteristics of Screened Enrollees by Site and Model**

Site	Average Age	Under Age 65 (%)	Female (%)	Spanish Letter Preference (%)	MBC Below Poverty Guideline (%)	MBC as a Percent of Poverty Guideline	Average MBC (\$)	Married (%)	Non-White (%)	Widow(er) (%)	Disabled (%)	Medicare+ Choice (%)
<b>Screening Model</b>	<b>70.3</b>	<b>20.5</b>	<b>70.0</b>	<b>0.0</b>	<b>45.1</b>	<b>99.4</b>	<b>654.8</b>	<b>11.7</b>	<b>2.6</b>	<b>36.3</b>	<b>38.8</b>	<b>19.8</b>
Carlisle	69.5	19.7	67.1	0.0	46.2	97.6	639.3	13.9	4.1	32.4	36.4	20.8
Lebanon	71.6	22.0	75.0	0.0	43.0	102.6	681.6	8.0	0.0	43.0	43.0	18.0
<b>Co-location Model</b>	<b>68.3</b>	<b>29.1</b>	<b>64.4</b>	<b>0.1</b>	<b>46.6</b>	<b>98.6</b>	<b>654.8</b>	<b>10.6</b>	<b>20.8</b>	<b>32.5</b>	<b>46.4</b>	<b>27.5</b>
Muskogee	69.7	23.2	57.2	0.0	47.5	97.0	637.2	13.1	20.5	29.6	39.7	7.4
Oklahoma City	66.3	35.5	66.9	0.2	44.4	100.4	672.5	8.3	27.9	32.0	51.0	29.4
Uniontown	70.5	25.1	59.9	0.0	46.5	97.3	627.1	20.9	5.9	31.6	48.7	29.4
West Chester	68.8	26.8	72.8	0.0	50.2	98.1	665.5	3.3	18.8	38.5	43.7	49.8
<b>Application Model</b>	<b>68.1</b>	<b>27.4</b>	<b>59.9</b>	<b>14.8</b>	<b>53.3</b>	<b>95.3</b>	<b>628.0</b>	<b>13.1</b>	<b>19.5</b>	<b>26.3</b>	<b>42.0</b>	<b>55.8</b>
Corpus Christi	67.5	29.5	52.8	16.8	53.2	96.4	621.2	21.8	11.6	24.4	42.3	57.9
Evansville	68.4	28.7	67.6	0.0	41.1	99.4	673.7	4.2	17.4	38.5	49.4	15.5
Lexington	67.0	34.4	66.5	0.0	53.3	95.9	649.2	5.4	31.1	32.9	53.6	0.0
Miami	71.0	14.2	51.7	66.7	63.6	88.8	565.0	20.9	18.1	15.3	20.4	76.7
Orlando	67.8	27.9	63.4	4.9	52.7	95.5	636.3	9.3	22.2	26.5	43.9	71.1
<b>Total</b>	<b>68.3</b>	<b>27.4</b>	<b>61.7</b>	<b>10.1</b>	<b>51.1</b>	<b>96.4</b>	<b>636.6</b>	<b>12.4</b>	<b>18.8</b>	<b>28.5</b>	<b>43.0</b>	<b>46.3</b>

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

**Exhibit 3.5**  
**Characteristics of Direct Enrollees by Site and Model**

Site	Average Age	Under Age 65 (%)	Female (%)	Spanish Letter Preference (%)	MBC Below Poverty Guideline (%)	MBC as a Percent of Poverty Guideline	Average MBC (\$)	Married (%)	Non-White (%)	Widow(er) (%)	Disabled (%)	Medicare+ Choice (%)
<b>Screening Model</b>	<b>72.7</b>	<b>24.9</b>	<b>74.0</b>	<b>0.3</b>	<b>56.8</b>	<b>91.8</b>	<b>619.8</b>	<b>4.6</b>	<b>3.1</b>	<b>37.5</b>	<b>50.4</b>	<b>5.9</b>
Carlisle	68.4	32.6	68.1	0.0	55.3	92.4	618.9	5.7	6.4	31.2	49.7	9.2
Lebanon	75.1	20.6	77.4	0.4	57.7	91.5	620.4	4.0	1.2	41.1	50.8	4.0
<b>Co-location Model</b>	<b>65.2</b>	<b>40.1</b>	<b>64.6</b>	<b>0.4</b>	<b>66.6</b>	<b>86.0</b>	<b>575.6</b>	<b>8.2</b>	<b>24.0</b>	<b>29.6</b>	<b>52.3</b>	<b>13.4</b>
Muskogee	65.9	38.5	61.2	0.3	66.6	84.9	557.7	11.2	19.9	28.7	50.8	6.5
Oklahoma City	63.6	41.4	68.5	0.0	71.0	84.2	573.1	4.1	38.4	29.8	52.5	12.7
Uniontown	66.3	42.2	62.4	0.0	65.3	86.1	572.9	14.5	4.1	28.9	52.6	13.9
West Chester	65.9	38.7	65.5	1.6	59.7	91.2	616.3	4.7	22.5	31.4	54.5	27.2
<b>Application Model</b>	<b>66.9</b>	<b>35.0</b>	<b>63.1</b>	<b>11.6</b>	<b>66.2</b>	<b>87.6</b>	<b>581.2</b>	<b>10.3</b>	<b>22.0</b>	<b>28.0</b>	<b>46.7</b>	<b>31.7</b>
Corpus Christi	66.5	35.8	60.0	17.7	71.1	83.9	539.8	17.7	13.4	30.9	47.7	33.3
Evansville	64.9	39.9	72.0	0.0	63.4	88.2	588.7	7.4	16.4	28.6	55.7	8.6
Lexington	67.4	34.3	70.5	0.0	63.8	88.8	598.4	4.1	23.9	35.1	49.3	0.4
Miami	68.4	28.6	49.5	51.2	78.4	79.1	519.8	13.6	23.0	18.8	26.8	47.7
Orlando	67.1	35.0	63.5	3.4	61.6	91.7	614.3	8.4	27.6	27.1	48.6	44.0
<b>Total</b>	<b>67.0</b>	<b>35.4</b>	<b>64.7</b>	<b>7.1</b>	<b>65.4</b>	<b>87.6</b>	<b>583.7</b>	<b>9.1</b>	<b>20.6</b>	<b>29.5</b>	<b>48.8</b>	<b>23.6</b>

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.



- **Direct enrollees were less likely to be married than screened enrollees** (nine percent versus 12 percent). While this was the case in all models, the largest discrepancy between the percentage of married enrollees was in the screening model, where 12 percent of screened enrollees and five percent of direct enrollees were married.

## V. Probability of Enrolling

We estimated the probability of enrolling using logistic regression and the same explanatory variables that were used to estimate the probability of being screened. The variables that are used in the model are the following:

- individual's age in years (Age);
- indicator variable for whether the individual was disabled (Disabled);
- interaction variable between disabled and age (Disabled x Age);
- indicator variable for whether the individual was female (Female);
- indicator for whether the individual had a Spanish language preference (Spanish Preference);
- individual's (if single) or couple's (if married) Title II income as a percentage of the poverty guideline (Title II);
- indicator for whether the individual was enrolled in a Medicare+Choice managed care plan (Medicare+Choice);
- indicator for whether the individual was married (Married);
- indicator for whether the individual was a widow or widower (Widow(er)); and
- indicator for whether the individual was not white (Non-white).

The ratio of the probability of enrolling for individuals with a given characteristic to those without that characteristic is called the odds ratio. The coefficients of the logit model can be interpreted as follows: the effect of a unit change in an explanatory variable is to increase the odds of enrolling multiplicatively by the factor  $\exp(\beta)$  – called the odds or risk ratio – controlling for all the other explanatory variables in the model. If the odds ratio is greater than one, the odds of enrolling are higher for an individual with a one unit increase in the explanatory variable. Conversely, if the odds ratio is less than one, the odds of enrolling are lower for an individual with a one unit increase in the explanatory variable. Also,  $100 \times (\exp(\beta) - 1)$  gives the percent change in the odds of enrolling for a one-unit increase in X. Because  $\exp(0)=1$ , the sign of the coefficient estimate indicates whether an increase in the explanatory variable increases (positive coefficient) or decreases (negative coefficient) the odds of enrolling.

*Exhibit 3.6* presents the coefficient estimates and odds ratios for the probability of enrollment (screened and not screened) among intended letter recipients overall and by model. For the overall sample, all 10 explanatory variables have a significant effect on the probability of enrolling.

For non-disabled elderly, “Age” was significantly and positively related to the odds of enrolling, with an odds ratio of 1.01. The older the beneficiary, the more likely it was that the beneficiary would enroll. For the disabled, “Age” was significantly and negatively related to the odds of enrolling, with an odds ratio of 0.97. The older the disabled beneficiary, the less likely it was that the beneficiary would enroll.

**Exhibit 3.6**  
**Coefficients for and Odds of Enrolling**

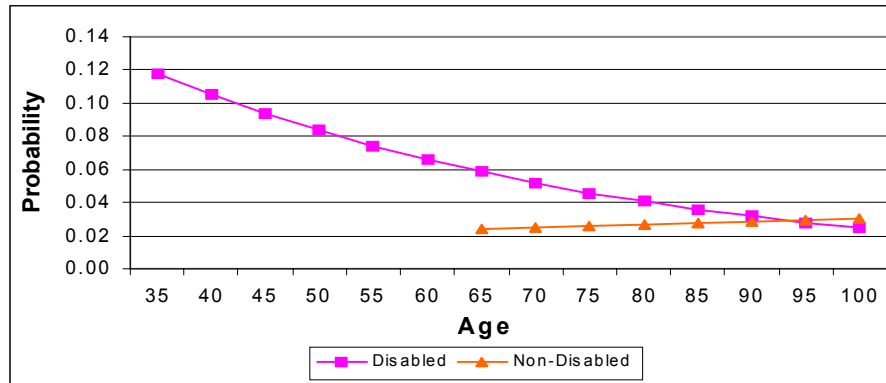
Variable	Overall		By Model	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio
Title II	-0.007 <sup>***</sup>	0.993 <sup>***</sup>	-0.007 <sup>***</sup>	0.993 <sup>***</sup>
Age	0.007 <sup>***</sup>	1.007 <sup>***</sup>	0.007 <sup>***</sup>	1.007 <sup>***</sup>
Disabled	3.028 <sup>***</sup>	20.656 <sup>***</sup>	2.985 <sup>***</sup>	19.790 <sup>***</sup>
Disabled x Age	-0.032 <sup>***</sup>	0.969 <sup>***</sup>	-0.032 <sup>***</sup>	0.969 <sup>***</sup>
Spanish Preference	0.751 <sup>***</sup>	2.119 <sup>***</sup>	0.656 <sup>***</sup>	1.927 <sup>***</sup>
Married	0.107 <sup>***</sup>	1.113 <sup>***</sup>	0.106 <sup>***</sup>	1.112 <sup>***</sup>
Female	-0.045 <sup>*</sup>	0.956 <sup>*</sup>	-0.041 <sup>***</sup>	0.960 <sup>***</sup>
Widow(er)	0.490 <sup>***</sup>	1.632 <sup>***</sup>	0.491 <sup>***</sup>	1.634 <sup>***</sup>
Non-White	0.435 <sup>***</sup>	1.545 <sup>***</sup>	0.418 <sup>***</sup>	1.519 <sup>***</sup>
Medicare+Choice	0.426 <sup>***</sup>	1.531 <sup>***</sup>	0.371 <sup>***</sup>	1.448 <sup>***</sup>
Co-location			-0.049	0.952
Application			0.242 <sup>***</sup>	1.273 <sup>***</sup>

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

“Disabled” should be interpreted in conjunction with “Age x Disabled”. “Disabled” captures the effect of being disabled on the probability of enrolling at age zero. “Disabled” was significantly and positively related to the odds of enrolling, whereas “Age x Disabled” was significantly and negatively related to the odds of enrolling. The disabled were more likely to enroll (until age 95) despite the negative coefficient on “Age x Disabled”. *Exhibit 3.7* displays the probability of enrollment by age for disabled individuals, and for non-disabled individuals age 65 and older. Among those elderly who had not received disability benefits, the probability of enrolling increased with age.

**Exhibit 3.7**  
**Probability of Enrolling by Age and Disability Status**

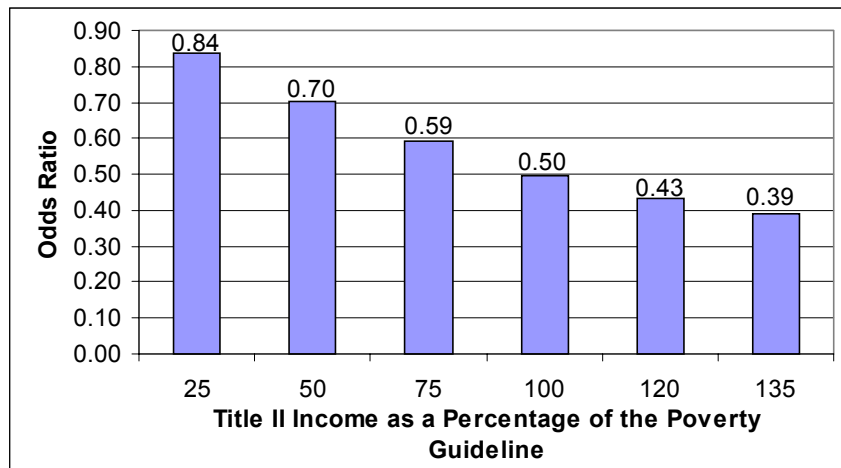


**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

In addition, we found the following:

- Being female was significantly and negatively related to the odds of enrolling, with an odds ratio of 0.96. Females were four percent less likely to enroll than males.
- Being enrolled in a Medicare+Choice managed care plan was also significantly and positively related to the odds of enrolling, with an odds ratio of 1.5. Beneficiaries enrolled in Medicare+Choice plans were 50 percent more likely to enroll in buy-in programs than beneficiaries in traditional Medicare. This might be a result of lower income among beneficiaries who are enrolled in Medicare+Choice plans.
- Spanish language preference was significantly and positively related to the odds of enrolling, with an odds ratio of 2.1. Beneficiaries with Spanish language preference were twice as likely to enroll as beneficiaries with no Spanish language preference.
- Being married was significantly and positively related to the probability of enrolling, with an odds ratio of 1.1.
- Title II income was significantly and negatively related to the probability of enrolling, with an odds ratio of 0.99. A percentage increase in Title II income decreased the odds of enrolling by one percent relative to a beneficiary with no Title II income (see *Exhibit 3.8*). A high Title II income (expressed as a percentage of the poverty guideline) increased the odds of exceeding the income limits for the Buy-in programs and reduced the odds of enrolling.

**Exhibit 3.8**  
**Odds of Enrolling by Income as a**  
**Percent of the Poverty Guideline**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

To compare the odds of enrolling among intended letter recipients across the three models, we also estimated a logit model with dummy variables (0/1) for the different models. We included the other explanatory variables so that comparisons could be made between models, controlling for individual-level characteristics. (The dummy variable for the screening model was the left-out category). *Exhibit 3.6* indicates that the application model was associated with an increased odds of enrollment, and the effect was significant. The probability of enrolling was 23 percent higher in the application model. The higher probability of enrolling in the application model was most likely associated with the different methods of application intake in the screening and the application models. In the screening model, beneficiaries had to go to the state Medicaid agency, whereas in the application model, an SSA representative accepted applications in the SSA field office. It appears that the application model coefficient may also be picking up some of the effect related to Spanish language preference because the coefficient and odds ratio were lower when the model dummies were included. It should be pointed out that these are only gross enrollment models. The net comparison regarding model effectiveness in increasing Buy-in enrollment comes from the impact estimates (Chapter 5).

We also estimated the probability of enrolling among intended letter recipients who were screened and found potentially eligible. *Exhibit 3.9* presents the coefficient estimates and odds ratios for the probability of enrollment among the potentially eligible. Overall, being a widow(er) was significantly and positively related to enrolling among the potentially eligible, and being non-white and older was significantly and negatively related to enrolling among the potentially eligible. Being disabled was not significantly related to the probability of enrolling among the potentially eligible, probably because the disabled might be more likely to skip the screening step and go directly to the state Medicaid agency to enroll. The disabled are eligible for Medicaid in the first 24 months of their disability; therefore, they are perhaps more likely to be familiar with the state Medicaid agency.

**Exhibit 3.9**  
**Odds of Enrolling among Potentially Eligible**

Variable	Overall		By Model	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio
Intercept	0.332	1.394	-0.009	0.991
Title II	0.000	1.000	0.000	1.000
Age	-0.007*	0.993*	-0.007*	0.993*
Disabled	0.007	1.007	-0.032	0.968
Disabled x Age	0.001	1.001	0.002	1.002
Spanish Preference	0.043	1.044	-0.036	0.965
Married	-0.091	0.913	-0.090	0.914
Female	-0.098**	0.907**	-0.095*	0.910*
Widow(er)	0.117**	1.124**	0.122**	1.129**
Non-White	-0.149***	0.862***	-0.179***	0.836***
Medicare+Choice	0.179***	1.196***	0.112**	1.119**
Co-location			0.210***	1.233***
Application			0.434***	1.543***

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

The odds of enrolling and the odds of enrolling among the potentially eligible explain two different events. The odds of enrolling captures eligibility among beneficiaries who were sent letters. For example, widow(er)s and non-whites were more likely to enroll because they were more likely to have lower income. On the other hand, the sample for the odds of enrolling among potentially eligible has already eliminated most of the ineligible beneficiaries. The odds of enrolling among potentially eligible captures enrollment among beneficiaries who were eligible. This explains the change in coefficients of “Age”, “Female”, and “Non-White” between the two models. Older non-white females were more likely to be eligible for Buy-in benefits, but they did not necessarily pursue Buy-in benefits as much as younger white males.

To compare odds of enrolling among the potentially eligible across the three models, we also estimated a logit model with dummy variables for the different models. We included the other explanatory variables so that comparisons could be made among models, controlling for individual-level characteristics. (The dummy variable for the screening model was the left-out category). We found that the co-location model was significantly associated with increased odds of enrollment relative to the screening model. For the co-location model, the odds of enrolling was higher by about 23 percent relative to the screening model. The application model was also significantly associated with increased odds of enrolling relative to the screening model. For the application model, the odds of enrolling increased by about 54 percent relative to the screening model. This may reflect the high no-show rates for application appointments in the screening model.

*Exhibit B.1* in *Appendix B* presents the probability of enrolling among those mailed letters by site and model. When the probability of enrolling was estimated by model, the coefficients for “Title II”, “Age”, “Disabled”, “Disabled x Age”, and “Widow(er)” retained their significance in all three models. “Non-white” and “Medicare+Choice” were significant in the co-location and application models, and “Married” and “Female” were significant in the application model. “Age” became significantly and negatively related to the odds of enrolling in the co-location model.

When the probability of enrolling was estimated by site, the coefficients for all variables except “Married” and “Female” retained their significance for at least half of the sites and “Spanish language preference” retained its significance for all sites.

## **VI. Reasons for Denial**

Some of those who were sent letters and applied were denied eligibility. We only had reliable reasons for denial data from Oklahoma.<sup>48</sup> Among those mailed letters who applied and were denied, 44 percent were ineligible due to income or resources, 38 percent failed to complete an application and 12 percent voluntarily withdrew from the process (see *Exhibit 3.10*). Oklahoma verifies income and resources for eligibility determinations. Among those screened potentially eligible who were sent a letter, approximately five percent were denied due to income and resources and five percent failed to follow through on the application process.

In order to understand whether the screening process influenced the reasons for denial among those mailed letters, we tabulated reasons by those who were screened versus those who were not screened. As will be discussed in the next chapter, a large proportion of those mailed letters ended up enrolling even though they had not gone through the SSA screening process. Among those who applied for buy-in benefits in Oklahoma and whose applications were denied, 165 of 233 (or 70 percent) had been screened potentially eligible by SSA. Of these 165, 48 percent were found to be ineligible by the state Medicaid agency due to income or resources. This suggests that either: 1) the screening process could be refined to be more accurate (e.g., more explicit probing for resources); and/or 2) individuals misreport income and resources during the screening process. It also suggests that individuals with higher incomes who might not otherwise apply are pursuing benefits as a result of the outreach letters.

The next most prevalent reason for denying an application among those sent letters in Oklahoma was the failure of the beneficiary to complete the application. This means that the individual started the application process and did not follow through for some reason. The other most common reason for denial was when an individual completed an application and then decided he or she was no longer interested in receiving the benefits.

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<sup>48</sup> We also had reason for denial data for QMBs in Florida. We do not present these data because Florida maintains two data systems – one for QMBs and one for SLMBs and QI-1s. Approximately 90 percent the Florida QMB applications that were denied listed income or resources as the reason. It is possible that many of those denied for QMB could have been eligible for SLMB or QI-1, but because of the two systems, we were not able to make that determination.

**Exhibit 3.10**  
**Reasons for Denial Among Those Mailed Letters in Oklahoma**

Reason for Denial	Total		Screened		Not Screened	
	#	%	#	%	#	%
Ineligible due to income/resources	103	44.2	79	47.9	27	35.5
Failed to complete application	88	37.8	60	36.4	31	40.8
Already receiving benefits	1	0.4	1	0.6	0	0.0
Voluntary withdrawal	29	12.4	20	12.1	10	13.2
Moved/unable to locate	2	0.9	1	0.6	1	1.3
Other	10	4.3	4	2.4	7	9.2
<b>TOTAL</b>	<b>233</b>	<b>100.0</b>	<b>165</b>	<b>100.0</b>	<b>76</b>	<b>100.0</b>

Source: Oklahoma state Medicaid data files.

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## CHAPTER 4: DISCRETE TIME HAZARD ANALYSIS

### I. Introduction

In this section, we investigate the length of time between various steps in the process – from letter mailing to screening and from screening to enrollment. We present analyses that account for differences in the characteristics of individuals to provide information about the effects of these variables on the time between one step in the process and the next.

Hazard models, such as proportional hazard models or discrete-time hazard models, are commonly used to investigate the relationships among the characteristics of a population being studied and the length of time before the occurrence of an event. These models are most commonly used in medical studies to investigate effects of a particular treatment on time to death. The process of estimating these models is also commonly called survival analysis or duration analysis. We use the term “hazard analysis” throughout this report.

Hazard analysis is applied in the analysis of time between steps of the SSA Buy-in program for the following reasons:

- Hazard analysis is appropriate when data correspond to the time from a well-defined time point (such as time of screening) until the occurrence of some particular event (such as enrollment).
- Hazard analysis is well suited for data that are skewed or not normally distributed; data that measure time to some event are often skewed and non-normal.
- Measurements of time to the event of interest (such as screening time) might be censored (e.g., the event of interest might not have been observed for an individual who dropped out after the initial letter mailing because we can no longer observe his or her data). Hazard analysis takes such censoring into account.

Through the use of hazard modeling in the analysis of process time data, we can investigate how time-to-the event varies by relevant individual-level explanatory variables (such as age, income level, race, marital status and sex), taking censoring into account. Therefore, if certain individual characteristics are associated with a quicker response, potential replication or expansion efforts can benefit from this information, particularly if a site has a high concentration of individuals who are likely to respond more quickly or more slowly. Staffing, or more likely the volume of mailings, could be adjusted accordingly.

In the analysis of the SSA Buy-in program, we apply a discrete-time hazard model rather than a proportional hazards model. Cox’s proportional hazards model assumes that time between events is continuous. In order to apply that model to our data, then, there should be relatively few observations in the data with the same value for length of time to an event. However, since multiple people were screened or enrolled on the same day, there are in fact a large number of tied values for length of time in the data. We applied Cox’s discrete-time hazard model since this method assumes that events can occur at the same discrete time.

## II. The Discrete-Time Hazard Model

Cox's model for discrete-time data can be described as follows. The time variable  $t$  takes only integer values. Let  $P_{it}$  be the probability that individual  $i$  experiences the event at time  $t$ , given that the event has not already occurred for that individual. Let  $X_{i1}$ ,  $X_{i2}$ , ... and  $X_{ik}$  represent  $k$  explanatory variables for individual  $i$ . In the model, the log-odds of  $P_{it}$  is related to explanatory variables by the equation:

$$\log\left(\frac{P_{it}}{1-P_{it}}\right) = \alpha_t + \beta_1 X_{i1} + \dots + \beta_k X_{ik}$$

Here,  $\alpha_t$  is a constant that can vary from one time point to the next, whereas the coefficients of the explanatory variables are constant over time. To estimate the model we treat the  $\alpha_t$ s as nuisance parameters and estimate only the  $\beta$ s – the coefficients of the explanatory variables. In this model, the odds that individual  $i$  moves to the next step of the process at time  $t$ , given that individual  $i$  has not already moved to that step, is equal to  $P_{it}/(1-P_{it})$ . The coefficients may be interpreted as follows: the effect of a unit change in  $X_1$  is to increase the log odds of the occurrence of the event by an amount  $\beta_1$ , controlling for the other explanatory variables in the model. Or we may also say that the effect of a unit change in  $X_1$  is to increase the odds of the occurrence of an event multiplicatively by the factor  $\exp(\beta_1)$ , commonly called the risk ratio, controlling for the other explanatory variables in the model. For example, assume that there are two explanatory variables in the model and that  $X_1$  represents gender with  $X_1=1$  indicating that the individual is female and  $X_1=0$  indicating that the individual is male. If  $X_2$  represents the individual's age, then we may say that relative to males, the odds that a female who has not moved to the next step in the process before time  $t$  will move to the next step at  $t$  are  $\exp(\beta_1)$  times higher than for a male at the same age. Also,  $100 \times (\exp(\beta_1) - 1)$  gives the percent change in the odds that the next step in the process will occur for a one-unit increase in  $X_1$ .

$P_{it}$  represents the probability that individual  $i$  will experience the outcome at time  $t$ . In the following sections, we present results from discrete-time hazard models for the following outcome variables: time from letter mailing-to-screening for the three SSA Buy-in models (screening, application and co-location models) and 11 sites; and time from screening-to-enrollment for the three models and 11 sites. Each outcome variable is measured as the number of days between the two events. The data capture whether or not individual  $i$  has experienced the outcome and the time of the outcome.

For both of the above outcome variables, we present and discuss the estimated model. For specific individual-level characteristics, we also present estimated probabilities obtained from the model for the occurrence of the next step at various intervals of time from the previous step. For the analysis of screening to enrollment, we limit our analyses to those individuals who were screened and declared potentially eligible for the program.

Explanatory variables included in the discrete-time hazard models are the same for the screening model and the enrollment model. These variables include the individual's age in years (Age), an indicator variable for whether the individual was disabled (Disabled), an interaction variable between disabled and age (Disabled x Age), an indicator variable for whether the individual was female (Female), an indicator for whether the individual had a Spanish language preference

(Spanish Preference), the individual's (if single) or couple's (if couple) Title II income as a percentage of the poverty guideline (Title II), an indicator for whether the individual was enrolled in a Medicare+Choice managed care plan (Medicare+Choice), an indicator for whether the individual was married (Married), an indicator for whether the individual was a widow(er) (Widow(er)), and an indicator for whether the individual was not white (Non-white).

**Exhibit 4.1** presents the coefficient estimates and odds ratios of being screened among intended letter recipients and enrolling among potentially eligible beneficiaries. The coefficient estimates are comparable to the coefficient estimates presented in the probability of being screened and probability of enrolling sections. We interpret the coefficients in the following section.

**Exhibit 4.1**  
**Hazard Analysis Coefficients and Odds Ratios**

Variable	Letter to Screening		Screening to Enrolling	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio
Title II	0.00002	1.000	0.002***	1.002***
Age	-0.007***	0.993***	-0.003***	0.997***
Disabled	0.433***	1.541***	-0.062	0.940
Disabled x Age	-0.0002	1.000	0.002	1.002
Spanish Preference	0.693***	2.000***	0.022	1.022
Married	0.121***	1.128***	-0.078	0.925
Female	0.045**	1.046**	-0.094***	0.910***
Widow(er)	0.106***	1.112***	0.068	1.071
Non-White	0.458***	1.581***	-0.123***	0.884***
Medicare+Choice	0.584***	1.793***	0.087***	1.091***
Co-location	-0.178***	0.837***	0.287***	1.333***
Application	0.032	1.033	0.494***	1.639***

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

### III. Letter Receipt to Screening

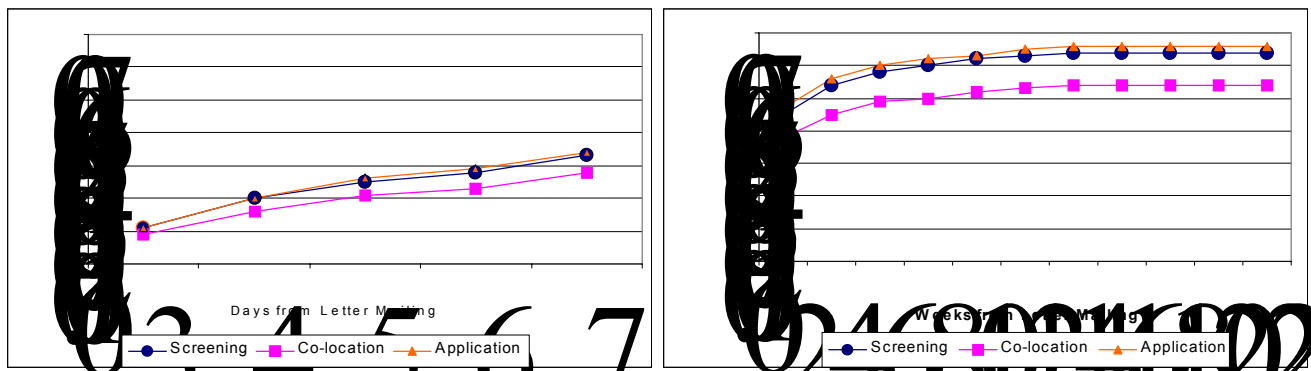
#### A. By Model

We calculated the predicted probability of having reached screening by day during the first week since letter mailing, and by weeks thereafter for each model. In those instances when a beneficiary was screened before having been mailed a letter, so that the length of time between letter receipt to screening was negative, we set the length of time equal to one.<sup>49</sup> Predictions for each model were made using a hazard model that includes indicator variables for the three models, with the indicator variable for that subgroup set equal to one, and the rest of the

<sup>49</sup> 1,122 (0.5 percent) out of 216,288 letter recipients were screened before they were mailed a letter. These individuals may have heard about the demonstration through word of mouth, posters, or other outreach.

variables set equal to their means. *Exhibit 4.2* shows the increase in probability of being screened over time by model. The left panel shows the probability of being screened during the first seven days after letter mailing, when the majority of screens were conducted, and the right panel shows the probability over 22 weeks after letter mailing. As this exhibit shows, the probabilities of screening were consistently lowest for the co-location model relative to the other models. At eight weeks, the probability of being screened began to flatten out. At 16 weeks (approximately four months), the probability of being screened ranged from 0.054 in the co-location model to 0.066 in the application model (0.064 in the screening model). The probabilities were relatively small for all models, due to the fact that a large percentage of individuals in the study simply did not go on to screening after having received the letter.

**Exhibit 4.2**  
**Probability of Being Screened by Days during the First Week**  
**and from Week of Letter Mailing by Model**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

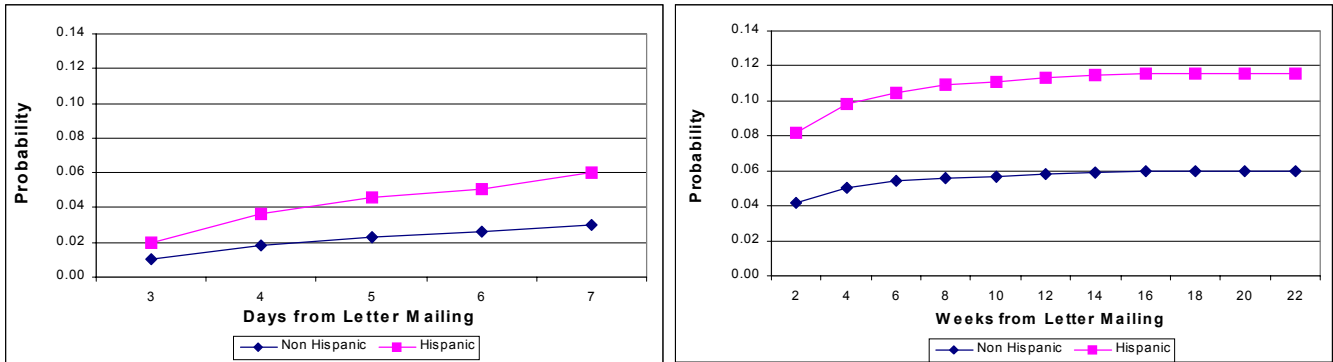
As discussed in Chapter 2, it is unclear why there were differences in the probability of being screened across models. Nothing inherent in the process from letter mailing to screening should differ by model. All of the letters and initial contact processes were the same. This finding might be the result of the timing of the implementation of the models. By the time letters were sent to the application model sites, the DSU staff were more experienced and fewer letters per mailing meant a shorter wait time when beneficiaries called the DSU. Also, the results might reflect differences in additional outreach being conducted in each site, either prior to or during the demonstration period, differences in familiarity and accessibility of the SSA field offices, which could have an impact on walk-ins, and differences in characteristics of the population, other than age, gender, race, disability status, Medicare+Choice enrollment, Spanish preference, marital status, and Title II income, which influenced differences in response.

### **B. By Selected Characteristics**

*Exhibits 4.3, 4.4, and 4.5* present the probabilities over time by Spanish language preference, age and disability status, and Medicare+Choice enrollment (i.e., enrollment in an HMO). *Exhibit 4.3* shows that Spanish language preference greatly increased the probability of reaching the screening stage more quickly through week 22. As *Exhibit 4.4* illustrates, disabled beneficiaries aged 55 were more likely to reach the screening stage more quickly than retired beneficiaries

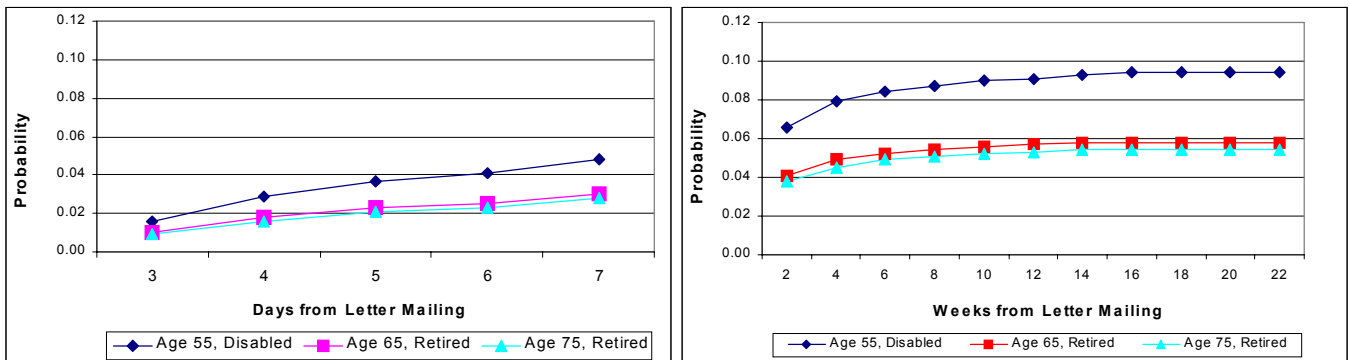
aged 65 and 75 throughout the demonstration. *Exhibit 4.5* shows that Medicare+Choice enrollees were more likely to reach the screening stage more quickly during their first week. Medicare+Choice enrollees may be better informed or more responsive to health decisions because these individuals had to make an active choice to join a plan other than traditional Medicare.

**Exhibit 4.3**  
**Probability of Being Screened by Days during the First Week and from Week of Letter Mailing by Spanish Language Preference**



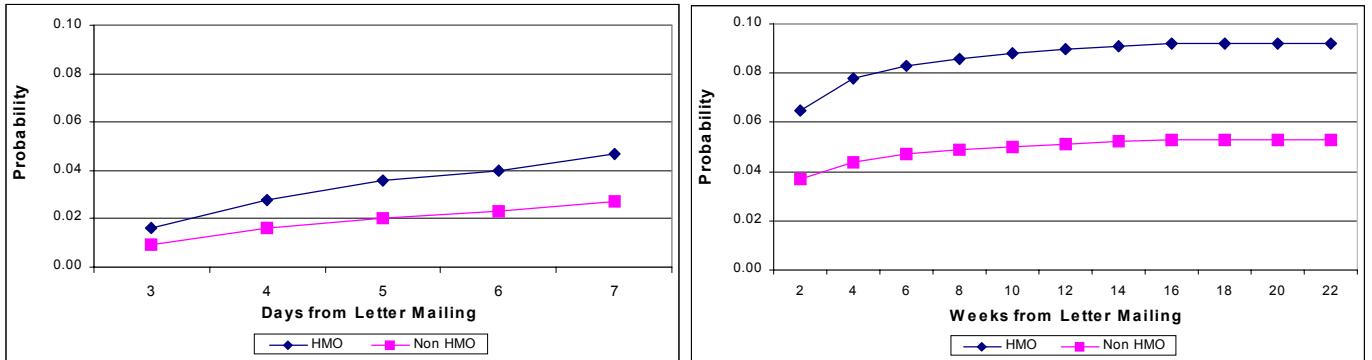
**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

**Exhibit 4.4**  
**Probability of Being Screened by Days during the First Week and from Week of Letter Mailing Among Beneficiaries by Age**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

**Exhibit 4.5**  
**Probability of Being Screened by Days during the First Week and from Week of Letter Mailing by Medicare+Choice HMO Enrollment**

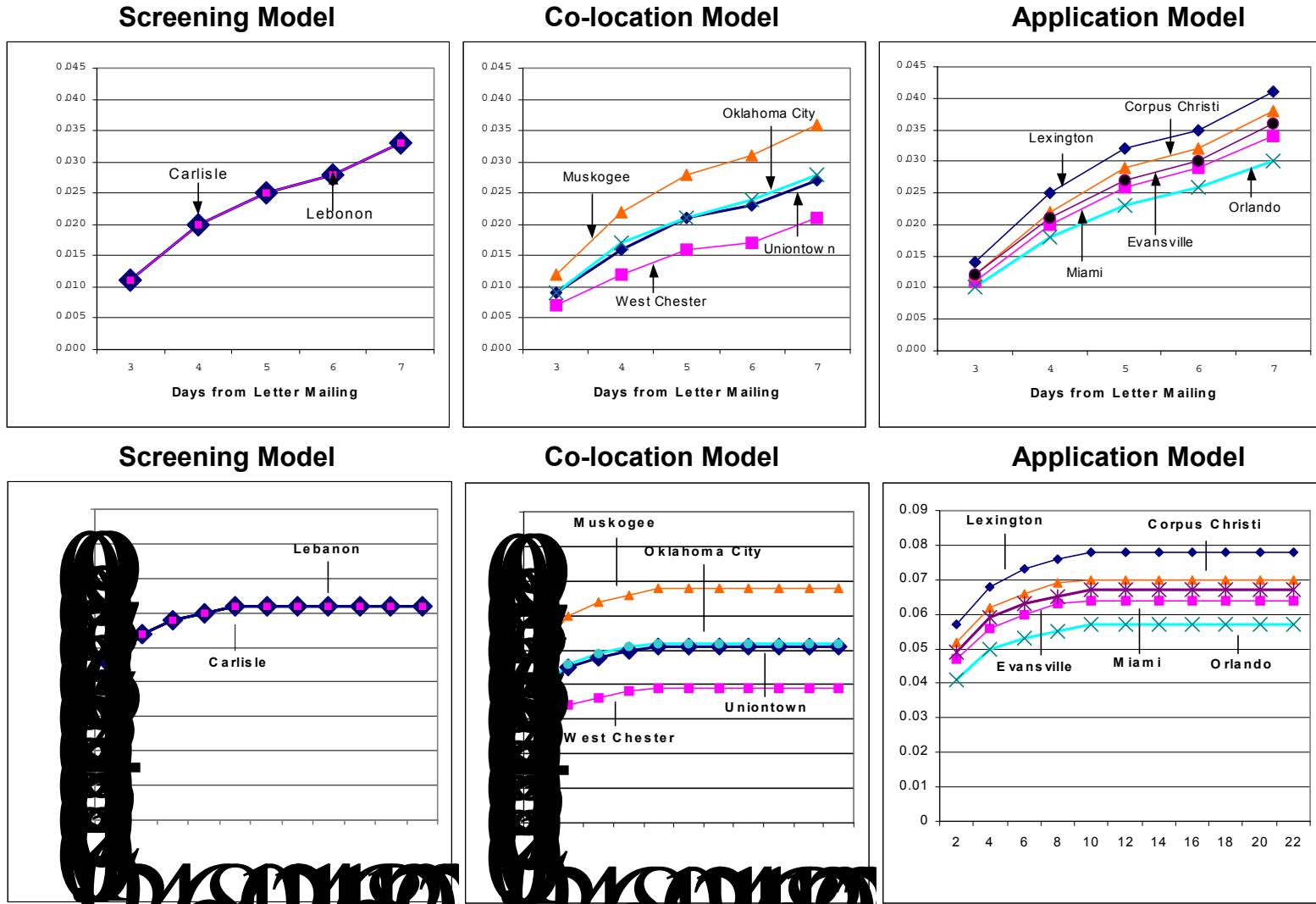


**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

**C. By Site**

*Exhibit 4.6* shows the predicted probability of having reached screening by days and weeks from letter mailing for each site. Predictions are made for each site with the explanatory variables in the estimated models set equal to their means. During the first week after the mailing, Lebanon, Carlisle, Oklahoma City, Uniontown, Evansville, Corpus Christi, and Miami had similar trajectories. In comparison, Muskogee and Lexington had a slightly accelerated enrollment, and Orlando and West Chester had slower take-up rates. After the first week, the slopes over time do not appear to be appreciably different. Lexington and Muskogee have higher rates of screening and Orlando and West Chester have lower rates of screening throughout the duration of the demonstration.

**Exhibit 4.6**  
**Letter Mailing to Screening: Predicted Probabilities by Site**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

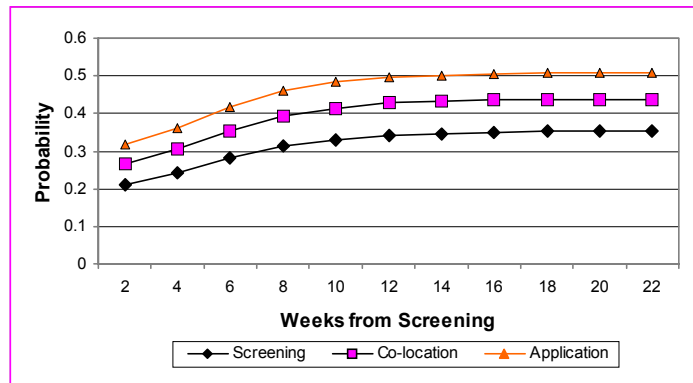
**IV. Screening to Enrollment**

**A. By Model**

We estimated the predicted probability of reaching enrollment for individuals found to be potentially eligible, by weeks after screening for key subgroups. In those instances when a beneficiary enrolled before being screened, so that the length of time between screening to enrollment was negative, we set the length of time equal to one.<sup>50</sup> Predictions for each subgroup were made using a discrete-time hazard model that includes indicator variables for the three models, with the indicator variable for that subgroup set equal to one, and the rest of the variables set equal to their means. At 16 weeks after screening (approximately four months) the probability of having enrolled ranged from 0.350 in the screening model to 0.506 in the application model (0.436 in the co-location model).

*Exhibit 4.7* illustrates the increase in probability over time by model. It shows that the predicted probability of enrolling among those screened potentially eligible was higher in the application model relative to the other models at every point in time. There were no significant differences in the increase in probability of over time by any of the explanatory variables.

**Exhibit 4.7**  
**Probability of Enrolling from Week of Screening**  
**Potentially Eligible by Model**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

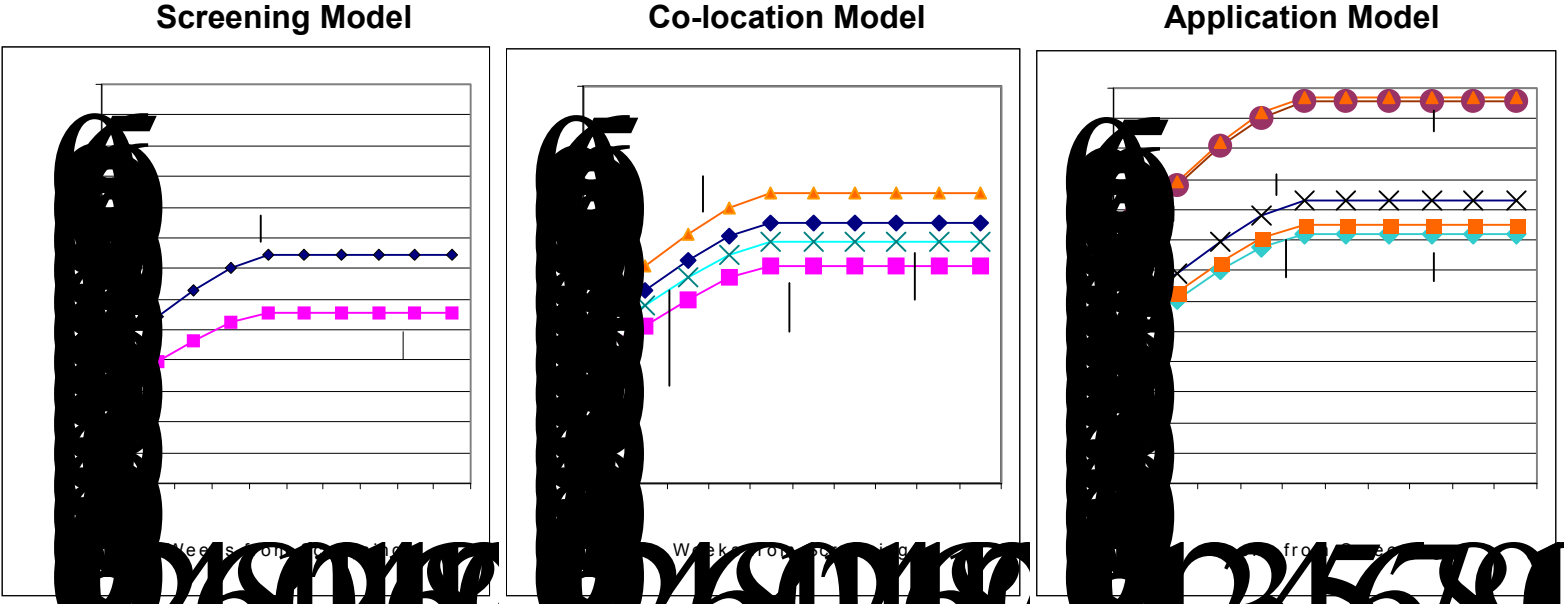
**B. By Site**

*Exhibit 4.8* displays the predicted probabilities for screening to enrollment with site indicators, so comparisons can be made across sites controlling for demographic characteristics. The odds of enrolling were consistently highest in Miami and Corpus Christi and consistently lowest in Lebanon. The slopes over time were not appreciably different by site. Most enrollment occurred within 10 weeks of being screened.

<sup>50</sup> 1,917 (21 percent) out of 9,144 potential eligibles were enrolled prior to being screened, most likely due to retroactive enrollment for SLMBs and QI-Is.



**Exhibit 4.8**  
**Screening to Enrollment: Predicted Probabilities by Site**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and screener data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

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## CHAPTER 5: IMPACT OF THE DEMONSTRATION MODELS ON BUY-IN ENROLLMENT

In order to assess whether the demonstration had an effect on Buy-in enrollment, we compare enrollment in the demonstration sites to enrollment in comparison areas. In Section I, we describe the data used for the impact analysis. In Section II, we discuss the difference-in-difference (DID) methodology used to assess the impact of the demonstration models. Finally, in Section III, we present and discuss the results.

### I. Impact Analysis File

The main sources of data used were the SSA-provided MBR data for the states of interest, matched to the CMS-provided Third Party Billing Record data, which indicated Buy-in enrollment, and the CMS Group Health Plan file, which provided information on Medicare+Choice plan enrollment. The sample for the impact analysis includes all individuals who we estimated should have received a letter from SSA had they lived in the demonstration area with the criteria outlined in previous chapters:

- Single and receiving individual monthly Title II Social Security benefits of less than \$947 or married and receiving combined benefits of less than \$1,265;

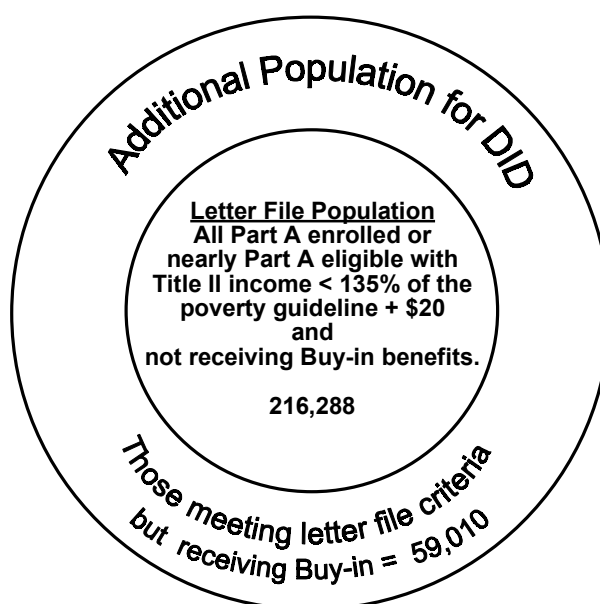
-AND-

- Entitled to Medicare Part A benefits; *or*
- Attained the age of 64 and 11 months or had received 24 consecutive months of disability insurance benefits.

As discussed in Chapter 2, SSA staggered the mailing of the letters in nine separate batches, based on the terminal digit of the individual's SSN and the demonstration model. SSA selected all individuals meeting the criteria approximately one week prior to mailing. To construct a comparable sample, we selected individuals based on whether they met the criteria at the point in time when SSA would have pulled the sample. For example, an individual with a terminal digit of 0 and living in Muskogee or Oklahoma City would have been sent a letter on April 8, 1999. SSA determined the eligible sample for this mailing on March 31. Therefore, to construct the Oklahoma sample, we included individuals with terminal digits of 0 who met the criteria as of March 31. Also, as discussed in Chapter 2, we excluded married individuals who received a letter in the demonstration area, but most likely should not have received the letter because their Title II income exceeded the couple limits.

In contrast to the previous analyses, where existing enrollment was excluded, we retained individuals already enrolled in the Buy-in program for the impact analysis (see *Exhibit 5.1*). We chose to use the broader measure of enrollment because it provided an estimate of the net impact on enrollment rather than the change in new enrollment. Although the change in new enrollment would yield a higher estimate for the impact of the demonstration, the policy debate has been framed in terms of the percent of potential eligibles that do not enroll. Therefore, the results presented provide an indication of the expected change in the percent of potential eligibles enrolled that might occur if the demonstration were instituted elsewhere.

**Exhibit 5.1**  
**Analysis Population for Difference-in-Difference (DID)**  
**versus Letter File Population**



**DID Analysis Population: 216,288 + 59,010 = 225,298**

We applied the same criteria in the creation of comparison areas. For most individuals, we used their zip code in March 1999. For the subset for whom we did not have a 1999 zip code, we used the zip code as of March 2000, when the file was extracted.<sup>51</sup> We assume that any movement from the demonstration area to the comparison area is offset by movement in the reverse direction. Our analysis of movement between 1999 and 2000 among individuals who had zip code information for both time periods indicated that 98 percent of individuals in the demonstration sites remained in the same demonstration area and two percent moved out of the demonstration area into another part of the state.

## II. Methods

### A. *Difference-in-Difference (DID) Estimator*

For the impact analysis of the screening, co-location, and application models, we used a pre-post with comparison group non-experimental design. We relied on the difference between the change in enrollment from the pre- to post-periods for the demonstration sites and the comparison areas to identify the net impact of the demonstration on Buy-in enrollment. This

<sup>51</sup> We excluded a few (less than one-half of one percent) from the sample because we did not have their 1999 zip code and they were living in a different state as of the date when the file was extracted (March 2000). We did this because, even though all of the individuals lived in one of the demonstration states in 1999, we had no way of knowing whether these individuals lived in the demonstration or the comparison areas during the demonstration period because we only had the current zip code for this subset.

approach is called a difference-in-difference (DID) analysis. The simple difference-in-difference estimator is represented by the following formula:

$$(1) \quad DID = (Post^{demo} - Pre^{demo}) - (Post^{comp} - Pre^{comp})$$

where  $Post^{demo}$  and  $Pre^{demo}$  are the post- and pre-enrollment rates in the demonstration area and  $Post^{comp}$  and  $Pre^{comp}$  are the corresponding rates in the comparison areas. The pre-period is the nine-month period from April 1998 to December 1998, and the post-period is from April 1999 to December 1999. Equation (1) controls for differing levels of pre-enrollment rates in demonstration areas and comparison sites. The DID technique provides simple, consistent, non-parametric estimates of the relationship between demonstration and comparison sites.

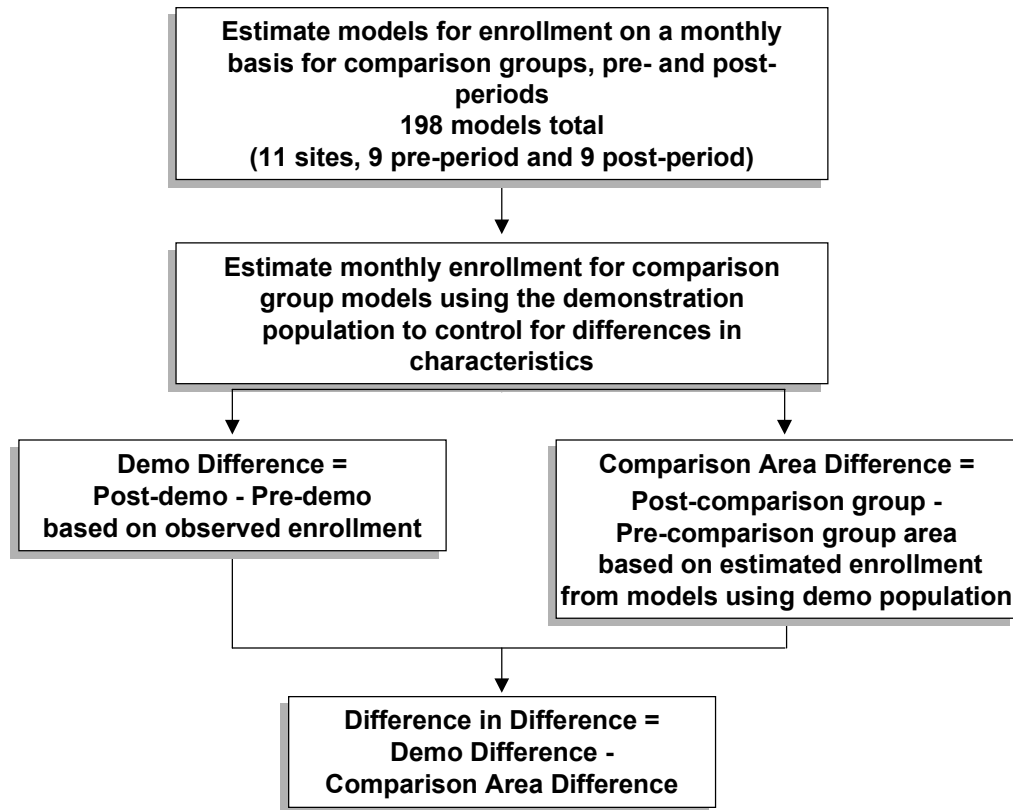
Differences in participation rates across sites, and changes over time within site, might partly reflect differences in the characteristics of beneficiaries. Because demographic and economic characteristics (e.g., sex, race, marital status, disability, age, and income) can affect enrollment, failing to control fully for such “background” differences could bias the estimates, even under the DID approach.

We assessed whether the demonstration and comparison population differed in observable demographic and economic characteristics. In general, the means and proportions for the demonstration and comparison areas differed for most of the explanatory variables (see *Exhibit C.1* in *Appendix C*). Hence, we adjusted the DID estimates using the Blinder-Oaxaca means-coefficient analysis approach (see Blinder 1973 and *Appendix E*)<sup>52</sup>. *Exhibit 5.2* provides an overview of the adjusted DID methodology. The data for the comparison sites were used to run a logistic regression of enrollment on sex, race, marital status, disability, age, age interacted with disability, Title II income as a percent of the poverty guideline, Medicare+Choice enrollment, and widow(er) status. The same population was used in the pre- and post models.

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<sup>52</sup> Blinder, Alan S. 1973. "Wage Discrimination: Reduced Form and Structural Estimates." *Journal of Human Resources*, Vol. 8, Fall, pp. 436-55.

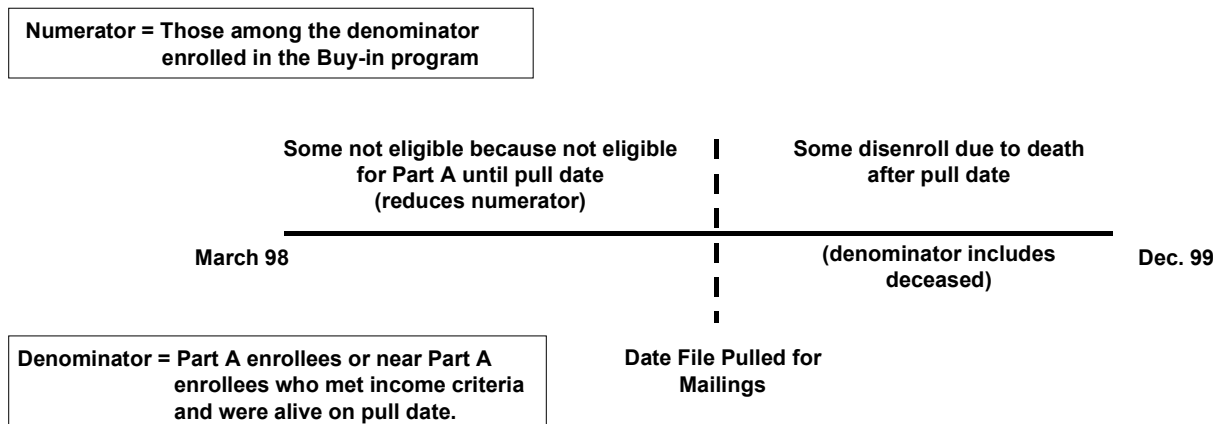
## Exhibit 5.2 Overview of Difference-in-Difference Methodology



We followed the same population over the entire pre- and post-period that met the letter-targeted criteria and were alive at the time information would have been checked to generate the letters (see *Exhibit 5.3*). This means that individuals who were not eligible for Part A benefits during the pre-period were included in the pre-models; and individuals who died during the post-period were retained. By treating the demonstration and comparison areas the same, we should avoid any bias as a result of these inclusions.

### Exhibit 5.3

#### DID Analysis Population and the Implications for Percent Enrolled Estimates



Applying the parameter estimates obtained from these regressions to each demonstration site's population to predict the pre- and post-probability of enrollment in that site resulted in adjusted estimates.<sup>53</sup> These estimates use the relationship between characteristics and enrollment from the comparison group and the characteristics of the population in the demonstration area to estimate enrollment of the comparison group as a proxy for enrollment in the demonstration area absent the demonstration. Enrollment, the dependent variable, is an indicator that takes on the value one if the individual is enrolled and zero otherwise (see *Exhibit C.2* in *Appendix C* for the coefficients). The predicted enrollment rates are then used to estimate the DID.

A common criticism of means-coefficient analysis is that even though it tackles the non-randomization problem, the model may be mis-specified. We conducted in-depth diagnostic checks on the model to ensure that the model is well specified (see *Appendix D*).

### **B. Comparison Groups**

We explored four types of comparison groups. For each of the sites, two comparison groups were based on geographic area – the remainder of the state, and areas within the same state selected on the basis of similarities with the demonstration sites (selected comparison areas). For the selected comparison areas, selection was based on the size of the population age 65 and older, the percent of the elderly with income less than the poverty level, and minority representation. *Exhibit 5.4* shows the selected comparison areas based on geography. *Exhibit 5.5* presents additional information about the selected comparison areas that was also presented in the prior report.

We present the results of the adjusted select comparison areas in the main body of the report because they provide the best estimate of the impact of the demonstration by controlling for as many differences in the characteristics of the population between the demonstration sites and the

<sup>53</sup> That is, we control for the differences in demographic and economic factors for individuals in the demonstration sites that may affect Buy-in enrollment.

comparison areas. The differences in the characteristics of the demonstration population and the remainder of the state were quite large in some areas (e.g., Miami, Lexington, Muskogee, and Corpus Christi). Also, the different methods and comparison groups did not alter the overall conclusions and the estimates were actually quite similar (see *Appendix E*).

**Exhibit 5.4**  
**Selected Comparison Areas for Each Demonstration Site Based on Geography**

Demonstration Site	Comparison Areas	
	Balance of State	Selected Areas
<b>Screening Model</b>		
Carlisle	Pennsylvania except Carlisle, Lebanon, Uniontown, and West Chester	Bucks County and Columbia County
Lebanon	Pennsylvania except Carlisle, Lebanon, Uniontown, and West Chester	Monroe County
<b>Co-location Model</b>		
Muskogee	Oklahoma except Muskogee and Oklahoma City	Altus City, Chickasha City and Guthrie City
Oklahoma City	Oklahoma except Muskogee and Oklahoma City	Lawton City
Uniontown	Pennsylvania except Carlisle, Lebanon, Uniontown, and West Chester	Somerset County
West Chester	Pennsylvania except Carlisle, Lebanon, Uniontown, and West Chester	Montgomery County
<b>Application Model</b>		
Corpus Christi	Texas except Corpus Christi	San Patricio County
Evansville	Indiana except Evansville	Delaware County
Lexington	Kentucky except Lexington	Jefferson County
Miami	Florida except Miami and Orlando	Hialeah City
Orlando	Florida except Miami and Orlando	West Palm Beach



**Exhibit 5.5**  
**Economic and Demographic Characteristics, Population Age 65+ (Percent)**

AREA NAME	Population (#)	In Poverty	Black	Hispanic	Female	Live Alone	With Limit	Own Home	No Vehicle	No Phone
<b>Florida</b>										
Miami*	59,931	32.2	11.9	73.1	60.9	27.3	27.4	40.5	45.7	4.9
Hiialeah City	26,188	24.5	1.0	86.5	59.2	14.8	25.3	53.1	30.1	1.4
Orlando*	18,717	16.1	16.7	5.3	62.6	34.1	20.6	65.3	26.3	3.5
West Palm Beach	12,359	15.6	15.7	9.2	61.6	36.2	20.0	68.3	25.8	3.7
<b>Remainder of State</b>	<b>2,289,995</b>	<b>10.2</b>	<b>5.2</b>	<b>5.5</b>	<b>57.4</b>	<b>26.3</b>	<b>17.8</b>	<b>83.1</b>	<b>16.0</b>	<b>2.1</b>
<b>Indiana</b>										
Vanderburgh County*	25,904	11.6	5.3	0.2	63.2	35.9	21.4	74.7	23.4	1.8
Delaware County	15,114	12.1	5.5	0.1	62.4	35.7	19.4	81.7	18.9	2.3
<b>Remainder of State</b>	<b>670,041</b>	<b>10.7</b>	<b>5.5</b>	<b>0.1</b>	<b>60.6</b>	<b>32.5</b>	<b>19.6</b>	<b>78.5</b>	<b>18.7</b>	<b>2.4</b>
<b>Kentucky</b>										
Fayette County*	22,303	13.2	12.5	0.3	62.7	32.7	21.3	69.9	24.3	2.2
Jefferson County	89,367	12.2	12.6	0.3	62.7	33.3	22.1	75.4	25.9	2.2
<b>Remainder of State</b>	<b>445,624</b>	<b>20.5</b>	<b>5.9</b>	<b>0.2</b>	<b>60.3</b>	<b>32.7</b>	<b>24.6</b>	<b>77.7</b>	<b>23.7</b>	<b>5.3</b>
<b>Oklahoma</b>										
Muskogee City*	7,061	18.2	15.2	0.2	62.1	39.0	21.7	72.8	21.5	4.0
Altus City	2,509	18.5	6.8	3.2	63.3	36.7	24.9	80.0	19.6	3.1
Chickasha City	2,876	17.8	6.2	0.8	64.4	35.5	29.7	81.8	18.4	5.0
Guthrie City	2,022	19.2	12.5	1.1	65.6	41.4	17.9	78.9	16.8	3.8
Muskogee Comp Site	2,469	18.4	8.1	1.7	64.4	37.5	22.6	81.0	17.7	4.1
Oklahoma City*	52,591	13.1	10.8	1.1	61.7	35.0	20.7	78.2	17.0	2.4
Lawton City	7,345	13.2	9.1	2.5	61.3	32.0	13.5	87.9	8.5	3.8
<b>Remainder of State</b>	<b>363,942</b>	<b>18.6</b>	<b>3.7</b>	<b>0.6</b>	<b>59.7</b>	<b>33.4</b>	<b>21.7</b>	<b>83.5</b>	<b>15.8</b>	<b>4.0</b>
<b>Pennsylvania</b>										
Chester County*	40,769	6.1	5.6	0.6	58.8	24.9	16.1	76.2	16.6	0.8
Montgomery County	101,976	5.8	3.4	0.4	60.9	27.8	16.5	73.0	18.3	0.7
Cumberland County*	26,128	6.0	0.7	0.3	60.4	29.8	14.3	77.1	15.0	0.7
Bucks County	58,784	6.1	1.4	0.4	59.1	25.6	17.5	76.5	17.3	0.6
Fayette County*	26,169	14.5	3.6	0.2	60.1	32.4	24.5	79.9	26.3	2.2
Somerset County	13,252	13.6	0.0	0.1	59.3	31.6	22.4	83.1	21.4	2.9
Lebanon County*	16,749	8.7	0.2	0.2	60.3	32.0	16.1	73.6	22.2	2.1
Monroe County	12,514	8.9	0.9	0.8	56.3	23.7	14.0	82.4	14.2	1.4
Perry County*	4,569	11.2	0.0	0.2	57.4	28.1	18.3	82.2	19.4	2.4
Columbia County	9,974	10.2	0.1	0.1	60.4	32.1	19.2	79.6	17.9	0.8
<b>Remainder of State</b>	<b>1,741,455</b>	<b>10.6</b>	<b>6.4</b>	<b>0.5</b>	<b>60.8</b>	<b>31.3</b>	<b>20.2</b>	<b>75.9</b>	<b>27.7</b>	<b>1.5</b>
<b>Texas</b>										
Nueces County*	29,063	20.2	5.0	36.0	59.0	29.4	22.9	74.5	18.8	4.6
San Patricio County	6,013	21.4	1.4	34.5	56.8	23.5	28.5	84.4	16.6	7.3
<b>Remainder of State</b>	<b>1,679,195</b>	<b>18.3</b>	<b>9.2</b>	<b>12.3</b>	<b>59.7</b>	<b>29.9</b>	<b>21.5</b>	<b>79.8</b>	<b>17.0</b>	<b>4.1</b>
<b>U.S. Total</b>	<b>31,195,275</b>	<b>12.8</b>	<b>8.0</b>	<b>3.4</b>	<b>59.9</b>	<b>30.5</b>	<b>20.1</b>	<b>75.0</b>	<b>22.3</b>	<b>2.5</b>

**Source:** The Lewin Group tabulations of the 1990 Decennial Census.

**Note:** \* Indicates demonstration site.

In order to further explore the sensitivity of the results to the selection of the comparison group, two comparison groups were selected based on the use of a propensity score methodology for Miami. We chose to explore the propensity score methodology for Miami because the characteristics and enrollment for this site differed dramatically from the remainder of the state and the other sites. While the adjusted DID procedure works well if the populations in the comparison and demonstration areas are sufficiently similar, it might work poorly when they are quite disparate, because the models from the comparison areas are being used to make predictions that rely on out-of-sample extrapolation. The propensity score matching approach addresses this issue by selecting a sub-sample from the comparison group that is similar in characteristics to the demonstration beneficiaries.

The estimates for Miami from the propensity score methodology, which are presented in *Exhibit E.4* in *Appendix E*, were comparable to the mean analysis approach.

### **C. Estimating the Impact Overall and by Model**

In order to estimate the effect of the demonstration overall and by model, we needed to develop an approach that took into account the significant differences in the characteristics of the populations in the individual sites. We chose to use the demonstration DID populations for all of the sites combined for this purpose. By using the same population for all of the estimates, we eliminated differences that resulted from the population in each site. We chose the entire population for all the demonstration sites rather than one of the individual sites because criteria and justification for choosing a particular site did not have to be developed and characterizing the results as representative across all the demonstration sites was the most appropriate. In order to estimate the percent enrolled in the demonstration sites, we had to generate models for enrollment in each demonstration site as described above for the comparison areas. Using these demonstration site specific models, we predicted the percent enrolled using the entire demonstration site population. This population was also used to predict participation for the selected comparison areas. Finally, the difference-in-difference estimates were calculated.

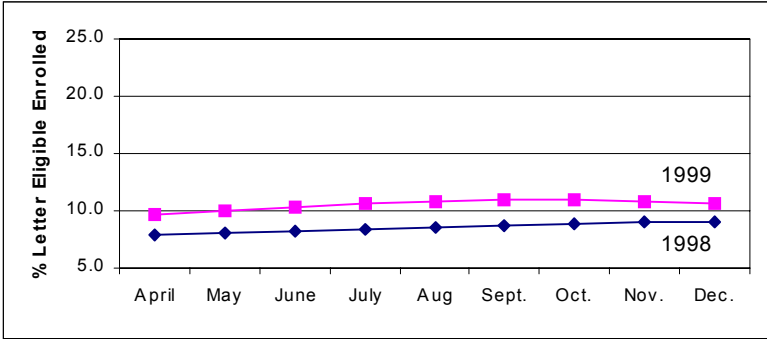
## **III. Results**

### **A. Percent Enrolled**

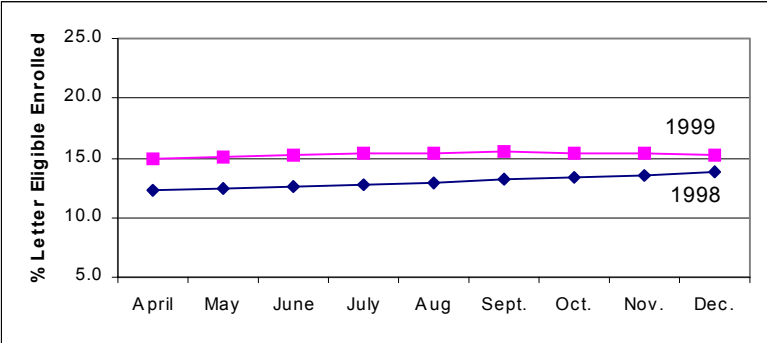
The percent of those eligible to receive letters enrolled in Buy-in was greater during the demonstration period than prior to the demonstration period (see *Exhibit 5.6*). The application sites had the highest percentage of enrollment in the Buy-in program, followed by the co-location sites and the screening sites.

**Exhibit 5.6**  
**Percent of Letter Eligible Enrolled during the Pre- and Post-Period by Model**

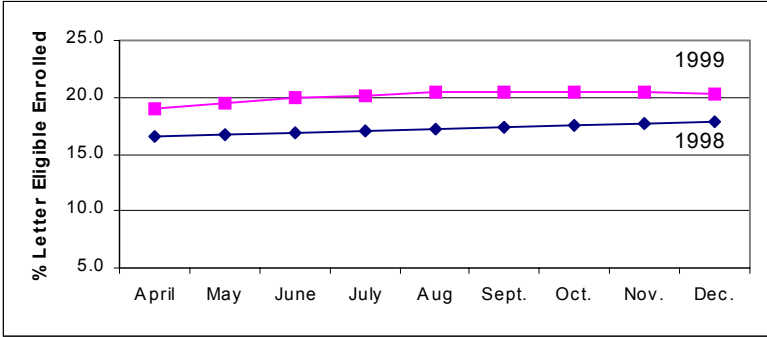
**Screening Model**



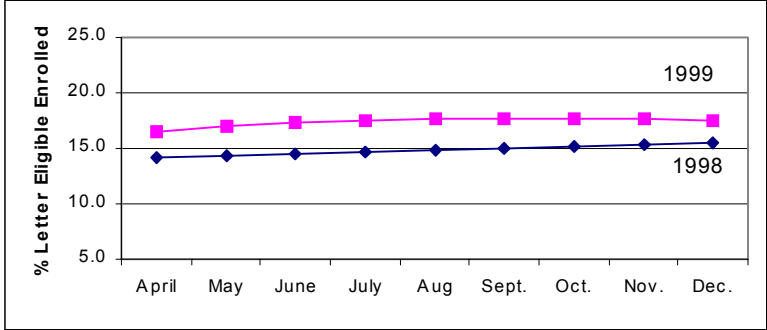
**Co-location Model**



**Application**



**All Models**



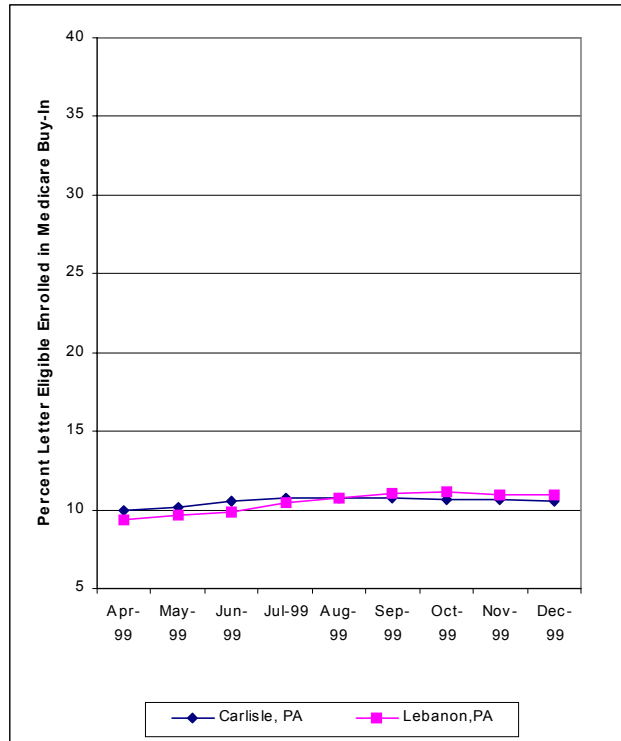
**Source:** The Lewin Group analysis of matched Master Beneficiary Record and Third Party Billing data for persons with Title II income less than 135% of the poverty guideline and Medicare Part A.

At the site level, two application sites had the highest enrollment. Miami had the highest demonstration enrollment percentage with nearly 40 percent, followed by Corpus Christi with about 26 percent enrollment (see *Exhibit 5.7*). Evansville and Lexington, among the application sites, and Muskogee and Uniontown, among the co-location sites, all had enrollment percentages around 20 percent. Orlando was the lowest among the application sites with approximately 15 percent enrollment. The other two co-location sites (Oklahoma City and West Chester) and both the screening model sites (Carlisle and Lebanon) had the lowest enrollment rates: approximately 10 to 12 percent. The April 1999 percent of the DID population enrolled in the Buy-in program was highly correlated to the percent of the elderly with income less than the poverty level in each site (see *Exhibit 5.8*). This result is expected given the means-tested nature of the benefit.

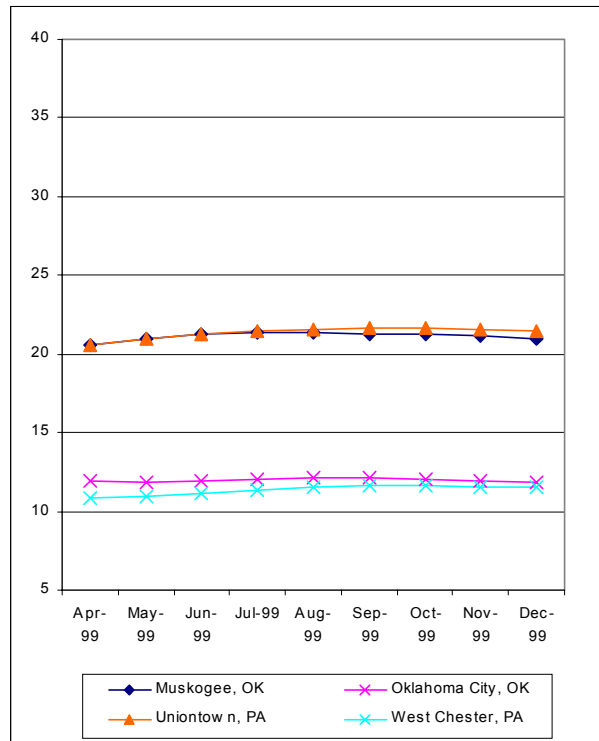
The percent enrolled should not be viewed as a participation rate among potential eligibles because the letter criteria were restricted to using only Title II income, and many of those sent letters would not qualify for Medicare Buy-in benefits because their income and resources exceeded the limits. Based on the non-responders survey, we estimate that roughly half of those in the impact analysis file would likely not qualify for Buy-in based on income and assets. This would imply participation rates between 20 and 80 percent rather than 10 to 40 percent.

**Exhibit 5.7**  
**Percent of Letter Eligible Enrolled during the Demonstration, by Site**

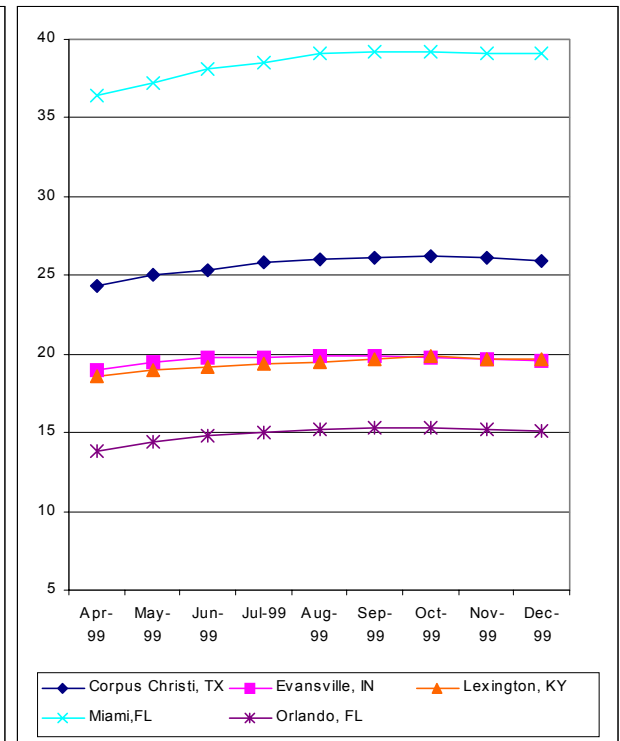
**Screening Model**



**Co-location Model**



**Application Model**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A.

**Exhibit 5.8**  
**Percent of Letter Eligible Enrolled April 1999 and Percent in Poverty**  
**Among 1990 Population Age 65 and Older**

Site	Percent Letter Eligible Enrolled, April 1999	Percent in Poverty, 1990
Carlisle	9.9	6.8
Lebanon	9.4	8.7
Muskogee	20.6	18.2
Oklahoma City	11.9	13.1
Uniontown	20.6	14.5
West Chester	10.9	6.1
Corpus Christi	24.4	20.2
Evansville	19.0	11.6
Lexington	18.6	13.2
Miami	36.4	32.2
Orlando	13.9	16.1
<b>Correlation</b>		<b>0.93</b>

**Source:** The Lewin Group analysis of matched Master Beneficiary Record and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A and 1990 Decennial Census data.

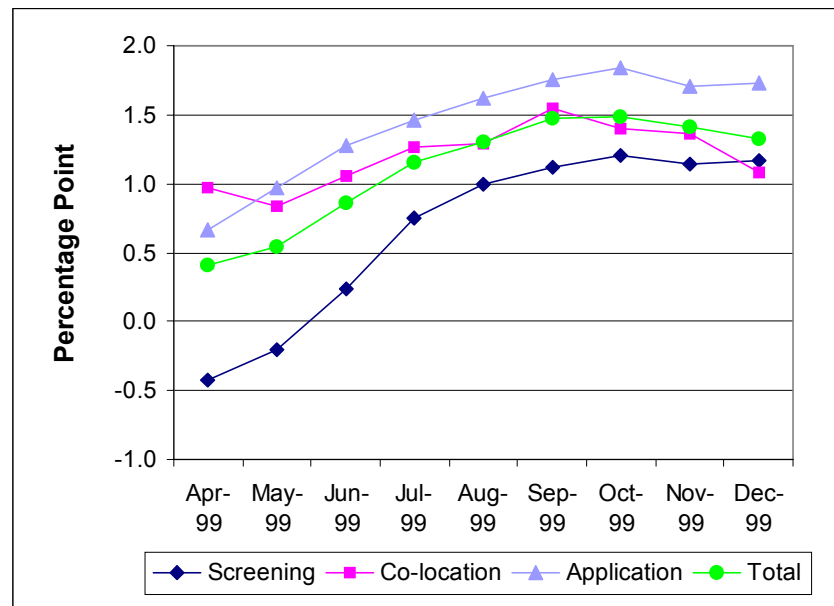
**B. Adjusted Difference-in-Difference Estimates Analysis**

**1. By Model**

The changes between the pre- and post-periods were significantly higher in the demonstration sites than in the selected comparison areas.<sup>54</sup> *Exhibit 5.9* displays the estimates of the changes in the percent enrolled from the pre-period to the post-period for the demonstration and comparison sites by model. As discussed in Section II.C, to estimate average effects by model and overall, we adjusted the selected comparison areas, to reflect the entire demonstration site population. The maximum DID overall was 1.5 percentage points. By model, it was 1.2 percentage points for the screening, 1.5 percentage points for the co-location model and 1.8 for the application model. The percent enrolled in the Buy-in program increased up to 10.1 percent for the three models combined and up to 12.8 percent in the screening model, 11.1 percent in the co-location, and 9.6 percent in the application model. The percent increase needs to be viewed with some caution because the size of the baseline can affect the percentage change. For example, the screening models had the highest percentage increase because they had the smallest enrollment base to start. However, the range of increase in the percent enrolled – 9.6 to 12.8 percent was fairly tight.

<sup>54</sup> We used a z-test to test for statistical significance. The z-value was defined as  $[(\text{Post}^{\text{demo}} - \text{Pre}^{\text{demo}}) - (\text{Post}^{\text{comp}} - \text{Pre}^{\text{comp}})] / \{ \text{var}(\text{Post}^{\text{demo}} - \text{Pre}^{\text{demo}}) / n_{\text{demo}} + \text{var}(\text{Post}^{\text{comp}} - \text{Pre}^{\text{comp}}) / n_{\text{comp}} \}^{1/2}$

**Exhibit 5.9**  
**Percentage Point Difference-in-Difference by Model**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A.

The application model resulted in the greatest level of increase in enrollment, followed by the co-location and screening models. With the exception of December, the DID estimates for the screening model were consistently the lowest. The application model increased enrollment by approximately one half of a percentage point higher than the screening model and between 0.2 and 0.4 percentage points higher than the co-location model. The screening model estimates were negative prior to June, meaning the comparison area had larger increases in enrollment than the demonstration area. We speculate that this occurred because the two screening models were in Pennsylvania and this state did not retroactively enroll for the SLMB and QI-1 programs as federal regulations permit. As a result, any new enrollment would not be evident for two to three months after letters were mailed and an application was completed because it took this amount of time for the paperwork to be processed. The smaller differential between the co-location and the application models may indicate an increased willingness of beneficiaries to visit the SSA office rather than the state Medicaid office.

Another expression of the results by model is in terms of the number of additional enrollments as a result of the demonstration per 1,000 letters mailed. Using this measure, each model resulted in the following:

**Exhibit 5.10**  
**Additional Enrollment per 1,000 Letters Mailed**

Screening	15
Co-Location	18
Application	23

This implies that the co-location model had a 20 percent greater impact than the screening model and that the application model had a more than 50 percent greater impact than the screening model and a 28 percent greater impact than the co-location model. These results must be viewed with some caution because they are based on a limited number of sites within each model and there may be site-specific variation for which we were unable to account explicitly in our analysis. These issues are taken up in the next section.

**2. By Site**

The graphs by site indicate that after June, the demonstration sites had consistently higher changes in enrollment than the comparison areas (see *Exhibit 5.11*). In general, the trend of the DID over the demonstration period increased from April through August/September when letters were mailed and either flattened or declined slightly from October through the end of the year when no additional outreach was conducted. The enrollment rates indicate that there was little difference between the changes in enrollment in the demonstration and comparison sites in the early part of the period. Consistent with both the staggered timing of the mailings and the time necessary to process applications, lower DID's in several demonstration sites in April suggests that the model did not have much impact until later in those areas.

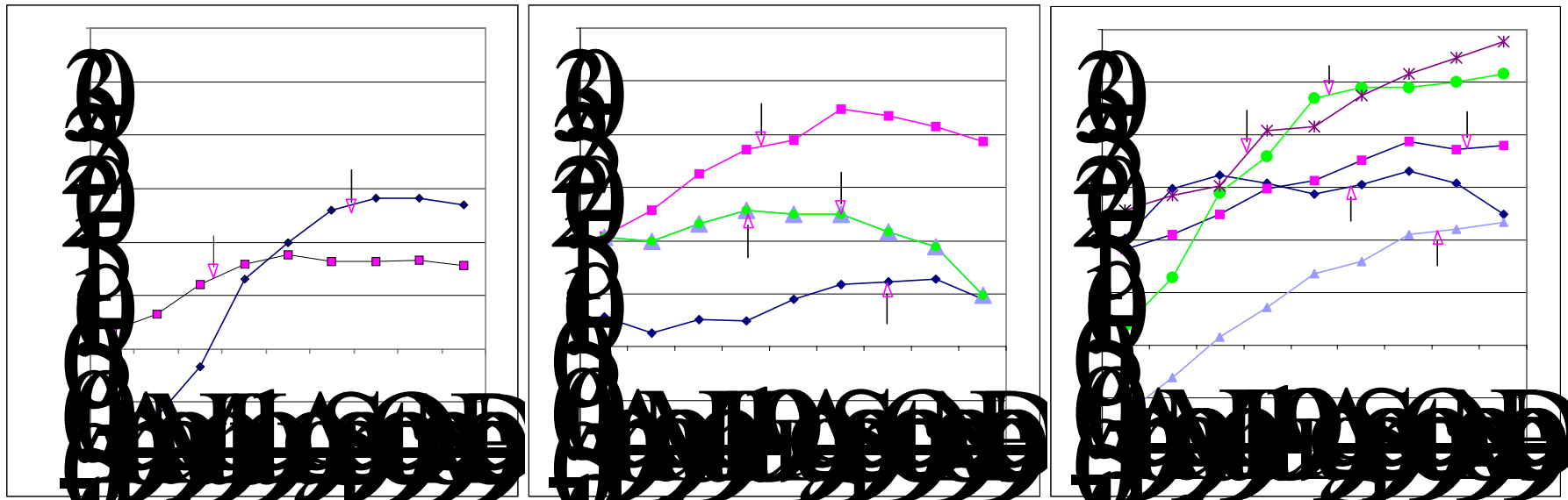


**Exhibit 5.11**  
**Percentage Point Difference-in-Difference by Model and Site**

**Screening Model**

**Co-location Model**

**Application Model**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A.

Corpus Christi, an application model site, had the greatest increase in enrollment among the demonstration sites. Corpus Christi was also the only site that had both a shortened application form and minimal to no verification of income and assets. Miami, also an application model site, had the next highest change in enrollment relative to the selected adjusted comparison area. Both Corpus Christi and Miami had relatively large Hispanic populations among those age 65 and older in 1990. This was not the case for the third highest change in enrollment relative to the comparison area, Muskogee. Muskogee's participation rate was considerably higher than the other three co-location sites. A particularly engaged co-located worker who actively solicited any potential Buy-in prospect and conducted all the screenings himself may explain Muskogee's anomalous results.

Oklahoma City, a co-location site, is joined by Carlisle, one of the two screening model sites, and Orlando, an application model site, as the sites with the smallest changes in enrollment, relative to other sites within the same model. During the demonstration period (May 4, 1999), a tornado struck Oklahoma City and may have affected follow through among those sent letters. Oklahoma City had the third lowest percent screened after West Chester and Carlisle.

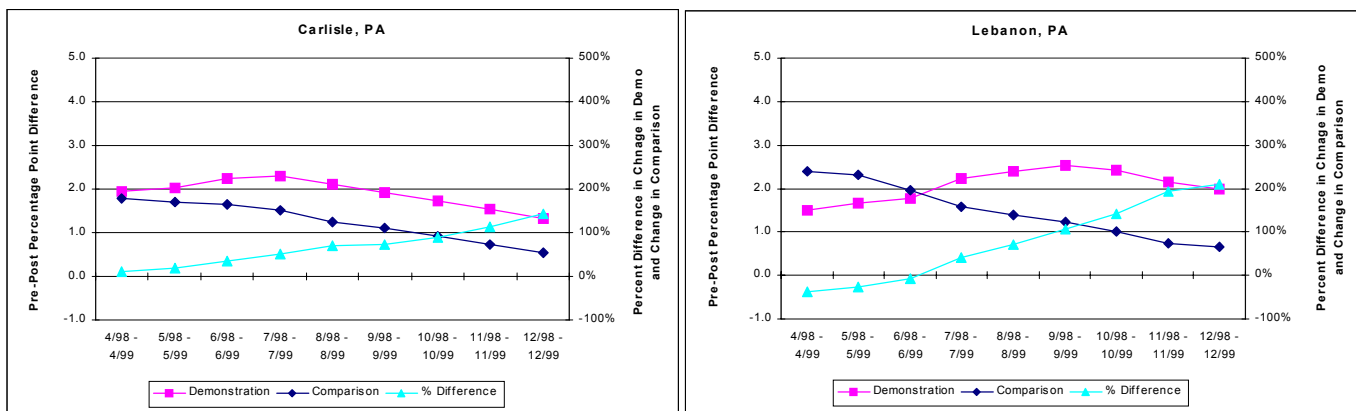
In our interviews, participants stated that Carlisle was a conservative area. Carlisle had one of the lowest percent screened among those sent letters. Also, in the other screening model site, Lebanon, the field office manager actively pursued outreach through a variety of activities, including radio shows. These guest appearances and other outreach activities may explain the sharp increase in the DID estimates in Lebanon relative to Carlisle (and most of the other sites) and an ultimate DID greater than five other sites.

In Orlando, the SSA field office completed the largest number of applications among the sites, and yet, had one of the smallest DID changes. This field office is responsible for a wide geographic area and with approximately 100 staff, is the largest field office in the country. Perhaps travel distance played a role in discouraging potential applicants because, among the demonstration sites, Orlando also had one of the highest percentages of its screens conducted by the DSU (88.4 percent compared to 73.6 percent average for the other sites). It is interesting to note that while the DID percentage point change was the smallest among the application sites in Orlando, the percentage change in the DID was more similar to the other application sites.

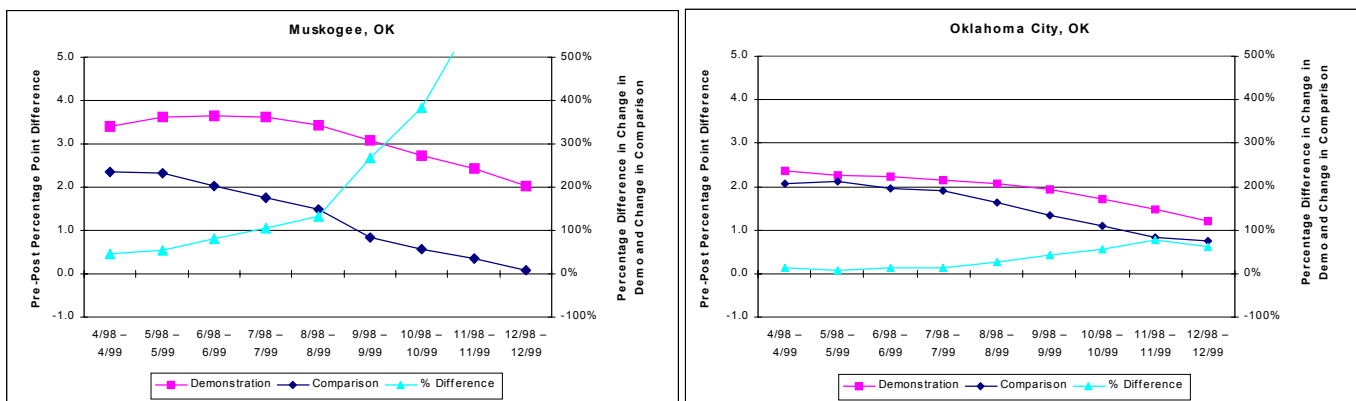
*Exhibit 5.12* presents the percent changes and percentage point difference for the DID by site (see *Exhibit C.3* for the underlying data). The percentage difference in the DID over the period tends to increase steadily, peaking in December for most sites (see the right hand axis of the charts in *Exhibit 5.12*). The increasing percentage difference over time resulted primarily from the general decline in the DID for the comparison areas, rather than a dramatic increase in enrollment in the latter part of the period in the demonstration areas. This happened because the percent enrolled in the comparison areas steadily declined after the start of the mailings due to deaths. The analysis sample included letter eligible individuals based on information when a letter file would have been generated for them. This meant that these individuals must have been alive at the time the letter files were generated (generally a week before the mailing). As discussed in Section II, for the analysis file, we maintained the same denominator over the entire time period. This resulted in an increasing percentage of Buy-in enrolled among the analysis sample in both the demonstration and comparison areas as time passes and more individuals became enrolled than disenrolled for reasons other than death. Once the letter file generation date

had passed, Buy-in enrolled individuals in the analysis sample disenrolled due to death. The deaths of existing enrolled Buy-ins in the comparison area tended to offset the newly enrolled, resulting in a relatively constant enrollment rate during the post-period. In the demonstration areas, the increased enrollment as a result of the demonstration continued to increase the percent enrolled. Therefore, during the post-period, the slope in difference between the change in the demonstration area over time was steeper than for the comparison area which resulted in the largest percentage differences in the later months.

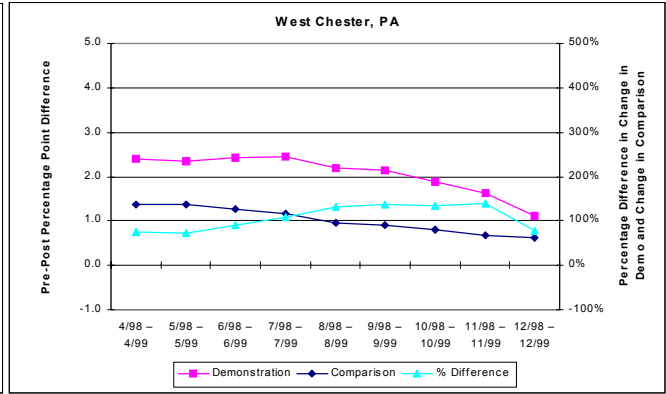
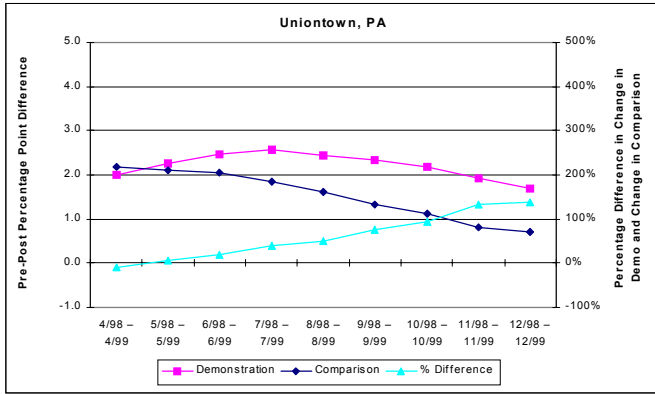
**Exhibit 5.12**  
**Pre-Post Percentage Point Difference and Percent**  
**Difference in the Change by Site**  
**Screening Model**



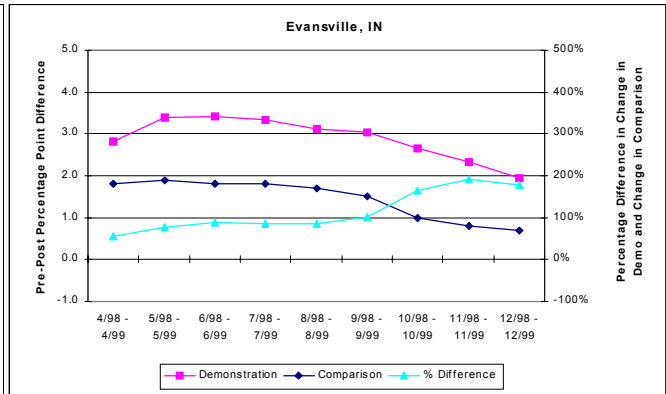
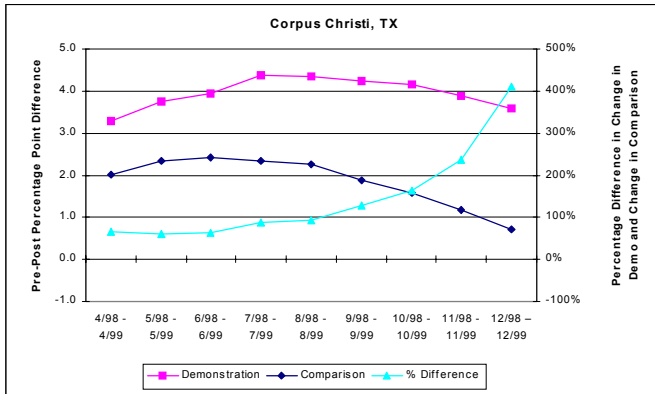
**Co-location Model**



**Exhibit 5.12 (cont.)  
Pre-Post Percentage Point Difference and Percent  
Difference in the Change by Site  
Co-location Model**

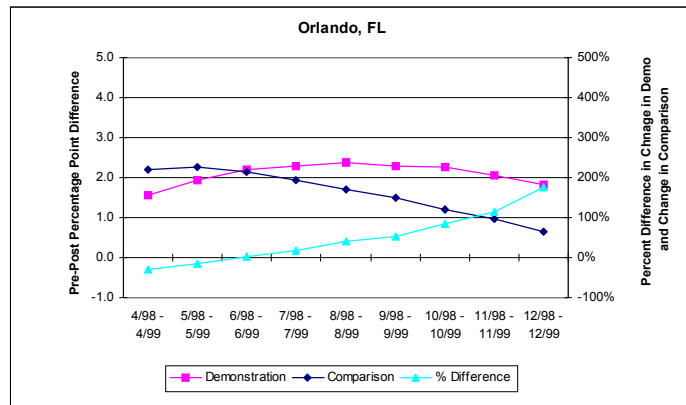
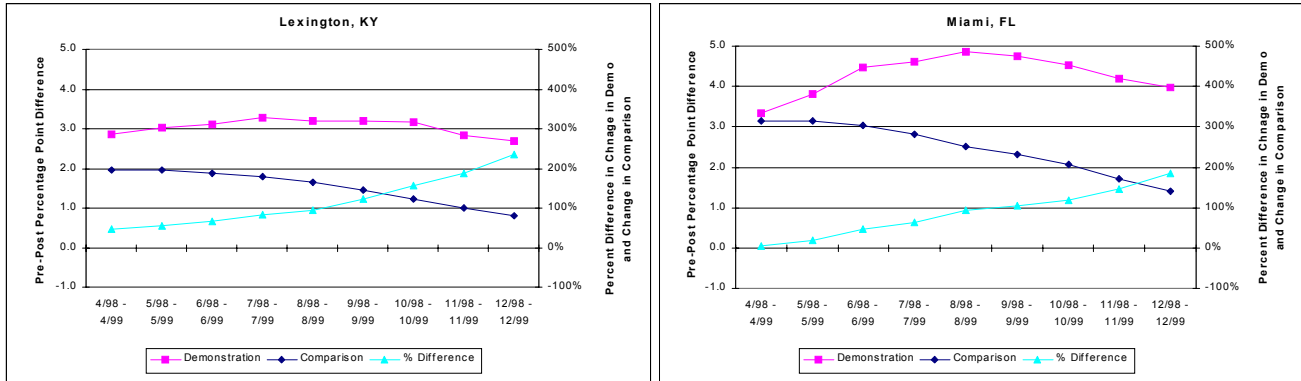


**Application Model**



**Exhibit 5.12 (cont.)  
Pre-Post Percentage Point Difference and Percent  
Difference in the Change by Site**

**Application Model**



Source: The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare Part A.

**C. Conclusions**

Overall, the demonstration increased Buy-in enrollment per 1,000 letters mailed by model as follows:

**Exhibit 5.13  
Additional Enrollment per 1,000 Letters Mailed**

Screening	15
Co-Location	18
Application	23
All three models	19

This implies that the co-location model had a 20 percent greater impact than the screening model and that the application model had a more than 50 percent greater impact than the screening model and a 28 percent greater impact than the co-location model.

Relative to existing enrollment, the three models combined increased enrollment 1.5 percentage points, or about ten percent. While 1.5 percentage points may seem small, it in fact represents the potential to increase participation from 60 percent among individuals eligible for Buy-in benefits to 66 percent. The application model had the largest absolute impact, increasing enrollment approximately 1.8 percentage points. The primary difference between the application and co-location models and the screening model was the greater involvement of SSA staff and the use of the SSA office for application intake rather than using the state Medicaid agency. One might conclude that individuals who responded to the letter found the SSA office more convenient and less stigmatic than the state Medicaid agency. Among the application sites, the higher increase in the DID estimates in Corpus Christi and Miami may have been associated with a higher proportion of Hispanics, suggesting the bilingual outreach and screening was particularly effective. This conclusion is supported by the screening and enrollment probabilities.

In general, these results must be viewed with some caution because they are based on a limited number of sites within each model and there may be site-specific variation for which we were unable to account for explicitly in our analysis. For example, Orlando had a much smaller increase than the other application model sites. We speculated that this might be the result of the longer travel distance to the central office location, which may have discouraged potential applicants. Also, among the co-located sites, the large DID increases in Muskogee, relative to the other sites, may have been the result of the extra involvement of the co-located worker in actually conducting the screens. Finally, among the two screening model sites, we speculate that the steep increase in the Lebanon DID estimate and the ultimate DID that exceeds several other sites may have resulted from the particularly active outreach of the Lebanon field office manager. In particular, definitive conclusions regarding the screening model are hampered by having only two sites in the same state upon which to base the analysis.

The next round of impact analyses will examine whether greater involvement of SSA staff in the verification of applications has any impact over and above taking the application. The decision making model also will provide a better indication of the effect of the demonstration in larger cities with more field offices involved. In addition, a different approach to screening and referral involving AARP volunteers rather than SSA staff will be assessed. Finally, the impact of the widow(er)s model in Massachusetts will be examined.

**APPENDIX A:  
ODDS OF BEING SCREENED**

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*Exhibit A.1* presents the odds of being screened for each site and model. When the probability of being screened was estimated by model, “Married”, “Non-white”, and “Medicare+Choice” were significant in all three models, “Widow(er)” was significant in the screening and co-location models, disabled was significant in the screening and application models, and “Age” was significant in the co-location and application models. The signs of the significant coefficients were consistent across the three models and, overall, the coefficients by model had the same sign as the overall coefficient.

“Married”, “Non-white”, and “Medicare+Choice” were significantly and positively related to the odds of being screened in all three models. The effect of “Married” was strongest in the screening model, Non-white in the co-location model and “Medicare+Choice” in the application model. The effect of “Disabled” was strongest in the screening model, and “Widow(er)” in the co-location model. “Female” and “Title II” were insignificant in all three models.

When the probability of being screened was estimated by site, most explanatory variables with the exception of “Medicare+Choice”, “Spanish language preference”, “Married”, “Widow(er)”, and “Non-white” lost their significance. This finding indicates that the sample sizes in most sites do not support a probability of being screened analysis. This is perhaps due to the low percentage of intended letter recipients who were screened (7.1 percent).

“Spanish language preference” was not included in the probability of being screened in all models and sites, because most sites had very few intended letter recipients with Spanish language preference and even fewer of them were screened. We included “Spanish language preference” in the overall regression and in sites and models where there was a large population with Spanish language preference. These sites are Miami, Orlando, and Corpus Christi. All three of these sites are application model sites; therefore Spanish language preference was only included in the probability of being screened in the application model. Spanish language preference was significantly and positively related to the odds of being screened in all three sites, in the application model, and overall. Overall, the odds of being screened for intended letter recipients with Spanish language preference were more than twice as high as those mailed letters without Spanish language preference.

**Exhibit A.1**  
**Odds of Being Screened by Site and Model**

	Title II	Age	Disabled	Disabled x Age	Spanish Preference	Married	Female	Widow(er)	Non-White	Medicare+ Choice
Carlisle	1.002*	1.001	6.253***	0.982**		1.412***	1.034	1.152	1.251	1.729***
Lebanon	0.999	1.000	3.175**	0.989		1.380**	1.050	1.303**	1.650*	1.887***
<b>Screening Model</b>	<b>1.001</b>	<b>1.001</b>	<b>4.602***</b>	<b>0.985***</b>		<b>1.398***</b>	<b>1.045</b>	<b>1.215***</b>	<b>1.384*</b>	<b>1.806***</b>
Muskogee	1.002	0.986**	0.613	1.012*		1.123	1.068	1.193*	1.417***	1.663***
Oklahoma City	1.003***	0.998	2.603***	0.995		0.912	1.073	1.280***	2.079***	1.984***
Uniontown	0.999	0.983**	0.971	1.005		1.363	1.033	1.144	1.377*	1.101
West Chester	0.994***	0.991	1.392	1.003		1.053	0.953	1.411***	2.166***	1.816***
<b>Co-location Model</b>	<b>1.000</b>	<b>0.990***</b>	<b>1.290</b>	<b>1.003</b>		<b>1.133**</b>	<b>1.023</b>	<b>1.257***</b>	<b>1.854***</b>	<b>1.518***</b>
Corpus Christi	1.000	0.987**	1.145	1.004	1.681***	1.260***	0.998	0.915	1.258**	1.955**
Evansville	1.001	0.996	1.986	0.998		1.019	1.033	1.337***	1.766***	1.427***
Lexington	1.003**	0.990*	1.756	0.999		0.761**	1.012	1.325***	2.198***	0.000
Miami	0.999	1.001	2.728*	0.989	1.783***	1.346***	1.032	0.787**	1.186*	2.024***
Orlando	0.999*	0.991***	1.397	1.001	2.322***	1.047	1.122***	0.998	1.533***	2.456***
<b>Application Model</b>	<b>1.000</b>	<b>0.992***</b>	<b>1.549***</b>	<b>1.000</b>	<b>2.079***</b>	<b>1.113***</b>	<b>1.063</b>	<b>1.049</b>	<b>1.536***</b>	<b>1.994***</b>
<b>Total</b>	<b>1.000</b>	<b>0.992***</b>	<b>1.671***</b>	<b>0.999</b>	<b>2.273***</b>	<b>1.146***</b>	<b>1.045**</b>	<b>1.122***</b>	<b>1.638***</b>	<b>1.896***</b>

<sup>a/</sup> Title II income is equal to the sum of couple's Title II income and is expressed as a percentage of 135 percent of the poverty guideline.

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record and screener and Group Health Plan data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guideline.

**APPENDIX B:  
ODDS OF ENROLLING**

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**Exhibit B.1** presents the odds of enrolling among those mailed letters by site and model. **Exhibit B.2** presents the odds of enrolling among those who were screened potentially eligible. When the probability of enrolling was estimated by model, the coefficients for “Title II”, “Age”, “Disabled”, “Disabled x Age”, and “Widow(er)” retained their significance in all three models. “Non-white” and “Medicare+Choice” were significant in the co-location and application models, and “Married” and “Female” were significant in the application model. “Age” became significantly and negatively related to the odds of enrolling in the co-location model. When the probability of enrolling among potentially eligible was estimated by model, most coefficients lost their significance.

“Disabled”, “Widow(er)”, “Non-white”, and “Medicare+Choice” were significantly and positively related to the odds of enrolling in all three models. “Disabled x Age” was significantly and negatively related to the odds of enrolling in all three models. “Age” was significantly and positively related to the odds of enrolling in the screening and application models, and significantly and negatively related to the odds of enrolling in the co-location model.

When the probability of enrolling was estimated by site, the coefficients for “Title II”, “Age”, “Disabled”, “Disabled x Age”, “Widow(er)”, “Non-white”, and “Medicare+Choice” retained their significance for at least half of the sites. Spanish language preference retained its significance in all sites.

“Spanish language preference” was not included in the probability of enrolling in all models and sites, because most sites had very few intended letter recipients with Spanish language preference and even fewer of them enrolled. We included this variable in the overall regression and in sites and models where there was a large population with Spanish language preference. These sites are Miami, Orlando, and Corpus Christi. All three of these sites are application model sites; therefore “Spanish language preference” was only included in the probability of enrolling in the application model. “Spanish language preference” was significantly and positively related to the odds of being enrolled in Corpus Christi, Orlando, and Miami and in the application model and overall. Overall, the odds of being enrolled for intended letter recipients with Spanish language preference were twice as high as intended letter recipients without Spanish language preference. This was also the case for being screened.

**Exhibit B.1**  
**Odds of Enrolling by Site and Model**

	Title II	Age	Disabled	Disabled x Age	Spanish Preference	Married	Female	Widow(er)	Non-White	Medicare+ Choice
Carlisle	0.997	1.020*	181.334***	0.943***		1.041	0.970	1.560***	1.700*	1.511**
Lebanon	0.989***	1.093***	11129.672***	0.902***		0.873	1.341**	1.410**	0.404	0.740
<b>Screening Model</b>	<b>0.994***</b>	<b>1.059***</b>	<b>1504.988***</b>	<b>0.921***</b>		<b>0.937</b>	<b>1.160</b>	<b>1.432***</b>	<b>1.101</b>	<b>1.096</b>
Muskogee	0.994***	0.977***	2.211	0.996		0.926	0.936	1.908***	1.816***	1.246
Oklahoma City	0.998	0.981***	8.834***	0.981**		0.867	1.074	2.053***	2.192	1.834***
Uniontown	0.988***	0.989	6.011**	0.985		1.623***	0.958	1.179	1.009***	0.760**
West Chester	0.988***	1.005	37.204***	0.962***		0.674	0.837	1.921***	1.998***	1.656***
<b>Co-location Model</b>	<b>0.994***</b>	<b>0.984***</b>	<b>6.956**</b>	<b>0.984***</b>		<b>1.086</b>	<b>0.938</b>	<b>1.837***</b>	<b>1.835***</b>	<b>1.255***</b>
Corpus Christi	0.996***	0.981***	2.336*	0.996	2.054***	1.259***	0.916	1.479***	1.194*	1.784***
Evansville	0.991***	1.032***	129.341***	0.946***		1.170	1.179	1.411***	1.949***	1.134
Lexington	0.998	1.017**	35.297***	0.963***		0.672**	1.059	1.776***	2.023***	0.337
Miami	0.992***	0.990	4.321**	0.984*	1.408***	1.588***	0.861*	1.713***	1.395***	1.266***
Orlando	0.992***	1.023***	47.922***	0.956***	0.743***	0.885	0.992	1.446***	1.428***	1.891***
<b>Application Model</b>	<b>0.993***</b>	<b>1.010***</b>	<b>17.908***</b>	<b>0.969***</b>	<b>1.870***</b>	<b>1.142***</b>	<b>0.949***</b>	<b>1.583***</b>	<b>1.403***</b>	<b>1.548***</b>
<b>Total</b>	<b>0.993***</b>	<b>1.007***</b>	<b>20.646***</b>	<b>0.968***</b>	<b>2.119***</b>	<b>1.113***</b>	<b>0.956***</b>	<b>1.632***</b>	<b>1.546***</b>	<b>1.530***</b>

<sup>a/</sup> Title II is equal to the sum of couple's Title II income for couples and is expressed as a percentage of 135 percent of the poverty guideline. Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan and Third Party Billing Record data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

**Exhibit B.2**  
**Odds of Enrolling among Potentially Eligible by Site and Model**

	Title II	Age	Disabled	Disabled x Age	Spanish Preference	Married	Female	Widow(er)	Non-White	Medicare+ Choice
Carlisle	0.998	1.000	5.748	0.977		1.089	1.212	1.052	1.228	0.949
Lebanon	1.011*	1.009	11.131	0.978		0.650	1.504	1.075	0.000	0.814
<b>Screening Model</b>	1.003	1.002	6.174	0.980		0.934	1.352	1.034	0.688	0.900
Muskogee	1.002	0.984	0.277	1.019		0.704	0.813	1.110	1.855	0.691
Oklahoma City	1.007**	0.965***	0.557	1.011		1.179	1.029	1.214	1.002	1.168
Uniontown	0.993	1.001	2.119	0.997		1.197	0.814	0.710	0.481	0.697
West Chester	0.998	0.967**	0.202	1.020		0.571	0.979	1.265	0.842	1.351
<b>Co-location Model</b>	1.002	0.977***	0.514	1.011		1.010	0.883	1.137	0.996	1.043
Corpus Christi	1.005*	0.952***	0.059***	1.040***	1.209	0.791	0.773*	1.407	0.847*	1.443***
Evansville	0.999	0.994	0.711	1.005		0.770	0.761	1.151	1.601	1.417*
Lexington	1.001	1.017	2.675	0.994		0.732	1.128	0.983	1.138	1.000
Miami	1.005	0.997	1.055	0.999	1.085	1.018	1.253	1.525	1.010	1.010
Orlando	0.997*	1.017**	4.053**	0.982**	0.336***	0.679***	0.916	1.068	0.682***	1.158*
<b>Application Model</b>	1.000	1.001	1.272	0.998	0.962	0.877	0.887*	1.144*	0.780***	1.156***
<b>Total</b>	1.000	0.993*	1.007	1.001	1.044	0.913	0.907*	1.124**	0.861***	1.196***

a/ Title II income is equal to the sum of couple's Title II income for couples and is expressed as a percentage of 135 percent of the poverty guideline.

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener and Third Party Billing Record data for SSA letter-targeted individuals with Title II income less than 135 percent of the poverty guidelines.

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**APPENDIX C:  
DIFFERENCE-IN-DIFFERENCE ANALYSIS RESULTS**

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This appendix provides the underlying data for the adjusted selected comparison DID analysis. **Exhibit C.1** shows that the demonstration sites and the selected comparison areas differ on most characteristics. A "true" means that the characteristics do not differ while a "false" means that the characteristics do differ. **Exhibit C.2** provides the parameter estimates for each site for the selected comparison logistic regressions. The rank of the standardized estimates is an indicator of the effect of the right hand side variable on the predicted enrollment with the largest impact having a value of 1 and the smallest a value of 9. Finally, **Exhibit C.3** presents the resulting data for the DID estimates.

**Exhibit C.1**  
**Means and T-statistics for Characteristics of Demonstration**  
**and Non-demonstration Sample Population**

Variable	Demonstration	Select Comparison Area	T-Statistic <sup>55</sup>	P-value for equal means	No Significant Difference Between Characteristics of Comparison and Demonstration Groups
<b>Evansville</b>					
Age	70.9	70.7	1.0513	0.2931	TRUE
Title II	95.4	97.7	-5.6820	0.0000*	FALSE
Female	65.3	64.2	1.8820	0.0599**	TRUE
Non-white	8.8	7.6	3.4540	0.0006*	FALSE
Married	8.0	10.6	-7.5340	0.0000*	FALSE
Disabled	36.5	37.5	-1.8280	0.0675**	TRUE
Medicare+Choice	10.4	0.1	33.6430	0.0000*	FALSE
Widow(er)	30.3	30.8	-0.9230	0.3562	TRUE
<b>Miami</b>					
Age	71.1	70.5	4.9753	0.0000*	FALSE
Title II	77.1	81.0	-12.9479	0.0000*	FALSE
Female	52.7	54.9	-4.3660	0.0000*	FALSE
Non-white	17.5	11.5	17.2050	0.0000*	FALSE
Married	13.6	16.5	-7.7550	0.0000*	FALSE
Disabled	25.9	21.5	10.2610	0.0000*	FALSE
Medicare+Choice	43.4	56.5	-25.6210	0.0000*	FALSE
Widow(er)	14.9	14.7	0.7700	0.4411	TRUE
<b>Orlando</b>					
Age	69.9	72.9	-34.4642	0.0000*	FALSE
Title II	92.4	95.8	-17.2812	0.0000*	FALSE
Female	61.1	63.7	-8.3380	0.0000*	FALSE
Non-white	18.7	17.3	5.5740	0.0000*	FALSE
Married	12.6	10.1	11.8960	0.0000*	FALSE
Disabled	34.2	27.9	20.5250	0.0000*	FALSE
Medicare+Choice	41.0	47.8	-21.0730	0.0000*	FALSE
Widow(er)	23.6	26.7	19.5310	0.0000*	FALSE
<b>Lexington</b>					
Age	70.0	70.3	-2.2660	0.0235*	FALSE
Title II	87.7	93.2	-20.0153	0.0000*	FALSE
Female	64.6	64.7	-0.1000	0.9203	TRUE
Non-white	18.4	19.9	-4.4620	0.0000*	FALSE
Married	9.9	9.2	2.7520	0.0059*	FALSE
Disabled	35.7	37.2	-3.8910	0.0001*	FALSE
Medicare+Choice	0.3	11.4	-46.2400	0.0000*	FALSE
Widow(er)	26.3	28.6	-6.0410	0.0000*	FALSE

<sup>55</sup> A t statistic is given for the age and income variables. For the other variables, the z-value is reported.

**Exhibit C.1 (cont.)**  
**Means and T-statistics for Characteristics of Demonstration**  
**and Non-demonstration Sample Populations**

Variable	Demonstration	Select Comparison Area	T-Statistic <sup>56</sup>	P-value for equal means	No Significant Difference Between Characteristics of Comparison and Demonstration Groups
<b>Muskogee</b>					
Age	71.4	72.8	-7.8150	0.0000*	FALSE
Title II	87.2	87.2	0.0111	0.9911	TRUE
Female	58.3	62.3	-5.8030	0.0000*	FALSE
Non-white	13.3	10.6	5.6500	0.0000*	FALSE
Married	16.2	14.6	3.1910	0.0014*	FALSE
Disabled	35.4	30.4	7.3970	0.0000*	FALSE
Medicare+Choice	4.9	3.9	3.2820	0.0010*	FALSE
Widow(er)	25.7	28.7	-4.7230	0.0000*	FALSE
<b>Oklahoma City</b>					
Age	71.7	70.6	7.4726	0.0000*	FALSE
Title II	89.2	88.2	2.2547	0.0242*	FALSE
Female	64.0	60.1	6.4580	0.0000*	FALSE
Non-white	17.8	18.8	-2.1210	0.0339*	FALSE
Married	11.5	18.7	-17.1660	0.0000*	FALSE
Disabled	28.1	30.3	-3.9100	0.0001*	FALSE
Medicare+Choice	13.6	9.5	9.7870	0.0000*	FALSE
Widow(er)	25.3	27.3	-3.5830	0.0003*	FALSE
<b>West Chester</b>					
Age	72.4	73.1	-6.5454	0.0000*	FALSE
Title II	97.9	99.3	-5.5517	0.0000*	FALSE
Female	67.6	68.7	-2.8990	0.0037*	FALSE
Non-white	11.2	8.6	11.1470	0.0000*	FALSE
Married	9.0	8.2	3.2470	0.0012*	FALSE
Disabled	29.1	27.8	3.4620	0.0005*	FALSE
Medicare+Choice	29.0	36.4	-19.5280	0.0000*	FALSE
Widow(er)	29.7	30.1	-1.2420	0.2144	TRUE
<b>Lebanon</b>					
Age	73.0	70.5	14.7414	0.0000*	FALSE
Title II	97.5	96.9	1.3825	0.1668	TRUE
Female	63.3	61.8	2.3430	0.0191*	FALSE
Non-white	1.7	4.8	-13.3720	0.0000*	FALSE
Married	10.8	10.2	1.6210	0.1050	TRUE
Disabled	25.8	31.3	-9.3380	0.0000*	FALSE
Medicare+Choice	12.9	10.3	6.1500	0.0000*	FALSE
Widow(er)	27.8	25.0	4.8730	0.0000*	FALSE

<sup>56</sup> A t-statistic is given for the age and income variables. For the other variables, the z-value is reported.

**Exhibit C.1 (cont.)**  
**Means and T-statistics for Characteristics of Demonstration**  
**and Non-demonstration Sample Populations**

Variable	Demonstration	Select Comparison Area	T-Statistic <sup>57</sup>	P-value for equal means	No Significant Difference Between Characteristics of Comparison and Demonstration Groups
<b>Uniontown</b>					
Age	71.8	73.3	-8.9190	0.0000*	FALSE
Title II	91.6	92.9	-3.0328	0.0024*	FALSE
Female	61.2	60.3	1.3800	0.1677	TRUE
Non-white	4.8	1.0	17.0210	0.0000*	FALSE
Married	14.5	18.2	-7.9090	0.0000*	FALSE
Disabled	39.0	32.9	9.9170	0.0000*	FALSE
Medicare+Choice	21.7	31.4	-17.3070	0.0000*	FALSE
Widow(er)	32.2	31.0	2.0370	0.0417*	FALSE
<b>Corpus Christi</b>					
Age	70.5	70.6	-0.3824	0.7022	TRUE
Title II	84.3	85.7	-2.9048	0.0037*	FALSE
Female	58.3	55.8	3.4610	0.0005*	FALSE
Non-white	10.5	6.9	8.2350	0.0000*	FALSE
Married	19.1	23.0	-6.7640	0.0000*	FALSE
Disabled	33.6	33.9	-0.3180	0.7503	TRUE
Medicare+Choice	29.5	29.1	0.5700	0.5688	TRUE
Widow(er)	26.2	27.1	-1.4580	0.1448	TRUE
<b>Carlisle</b>					
Age	73.0	72.1	7.6736	0.0000*	FALSE
Title II	93.1	98.1	-17.6688	0.0000*	FALSE
Female	64.1	66.9	-6.5000	0.0000*	FALSE
Non-white	2.5	4.3	-10.6350	0.0000*	FALSE
Married	13.8	9.0	17.1880	0.0000*	FALSE
Disabled	24.0	30.2	-14.9490	0.0000*	FALSE
Medicare+Choice	11.4	35.9	-58.7200	0.0000*	FALSE
Widow(er)	26.7	29.7	-7.2430	0.0000*	FALSE

Statistical significance levels are indicated as \* = 5 percent; \*\* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, Group Health Plan, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

<sup>57</sup> A t-statistic is given for the age and income variables. For the other variables, the z-value is reported.

**Exhibit C.2**  
**Multivariate Logistic Regression Results Using**  
**Non-Demonstration Site Data (Selected Comparison Area)**

Variable	Parameter Estimate	P-value	Standardized Estimate	Rank of Standardized Estimate
<b>Evansville</b>				
Female	-0.027	0.0001	-0.0725	6
Non-white	-0.360	0.0001	-0.0526	8
Married	-0.045	0.6826	-0.0076	9
Disabled	-6.031	0.0001	-1.6102	1
Age	-0.033	0.0001	-0.2619	3
Disabled x Age	0.068	0.0001	1.1963	2
Medicare+Choice	11.689	0.9610	0.2425	4
Widow(er)	-0.236	0.0011	-0.0599	7
Title II	0.014	0.0001	0.2378	5
<b>Miami</b>				
Female	-0.144	0.0001	-0.0395	9
Non-white	0.723	0.0001	0.1271	7
Married	-0.755	0.0001	-0.1543	6
Disabled	-4.445	0.0001	-1.0058	1
Age	-0.043	0.0001	-0.2417	5
Disabled x Age	0.054	0.0001	0.7846	2
Medicare+Choice	1.401	0.0001	0.3829	4
Widow(er)	-0.308	0.0001	-0.0600	8
Title II	0.030	0.0001	0.4668	3
<b>Orlando</b>				
Female	-0.335	0.0001	-0.0887	6
Non-white	-1.023	0.0001	-0.2135	5
Married	0.125	0.0854	-0.0208	8
Disabled	-5.666	0.0001	-1.4016	1
Age	-0.036	0.0001	-0.2540	4
Disabled x Age	0.065	0.0001	1.1000	2
Medicare+Choice	0.166	0.0001	0.0456	7
Widow(er)	-0.031	0.5107	-0.0075	9
Title II	0.018	0.0001	0.2911	3
<b>Lexington</b>				
Female	-0.601	0.0001	-0.1584	6
Non-white	-0.843	0.0001	-0.1855	4
Married	0.261	0.0001	0.0416	9
Disabled	-5.472	0.0001	-1.4467	1
Age	-0.022	0.0001	-0.1771	5
Disabled x Age	0.062	0.0001	1.0743	2
Medicare+Choice	0.697	0.0001	0.1221	7
Widow(er)	-0.196	0.0001	-0.0489	8
Title II	0.021	0.0001	0.3801	3

**Exhibit C.2 (cont.)**  
**Multivariate Logistic Regression Results Using**  
**Non-Demonstration Site Data (Selected Comparison Area)**

Variable	Parameter Estimate	P-value	Standardized Estimate	Rank of Standardized Estimate
<b>Muskogee</b>				
Female	-0.540	0.0001	-0.1443	6
Non-white	-0.914	0.0001	-0.1552	5
Married	-0.225	0.0682	-0.0437	9
Disabled	-5.524	0.0001	-1.4007	1
Age	-0.025	0.0001	-0.1780	4
Disabled x Age	0.061	0.0001	1.0671	2
Medicare+Choice	0.697	0.0042	0.0745	7
Widow(er)	-0.263	0.0039	-0.0655	8
Title II	0.018	0.0001	0.3233	3
<b>Oklahoma City</b>				
Female	-0.437	0.0001	-0.1180	7
Non-white	-0.715	0.0001	-0.1539	6
Married	0.515	0.0004	0.1106	8
Disabled	-5.959	0.0001	-1.5039	1
Age	-0.042	0.0001	-0.2900	5
Disabled x Age	0.068	0.0001	1.1198	2
Medicare+Choice	2.378	0.0001	0.3841	3
Widow(er)	-0.010	0.9162	-0.0025	9
Title II	0.017	0.0001	0.2958	4
<b>West Chester</b>				
Female	-0.312	0.0001	-0.0798	7
Non-white	-0.841	0.0001	-0.1301	6
Married	0.128	0.1576	0.0193	8
Disabled	-6.733	0.0001	-1.6636	1
Age	-0.025	0.0001	-0.1762	5
Disabled x Age	0.075	0.0001	1.2520	2
Medicare+Choice	0.847	0.0001	0.2246	4
Widow(er)	-0.627	0.2010	-0.0159	9
Title II	0.016	0.0001	0.2780	3
<b>Lebanon</b>				
Female	-0.084	0.2449	-0.0225	9
Non-white	-0.537	0.0001	-0.0631	7
Married	0.211	0.1225	0.0353	8
Disabled	-6.326	0.0001	-1.6171	1
Age	-0.287	0.0001	-0.2075	4
Disabled x Age	0.071	0.0001	1.1683	2
Medicare+Choice	0.501	0.0004	0.0839	6
Widow(er)	-0.435	0.0001	-0.1039	5
Title II	0.017	0.0001	0.2899	3



**Exhibit C.2 (cont.)**  
**Multivariate Logistic Regression Results Using**  
**Non-Demonstration Site Data (Selected Comparison Area)**

Variable	Parameter Estimate	P-value	Standardized Estimate	Rank of Standardized Estimate
<b>Uniontown</b>				
Female	-0.292	0.0001	-0.0787	6
Non-white	-0.398	0.1141	-0.0220	8
Married	-0.221	0.0312	-0.0469	7
Disabled	-5.337	0.0001	-1.3829	1
Age	-0.001	0.8545	-0.0060	9
Disabled x Age	0.064	0.0001	1.1859	2
Medicare+Choice	1.457	0.0001	0.3728	3
Widow(er)	-0.386	0.0001	-0.0984	5
Title II	0.019	0.0001	0.3332	4
<b>Corpus Christi</b>				
Female	-0.300	0.0001	-0.0823	6
Non-white	-0.414	0.0005	-0.0578	8
Married	-0.866	0.0001	-0.2009	4
Disabled	-2.496	0.0001	-0.6513	1
Age	-0.007	0.1950	-0.0477	9
Disabled x Age	0.024	0.0001	0.4205	3
Medicare+Choice	0.695	0.0001	0.1742	5
Widow(er)	-0.239	0.0100	-0.0585	7
Title II	0.024	0.0001	0.4292	2
<b>Carlisle</b>				
Female	-0.215	0.0001	-0.0557	8
Non-white	-0.527	0.0001	-0.0590	6
Married	0.008	0.9191	0.0013	9
Disabled	-6.437	0.0001	-1.6291	1
Age	-0.025	0.0001	0.1837	5
Disabled x Age	0.073	0.0001	1.2382	2
Medicare+Choice	0.838	0.0001	0.2216	4
Widow(er)	-0.227	0.0001	-0.0572	7
Title II	0.016	0.0001	0.2716	3

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

**Exhibit C.3**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**

	Demonstration Area		Adjusted Select Comparison Area		Demonstration Area	Adjusted Select Comparison Area	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Screening Model</b>								
<b>Carlisle</b>								
4/98 - 4/99	8.0	9.9	8.0	9.8	2.0	1.8	10.0	0.2***
5/98 - 5/99	8.2	10.2	8.1	9.8	2.0	1.7	18.6	0.3***
6/98 - 6/99	8.3	10.5	8.2	9.8	2.2	1.6	36.3	0.6***
7/98 - 7/99	8.5	10.8	8.3	9.8	2.3	1.5	52.0	0.8***
8/98 - 8/99	8.7	10.8	8.6	9.8	2.1	1.2	70.8	0.9***
9/98 - 9/99	8.8	10.8	8.7	9.8	1.9	1.1	72.5	0.8***
10/98 - 10/99	9.0	10.7	8.9	9.8	1.7	0.9	88.7	0.8***
11/98 - 11/99	9.1	10.6	9.0	9.8	1.6	0.7	114.1	0.8***
12/98 - 12/99	9.2	10.6	9.2	9.7	1.3	0.5	143.1	0.8***
<b>Lebanon</b>								
4/98 - 4/99	7.9	9.4	8.2	10.6	1.5	2.4	-36.8	-0.9***
5/98 - 5/99	8.0	9.7	8.4	10.7	1.7	2.3	-27.7	-0.6***
6/98 - 6/99	8.1	9.9	8.7	10.7	1.8	1.9	-8.6	-0.2***
7/98 - 7/99	8.2	10.4	9.1	10.7	2.2	1.6	41.1	0.7***
8/98 - 8/99	8.4	10.8	9.2	10.6	2.4	1.4	71.4	1.0***
9/98 - 9/99	8.5	11.1	9.4	10.6	2.5	1.2	105.5	1.3***
10/98 - 10/99	8.8	11.2	9.6	10.6	2.4	1.0	142.0	1.4***
11/98 - 11/99	8.8	11.0	9.7	10.5	2.2	0.7	192.5	1.4***
12/98 - 12/99	8.9	10.9	9.8	10.5	2.0	0.6	208.6	1.4***
<b>Co-location Model</b>								
<b>Muskogee</b>								
4/98 - 4/99	17.2	20.6	16.4	18.8	3.4	2.4	44.6	1.0***
5/98 - 5/99	17.4	21.0	16.5	18.8	3.6	2.3	54.9	1.3***
6/98 - 6/99	17.6	21.2	16.8	18.8	3.7	2.0	80.9	1.6***
7/98 - 7/99	17.7	21.3	17.1	18.8	3.6	1.8	105.2	1.9***
8/98 - 8/99	18.0	21.4	17.2	18.7	3.4	1.5	131.3	1.9***
9/98 - 9/99	18.2	21.3	17.6	18.5	3.1	0.8	267.2	2.2***
10/98 - 10/99	18.5	21.2	17.8	18.4	2.7	0.6	384.1	2.2***
11/98 - 11/99	18.7	21.2	18.0	18.3	2.4	0.3	593.4	2.1***
12/98 - 12/99	19.0	21.0	18.1	18.2	2.0	0.1	2363.4	1.9***

**Exhibit C.3 (cont.)**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**

	Demonstration Area		Adjusted Select Comparison Area		Demonstration Area	Adjusted Select Comparison Area	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Oklahoma</b>								
4/98 - 4/99	9.6	11.9	10.8	12.9	2.4	2.1	13.6	0.3***
5/98 - 5/99	9.6	11.9	10.9	13.0	2.3	2.1	6.4	0.1***
6/98 - 6/99	9.8	12.0	11.1	13.1	2.2	2.0	13.1	0.3***
7/98 - 7/99	9.9	12.1	11.3	13.2	2.2	1.9	13.2	0.3***
8/98 - 8/99	10.0	12.1	11.5	13.1	2.1	1.6	27.3	0.4***
9/98 - 9/99	10.2	12.1	11.7	13.0	1.9	1.3	43.7	0.6***
10/98 - 10/99	10.4	12.1	11.9	13.0	1.7	1.1	56.2	0.6***
11/98 - 11/99	10.5	12.0	12.1	12.9	1.5	0.8	77.3	0.6***
12/98 - 12/99	10.7	11.9	12.2	13.0	1.2	0.7	60.2	0.5***
<b>Uniontown</b>								
4/98 - 4/99	18.6	20.6	15.5	17.7	2.0	2.2	-9.2	-0.2***
5/98 - 5/99	18.7	20.9	15.7	17.8	2.3	2.1	7.3	0.2***
6/98 - 6/99	18.8	21.3	15.8	17.9	2.5	2.1	19.3	0.4***
7/98 - 7/99	18.9	21.4	16.0	17.8	2.6	1.9	39.2	0.7***
8/98 - 8/99	19.1	21.6	16.2	17.8	2.4	1.6	49.8	0.8***
9/98 - 9/99	19.3	21.7	16.5	17.8	2.3	1.3	75.3	1.0***
10/98 - 10/99	19.5	21.7	16.7	17.8	2.2	1.1	95.0	1.1***
11/98 - 11/99	19.7	21.6	16.8	17.6	1.9	0.8	133.9	1.1***
12/98 - 12/99	19.8	21.5	16.9	17.6	1.7	0.7	137.7	1.0***
<b>West Chester</b>								
4/98 - 4/99	8.5	10.9	7.7	9.1	2.4	1.4	75.7	1.0***
5/98 - 5/99	8.6	11.0	7.8	9.1	2.4	1.4	73.3	1.0***
6/98 - 6/99	8.7	11.1	7.9	9.2	2.4	1.3	91.0	1.2***
7/98 - 7/99	8.9	11.3	8.1	9.2	2.5	1.2	109.8	1.3***
8/98 - 8/99	9.3	11.5	8.3	9.2	2.2	1.0	131.1	1.2***
9/98 - 9/99	9.5	11.7	8.4	9.3	2.2	0.9	136.8	1.2***
10/98 - 10/99	9.8	11.7	8.5	9.3	1.9	0.8	135.4	1.1***
11/98 - 11/99	10.0	11.6	8.5	9.2	1.6	0.7	138.9	0.9***
12/98 - 12/99	10.4	11.5	8.6	9.2	1.1	0.6	78.3	0.5***

**Exhibit C.3 (cont.)**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**

	Demonstration Area		Adjusted Select Comparison Area		Demonstration Area	Adjusted Select Comparison Area	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Application Model</b>								
<b>Corpus Christi</b>								
4/98 - 4/99	21.1	24.4	26.2	28.2	3.3	2.0	64.3	1.3***
5/98 - 5/99	21.3	25.0	26.2	28.6	3.8	2.3	60.8	1.4***
6/98 - 6/99	21.4	25.4	26.3	28.7	4.0	2.4	62.5	1.5***
7/98 - 7/99	21.5	25.9	26.4	28.7	4.4	2.3	87.5	2.0***
8/98 - 8/99	21.7	26.1	26.5	28.8	4.4	2.3	91.9	2.1***
9/98 - 9/99	21.9	26.1	26.8	28.7	4.3	1.9	126.9	2.4***
10/98 - 10/99	22.1	26.3	27.0	28.6	4.2	1.6	163.3	2.6***
11/98 - 11/99	22.2	26.1	27.2	28.3	3.9	1.2	235.6	2.7***
12/98 - 12/99	22.4	26.0	27.3	28.0	3.6	0.7	411.4	2.9***
<b>Evansville</b>								
4/98 - 4/99	16.1	19.0	15.4	17.2	2.8	1.8	56.1	1.0***
5/98 - 5/99	16.1	19.5	15.5	17.4	3.4	1.9	78.4	1.5***
6/98 - 6/99	16.3	19.7	15.6	17.4	3.4	1.8	89.4	1.6***
7/98 - 7/99	16.5	19.8	15.7	17.5	3.3	1.8	85.6	1.5***
8/98 - 8/99	16.8	19.9	15.9	17.6	3.1	1.7	84.1	1.4***
9/98 - 9/99	16.9	19.9	16.1	17.6	3.0	1.5	102.0	1.5***
10/98 - 10/99	17.1	19.8	16.4	17.4	2.7	1.0	165.0	1.7***
11/98 - 11/99	17.3	19.7	16.5	17.3	2.3	0.8	192.5	1.5***
12/98 - 12/99	17.6	19.5	16.6	17.3	1.9	0.7	177.1	1.2***
<b>Lexington</b>								
4/98 - 4/99	15.7	18.6	15.1	17.1	2.9	2.0	46.7	0.9***
5/98 - 5/99	15.9	19.0	15.2	17.2	3.0	2.0	53.5	1.1***
6/98 - 6/99	16.0	19.2	15.4	17.2	3.1	1.9	66.2	1.2***
7/98 - 7/99	16.1	19.4	15.5	17.3	3.3	1.8	83.4	1.5***
8/98 - 8/99	16.3	19.5	15.6	17.3	3.2	1.7	94.5	1.6***
9/98 - 9/99	16.5	19.7	15.8	17.2	3.2	1.4	121.8	1.8***
10/98 - 10/99	16.7	19.8	16.0	17.2	3.2	1.2	157.3	1.9***
11/98 - 11/99	16.9	19.7	16.2	17.2	2.8	1.0	187.7	1.9***
12/98 - 12/99	17.0	19.7	16.3	17.1	2.7	0.8	234.6	1.9***

**Exhibit C.3 (cont.)**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**

	Demonstration Area		Adjusted Select Comparison Area		Demonstration Area	Adjusted Select Comparison Area	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Miami</b>								
4/98 - 4/99	33.1	36.4	31.1	34.2	3.3	3.2	5.6	0.2***
5/98 - 5/99	33.4	37.2	31.4	34.6	3.8	3.2	20.3	0.6***
6/98 - 6/99	33.7	38.1	31.6	34.7	4.5	3.0	47.8	1.4***
7/98 - 7/99	34.0	38.6	32.0	34.8	4.6	2.8	63.6	1.8***
8/98 - 8/99	34.2	39.1	32.3	34.8	4.9	2.5	93.9	2.3***
9/98 - 9/99	34.4	39.2	32.4	34.7	4.8	2.3	105.5	2.4***
10/98 - 10/99	34.7	39.2	32.7	34.7	4.5	2.1	118.8	2.5***
11/98 - 11/99	35.0	39.2	32.9	34.6	4.2	1.7	147.2	2.5***
12/98 - 12/99	35.1	39.1	33.1	34.5	4.0	1.4	183.9	2.6***
<b>Orlando</b>								
4/98 - 4/99	12.3	13.9	11.9	14.1	1.6	2.2	-29.8	-0.7***
5/98 - 5/99	12.5	14.4	12.1	14.3	2.0	2.3	-13.7	-0.3***
6/98 - 6/99	12.6	14.8	12.2	14.4	2.2	2.1	3.5	0.1***
7/98 - 7/99	12.7	15.0	12.4	14.4	2.3	1.9	18.8	0.4***
8/98 - 8/99	12.9	15.2	12.7	14.4	2.4	1.7	40.0	0.7***
9/98 - 9/99	13.0	15.3	12.8	14.3	2.3	1.5	52.4	0.8***
10/98 - 10/99	13.1	15.4	13.0	14.2	2.3	1.2	86.7	1.1***
11/98 - 11/99	13.2	15.2	13.2	14.1	2.1	1.0	114.5	1.1***
12/98 - 12/99	13.3	15.1	13.4	14.0	1.8	0.7	176.6	1.2***

Statistical significance levels are indicated as \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record, screener, and Third Party Billing Record data for individuals with Title II income less than 135 percent of the poverty guidelines and Medicare Part A.

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**APPENDIX D:  
LOGISTIC REGRESSION DIAGNOSTICS**

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We conducted three diagnostic checks on the estimated models to ensure that the final model used in the analysis was correctly specified. We present an overview of the diagnostics below.

### **1. Test of goodness of fit**

We used the deviance chi-square and Pearson chi-square to determine the fitness of the models. A test for comparing the fitted model to the saturated model suggests that the fitted model is adequate. Also the Akaike information criterion (AIC) and Schwartz criterion were used to compare different models, such as the intercept-only and fitted models. The test statistics indicate that the fitted linear logistic models are in fact correct. These statistics take into account the number of explanatory variables in the model and thus give a better idea of how the strength of the association between the observed and fitted probabilities changes as variables are added or deleted from the model. The measures of association between the predicted and observed events also provide information on how good the fit is. Generally, the larger the value of the measure of association, the closer the agreement between the observed and predicted events.

### **2. Outliers**

Outliers may have a strong influence over the fitted coefficients, giving a poor fit to the bulk of the data observations. This may lead to the conclusion that the logistic model is incorrect, when in fact it fits most of the data well. Also, if outliers are present in the data, then the logistic goodness of fit test may not be the most powerful. Once the logistic model has been fitted, we used the boxplot on the standardized deviance residuals to check for outliers in the data. We found one outlier in the Title II income in the pre-comparison area and removed it from that data set.

### **3. Test for Multicollinearity**

Multicollinearity may not be so serious a problem if the purpose of fitting the regression equation is predicting the probability of enrollment in the range of the explanatory variables. However, it becomes a problem if the objective is to model the linear relationship between the explanatory variables and estimating the values of the individual coefficients as was done in the study. Thus we tested for multicollinearity by noting that: (i) the regression coefficients did not change drastically when an explanatory variable was added or deleted; (ii) all the explanatory variables have significant Wald test statistic and the overall chi-square test for fit is also significant; and (iii) the regression coefficient was positive when theoretically the log odds was expected to increase with increasing values of that variable (e.g., disability), or the regression coefficient is negative when theoretically the log odds should decrease with increasing values of that variable (e.g., income).

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**APPENDIX E:  
COMPARISON OF RESULTS BASED ON ALTERNATIVE  
COMPARISON GROUPS AND METHODS**

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As indicated in Chapter 5, we pursued a number of different comparison groups to test the robustness of the results. In this appendix, we outline the adjustment methods used in developing the difference-in difference estimates. We used two alternative methods: 1) the Blinder-Oaxaca technique and 2) propensity scores. The propensity score methodology was applied only for Miami.

## I. BLINDER-OAXACA TECHNIQUE

The Blinder-Oaxaca approach was used to examine the differences in enrollment rates between the comparison and demonstration sites. This approach was chosen in order to hold constant differences in individual characteristics that might have an effect on the probability of enrolling. The Blinder-Oaxaca technique allows the decomposition of differences in the enrollment rate due to the “unexplained” factors versus individual characteristics. To determine whether the differences in enrollment is consistent with demonstration or individual characteristics, it must be shown that there is significant difference in enrollment between comparison and demonstration sites, even after holding constant the characteristics of the two sites. A variant of the Blinder-Oaxaca decomposition uses the coefficients in the logistic regressions for the comparison site applied to the individual characteristics of the demonstration site in order isolate the enrollment differences between the comparison and demonstration sites for reasons other than the individual characteristics available for the analysis.

In general the methodology requires that we estimate two equations demonstration (demo) model and comparison model (comp) as shown in equations (1) and (2) respectively.

$$ER_{\text{demo}} = X_{\text{demo}} \beta_d \quad (1)$$

$$ER_{\text{comp}} = X_{\text{comp}} \beta_c \quad (2)$$

The decomposition is given by:

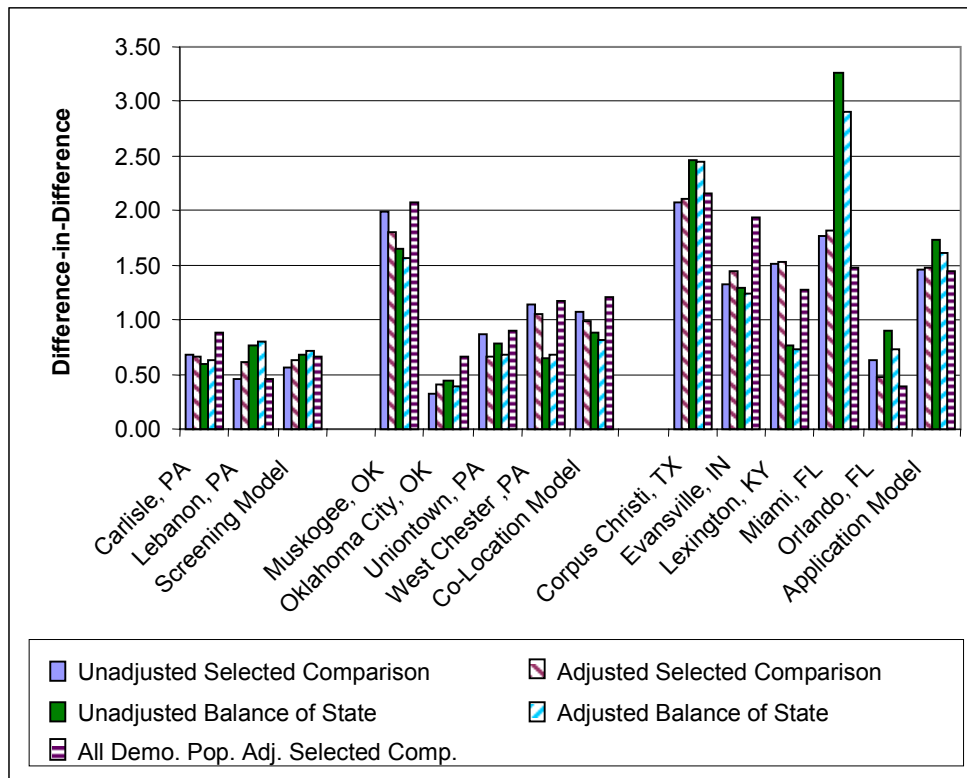
$$ER_{\text{comp}} - ER_{\text{demo}} = (X_{\text{comp}} - X_{\text{demo}}) (\beta_d + \beta_c) / 2 + (\beta_c - \beta_d) (X_{\text{comp}} + X_{\text{demo}}) / 2 \quad (3)$$

ER's are the enrollment rates for the sites  $\beta$  is a vector of the estimated coefficients and Xs are the independent variables. The first term on the right hand side calculates differences in enrollment due to characteristics between individuals in the demonstration and comparison sites. It is generally termed the explained portion. The last two terms measure the change in enrollment which cannot be explained and are termed unexplained portion. In our case,  $\beta_c = \beta_d$  because we use the coefficients from the comparison area applied to the demonstration population, therefore the second term drops out of the equation (3).

**Exhibit E.1** presents summary measures for each site and model based on unadjusted and adjusted estimates for the selected comparison areas and the balance of the state (**Exhibits E.2** and **E.3** provide the underlying data for the adjusted balance of state and all demonstration population DID analysis). The summary measure was the average of the DID for each site across the nine months examined in the two year period. The different comparison groups result in somewhat different results, however, for each of the comparison groups and methods, the DID results were always positive and the range of the differences were small. The DID ranged from:

- 0.63 to 2.08 for the unadjusted selected comparison area;
- 0.47 to 2.10 for the adjusted selected comparison area;
- 0.44 to 3.26 for the unadjusted balance of state;
- 0.38 to 2.90 for the adjusted balance of state; and
- 0.39 to 2.16 when the entire demonstration site population is used with the selected comparison areas.

**Exhibit E.1  
Summary Measure of the DID Estimates  
Using Alternative Comparison Groups by Site**



**Note:** The summary measure is the average for the difference-in-difference for the nine months of the demonstration.

**Source:** The Lewin Group analysis of matched Master Beneficiary Record and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare part A and 1990 Decennial Census data.

**Exhibit E.2**  
**Impact of Demonstration Percent Medicaid Buy-in Enrolled**  
**Among Letter Eligible by Month**  
**(Comparison is Adjusted Balance of State)**

	Demonstration Area		Adjusted Balance of State Comparison Area		Demonstration Area	Adjusted Balance of State Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Screening Model</b>								
<b>Carlisle</b>								
4/98 - 4/99	8.0	9.9	10.4	12.4	2.0	2.0	-3.5	-0.1
5/98 - 5/99	8.2	10.2	10.6	12.4	2.0	1.9	7.4	0.1
6/98 - 6/99	8.3	10.5	10.8	12.4	2.2	1.6	37.4	0.6
7/98 - 7/99	8.5	10.8	10.9	12.4	2.3	1.5	55.4	0.8
8/98 - 8/99	8.7	10.8	11.2	12.4	2.1	1.3	69.6	0.9
9/98 - 9/99	8.8	10.8	11.3	12.4	1.9	1.1	75.5	0.8
10/98 - 10/99	9.0	10.7	11.5	12.4	1.7	0.9	90.1	0.8
11/98 - 11/99	9.1	10.6	11.6	12.3	1.6	0.7	115.3	0.8
12/98 - 12/99	9.2	10.6	11.8	12.3	1.3	0.5	150.9	0.8
<b>Lebanon</b>								
4/98 - 4/99	7.9	9.4	10.0	12.0	1.5	2.0	-24.5	-0.5
5/98 - 5/99	8.0	9.7	10.2	12.0	1.7	1.9	-10.7	-0.2
6/98 - 6/99	8.1	9.9	10.3	12.0	1.8	1.7	6.6	0.1
7/98 - 7/99	8.2	10.4	10.5	12.0	2.2	1.5	52.4	0.8
8/98 - 8/99	8.4	10.8	10.8	12.0	2.4	1.3	92.0	1.2
9/98 - 9/99	8.5	11.1	10.9	12.0	2.5	1.1	132.1	1.4
10/98 - 10/99	8.8	11.2	11.1	12.0	2.4	0.9	167.8	1.5
11/98 - 11/99	8.8	11.0	11.2	11.9	2.2	0.7	202.8	1.4
12/98 - 12/99	8.9	10.9	11.4	11.9	2.0	0.5	270.4	1.5
<b>Co-location Model</b>								
<b>Muskogee</b>								
4/98 - 4/99	17.2	20.6	15.3	17.6	3.4	2.3	47.2	1.1
5/98 - 5/99	17.4	21.0	15.4	17.7	3.6	2.3	60.2	1.4
6/98 - 6/99	17.6	21.2	15.6	17.7	3.7	2.1	74.6	1.6
7/98 - 7/99	17.7	21.2	15.8	17.7	3.5	1.9	82.9	1.6
8/98 - 8/99	18.0	21.4	16.0	17.7	3.4	1.7	105.4	1.8
9/98 - 9/99	18.2	21.3	16.3	17.6	3.1	1.4	127.4	1.7
10/98 - 10/99	18.5	21.2	16.5	17.5	2.7	1.1	156.1	1.7
11/98 - 11/99	18.7	21.2	16.7	17.4	2.4	0.8	218.4	1.7
12/98 - 12/99	19.0	21.0	16.9	17.3	2.0	0.4	381.0	1.6

**Exhibit E.2 (cont.)**  
**Impact of Demonstration Percent Medicaid Buy-in Enrolled**  
**Among Letter Eligible by Month**  
**(Comparison is Adjusted Balance of State)**

	Demonstration Area		Adjusted Balance of State Comparison Area		Demonstration Area	Adjusted Balance of State Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Oklahoma City</b>								
4/98 - 4/99	9.6	11.6	14.0	16.2	2.0	2.2	-8.2	-0.2
5/98 - 5/99	9.6	11.9	14.1	16.2	2.3	2.2	3.7	0.1
6/98 - 6/99	9.8	12.0	14.3	16.3	2.2	2.0	10.4	0.2
7/98 - 7/99	9.9	12.1	14.4	16.3	2.2	1.9	15.0	0.3
8/98 - 8/99	10.0	12.1	14.6	16.3	2.1	1.6	26.8	0.4
9/98 - 9/99	10.2	12.1	14.9	16.2	1.9	1.3	43.3	0.6
10/98 - 10/99	10.4	12.1	15.1	16.1	1.7	1.1	58.3	0.6
11/98 - 11/99	10.5	12.0	15.3	16.0	1.5	0.8	88.5	0.7
12/98 - 12/99	10.7	11.9	15.5	15.9	1.2	0.5	150.0	0.7
<b>Uniontown</b>								
4/98 - 4/99	18.6	20.6	13.0	15.3	2.0	2.3	-12.7	-0.3
5/98 - 5/99	18.7	20.9	13.2	15.3	2.3	2.2	3.2	0.1
6/98 - 6/99	18.8	21.3	13.4	15.4	2.5	2.0	23.6	0.5
7/98 - 7/99	18.9	21.4	13.6	15.4	2.6	1.8	46.6	0.8
8/98 - 8/99	19.1	21.6	13.8	15.3	2.4	1.5	62.0	0.9
9/98 - 9/99	19.3	21.7	14.0	15.4	2.3	1.3	76.5	1.0
10/98 - 10/99	19.5	21.7	14.2	15.3	2.2	1.1	98.2	1.1
11/98 - 11/99	19.7	21.6	14.4	15.3	1.9	0.9	115.7	1.0
12/98 - 12/99	19.8	21.5	14.5	15.2	1.7	0.7	144.9	1.0
<b>West Chester</b>								
4/98 - 4/99	8.5	10.9	10.9	12.9	2.4	2.0	18.7	0.4
5/98 - 5/99	8.6	11.0	11.0	13.0	2.4	2.0	20.4	0.4
6/98 - 6/99	8.7	11.1	11.2	13.0	2.4	1.8	35.0	0.6
7/98 - 7/99	8.9	11.3	11.4	13.0	2.5	1.6	52.2	0.8
8/98 - 8/99	9.3	11.5	11.6	13.0	2.2	1.4	59.4	0.8
9/98 - 9/99	9.5	11.7	11.8	13.0	2.2	1.2	74.8	0.9
10/98 - 10/99	9.8	11.7	12.0	13.0	1.9	1.0	81.7	0.9
11/98 - 11/99	10.0	11.6	12.1	12.9	1.6	0.9	90.6	0.8
12/98 - 12/99	10.4	11.5	12.2	12.9	1.1	0.7	64.7	0.4



**Exhibit E.2 (cont.)**  
**Impact of Demonstration Percent Medicaid Buy-in Enrolled**  
**Among Letter Eligible by Month**  
**(Comparison is Adjusted Balance of State)**

	Demonstration Area		Adjusted Balance of State Comparison Area		Demonstration Area	Adjusted Balance of State Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Application Model</b>								
<b>Corpus Christi</b>								
4/98 - 4/99	21.1	24.4	17.5	19.5	3.3	2.0	61.3	1.3
5/98 - 5/99	21.3	25.0	17.6	19.6	3.8	2.0	85.6	1.7
6/98 - 6/99	21.4	25.4	17.8	19.7	4.0	1.9	103.6	2.0
7/98 - 7/99	21.5	25.9	17.9	19.8	4.4	1.9	136.2	2.5
8/98 - 8/99	21.7	26.1	18.1	19.7	4.4	1.7	162.0	2.7
9/98 - 9/99	21.9	26.1	18.3	19.7	4.3	1.4	203.6	2.9
10/98 - 10/99	22.1	26.3	18.4	19.6	4.2	1.2	249.6	3.0
11/98 - 11/99	22.2	26.1	18.6	19.5	3.9	0.9	337.1	3.0
12/98 - 12/99	22.4	26.0	18.7	19.4	3.6	0.6	459.4	2.9
<b>Evansville</b>								
4/98 - 4/99	16.1	19.0	12.9	15.0	2.8	2.1	34.4	0.7
5/98 - 5/99	16.1	19.5	13.0	15.2	3.4	2.2	54.1	1.2
6/98 - 6/99	16.3	19.7	13.1	15.3	3.4	2.2	55.7	1.2
7/98 - 7/99	16.5	19.8	13.2	15.3	3.3	2.1	60.6	1.3
8/98 - 8/99	16.8	19.9	13.5	15.3	3.1	1.8	72.9	1.3
9/98 - 9/99	16.9	19.9	13.7	15.3	3.0	1.6	94.2	1.5
10/98 - 10/99	17.1	19.8	13.9	15.2	2.7	1.3	107.0	1.4
11/98 - 11/99	17.3	19.7	14.1	15.1	2.3	1.0	136.4	1.4
12/98 - 12/99	17.6	19.5	14.3	15.0	1.9	0.7	193.9	1.3
<b>Lexington</b>								
4/98 - 4/99	15.7	18.6	19.9	22.7	2.9	2.8	1.4	0.0
5/98 - 5/99	15.9	19.0	20.1	22.9	3.0	2.8	6.3	0.2
6/98 - 6/99	16.0	19.2	20.3	23.0	3.1	2.7	14.3	0.4
7/98 - 7/99	16.1	19.4	20.4	23.1	3.3	2.6	24.3	0.6
8/98 - 8/99	16.3	19.5	20.6	23.1	3.2	2.5	30.5	0.8
9/98 - 9/99	16.5	19.7	20.9	23.1	3.2	2.2	44.1	1.0
10/98 - 10/99	16.7	19.8	21.1	23.1	3.2	2.0	60.9	1.2
11/98 - 11/99	16.9	19.7	21.4	23.1	2.8	1.7	67.1	1.1
12/98 - 12/99	17.0	19.7	21.6	23.0	2.7	1.4	87.5	1.3

**Exhibit E.2 (cont.)**  
**Impact of Demonstration Percent Medicaid Buy-in Enrolled**  
**Among Letter Eligible by Month**  
**(Comparison is Adjusted Balance of State)**

	Demonstration Area		Adjusted Balance of State Comparison Area		Demonstration Area	Adjusted Balance of State Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Miami</b>								
4/98 - 4/99	33.1	36.4	14.7	16.6	3.3	1.9	80.0	1.5
5/98 - 5/99	33.4	37.2	14.9	16.8	3.8	1.9	100.0	1.9
6/98 - 6/99	33.7	38.1	15.0	16.8	4.5	1.8	147.5	2.7
7/98 - 7/99	34.0	38.6	15.2	16.8	4.6	1.6	185.7	3.0
8/98 - 8/99	34.2	39.1	15.4	16.8	4.9	1.4	244.0	3.4
9/98 - 9/99	34.4	39.2	15.5	16.7	4.8	1.2	287.0	3.5
10/98 - 10/99	34.7	39.2	15.6	16.7	4.5	1.1	314.7	3.4
11/98 - 11/99	35.0	39.2	15.8	16.6	4.2	0.9	377.3	3.3
12/98 - 12/99	35.1	39.1	15.9	16.6	4.0	0.6	521.9	3.3
<b>Orlando</b>								
4/98 - 4/99	12.3	13.9	13.4	15.3	1.6	1.8	-14.4	-0.3
5/98 - 5/99	12.5	14.4	13.6	15.4	2.0	1.9	4.3	0.1
6/98 - 6/99	12.6	14.8	13.7	15.5	2.2	1.8	24.7	0.4
7/98 - 7/99	12.7	15.0	13.9	15.5	2.3	1.6	44.9	0.7
8/98 - 8/99	12.9	15.2	14.1	15.5	2.4	1.4	73.2	1.0
9/98 - 9/99	13.0	15.3	14.2	15.4	2.3	1.2	88.5	1.1
10/98 - 10/99	13.1	15.4	14.3	15.4	2.3	1.1	106.4	1.2
11/98 - 11/99	13.2	15.2	14.5	15.4	2.1	0.9	130.0	1.2
12/98 - 12/99	13.3	15.1	14.6	15.3	1.8	0.7	175.8	1.2

**Exhibit E.3**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**  
**(All Demos Adjusted Select Comparison Area)**

	All Demos Demonstration Area		All Demos Adjusted Select Comparison		Demonstration	All Demos Adjusted Select Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Screening Model</b>								
<b>Carlisle</b>								
4/98 - 4/99	10.1	12.1	10.0	12.0	1.9	1.9	-0.5	0.0
5/98 - 5/99	10.3	12.6	10.1	12.0	2.2	1.9	17.0	0.3
6/98 - 6/99	10.5	13.0	10.2	12.0	2.5	1.8	40.6	0.7
7/98 - 7/99	10.6	13.3	10.4	12.0	2.6	1.6	63.9	1.0
8/98 - 8/99	10.8	13.2	10.7	12.0	2.4	1.3	86.3	1.1
9/98 - 9/99	11.0	13.3	10.9	12.0	2.2	1.1	96.0	1.1
10/98 - 10/99	11.1	13.2	11.0	12.0	2.1	0.9	121.9	1.1
11/98 - 11/99	11.2	13.1	11.2	11.9	1.9	0.7	177.5	1.2
12/98 - 12/99	11.4	13.1	11.4	11.8	1.7	0.4	306.9	1.3
<b>Lebanon</b>								
4/98 - 4/99	9.2	11.3	10.4	13.3	2.1	3.0	-28.7	-0.8
5/98 - 5/99	9.5	11.6	10.5	13.4	2.1	2.8	-25.9	-0.7
6/98 - 6/99	9.6	11.7	11.1	13.4	2.1	2.4	-10.4	-0.2
7/98 - 7/99	9.8	12.3	11.5	13.5	2.5	2.0	23.0	0.5
8/98 - 8/99	10.0	12.7	11.7	13.5	2.7	1.8	49.1	0.9
9/98 - 9/99	10.2	12.9	11.9	13.5	2.8	1.6	69.3	1.1
10/98 - 10/99	10.4	13.0	12.1	13.4	2.6	1.3	95.3	1.3
11/98 - 11/99	10.5	12.8	12.2	13.3	2.2	1.1	93.8	1.1
12/98 - 12/99	10.7	12.8	12.3	13.3	2.1	1.0	99.7	1.0
<b>Co-location Model</b>								
<b>Muskogee</b>								
4/98 - 4/99	14.8	18.2	14.1	16.5	3.5	2.4	41.3	1.0
5/98 - 5/99	14.9	18.7	14.1	16.6	3.8	2.4	54.4	1.3
6/98 - 6/99	15.1	18.9	14.5	16.6	3.9	2.1	82.3	1.7
7/98 - 7/99	15.2	19.1	14.7	16.6	3.8	1.8	108.8	2.0
8/98 - 8/99	15.5	19.2	14.8	16.5	3.8	1.7	120.9	2.1
9/98 - 9/99	15.8	19.2	15.4	16.4	3.4	1.0	241.2	2.4
10/98 - 10/99	16.1	19.2	15.6	16.3	3.1	0.7	336.8	2.4
11/98 - 11/99	16.3	19.1	15.8	16.3	2.8	0.5	434.2	2.3
12/98 - 12/99	16.5	19.0	15.7	16.2	2.5	0.5	411.5	2.0

**Exhibit E.3 (cont.)**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**  
**(All Demos Adjusted Select Comparison Area)**

	All Demos Demonstration Area		All Demos Adjusted Select Comparison		Demonstration	All Demos Adjusted Select Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Oklahoma City</b>								
4/98 – 4/99	9.4	11.6	9.9	11.9	2.2	2.0	10.1	0.2
5/98 – 5/99	9.5	11.9	10.0	12.0	2.4	2.0	21.6	0.4
6/98 – 6/99	9.6	12.1	10.2	12.1	2.4	1.9	30.5	0.6
7/98 – 7/99	9.8	12.1	10.3	12.1	2.4	1.8	32.0	0.6
8/98 – 8/99	10.0	12.2	10.6	12.1	2.2	1.6	42.2	0.7
9/98 – 9/99	10.1	12.3	10.7	12.0	2.1	1.3	68.0	0.9
10/98 – 10/99	10.2	12.2	10.9	12.0	2.0	1.1	86.5	0.9
11/98 – 11/99	10.4	12.1	11.2	11.9	1.7	0.8	121.5	0.9
12/98 – 12/99	10.5	12.0	11.3	12.0	1.4	0.7	116.5	0.8
<b>Uniontown</b>								
4/98 – 4/99	18.2	20.3	14.8	17.0	2.1	2.1	0.2	0.0
5/98 – 5/99	18.3	20.7	15.0	17.0	2.4	1.9	24.7	0.5
6/98 – 6/99	18.4	21.1	15.2	17.2	2.6	2.0	31.6	0.6
7/98 – 7/99	18.5	21.3	15.3	17.1	2.8	1.7	60.6	1.1
8/98 – 8/99	18.8	21.4	15.5	17.1	2.6	1.6	64.4	1.0
9/98 – 9/99	18.7	21.4	15.9	17.1	2.7	1.2	128.5	1.5
10/98 – 10/99	19.1	21.4	16.1	17.2	2.3	1.1	102.1	1.2
11/98 – 11/99	19.3	21.3	16.2	17.0	2.0	0.8	150.1	1.2
12/98 – 12/99	19.5	21.2	16.3	17.0	1.7	0.7	149.0	1.0
<b>West Chester</b>								
4/98 – 4/99	10.1	12.7	9.2	10.7	2.7	1.5	76.9	1.2
5/98 – 5/99	10.2	12.8	9.3	10.8	2.6	1.5	75.9	1.1
6/98 – 6/99	10.3	13.0	9.4	10.8	2.7	1.4	94.8	1.3
7/98 – 7/99	10.5	13.2	9.6	10.8	2.7	1.3	113.8	1.4
8/98 – 8/99	11.0	13.5	9.8	10.8	2.4	1.0	139.6	1.4
9/98 – 9/99	11.3	13.6	9.9	10.9	2.3	0.9	143.9	1.4
10/98 – 10/99	11.6	13.6	10.0	10.9	2.0	0.8	141.8	1.2
11/98 – 11/99	11.7	13.4	10.1	10.8	1.7	0.7	153.7	1.0
12/98 – 12/99	12.2	13.4	10.2	10.8	1.2	0.6	87.7	0.5

**Exhibit E.3 (cont.)**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**  
**(All Demos Adjusted Select Comparison Area)**

	All Demos Demonstration Area		All Demos Adjusted Select Comparison		Demonstration	All Demos Adjusted Select Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Application Model</b>								
<b>Corpus Christi</b>								
4/98 - 4/99	19.6	22.8	23.5	25.3	3.2	1.8	81.2	1.4
5/98 - 5/99	19.8	23.5	23.6	25.7	3.7	2.1	72.9	1.5
6/98 - 6/99	19.9	23.8	23.6	25.8	3.8	2.2	72.1	1.6
7/98 - 7/99	20.0	24.2	23.7	25.8	4.2	2.1	103.2	2.1
8/98 - 8/99	20.2	24.4	23.8	25.8	4.2	2.0	112.8	2.2
9/98 - 9/99	20.4	24.4	24.1	25.7	4.1	1.6	152.3	2.5
10/98 - 10/99	20.6	24.5	24.3	25.6	3.9	1.3	199.2	2.6
11/98 - 11/99	20.7	24.3	24.4	25.4	3.6	1.0	267.9	2.7
12/98 - 12/99	20.9	24.2	24.5	25.1	3.3	0.5	513.9	2.8
<b>Evansville</b>								
4/98 - 4/99	14.5	17.4	13.0	14.6	2.9	1.6	85.9	1.4
5/98 - 5/99	14.4	17.9	13.1	14.8	3.5	1.6	115.3	1.9
6/98 - 6/99	14.6	18.2	13.2	14.7	3.6	1.5	137.5	2.1
7/98 - 7/99	14.7	18.4	13.3	14.8	3.6	1.5	137.0	2.1
8/98 - 8/99	15.1	18.5	13.5	14.9	3.5	1.4	148.6	2.1
9/98 - 9/99	15.2	18.6	13.7	14.9	3.4	1.2	185.8	2.2
10/98 - 10/99	15.4	18.4	13.9	14.8	3.0	0.9	241.5	2.1
11/98 - 11/99	15.6	18.3	14.0	14.7	2.6	0.7	291.7	2.0
12/98 - 12/99	15.9	18.2	14.1	14.7	2.3	0.6	301.8	1.7
<b>Lexington</b>								
4/98 - 4/99	11.6	14.3	11.6	13.3	2.7	1.7	55.7	1.0
5/98 - 5/99	11.8	14.9	11.6	13.4	3.1	1.8	76.8	1.4
6/98 - 6/99	11.8	15.0	11.8	13.5	3.2	1.7	87.2	1.5
7/98 - 7/99	12.2	15.2	11.9	13.5	3.0	1.7	78.9	1.3
8/98 - 8/99	12.3	15.3	12.0	13.6	2.9	1.6	85.5	1.4
9/98 - 9/99	12.5	15.4	12.1	13.6	2.9	1.5	101.2	1.5
10/98 - 10/99	12.6	15.5	12.3	13.6	2.9	1.3	125.2	1.6
11/98 - 11/99	13.0	15.1	12.4	13.6	2.1	1.1	83.1	0.9
12/98 - 12/99	13.1	15.1	12.5	13.5	1.9	1.0	100.7	1.0

**Exhibit E.3 (cont.)**  
**Impact of Demonstration**  
**Percent Medicaid Buy-in Enrolled Among Letter Eligible by Month**  
**(All Demos Adjusted Select Comparison Area)**

	All Demos Demonstration Area		All Demos Adjusted Select Comparison		Demonstration	All Demos Adjusted Select Comparison	DID	DID
	Pre	Post	Pre	Post	Percentage Point Change	Percentage Point Change	Percent Change	Percentage Points
<b>Miami</b>								
4/98 - 4/99	32.0	35.2	30.5	33.7	3.1	3.1	-0.3	0.0
5/98 - 5/99	32.4	35.9	30.7	34.0	3.5	3.2	8.8	0.3
6/98 - 6/99	32.6	36.8	31.0	34.1	4.2	3.1	35.8	1.1
7/98 - 7/99	32.9	37.2	31.3	34.2	4.3	2.9	48.2	1.4
8/98 - 8/99	33.1	37.6	31.6	34.2	4.5	2.6	74.2	1.9
9/98 - 9/99	33.3	37.7	31.8	34.2	4.4	2.4	85.5	2.0
10/98 - 10/99	33.5	37.7	32.1	34.2	4.2	2.1	97.8	2.1
11/98 - 11/99	33.8	37.6	32.3	34.0	3.8	1.7	128.3	2.2
12/98 - 12/99	33.9	37.5	32.5	33.8	3.6	1.3	179.3	2.3
<b>Orlando</b>								
4/98 - 4/99	13.0	14.7	11.8	13.9	1.7	2.1	-20.2	-0.4
5/98 - 5/99	13.2	15.2	11.9	14.1	2.0	2.2	-8.2	-0.2
6/98 - 6/99	13.3	15.5	12.1	14.1	2.1	2.0	6.0	0.1
7/98 - 7/99	13.5	15.6	12.3	14.1	2.1	1.8	18.8	0.3
8/98 - 8/99	13.6	15.7	12.5	14.1	2.1	1.6	34.8	0.5
9/98 - 9/99	13.8	15.8	12.7	14.0	2.0	1.4	44.9	0.6
10/98 - 10/99	13.9	15.8	12.9	13.9	1.9	1.1	77.0	0.8
11/98 - 11/99	14.0	15.6	13.0	13.8	1.6	0.8	104.4	0.8
12/98 - 12/99	14.1	15.5	13.2	13.7	1.4	0.5	178.4	0.9

In comparing the adjusted selected comparison area results to the adjusted balance of state results, we found that the selected comparison area resulted in significantly lower estimates in Miami, relative to the remainder of the state. In 1990, Miami had a much higher percentage of the elderly in poverty and a higher proportion of elderly Hispanics. On the other hand, in Lexington, the adjusted selected comparison area produced higher estimates than the adjusted balance of state. Relative to the remainder of the state, Lexington had a lower percentage of poor elderly in 1990 because the balance of the state is largely made up of Appalachian areas. The large difference in the characteristics of the demonstration population relative to the balance of state in Miami, Lexington, and several of the other sites, prompted us to choose the adjusted selected comparison area results. By using a comparison group with more uniform population characteristics, the observed differences in enrollment are more likely to result from the demonstration rather than inherent differences in the population.

## II. PROPENSITY SCORES

In addition to the alternative comparison groups using the Blinder-Oaxaca technique, we also used a covariate matching technique that relied on propensity scores for Miami only. In large observational studies there are often significant differences between characteristics of the comparison and demonstration groups. The problem of how to control for covariates is endemic in evaluation research. Such differences do not exist in randomized experiments. In non-experimental designs, these differences must be adjusted in order to reduce treatment selection bias and to determine the treatment effect. There are several methods to reduce the bias of these differences and to make the two groups more similar. One method is covariate matching. Covariate matching provides an appealing control strategy, but with continuous or high-dimensional covariate vectors, exact matching may not be possible. In order to include a large number of potential covariates or to control for continuous covariates without losing information by breaking the variable into discrete categories, Rosenbaum and Rubin (1984) developed the propensity score as a method of condensing the effects of many (continuous and/or discrete) explanatory variables into a single number that can be used for subclassification.

The goal of the propensity score approach is to create subclasses of treatment and comparison subjects that are homogeneous in their covariate vector  $\mathbf{x}$ . This means that within each subcategory the distribution of the  $\mathbf{x}$  variables will be the same for treatment and comparison subjects, allowing the researcher to “compare apples and apples” to get a (mostly<sup>58</sup>) unbiased estimate of the treatment effect *within the subgroup*. Then the within-subgroup treatment effect estimates can be averaged across all the subgroups to get an estimate of the overall treatment effect.

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<sup>58</sup> Technically, it has been shown (see references) that subclassification on the estimated propensity score into five subgroups is sufficient to eliminate about 90 percent of the bias in the estimated treatment effect due to differences in the distribution of  $\mathbf{x}$  between treatment and comparison groups. However, the propensity score approach can only reduce bias due to differences in *observed* covariates; it does not address underlying differences in *unobserved* covariates that might affect selection into treatment classes and/or the response variable. Bias from these unobserved sources is reduced only to the extent that the unobserved covariates are correlated with the observed covariates.

Propensity scoring allows for difference-in-difference estimates. Differences between the matched pairs of the homogeneous subsets were evaluated using the signed rank test.<sup>59</sup> We developed propensity scores for two characteristics of interest – the probability of living in the Miami demonstration area (Miami-like characteristics) and the probability of enrolling in Buy-in in the Miami demonstration area (Miami-like enrollment). Specifically, the methodology involved four major steps:

- (i) Using a multivariate logistic regression model, we regressed a dichotomous variable of the site on age, sex, race, income as a percent of the poverty guideline, marital status, disability, Medicare+Choice enrollment, and widow(er) status. The site (dependent) variable had the value of 1 if the site is the demonstration area and 0 otherwise for the Miami-like characteristics group selection. For the subset of those in Miami, the enrollment (dependent) variable had the value of 1 if the person enrolled in Buy-in in the pre-period and 0 otherwise for the Miami-like enrollment group selection.
- (ii) Using the estimates from (i), a propensity score was computed as the conditional probability that an individual: 1) was in the demonstration area rather than the non-demonstration area, conditional on the explanatory variables for the Miami-like characteristics group selection; and 2) enrolled during the pre-period in the demonstration area, conditional on the explanatory variables for the Miami-like enrollment group selection. The propensity score indicates the probability that a subject was in the Miami demonstration area or enrolled in Buy-in in the Miami demonstration area.
- (iii) Using an iterative sub-stratification or sub-classification technique, the propensity score is used as a mechanical device to sort the data into nine homogeneous subsets, where the same number of individuals in the Miami demonstration site is in each of the groups.<sup>60</sup>
- (iv) For the Miami-like characteristics group, using the homogeneous subsets of the demonstration and comparison sites, an aggregate unbiased estimate of the impact is calculated as follows: differences in the change in enrollment rates for demonstration and non-demonstration groups were computed for each homogeneous subset. A weighted average of the differences was then computed, using the subset size as the weights. That is, the impact of the demonstration is:  $\sum_i (DR_i - CR_i) / n_i$  where DR and CR are the enrollment rates for the demonstration and non-demonstration sites respectively and  $n_i$  is the size of the  $i^{\text{th}}$  homogeneous subset ( $i=1-9$ ).
- (v) For the Miami-like enrollment analysis, we used the same techniques as described in the previous section.

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<sup>59</sup> To calculate the signed ranks test, the differences between the paired data are calculated and the absolute values of these differences are recorded. The absolute value of the differences between the two variables are ranked and each rank is given a positive or negative sign depending on the sign of the original difference. The positive and negative ranks are then summed and averaged and a z-statistic is computed to test the null hypothesis of no differences in the matched pairs.

<sup>60</sup> “Homogeneous subsets” here means that the demonstration and comparison populations in each data sub-set have means and other moments that show no statistically significant differences.

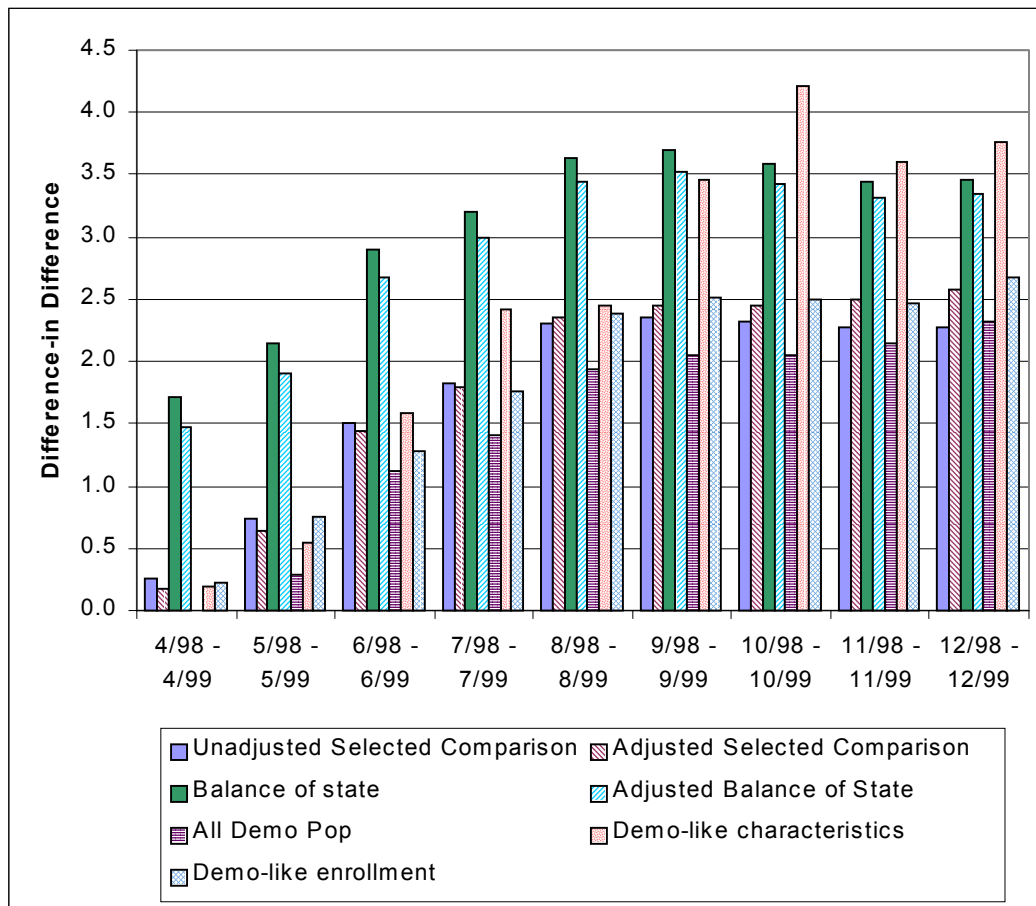


Thus subclassifying on the propensity score allows us a simple, intuitive procedure for simultaneously taking into account the effects of multiple covariates by looking only at a single composite variable. Within each propensity score subgroup, the demonstration and comparison subjects “look alike” with regard to their observed covariates  $x$ , thus avoiding bias due to large differences in covariates between the two groups.

One final caveat is in order however. The propensity score approach can only control for bias in *observed* covariates. If there are *unobserved* covariates that affect both the probability of receiving treatment *and* the response variable, then the estimated treatment effect will still be biased in the sense that it reflects not only the effect of the treatment, but also the effect of those unobserved variables. Thus, it is probably best to use the propensity score approach in situations where theory exists to suggest what factors are likely to affect the response variable and these factors are all observed by the researcher. The propensity score approach is likely to give misleading results in settings that lack strong theoretical underpinnings (i.e. when “data mining”), or when theory strongly suggests that some unobservable variable plays a role in determining who receives treatment.

We found a significant, positive impact of the demonstration on enrollment in the buy-in program. In terms of percentage points and percent changes, the results indicate that, on average, the estimated causal effect of the demonstration in Miami was statistically significantly higher than the enrollment rate experienced at the selected comparison site for both models (see **Exhibit E.4**). While there may be some imperfections with (i) due to the approximate nature of the comparison group used in the study, the results indicate that the demonstration helped to boost enrollment into the SSA buy-in program.

**Exhibit E.4**  
**Monthly DID Estimates**  
**Using Alternative Comparison Groups and Methods for Miami**



**Source:** The Lewin Group analysis of matched Master Beneficiary Record and Third Party Billing data for individuals with Title II income less than 135% of the poverty guideline and Medicare part A and 1990 Decennial Census data.

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