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**MATHEMATICA**  
Policy Research, Inc.

**Participation in the  
Medicaid Buy-In  
Program: A Statistical  
Profile from Integrated  
Data**

*Final Report*

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Before anyone else, Steve Knapp at CMS envisioned a strategy for developing a comprehensive data system to track employment and health care for people with disabilities. We would like to dedicate this statistical profile to his memory in recognition of his hard work, inspiring enthusiasm, and indefatigable spirit. His colleagues at CMS, Carey Appold and Melissa Hulbert, in particular, are continuing with a similar determination and vision. Their efforts have made the database and this statistical profile a reality.

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# CONTENTS

Chapter	Page
I INTRODUCTION .....	1
II METHODS: ASSEMBLING THE DATA AND IDENTIFYING SUBGROUPS FOR ANALYSIS .....	5
A. DATA SOURCES .....	5
1. Buy-In Finder Files from 27 States .....	5
2. SSA’s Ticket Research File .....	6
3. SSA’s Master Earnings File .....	7
4. Medicaid Statistical Information System .....	7
5. Medicare Enrollment Data Base and Claims Files .....	8
6. Summary of Data Availability .....	8
B. THE DATA-INTEGRATION PROCESS .....	8
C. ANALYTIC GROUPS .....	9
III PROFILE OF ENROLLMENT AND PARTICIPANT CHARACTERISTICS .....	13
IV PROFILE OF EARNINGS .....	31
V PROFILE OF MEDICAL EXPENDITURES .....	57
REFERENCES .....	65
GLOSSARY .....	66
APPENDIX A: CLEANING PROCESS AND DATA QUALITY IN THE FINDER FILES	
APPENDIX B: SUPPORTING TABLES FOR DATA ASSEMBLY	
APPENDIX C: SUPPORTING TABLES FOR ENROLLMENT PROFILE	
APPENDIX D: SSA DISABLING CONDITION GROUPING	
APPENDIX E: SUPPORTING TABLES FOR EARNINGS PROFILE	

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## EXHIBITS

Exhibit	Page
I.1	SELECTED FINDINGS .....3
II.1	DATA SOURCES FOR THE INTEGRATED DATABASE, BY CALENDAR YEAR.....9
II.2	DATA INTEGRATION PROCESS .....11
II.3	NUMBER OF BUY-IN PARTICIPANTS MATCHED WITH OTHER DATA SOURCES .....12
III.1	NUMBER OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM, BY YEAR, 27 STATES, FIRST-TIME PARTICIPANTS VS. ALL OTHERS .....15
III.2	NUMBER OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM, BY YEAR AND STATE.....17
III.3	TOTAL LENGTH OF ENROLLMENT AMONG FIRST-TIME BUY-IN ENROLLEES IN 2001 AND 2002, BY YEAR OF PROGRAM IMPLEMENTATION .....19
III.4	YEAR-TO-YEAR CHANGE IN THE NUMBER OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM, BY YEAR OF IMPLEMENTATION AND STATE.....21
III.5	DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAMS FROM 2000 THROUGH 2004, 27 STATES AND BY FEDERAL AUTHORIZATION .....23
III.6	PERCENTAGE OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY TYPE OF IMPAIRMENT AT START OF ENROLLMENT .....25
III.7	PERCENTAGE OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY PRIOR SSI AND SSDI PROGRAM PARTICIPATION STATUS .....27
III.8	PRIOR MEDICARE ELIGIBILITY AMONG PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2003, BY STATE .....29

## EXHIBITS (*continued*)

Exhibit	Page
IV.1	NUMBER OF MEDICAID BUY-IN PARTICIPANTS, TOTAL AND WITH REPORTED EARNINGS, 27 STATES, 2000-2004.....33
IV.2	PERCENTAGE OF MEDICAID BUY-IN PARTICIPANTS WITH REPORTED EARNINGS, BY STATE, 2003-2004.....35
IV.3	TOTAL AND AVERAGE ANNUAL EARNINGS (IN \$) AMONG EVER-ENROLLED BUY-IN PARTICIPANTS WITH REPORTED EARNINGS, 27 STATES, 2000-2004.....37
IV.4	ANNUAL EARNINGS OF MEDICAID BUY-IN PARTICIPANTS (IN \$), 27 STATES, 2000-2004 .....37
IV.5	AVERAGE ANNUAL EARNINGS (IN \$) AMONG MEDICAID BUY-IN PARTICIPANTS WITH REPORTED EARNINGS, BY STATE, 2003-2004.....39
IV.6	DISTRIBUTION OF STATES WITH MEDICAID BUY-IN PROGRAMS BY PERCENTAGE OF PARTICIPANTS WITH REPORTED EARNINGS AND THEIR AVERAGE EARNINGS, 2004 .....41
IV.7	PERCENTAGE OF PARTICIPANTS WITH REPORTED EARNINGS WHO EARNED MORE THAN THE ANNUALIZED SGA LEVEL AND MORE THAN 200 PERCENT OF FPL, BY STATE, 2004.....43
IV.8	CHARACTERISTICS OF MEDICAID BUY-IN PARTICIPANTS WITH THE HIGHEST EARNINGS COMPARED WITH ALL PARTICIPANTS EVER ENROLLED IN 2004 .....45
IV.9	PERCENT OF BUY-IN PARTICIPANTS FOUND IN THE MEF WITH A HIGHER EARNINGS CATEGORY IN 2004 COMPARED WITH 2003, BY SELECTED EARNINGS CATEGORIES IN 2003, 24 STATES .....47
IV.10	AVERAGE ANNUAL EARNINGS IN 2003 AND 2004 FOR FIRST-TIME BUY-IN PARTICIPANTS IN 2004 FOUND IN MEF, BY STATE.....49
IV.11	ANNUAL EARNINGS BEFORE AND AFTER ENROLLMENT AMONG FIRST-TIME BUY-IN PARTICIPANTS IN 2001 OR 2002 FOUND IN MEF, BY STATE .....51



## EXHIBITS (*continued*)

Exhibit	Page
IV.12 PERCENTAGE OF FIRST-TIME BUY-IN PARTICIPANTS IN 2001 OR 2002 FOUND IN MEF WITH HIGHER POST-ENROLLMENT EARNINGS COMPARED WITH PRE-ENROLLMENT EARNINGS, BY STATE .....	53
IV.13 PERCENTAGE OF FIRST-TIME BUY-IN PARTICIPANTS IN 2001 OR 2002 FOUND IN MEF WITH HIGHER POST-ENROLLMENT EARNINGS COMPARED WITH PRE-ENROLLMENT EARNINGS, BY SELECTED CHARACTERISTICS .....	55
V.1 PER MEMBER PER MONTH (PMPM) MEDICAL EXPENDITURES AMONG SELECTED PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2002, BY STATE .....	59
V.2 PER MEMBER PER MONTH (PMPM) MEDICAL EXPENDITURES AMONG SELECTED PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2002, BY TYPE OF IMPAIRMENT, 22 STATES .....	61
V.3 PER MEMBER PER MONTH (PMPM) MEDICAL EXPENDITURES AMONG SELECTED PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2002, BY PRIOR PROGRAM PARTICIPATION, 22 STATES .....	63

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## I. INTRODUCTION

The Medicaid Buy-In program is designed to encourage individuals with disabilities to work or to work more by allowing them to pay premiums in exchange for Medicaid coverage even if their higher earnings would otherwise make them ineligible for Medicaid. Authorized by federal legislation as an optional Medicaid program in 1997 and 1999, the Buy-In program has been adopted by more than 30 states. As of December 2004, it had covered more than 125,000 individuals.

To meet its oversight responsibilities, the Centers for Medicare and Medicaid Services (CMS) asked states with Buy-In programs to submit annual participation data beginning in 2002. CMS then contracted with Mathematica Policy Research (MPR) to analyze the data from 2002 through 2004 and report on the findings. A series of reports (Ireys et al. 2003, White et al. 2005, and Black and Ireys 2006) showed that both the number of states with a Buy-In program and the number of participating individuals grew steadily over the period. These reports also underscored the fact that state Buy-In programs vary widely in terms of eligibility criteria, enrollment levels, percent of participants with reported earnings, participants' average earnings, and per capita health care expenditures.

Although the state-submitted data allowed CMS to begin tracking participation in the Buy-In program, several drawbacks in the data limited the agency's ability to address important policy questions about the program population. For example, states did not have access to and could therefore not submit such critical information as a participant's type of impairment or Medicare expenditures. In addition, states could submit earnings data only from their Unemployment Insurance (UI) systems, which are not as comprehensive or as accurate as federal earnings data available through the Social Security Administration (SSA).

To address these shortcomings, CMS worked closely with SSA to modify existing interagency data-use agreements such that person-level information from Medicare, Medicaid, and SSA files would be more readily available to policy analysts. In collaboration with CMS and SSA, MPR merged information from these files with data from state Buy-In programs.

The result of this effort was a new longitudinal, person-level database that can support analyses of the Buy-In program in a way that would not have been possible either with state data or with data from one federal agency alone. For example, the database can be used to examine:

- Participation trends in the Buy-In program over time
- Longitudinal patterns of earnings and medical expenditures for Buy-In participants
- The impact of Medicaid and Medicare policy changes on total medical expenditures for Buy-In participants (the database distinguishes between Medicaid and Medicare data)
- How the characteristics of Buy-In participants (for example, age, and disability type) relate to key indices of program performance, such as post-enrollment earnings

- Issues and trends that influence the implementation of the Medicaid Buy-In program in different states

The development of the new database reflects a seminal interagency effort to build a comprehensive data-linking system that can be used to monitor the employment, health, and health care of individuals with disabilities. This system can provide federal agencies with a useful tool for examining a range of critical policy questions. Indeed, the process used to generate the database (described in Chapter II) could be adapted for tracking employment patterns and medical expenditures for other groups of individuals with disabilities.

The new database has administrative benefits as well. For example, it lightens the reporting burden on states because they can now provide CMS with less information on Buy-In participants compared with previous reporting requirements.

The statistical profile of Buy-In participants presented in this document reflects the first analysis using the new integrated database. The next chapter describes the data sources and procedures used to build the database. Chapters III, IV, and V present findings from the analysis of Buy-In enrollment, participants' earnings, and medical expenditures. Each chapter includes an overview of the findings; figures, charts, and/or tables presenting the findings; and a short explanation of the policy questions that these analyses are designed to address. The text opposite each exhibit highlights the most important findings and describes the methods used to conduct the analyses.

Additional supporting tables for each chapter are included in the appendices, as are details about the quality of the data in the Buy-In finder files submitted from 27 states with a program. MPR's previous reports on participation in the Medicaid Buy-In program and a glossary of key terms appear at the end of the document.

Exhibit I.1 highlights some key findings from the analysis, many of which raise additional policy questions for federal and state officials interested in enhancing employment opportunities for adults with disabilities. For example, one open question involves the relationship between earnings, the use of such services as personal care services or psychiatric medications, and overall medical expenditures. Another question that could be examined in future work has to do with the personal characteristics that may be associated with success in reducing one's dependence on federal disability benefits. With support from CMS, MPR is using the database to develop a series of policy briefs that will address these and other issues.

## EXHIBIT I.1 SELECTED FINDINGS

### Enrollment Profile

- Enrollment in the Medicaid Buy-In program among states included in this analysis rose almost 400 percent within five years, increasing from 19,582 in 13 states in 2000 to 94,963 in 27 states in 2004.
- Between 2000 and 2004, the Medicaid Buy-In program has served 126,606 individuals in 27 states. Among participants, the average age was 45, about half were male, and slightly more than three-quarters were white.
- Since 2002, the number of new participants enrolling each year has been steady at approximately 31,000 individuals.
- The Buy-In program is attracting long-term enrollees. On average, first-time Buy-In participants were enrolled in the program for more than 12 months during a two-year period.
- Most Buy-In participants receive federal disability benefits, about 72 percent have been SSDI beneficiaries.
- The most common disabling condition is mental illness, more than 31 percent have some form of mental illness or other mental disorder.

### Earnings Profile

- In 2000, 16,727 Buy-In participants reported earnings to SSA; in 2004, this number rose to 62,528.
- Total earnings of all participants rose with participation levels, increasing from \$135 million in 2000 to \$453 million in 2004.
- For those with earnings, average earnings were \$8,065 in 2000 and \$7,246 in 2004.
- In 2004, 23 percent of Buy-In participants earned above \$9,720, which is the annual substantial gainful activity (SGA) level that SSA uses to determine eligibility for Social Security Disability Insurance (SSDI).
- About one-third of participants who enrolled in the Medicaid Buy-In program in 2001 or 2002 had higher earnings after enrollment than before.

### Medical Expenditure Profile

- Average Medicaid expenditures per member per month (PMPM) were \$1,076 among Buy-In participants in the 22 states with a program as of 2002; average PMPM Medicare expenditures were \$391.
- Medical expenditures vary by type of impairment. For example, PMPM Medicaid and Medicare combined expenditures in 2002 were \$1,042 among Buy-In participants with musculoskeletal disorder, and \$1,695 among those with mental retardation.
- Medical expenditures also vary by receipt of federal disability benefits. PMPM Medicaid and Medicare combined expenditures in 2002 ranged from \$1,179 among Buy-In participants receiving only SSI benefits to \$1,491 among those receiving only SSDI benefits.

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## **II. METHODS: ASSEMBLING THE DATA AND IDENTIFYING SUBGROUPS FOR ANALYSIS**

This chapter explains how MPR, with support from CMS and SSA, built the new database for tracking patterns of enrollment, employment, and medical expenditures of participants in the Medicaid Buy-In program. The chapter covers the data sources that were linked together, the linking procedures, and the rationale for identifying subgroups of Buy-In participants for the analyses described in Chapters III through V.

### **A. DATA SOURCES**

Working with CMS and SSA, MPR used the following sources of data to develop the new database:

- Buy-In finder files from 27 states
- The Ticket Research File (TRF) from SSA
- The Master Earnings File (MEF) from SSA
- Medicaid Statistical Information System (MSIS) from CMS
- Medicare Enrollment Data Base (EDB) and Claims Files from CMS

#### **1. Buy-In Finder Files from 27 States**

The ability to link data on Buy-In participants from different sources depends on the availability of two types of information: individual-level identifier information common to all data sources and information on the dates of Buy-In enrollment and disenrollment. The first acts as a “thread” that ties the data sources together, and the second supports the longitudinal tracking of enrollment and employment for each Buy-In participant. CMS asked states to provide files that contained both types of information. This file is referred to as a “finder file.”<sup>1</sup>

Most Buy-In programs were created after January 2000. In the interest of consistency and efficiency, CMS therefore asked states with both a Medicaid Buy-In program and a Medicaid Infrastructure Grant (MIG) to submit a finder file on individuals who enrolled in the program at any time since its inception or since January 1, 2000, whichever was later, through December 31, 2004. Data in finder files include social security number (SSN), date of birth (DOB), gender, race, enrollment start date and end date, Medicaid identification number, and state abbreviation.

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<sup>1</sup> Some Medicaid Buy-In participants can be identified in MSIS using state-specific eligibility codes. However, only about a dozen states provide such Buy-In indicators in their MSIS eligibility files. For consistency, finder files are requested from all the states.

By April 2005, 27 states had provided Buy-In finder files: Alaska, Arkansas, California, Connecticut, Illinois,<sup>2</sup> Indiana, Iowa, Kansas,<sup>3</sup> Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, Oregon, Pennsylvania, South Carolina, Utah, Vermont, Washington, West Virginia, and Wisconsin. Appendix A describes the quality of the data in the finder files and the process used by MPR to make the data suitable for analyses.

For various reasons, other states with a Buy-In program or with a Buy-In program and a MIG did not submit or were not asked to submit a finder file. For instance, Nevada and Wyoming have a Buy-In program and a MIG, but neither program had more than 10 enrollees at the time of the request and so did not submit a finder file. CMS did not request a finder file from North Dakota, which also has a Buy-In program and a MIG, because its Buy-In program was implemented in May 2004, leaving it still in the early stage of operation when the finder file requests were made. Although Arizona and Mississippi have a Buy-In program, they did not have a MIG in 2005 and so were not included in the study. Together, these two programs had about 2,000 Buy-In participants as of March 2005. Overall, the five states excluded from this study had less than 2,500 Buy-In participants when the finder files were requested, which suggests that the statistical profile presented in this report represents the large majority of individuals enrolled in the state Medicaid Buy-In programs.

## **2. SSA's Ticket Research File**

The TRF was designed to support an evaluation of the Ticket To Work program. It contains longitudinal data (January 1994 to December 2004) and one-time data on individuals age 18 to 64 who participated in the SSI or SSDI programs at any time from January 1996 through September 2004. These data, covered under the CMS-SSA interagency data use agreement, were culled from various other SSA administrative data files and include such items as identifiers, disabling conditions, program participation status, and benefit payments. As part of the final new database, the TRF file provides much-needed information on participation in SSI and SSDI and on the type of impairment.

Despite the TRF's advantages, it does not include all Buy-In participants. For instance, if a participant was never an SSI or SSDI beneficiary, or if a participant was a beneficiary before January 1996 or after September 2004, he or she would *not* be included in the TRF. Nevertheless, the majority of Buy-In participants are likely to have been SSI or SSDI

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<sup>2</sup> We found out during the analysis that Illinois's original finder file with 799 individuals did not include all the Buy-In participants as requested. Illinois resubmitted its finder file with 1,123 individuals in October 2005, but the additional data were received too late to be included in the data integration process. Hence, most of the analyses in this document are based on Illinois's original finder file, and results may not be applicable to all of its Buy-In participants.

<sup>3</sup> We detected an error in Kansas's original finder file early in the data integration process. Most of our analyses are based on Kansas's resubmitted finder file. However, the resubmission was too late to be included in the matching with Medicare data. As a result, Kansas is excluded from any analyses that involved Medicare data.



beneficiaries at some time from 1996 through 2004 and are therefore likely to be included in the TRF (Black and Ireys 2005).

### **3. SSA's Master Earnings File**

The MEF contains reliable annual earnings data (derived from W-2 reports)<sup>4</sup> on nearly all workers in the United States for each calendar year from 1951 through 2004. This information is the best available indicator of Buy-In participants' employment, as it includes identifying information as well as summary and detailed annual earnings data. MPR used the detailed earnings data instead of the summary data to develop the profile presented in this document because they provide more comprehensive earnings information for each employer (including state and local government) and for self-employed individuals.

Because the MEF is based on tax information from the W-2, the file is accessible only under rules established by the Internal Revenue Service (IRS). Those rules give access only to SSA employees and only at SSA facilities. Although the CMS-SSA interagency data-use agreement does not give CMS access to the micro-data, the agency can receive tabular data and derived variables approved by SSA.

MEF data are available for Buy-In participants regardless of SSI or SSDI status as long as they reported earnings to the IRS. Individuals are likely to have some earnings in order to meet eligibility criteria for the Buy-In program. Therefore, Buy-In participants will be in the MEF unless they earn small amounts of cash income from a casual job (for example, babysitting for a few hours per month), did not report income, or are not required to report because they work in sheltered workshops or other similar settings. If an individual did not show up in the MEF for a certain year, we assume his or her earnings in that year are missing rather than zero for the current analysis. Future work will further examine this assumption.

### **4. Medicaid Statistical Information System**

MSIS is a federally mandated system in which states provide CMS with quarterly eligibility and claims data from their Medicaid Management Information Systems (MMIS). The eligibility file, which contains one record for each Medicaid recipient, consists of demographic and monthly enrollment data. The claims files have records for each health care encounter paid for by Medicaid and includes information on service type, provider, dates, costs, and capitation payments. MSIS can be used to track Medicaid enrollment and spending history of Buy-In participants.

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<sup>4</sup> We used the amount of wages subject to Medicare taxes to represent annual earnings in this analysis (reported in Box 5 on the W-2 form). Unlike wages subject to Social Security taxes, there is no maximum wage base for Medicare taxes. Medicare wages include any deferred compensation, 401k contributions, or other fringe benefits that are normally excluded from the regular income tax, and therefore should accurately represent an individual's total earnings.

Although states are required to submit MSIS data within six weeks after the end of each fiscal year (FY) quarter, they do not always meet the deadline, and many states submit correction records months after the initial submission. Therefore, researchers often need to search for additional correction records and make retroactive adjustment to get the correct data for a particular quarter or a year. When the integrated database was constructed, the eligibility and claims data from most states had been received and approved through FY2003.

Because the Buy-In program is a Medicaid program, we would expect to find every Buy-In participant in MSIS. However, given the complexity of the quarterly MSIS data and both resource and time constraints, Buy-In participants were not verified against the MSIS eligibility files. Only the most recent available MSIS claims data (i.e., data from the second quarter of FY2002 through the fourth quarter of FY2003) were used to conduct the analysis, albeit a limited one, of Medicaid expenditures among Buy-In participants in calendar year 2002.

## **5. Medicare Enrollment Data Base and Claims Files**

The Medicare EDB is maintained by CMS and contains eligibility and enrollment data on people who are now or have ever been enrolled in Medicare. It is used primarily to establish entitlement for Medicare beneficiaries and to support the claims payment process nationwide. The Medicare claims files contain information on types, dates, and costs of services used by Medicare beneficiaries; that information comes from several Medicare claims and utilization files, including the National Claims History Files (NCH), the Standard Analytic Files (SAF), and the National Medicare Utilization Database (NMUD). By incorporating Medicare data into the new database, it was possible to determine the Medicare eligibility of Buy-In participants and track Medicare spending for Medicare-eligible Buy-In participants.

Medicare data were available through calendar year 2003 when we were developing the new database. Also, only Buy-In participants eligible for Medicare are included in this database. MPR used the EDB to verify individuals' Medicare eligibility through 2003 and extracted Medicare claims data from 1999 through 2003 for all the verified beneficiaries. However, because all the current medical expenditure analysis is conducted using linked Medicare and Medicaid data, and as pointed out earlier, our Medicaid data were limited to calendar year 2002, we restricted using of Medicare data to calendar year 2002 as well.

## **6. Summary of Data Availability**

As noted above, data in each of the five sources are available for somewhat different time periods (see Exhibit II.1). Consequently, the analyses completed for the subsequent chapters in this statistical profile are based on somewhat different periods of time depending on data availability.

## **B. THE DATA-INTEGRATION PROCESS**

Exhibit II.2 illustrates the specific procedures used to integrate data from the various sources. We started the data-integration process by reviewing the Buy-In finder files received

from the 27 states and “cleaning” them to resolve any outstanding coding or missing data problems. All state finder files were then combined into a single national Buy-In finder file.

## EXHIBIT II.1

### DATA SOURCES FOR THE INTEGRATED DATABASE, BY CALENDAR YEAR

Data Sources	1999	2000	2001	2002	2003	2004	2005
State-Submitted Finder Files		✓	✓	✓	✓	✓	
MSIS				✓			
SSA's TRF	✓	✓	✓	✓	✓	✓	
SSA's MEF	✓	✓	✓	✓	✓	✓	
Medicare	✓	✓	✓	✓	✓		

Note: MSIS data from 2002 were used for the analyses because they were the most recent data available data. MSIS data are available for years prior to 2002, but were not used in the analyses, because of time and resource constraints.

The individuals in the national finder file were verified through SSA’s enumeration verification system (EVS), using Social Security Number (SSN), date of birth, and gender. Those who were verified by the EVS were then matched with SSA’s TRF and MEF to create Buy-In TRF extract and Buy-In earnings extract correspondingly.

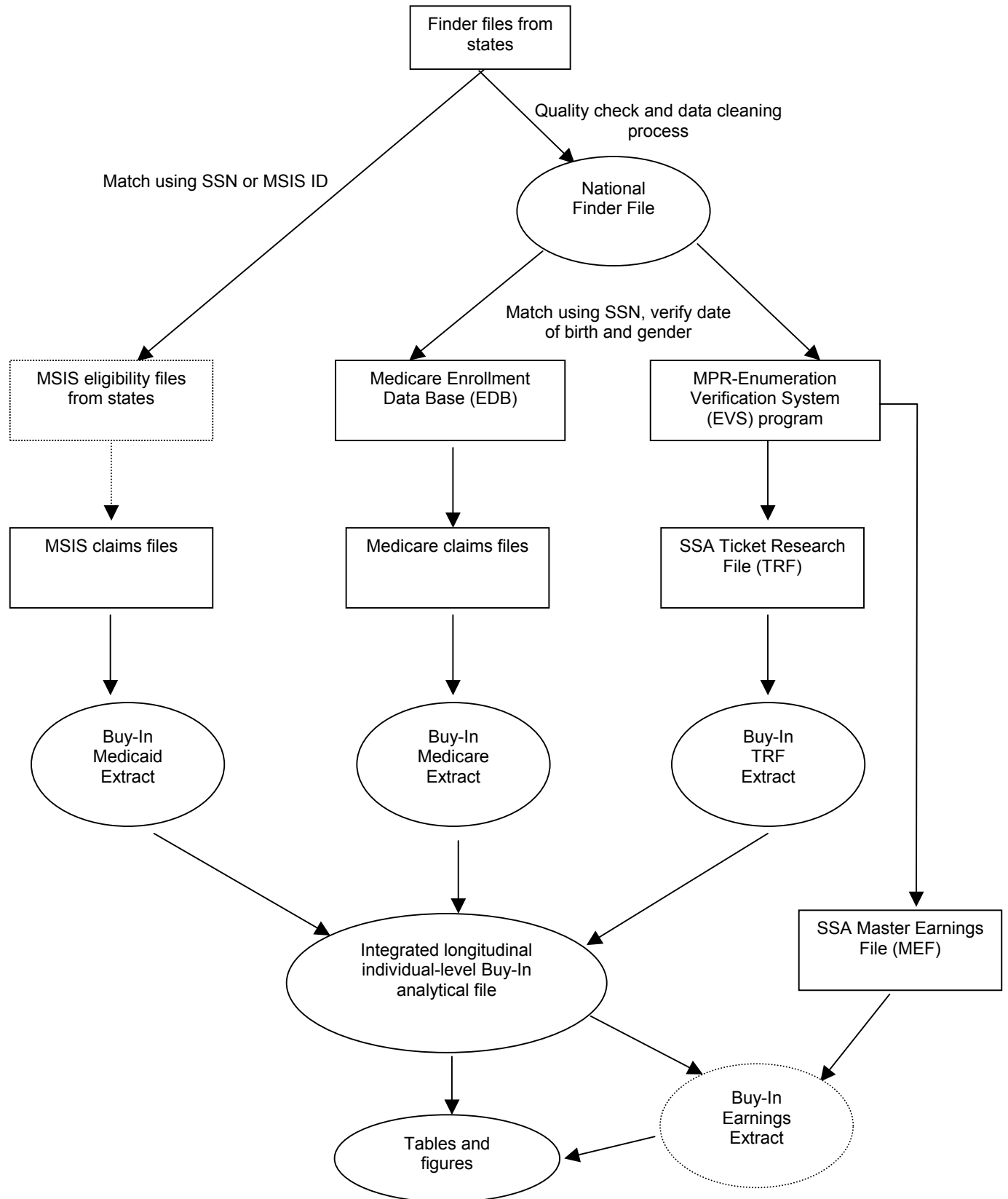
To create Buy-In Medicare extract, individuals from the national finder file were matched with the Medicare Enrollment Database (EDB) and those who were matched with the EDB were then linked with Medicare claims files. On the Medicaid side, because the MSIS data are available at the state level, each state’s finder file was matched with that state’s MSIS files to create Buy-In Medicaid extract.

Extracts created from each data source were integrated into the national person-level Buy-In analytical file, except for the earnings extract, which can only be accessed by SSA employees. Exhibit II.3 shows the number and percent of Buy-In participants from 2000 through 2004 (as indicated in the state finder files) who were matched with the other data sources thus included in each extract. These data provide important information about program overlap. For example, 16 percent of all Buy-In participants were not matched with the TRF, meaning that these individuals were not SSI or SSDI beneficiaries between 1999 and 2004.<sup>5</sup> Only 3 percent of all Buy-In participants did not have earnings reported to the IRS, and therefore do not appear in the MEF. Twenty-three percent of participants were not in the Medicare files, meaning that they were not enrolled in Medicare at any point between 1999 and 2003.

<sup>5</sup> Only less than one percent of the Buy-In participants were not matched to TRF because of invalidated name and date of birth.

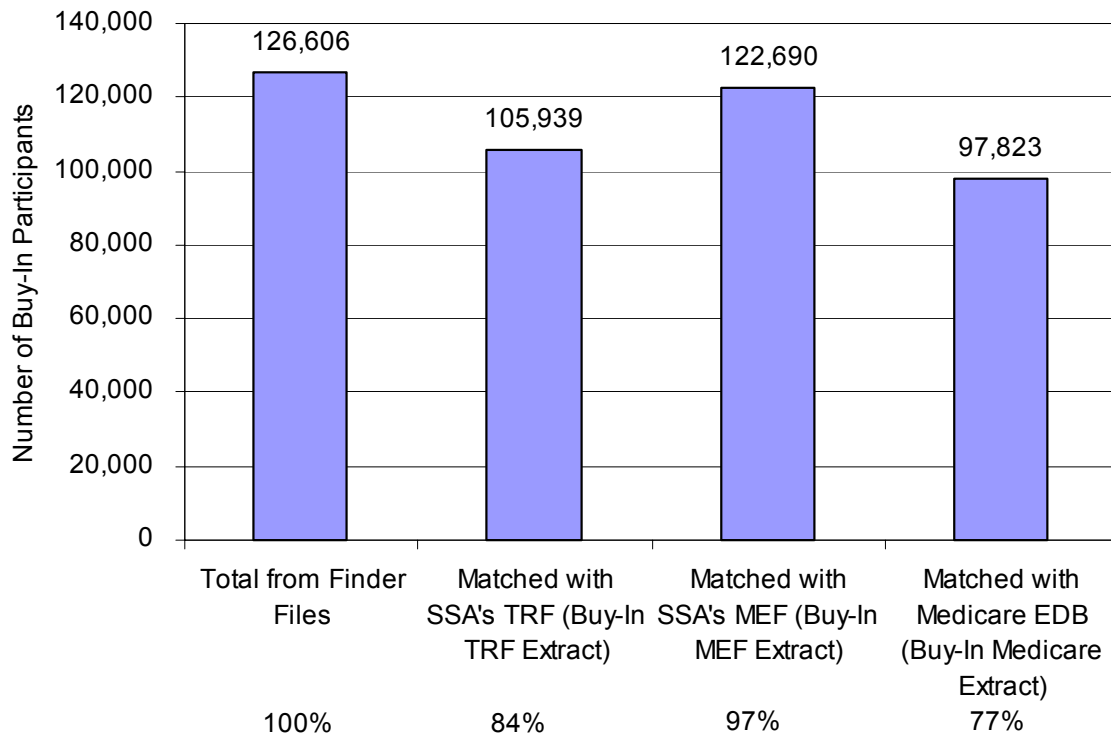
## EXHIBIT II.2

### DATA INTEGRATION PROCESS



### EXHIBIT II.3

#### NUMBER OF BUY-IN PARTICIPANTS MATCHED WITH OTHER DATA SOURCES



Data Source: Buy-In finder files from 27 states, Ticket Research File (TRF), Master Earnings File (MEF), and Medicare EDB

Analytic Group: Ever-enrolled Buy-In participants between 2000 and 2004

Notes: We did not verify Buy-In participants from finder files against the MSIS eligibility files because of time and resource constraints. Since Medicaid Buy-In is an option under the state Medicaid program, ideally it should be 100% match with MSIS eligibility file.

See Appendix Table B.1 for state-level matching information.

## C. ANALYTIC GROUPS

Although the universe of this study includes all individuals in the state finder files (that is, anyone who had ever participated in the Buy-In program in the years from 2000 to 2004), certain research questions can be addressed most effectively by examining a selected subgroup of participants rather than the entire group. For example, analyses of the characteristics of high earners focused on individuals with the top 10 percent of earnings.

To provide as much consistency as possible for the analyses in this statistical profile, MPR used the following groups:

- ***Ever-Enrolled Buy-In Participants from 2000 through 2004.*** This group includes any individual who was enrolled in the Buy-In program for at least one month during the five-year period 2000-2004.
- ***Ever-Enrolled Buy-In Participants by Year.*** This group includes people enrolled in the program for at least one month during a specific year. The same person may appear in this analytic group for different years, if his or her Buy-In enrollment extends across multiple years.
- ***First-Time Buy-In Participants.*** This group includes people enrolled in the program for the first time in a given year. For example, first-time enrollees in 2002 would not have been enrolled in 2000 or 2001. Because 2000 was selected as the first year in the finder file, first-time participants were not identified for 2000 because it was not possible to determine whether they had enrolled for the first time in 2000 or in a previous year.

In addition to the above selected subgroups, constraints in the other data sources meant that some analyses used data only for a limited number of years. For example, analyses of Medicaid expenditures were completed only for participants enrolled in 2002 because the Medicaid data are not yet available for 2003 or 2004. Similarly, some analyses were based on data from only certain subgroups of Buy-In participants. For example, the MEF includes only participants who have reported earnings; participants who do not have or report earnings do not appear in this data source. The analyses of earnings, therefore, were based only on individuals who appear in the MEF.

In the following chapters, the data sources and the analytic group used in the analyses are noted below each exhibit.

### **III. PROFILE OF ENROLLMENT AND PARTICIPANT CHARACTERISTICS**

Tracking enrollment trends and understanding participant characteristics are essential steps in monitoring the Medicaid Buy-In program. Enrollment trends—both nationally and within individual states—are important measures of the rate and effectiveness of program implementation over time and help policymakers determine whether the program is operating and performing as intended. Knowing participant characteristics provides a sense of who is attracted to the program and can help to determine whether the program is reaching the target population and to develop estimates of future program costs.

Although the number of states with a Medicaid Buy-In program and national enrollment levels have increased steadily since the program's first implementation (Black and Ireys 2006), there are few data on the particular demographic characteristics and impairments of participants. Also, few studies have focused on the other public assistance programs in which participants may have been involved before and after they enrolled in the Buy-In program. This chapter addresses the following questions about program enrollment and participants:

- How has the Buy-In program been growing?
- Who participates in the Buy-In program?
- How long do Buy-In participants remain enrolled?

Additional tables in Appendix C provide further information on enrollment and characteristics of Buy-In participants.

## **KEY FINDINGS ON PROGRAM GROWTH: A NATIONAL PERSPECTIVE**

Enrollment in the Medicaid Buy-In program grew steadily over the study period [see Exhibit III.1 as well as White et al. (2005) and Black and Ireys (2006)]. Specifically:

- In 2004, 94,963 individuals were enrolled in the Medicaid Buy-In program at some point during the year, up from 29,318 in 2001—an increase of 224 percent.
- The number of first-time participants almost doubled in 2002, mainly because a few states—specifically, Indiana, Missouri, and Pennsylvania—launched new Buy-In programs in that year.
- From 2002 through 2004, the number of new participants entering the Medicaid Buy-In program each year was steady at about 31,000 individuals.

## **METHODS**

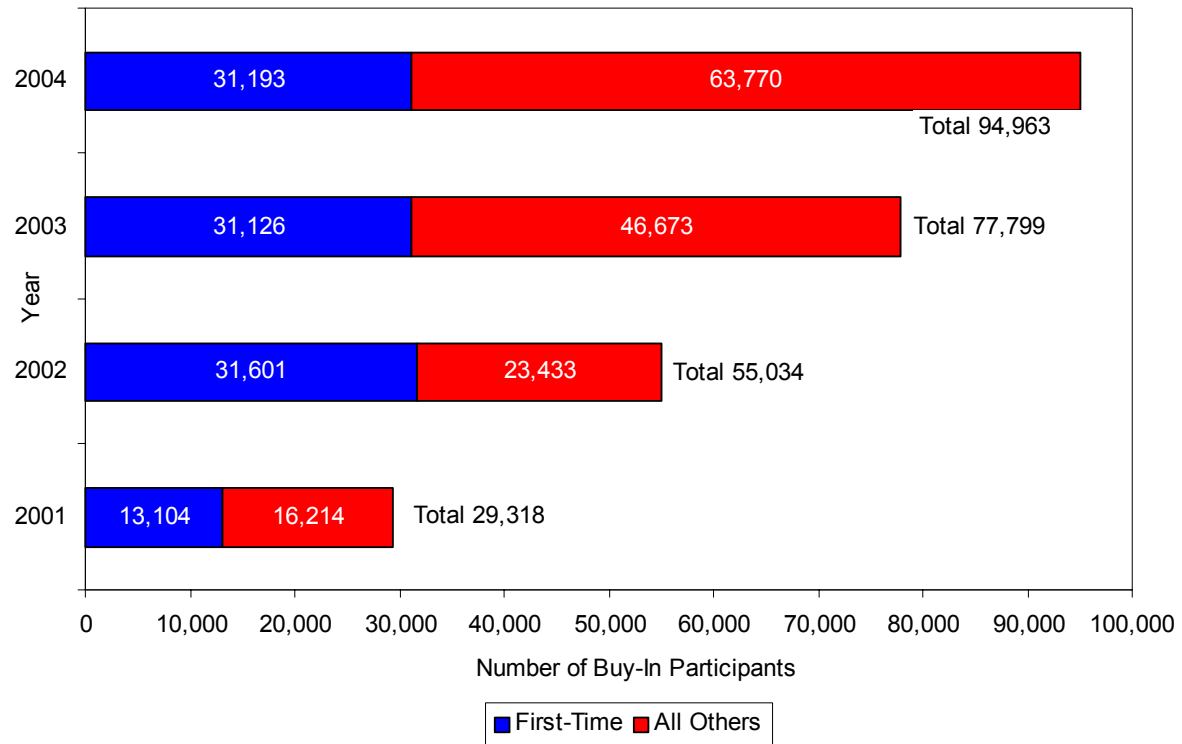
We divided the number of participants ever enrolled in the program in a given year into two groups: (1) those not previously enrolled (i.e., first-time participants) and (2) all others. We used this approach to illustrate (1) how Buy-In enrollment at the national level increased from 2001 through 2004 and (2) the extent to which such growth is attributable to new versus returning and continuing Buy-In participants.

The number of participants ever enrolled in the Buy-In program represents individuals who were enrolled at some point during the year. This figure is larger than the number of participants enrolled on the last day of the year—an index of enrollment, that has been used in other studies. For example, as Exhibit III.1 shows, 94,963 participants were enrolled in 27 Medicaid Buy-In programs at some point during 2004, whereas these 27 states had a total enrollment of 74,444 on December 31, 2004 (Black and Ireys 2006).



### EXHIBIT III.1

#### NUMBER OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM, BY YEAR, 27 STATES, FIRST-TIME PARTICIPANTS VS. ALL OTHERS



Data Source: Buy-In finder files from 27 states

Analytic Group: Ever-enrolled Buy-In participants, by year (2001-2004)

## KEY FINDINGS ON PROGRAM GROWTH: A STATE PERSPECTIVE

Over a period of five years, 126,606 individuals participated in the Medicaid Buy-In program in (Exhibit III.2). The number of states with Buy-In programs and total participation grew steadily:

- Only 13 states had a Buy-In program in 2000. Four years later, the number increased to 27, not including North Dakota, Nevada, and Wyoming, which did not submit finder files because of relatively low enrollment; and Arizona and Mississippi, which did not have a MIG.
- The 27 states for which we had data varied in total Buy-In enrollment, ranging from 86 individuals in West Virginia to 22,783 individuals in Missouri during 2004.

## METHODS

A program's formal implementation date might be different from the actual date of the first enrollment, even though states usually start enrollment soon after the implementation date. However, seven states—Arkansas, Michigan, Missouri, New Hampshire, New York, Wisconsin and West Virginia—submitted finder file records for 243 individuals who enrolled *before* the program implementation date, as reported in their MIG progress reports. It is possible that these participants were eligible for Buy-In up to three months before the implementation date because of retroactive eligibility in Medicaid. However, because MPR did not know precisely why these individuals appeared in the finder files, all of their records (including any data after the implementation date) were dropped from the analysis.

## EXHIBIT III.2

NUMBER OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID  
BUY-IN PROGRAM, BY YEAR AND STATE

State	Implementation Date	2000-2004	2000	2001	2002	2003	2004
Massachusetts	Jul-97	19,361	6,453	7,657	9,765	10,949	10,858
South Carolina	Oct-98	155	90	103	104	76	66
Oregon	Feb-99	1,509	380	648	800	981	782
Alaska	Jul-99	613	103	186	260	307	347
Minnesota	Jul-99	14,065	6,826	8,270	8,203	8,490	8,094
Nebraska	Jul-99	317	132	176	156	151	134
Maine	Aug-99	2,404	572	949	1,107	1,166	1,027
Vermont	Jan-00	1,480	362	517	683	760	840
New Jersey	Feb-00	1,911	3	323	723	1,161	1,626
Iowa	Mar-00	11,348	2,427	4,153	5,947	7,586	9,246
Wisconsin	Mar-00	10,789	968	1,996	4,478	6,734	9,113
California	Apr-00	2,195	258	712	902	1,152	1,502
Connecticut	Oct-00	6,389	1,008	2,654	3,511	3,838	4,318
New Mexico	Jan-01	2,740	—	565	1,113	1,520	1,797
Arkansas	Feb-01	263	—	213	218	122	107
Utah	Jul-01	960	—	196	395	433	496
Illinois <sup>a</sup>	Jan-02	798	—	—	160	456	798
Pennsylvania	Jan-02	6,203	—	—	1,511	3,148	5,463
Washington	Jan-02	601	—	—	157	288	545
New Hampshire	Feb-02	2,246	—	—	1,102	1,503	1,909
Indiana	Jul-02	11,144	—	—	4,297	7,887	8,862
Kansas	Jul-02	1,178	—	—	523	830	1,001
Missouri	Jul-02	24,686	—	—	8,919	17,627	22,783
New York	Jul-03	2,543	—	—	—	634	2,541
Louisiana	Jan-04	499	—	—	—	—	499
Michigan	Jan-04	123	—	—	—	—	123
West Virginia	May-04	86	—	—	—	—	86
Total		126,606	19,582	29,318	55,034	77,799	94,963

Data Source: Buy-In finder files from 27 states, MIG progress report (for implementation date)

Analytic Group: Ever-enrolled Buy-In participants, by year (2000-2004)

Note: Table is sorted by the implementation date.

<sup>a</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

## KEY FINDINGS ON ENROLLMENT DURATION

The Medicaid Buy-In program is designed to provide ongoing health care coverage for individuals with disabilities who want to work; it is not intended to be temporary coverage for uninsured individuals. Consequently, participants are likely to stay on the program for a while. As shown in Exhibit III.3:

- Fewer than one-quarter of first-time Buy-In participants enrolled in the program for six months or less in a two-year period.
- A large proportion of first-time Buy-In participants stayed in the program continuously for 24 months during the two-year observation period following enrollment: they represent, on average, 32 percent among those in programs implemented before 2000, 47 percent among those in programs implemented in 2000, 24 percent of first-time Buy-In participants among programs implemented in 2001, and 60 percent among those in programs implemented in 2002.

The average enrollment duration was ultimately uniform among states in any implementation group, but there was substantial variation across implementation groups (Appendix Table C.1):

- Programs implemented in 2002 had the highest average enrollment duration (20 months), comparing to the older programs.
- Utah is the only state in which first-time Buy-In participants were enrolled for less than a year (9 months) on average during the two-year period.
- The average enrollment duration for first-time Buy-In participants in New Jersey, Iowa, Washington, and Missouri was more than 20 months.

The number of enrollment months reported in Exhibit III.3 could include several enrollment spells during the two-year period. The maximum number of enrollment spells between 2000 and 2004 is seven (Appendix Table C.2).

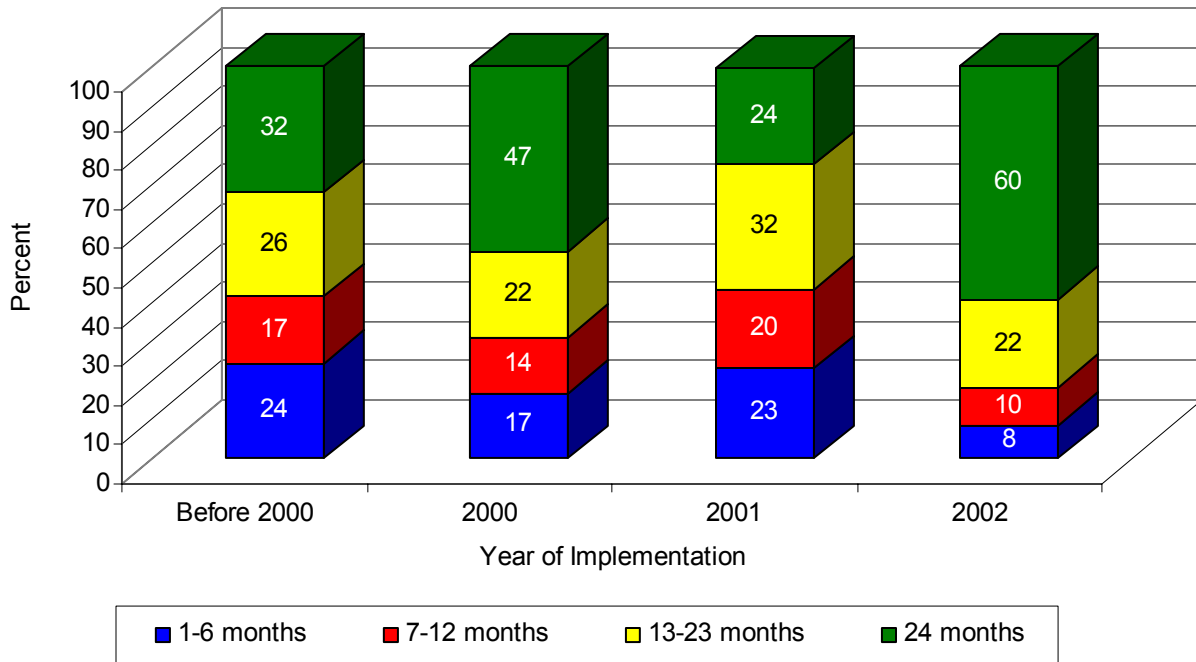
## METHODS

One way to understand the role played by the Medicaid Buy-In program in a person's life is to examine the person's total time on the program. Because the Buy-In program is ongoing, and in the interest of making reasonable comparisons across states, we looked at total enrollment time by choosing the same group of Buy-In participants in each state—those enrolled in the program for the first time in 2001 and 2002—and tracked the number of months enrolled during the two-year period following the first enrollment. For example, an individual first enrolled in March 2001 was tracked through February 2003.

States that implemented a Buy-In program in 2003 and 2004 were not included in the analysis because of the two-year observation period.

### EXHIBIT III.3

#### TOTAL LENGTH OF ENROLLMENT AMONG FIRST-TIME BUY-IN ENROLLEES IN 2001 AND 2002, BY YEAR OF PROGRAM IMPLEMENTATION



Data Source: Buy-In finder files from 23 states

Analytic Group: 44,705 first-time Buy-In participants in 2001 and 2002

Note: See Appendix Table C.1 for state-level information on total length of enrollment, and Table C.2 for more information on the number of enrollment spells in the Medicaid Buy-In program.

## **KEY FINDINGS ON PROGRAM GROWTH: YEAR-TO-YEAR CHANGE**

Although program size varies from state to state, many programs experienced substantial year-to-year increases in enrollment, particularly during the initial years of operation (Exhibit III.4). In addition:

- Enrollment usually increased the most during the first year of implementation and slowed afterwards.
- Enrollment in programs implemented before 2000 began to level off in 2001. Except for Alaska, the other six states that implemented programs before 2000 experienced negative enrollment growth between 2003 and 2004, with enrollment decreasing by an average of 7 percent.
- Buy-In programs implemented in 2000 grew by 25 percent between 2003 and 2004.
- Some of the largest Buy-In programs were implemented in 2002, and on average, they experienced a 47 percent increase in enrollment two years after implementation.

## **METHODS**

To explore how enrollment trends might be related to program age, MPR grouped states into five “implementation groups” based on the year of initial implementation. Year-to-year change in the number of ever-enrolled Buy-In participants across states and groups was compared across implementation groups. The average change for each group was calculated across states in that group.

Data for Louisiana, Michigan, and West Virginia are not reported because they implemented their Buy-In program in 2004.

## EXHIBIT III.4

YEAR-TO-YEAR CHANGE IN THE NUMBER OF PARTICIPANTS EVER ENROLLED  
IN THE MEDICAID BUY-IN PROGRAM, BY YEAR OF IMPLEMENTATION AND STATE

Year of Implementation	State	Percent Change Year to Year			
		2000-2001	2001-2002	2002-2003	2003-2004
Before 2000	Massachusetts	19	28	12	-1
	South Carolina	14	1	-27	-13
	Oregon	71	23	23	-20
	Alaska	81	40	18	13
	Minnesota	21	-1	3	-5
	Nebraska	33	-11	-3	-11
	Maine	66	17	5	-12
	<b>Average</b>	<b>44</b>	<b>14</b>	<b>5</b>	<b>-7</b>
2000	Vermont	43	32	11	11
	New Jersey <sup>a</sup>	10667	124	61	40
	Iowa	71	43	28	22
	Wisconsin	106	124	50	35
	California	176	27	28	30
	Connecticut	163	32	9	13
	<b>Average</b>	<b>112<sup>a</sup></b>	<b>64</b>	<b>31</b>	<b>25</b>
2001	New Mexico	—	97	37	18
	Arkansas	—	2	-44	-12
	Utah	—	102	10	15
	<b>Average</b>	<b>—</b>	<b>67</b>	<b>1</b>	<b>7</b>
2002	Illinois <sup>b</sup>	—	—	185	75
	Pennsylvania	—	—	108	74
	Washington	—	—	83	89
	New Hampshire	—	—	36	27
	Indiana	—	—	84	12
	Kansas	—	—	59	21
	Missouri	—	—	98	29
	<b>Average</b>	<b>—</b>	<b>—</b>	<b>93</b>	<b>47</b>
2003	New York	—	—	—	301
	<b>Average</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>301</b>

Data Source: Buy-In finder files from 24 states

Analytic Group: Ever-enrolled Buy-In participants, by year (2000-2004)

<sup>a</sup> New Jersey was excluded from the average calculation. The exceptionally large proportional change from 2000 to 2001 in New Jersey is an artifact of how program enrollment began. The program had three participants in 2000 and full scale enrollment did not begin until 2001.

<sup>b</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

## KEY FINDINGS ON DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

As shown in Exhibit III.5 and Appendix Table C.3:

- The composition of all Buy-In participants is nearly balanced between men and women: 49 percent of ever-enrolled Buy-In participants are male. For comparison, 47 percent of nonelderly Medicaid enrollees are male (Kaiser Family Foundation 2006).
  - West Virginia had the lowest share of male Buy-In participants (36 percent), and California had the highest (56 percent).
- 77 percent of ever-enrolled Buy-In participants are white. For comparison, 45 percent of nonelderly Medicaid enrollees are white (Kaiser Family Foundation 2006).
  - The share of white Buy-In participants ranged from 43 percent in Massachusetts to nearly 98 percent in New Hampshire.
- The age distribution among Buy-In participants differs according to whether the program was implemented under the authority of the BBA or the Ticket Act: 42 percent of Buy-In participants were 21 to 44 years old in BBA states, compared with 48 percent in Ticket Act states; 4 percent were older than 65 in BBA states. Unlike the BBA, the Ticket Act limited enrollment to adults under 65.
  - The average age of the 126,606 participants ever enrolled in the Buy-In program in 27 states from 2000 through 2004 was nearly 45 years.
  - Buy-In participants in California are older, on average, and those in South Carolina are younger, on average, than participants in other states.

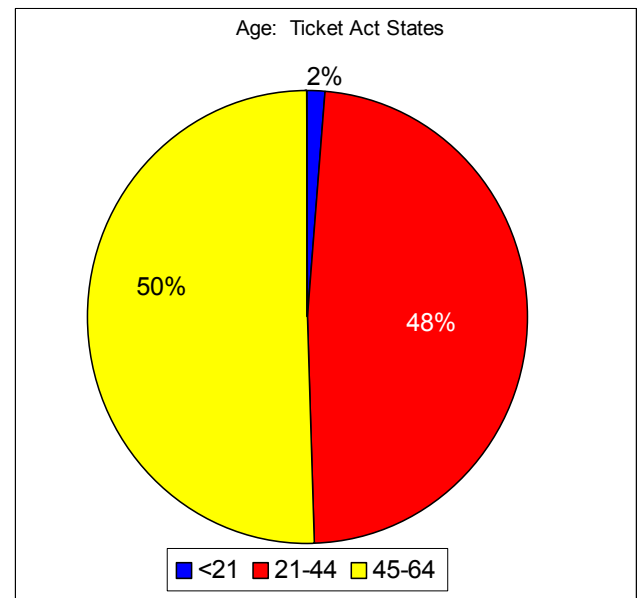
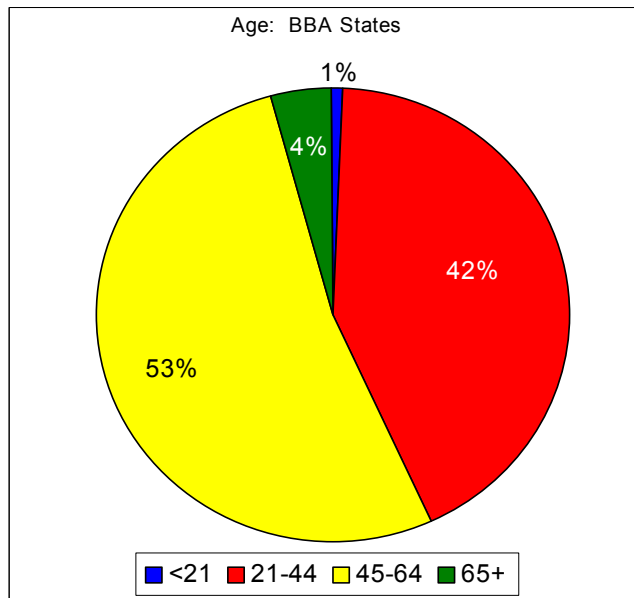
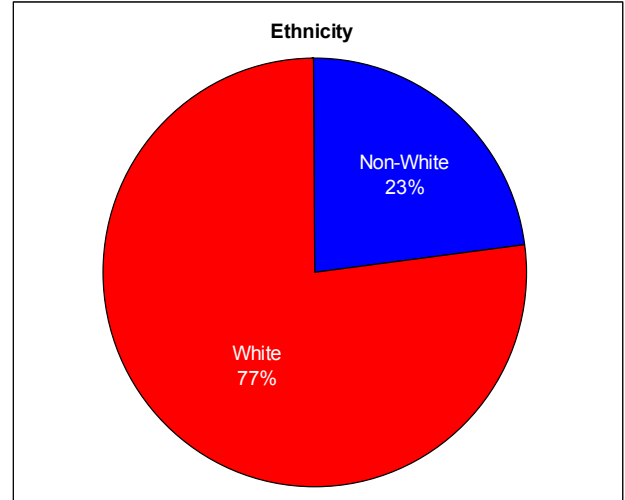
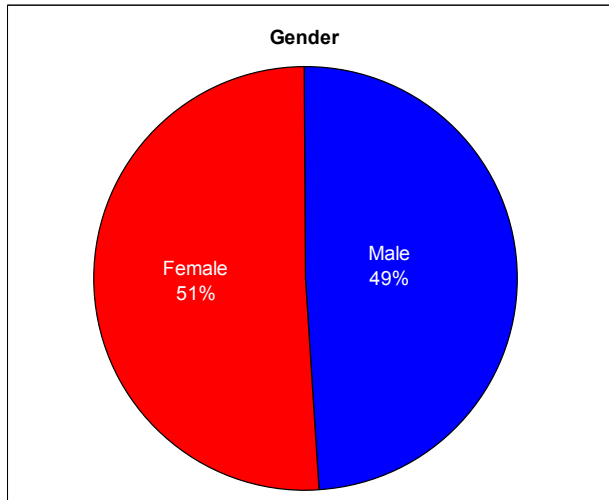
## METHODS

Age was measured at a participant's first month of Buy-In enrollment in the 2000–2004 period. States submitted different measures of race composition in finder files. For comparability, we report only the percentage of white and non-white participants.



### EXHIBIT III.5

#### DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAMS FROM 2000 THROUGH 2004, 27 STATES AND BY FEDERAL AUTHORIZATION



Data Source: Buy-In finder files from 27 states

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

Note: See Appendix Table C.3 for state-level information.

## KEY FINDINGS ON PARTICIPANTS' IMPAIRMENT

Exhibit III.6 shows the distribution of Buy-In participants, by type of impairment as determined by SSA. One quarter of the 126,606 ever-enrolled Buy-In participants between 2000 and 2004 had an unknown impairment based on TRF data. This percentage included 16 percent who had no matched TRF data (which means they have never been SSI or SSDI beneficiaries in that period) and therefore had no available impairment information; and another nine percent who had no identifiable disabling condition in the month of Buy-In enrollment. Otherwise:

- 30 percent of Buy-In participants were identified as having a mental illness or other mental disorders, the single most diagnosed condition among ever-enrolled Buy-In participants.
- Mental retardation and musculoskeletal conditions appeared in 12 and 9 percent of Buy-In participants, respectively. Only two percent of all Buy-In participants had a sensory disorder, including vision, hearing or speech impairment.
- 21 percent of Buy-In participants had a type of impairment other than the above four conditions.

States vary in the type of conditions that are most common in their enrolled population (Table C.4). For example:

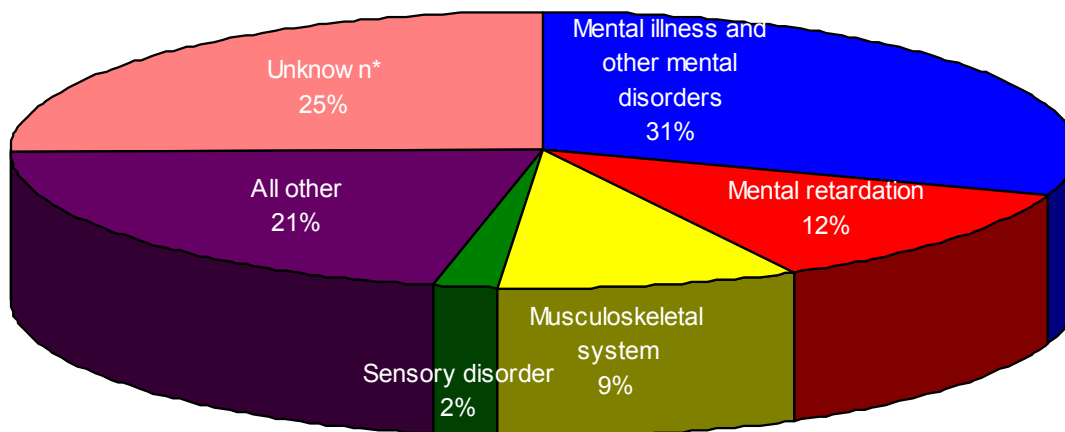
- New Hampshire had the highest share (56 percent) of participants diagnosed with a mental illness or other mental disorder, while West Virginia had the lowest (five percent).
- Zero (West Virginia) to 26 percent (Indiana) of participants were diagnosed with mental retardation; and zero (West Virginia) to 17 percent (Missouri) of participants had a musculoskeletal condition.
- Five percent of participants had a sensory disorder in three states (Louisiana, Nebraska, and South Carolina).

## METHODS

The primary disabling condition in the TRF identifies the primary impairment code used in the medical determination of an individual's eligibility for disability benefits. There are 23 diagnosis groups in the original TRF data. For this study, the 23 groups were combined into six categories of disabling conditions: mental illness and other mental disorders, mental retardation, musculoskeletal disorder, sensory disorder, and all other. Each individual was assigned to one of these categories according to his/her primary disabling condition at the *first ever* month of Buy-In enrollment during 2000-2004. Participants with no matched TRF data and participants who are matched but for whom the disabling condition was missing or unidentifiable in their first month were combined and counted in the category of "unknown."

### EXHIBIT III.6

PERCENTAGE OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY TYPE OF IMPAIRMENT AT START OF ENROLLMENT



Data Source: Buy-In finder files from 27 states and Ticket Research File (TRF)

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

Notes: See Appendix Table C.4 for state-level information and Appendix Table D.1 for a crosswalk between the 6 categories of disabling conditions reported here, the 23 disabling conditions defined in TRF, and the original SSA primary diagnosis codes.

\* Includes participants who were not matched with TRF data (16 percent), and participants whose primary disabling condition was missing or could not be categorized in the TRF at the first month of Buy-In enrollment (9 percent).

## **KEY FINDINGS ON PARTICIPANT CHARACTERISTICS: PRIOR PARTICIPATION IN SSI AND SSDI**

Many individuals received other disability benefits, such as SSI or SSDI, before participating in the Medicaid Buy-In program. As Exhibit III.7 shows:

- Nearly 69 percent of Buy-In participants received only SSDI benefits before they enrolled in the Buy-In program.
- Two percent of Buy-In participants received only SSI benefits before they enrolled in the Buy-In program.
- Another three percent of Buy-In participants received concurrent SSI and SSDI benefits before enrolling in the Buy-In program.
- 26 percent of Buy-In participants received neither SSDI nor SSI benefits during the year before enrolling in the Buy-In program, including 16 percent who have no matched TRF data, (meaning they have never been SSI or SSDI beneficiaries between 1999 and 2004).

States vary somewhat in rates of prior SSDI and SSI participation (Appendix Table C.5):

- Nebraska had the highest prior SSDI participation rate among Buy-In participants, followed by Kansas, New York, and Washington; 85 percent or more of Buy-In participants in these four states received only SSDI benefits before enrolling. In contrast, fewer than 50 percent of Buy-In participants in South Carolina and West Virginia received only SSDI benefits before enrolling in the Buy-In program.
- The share of participants receiving neither SSDI nor SSI benefits before they enrolled in the program ranged from 6 percent in Nebraska to 93 percent in West Virginia.

Few Buy-In participants were in 1619(a) and 1619(b) programs before enrolling in the Buy-In program (Appendix Table C.6): only 0.3 percent received cash benefits under 1619(a), and 2.8 percent gained Medicaid coverage through 1619(b).

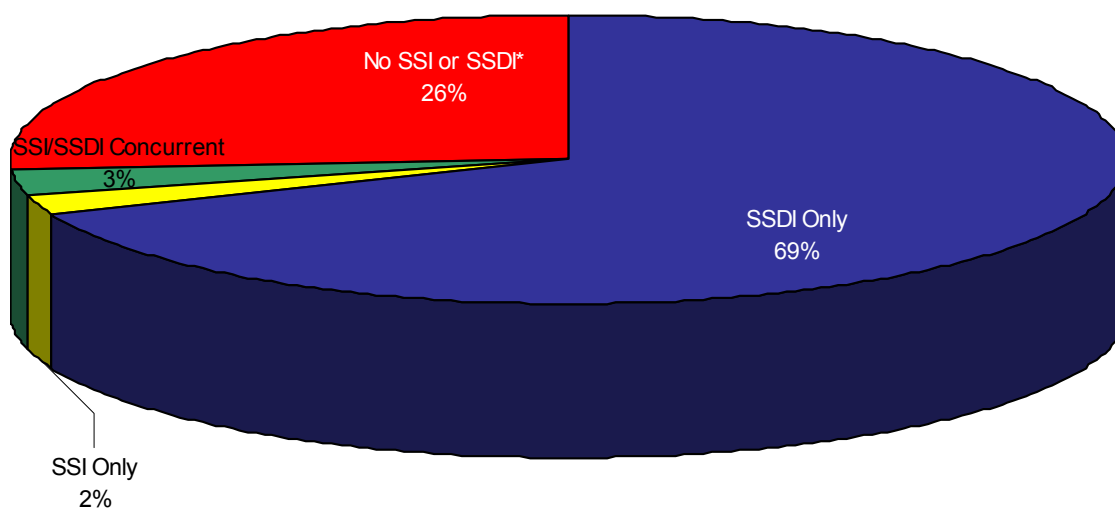
## **METHODS**

“Prior program participation” was defined as the latest participation status in SSI or SSDI during the 12 months *before* the *first ever* month of Buy-In enrollment between 2000 and 2004. The four categories of participation status in Exhibit III.6 are mutually exclusive. SSDI and SSI participation was defined on the basis of SSA’s payment status code in the TRF: only individuals “currently” receiving benefits in a month were considered participants for that month. Individuals who were not matched to TRF were automatically grouped into those with no SSI or SSDI.

See the glossary at the end of this document for definitions of 1619(a) and 1619(b).

### EXHIBIT III.7

#### PERCENTAGE OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY PRIOR SSI AND SSDI PROGRAM PARTICIPATION STATUS



Data Source: Buy-In finder files from 27 states and Ticket Research File (TRF)

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

Notes: SSI participants are individuals receiving SSI cash benefits only, including participation in 1619(a) but not 1619(b); SSDI participants include individuals receiving SSDI benefits who may be in a trial work period but not in an extended period of eligibility.

See Appendix Table C.5 for state-level information and Appendix Table C.6 for more detailed information on participation in other work incentive programs, such as 1619(a) and 1619(b).

\*Includes participants who were not matched with TRF data (16 percent), and participants who did not have any "current pay" status code in the TRF during the 12 months before the first month of Buy-In enrollment between 2000 and 2004 (10 percent)

## **KEY FINDINGS ON PARTICIPANT CHARACTERISTICS: PRIOR MEDICARE ELIGIBILITY**

Many Medicaid Buy-In participants were covered under Medicare as well, mainly because they had received SSDI benefits and were thus eligible for Medicare benefits. As Exhibit III.8 shows:

- Among 80,503 participants ever enrolled in the Buy-In program between 2000 and 2003 who were also matched with TRF data, 70 percent were enrolled in Medicare before participating in the Buy-In program, ranging from 18 percent in New Mexico to 85 percent in New York.

SSDI beneficiaries are automatically eligible for Medicare coverage after a 24-month waiting period following SSDI participation. For individuals in the waiting period, the Buy-In program is an attractive option to obtain medical coverage. In some states (New Mexico, for example), the Buy-In program was designed specifically for this group of workers. The last column in Exhibit III.8 shows:

- Among 80,503 participants ever enrolled in the Buy-In program between 2000 and 2003 who were also matched with TRF data, 20 percent were SSDI beneficiaries but not yet eligible for Medicare before participating in the Buy-In program; they were most likely in their two-year waiting period.
  - South Carolina had the lowest share of Buy-In participants previously enrolled in SSDI but not in Medicare (8 percent), and New Mexico had the largest share (69 percent).

## **METHODS**

To examine SSDI benefits (based on TRF data) and Medicare eligibility (based on Medicare EDB) at the same time, the analytic group for Exhibit III.8 was first restricted to Buy-In participants matched with TRF data, then further restricted to participants enrolled between 2000 and 2003 because Medicare data were not available in 2004.

In some states, there may be more Buy-In participants eligible for Medicare than are shown in Exhibit III.8 because they were not in TRF data. For example, some Buy-In programs implemented under the authority of BBA may have participants who are over 65 and thus automatically eligible for Medicare, but are not in the TRF.

Prior participation status refers to the latest Medicare eligibility or participation in SSDI during the 12 months *before the first ever* month of Buy-In enrollment from 2000 through 2003.

### EXHIBIT III.8

#### PRIOR MEDICARE ELIGIBILITY AMONG PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2003, BY STATE

State	Number of Participants	Percent with Medicare Eligibility	Percent with SSDI but No Medicare Eligibility
New York	573	85	10
Illinois <sup>a</sup>	414	83	11
Washington	278	82	12
New Hampshire	1,539	80	14
Oregon	1,241	80	11
California	1,370	78	16
Vermont	1,126	77	18
Minnesota	12,025	77	18
New Jersey	1,167	77	18
Indiana	6,410	74	10
Nebraska	291	73	26
Maine	1,596	71	15
Connecticut	4,940	71	17
Wisconsin	6,950	70	24
Missouri	15,278	70	21
Iowa	8,585	69	26
Utah	572	67	20
Pennsylvania	2,642	65	27
Massachusetts	11,052	65	15
Alaska	430	61	19
Arkansas	213	60	28
South Carolina	111	51	8
New Mexico	1,700	18	69
Total	80,503	70	20

Data Source: Buy-In finder files from 23 states, Ticket Research File (TRF), and the Medicare Enrollment DataBase (EDB)

Analytic Group: Ever-enrolled Buy-In participants from 2000 through 2003, matched with TRF data

Notes: The two percentage columns do not add up to 100 percent, because there are Buy-In participants who did not receive Social Security Disability Insurance (SSDI) benefits nor were eligible for Medicare before the Buy-In enrollment.

Kansas is not included in the exhibit because its revised finder file arrived after the Medicare data were linked.

Louisiana, Michigan and West Virginia are not included in the exhibit because their Buy-In programs were implemented in 2004.

Table is sorted in descending order by percentage eligible for Medicare.

<sup>a</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

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#### **IV. PROFILE OF EARNINGS**

Because sustained employment is a major goal of the Buy-In program, participants' earnings are a key index of program performance. Earnings can be analyzed in several ways, from assessing the percentage of participants who have any earnings after enrolling in the program to calculating the amount of dollars earned before and after enrolling. The data presented in this section address two specific questions: how much do participants earn, and how do earnings change after enrolling in the Buy-In program. The results of the analyses are presented for all state Medicaid Buy-In programs combined and for individual states. Additional tables in Appendix E provide further information on the earnings of Buy-In participants.

A recent report on the Medicaid Buy-In program (Black and Ireys 2006) summarized key trends in the earnings of program participants. That report was based on aggregate data submitted by the states. The earnings data assembled for this statistical profile allowed for two analyses not possible with aggregate data. One analysis examined the issue of whether participants' average annual earnings actually increased in the years after program enrollment compared with the years before enrollment. A second analysis examined key characteristics of the participants whose earnings increased. Both analyses provide policymakers and program administrators with new information on the characteristics of Buy-In participants and their earnings outcomes.

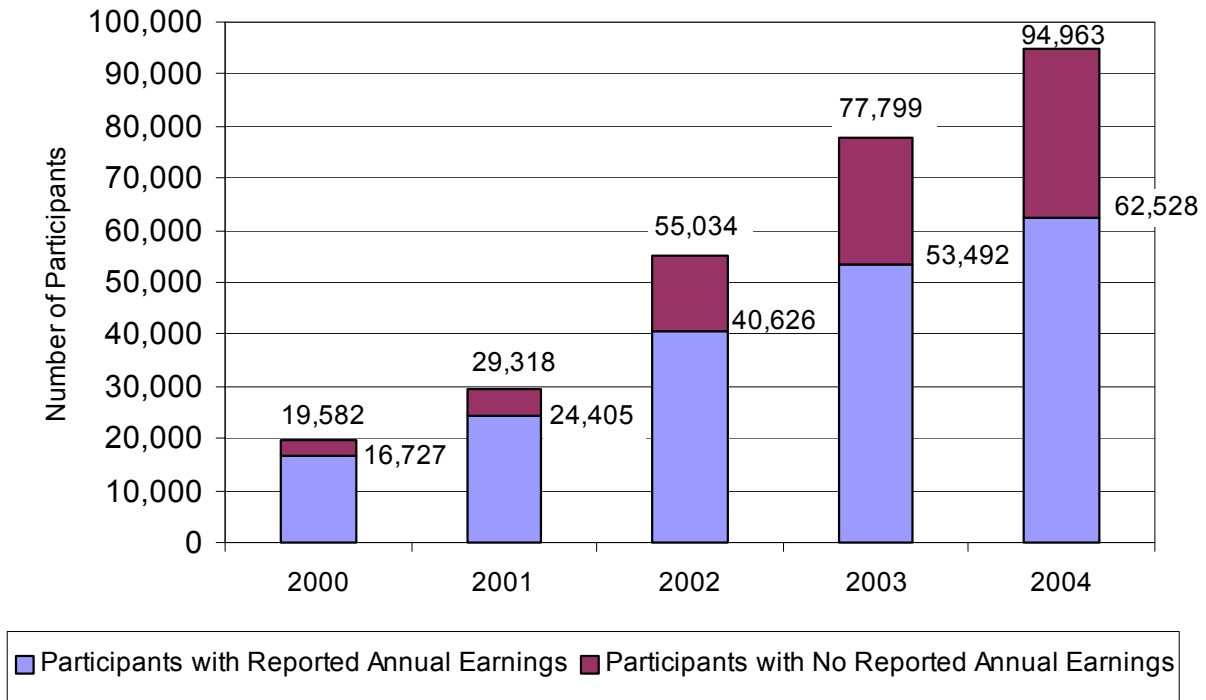
## **KEY FINDINGS ON PARTICIPANTS WITH REPORTED EARNINGS**

Not every individual who participated in the Medicaid Buy-In program during the study period had reported earnings. In some instances, earnings could be missing for a given year. This occurs when someone is laid off, looking for work, or leaves the labor force. Moreover, some individuals may not have had their earnings reported to SSA because they were in jobs that did not require employees to report earnings (those in some sheltered workshops, for example) or because they were earning money through casual jobs.

Our analyses of Buy-In participants with reported earnings (Exhibit IV.1) showed that their number rose from 16,727 in 2000 to 62,528 in 2004—an increase of 274 percent, slower than an increase of 385 percent in the overall Buy-In participation during the same five-year period. More specifically, the percent of ever-enrolled Buy-In participants who had earnings as reported in the MEF dropped from 85 percent in 2000 to 66 percent in 2004. This drop resulted, in part, because of the more lenient work-related provisions of the most recently implemented programs. For example, some of the newer programs had more generous grace periods than the older programs.

# EXHIBIT IV.1

## NUMBER OF MEDICAID BUY-IN PARTICIPANTS, TOTAL AND WITH REPORTED EARNINGS, 27 STATES, 2000-2004



Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants, by year

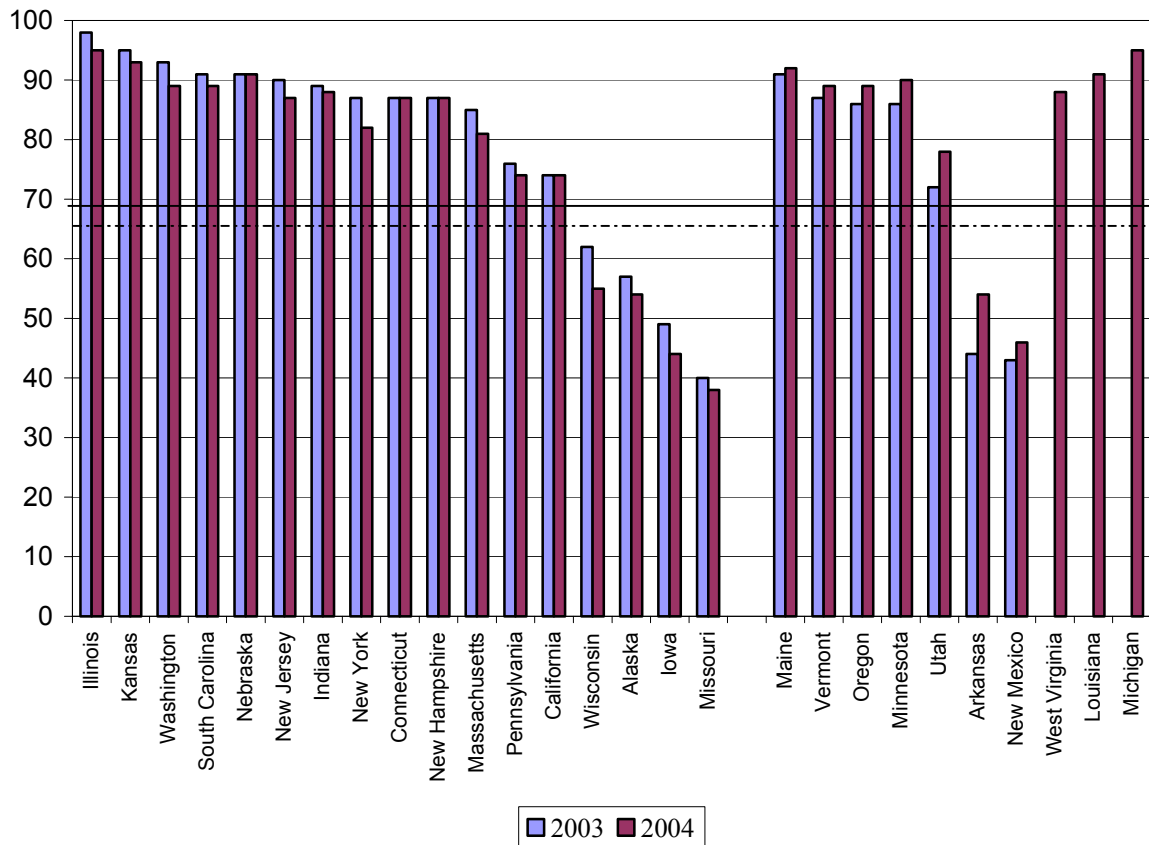
## **KEY FINDINGS ON STATE VARIATION IN PARTICIPANTS WITH EARNINGS**

As participants in a work incentive program, most Buy-In participants had reported earnings. Across 27 states, the share of ever-enrolled participants who had reported earnings each year fell from 69 percent in 2003 to 66 percent in 2004 (Exhibit IV.2), but states vary widely on this measure. For example:

- In 2003 and 2004, more than 90 percent of Buy-In participants in Illinois (only those included in its original finder file), Kansas, and Maine had reported earnings in the MEF, whereas less than half of the participants in Iowa, Missouri, and New Mexico did so.
- While the share of individuals with earnings rose from 2002 to 2003 in 7 states, it remained the same or was somewhat lower in 2003 compared with 2002 in 17 states.

# EXHIBIT IV.2

## PERCENTAGE OF MEDICAID BUY-IN PARTICIPANTS WITH REPORTED EARNINGS, BY STATE, 2003-2004



Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants in 2003 (77,799 participants) or 2004 (94,963)

Notes: In the states to the left of the space in the figure, the percentage of participants with earnings either remained the same or declined from 2003 to 2004. In the states to the right of the space, the percentage of participants with earnings increased from 2003 to 2004. In both groups, states are ordered by percentage of participants with earnings in 2003.

The solid line toward the top of the figure indicates the average percent of participants with earnings in 2003. The dotted line indicates that average percent for 2004.

Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

West Virginia, Louisiana and Michigan had no data for 2003, because their Buy-In programs were implemented in 2004.

See Appendix Tables E.1 for information for earlier years.

## **KEY FINDINGS ON EARNINGS TREND AND DISTRIBUTION**

The total annual earnings among Buy-In participants with reported annual earnings rose during this period because of an increase in total enrollment, but the average person earned somewhat less in 2004 compared with 2000 (Exhibit IV.3 and IV.4).

- The total annual earnings of all Medicaid Buy-In participants rose from \$135 million in 2000 to \$453 million in 2004, an increase of 236 percent. This growth reflects the increase not only in the number of states that implemented programs during this period but also in the enrollment in most of the programs.
- Although total earnings of all participants increased, average earnings among participants with earnings decreased from \$8,065 in 2000 to \$7,125 in 2003, and bounced back to \$7,246 in 2004. The average earner in 2004 earned 90 percent of what the average earner earned in 2000. The sudden drop of average earnings from 2001 to 2002 reflects the large number of new Buy-In programs implemented in 2002 and the relatively low level of average earnings consistently found among these new Buy-In states.
- In 2003, one participant earned \$360,360, the highest amount during the five-year period. In four of the five years, there were a few Buy-In participants who earned more than \$200,000 annually. The high level of earnings is possible because some states do not pose income restriction for Buy-In participation.
- In 2000, 75 percent of the participants with reported earnings earned less than \$9,759 and 50 percent earned less than \$5,589. In 2004, the comparable figures were slightly lower: 75 percent of the participants with reported earnings earned less than \$9,193 and 50 percent earned less than \$5,317 in that year.
- In 2000, 10 percent of the participants with reported earnings earned above \$18,308. In 2004, the top 10 percent earned \$16,205 or more. (See Exhibit IV.8 for characteristics of these high earners.)

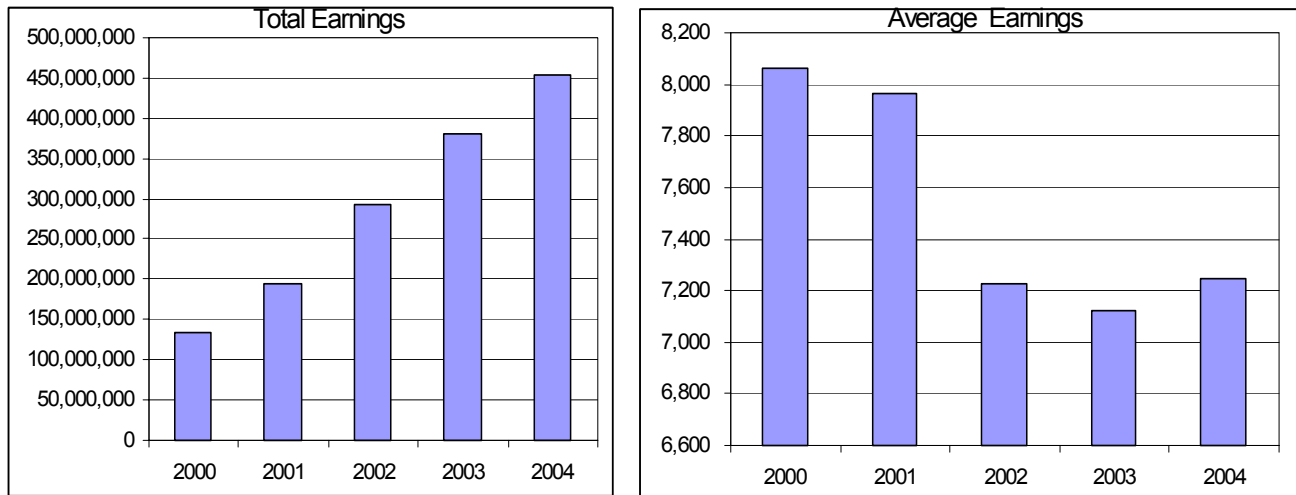
## **METHODS**

Total and average annual earnings (Exhibit IV.3) as well as the earnings distribution (Exhibit IV.4) were calculated only for participants with positive reported earnings in a corresponding year. That is, if we located an individual in the MEF but found that person to have missing, zero, or negative earnings, he or she was not included in the calculations for that year. Earnings amount is not adjusted for inflation.

The data in Exhibit IV.3 and Exhibit IV.4 are based on the group of ever-enrolled participants with earnings in each year and should not be used to infer changes in earnings for any single individual who might have been enrolled in a state's Buy-In program throughout this period. In other words, changes over time shown in these two exhibits reflect, among other things, different characteristics of those who were enrolled in the Buy-In program during a particular year, not necessarily changes in individuals' employment or earnings performances.

### EXHIBIT IV.3

#### TOTAL AND AVERAGE ANNUAL EARNINGS (IN \$) AMONG EVER-ENROLLED BUY-IN PARTICIPANTS WITH REPORTED EARNINGS, 27 STATES, 2000-2004



Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants, by year, with reported earnings in MEF for the corresponding year (see Exhibit IV.1 for number of participants analyzed, by year)

### EXHIBIT IV.4

#### ANNUAL EARNINGS OF MEDICAID BUY-IN PARTICIPANTS (IN \$), 27 STATES, 2000-2004

Earnings	2000	2001	2002	2003	2004
25th Percentile	\$2,721	\$2,607	\$2,175	\$2,043	\$2,146
Median	5,589	5,618	5,145	5,120	5,317
75th Percentile	9,759	9,436	8,761	8,965	9,193
90th Percentile	18,308	18,278	16,487	15,987	16,205
Maximum	343,501	190,140	258,880	360,360	206,051

Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants, by year, with reported earnings in MEF for the corresponding year (see Exhibit IV.1 for number of participants analyzed, by year)

Note: The minimum earnings amount in each year was less than \$1.

## **KEY FINDINGS ON STATE VARIATION IN AVERAGE EARNINGS**

Among Medicaid Buy-In participants who had reported earnings in the MEF, average annual earnings increased slightly from 2003 (\$7,125) to 2004 (\$7,246), as shown in Exhibit IV.5. However, annual earnings varied widely by state. For example:

- In 2004, participants in the Medicaid Buy-In program earned an average of \$14,342 in South Carolina, compared with an average of \$4,337 in Iowa.
- In 23 of 24 states that had a Medicaid Buy-In program as of December 2003, average earnings rose slightly from 2003 to 2004. Washington is the only state that experienced a drop in 2004 average earnings.
- The incremental amount of average annual earnings from 2003 to 2004 is the highest (more than \$1,000) in South Carolina, Alaska, and Oregon.

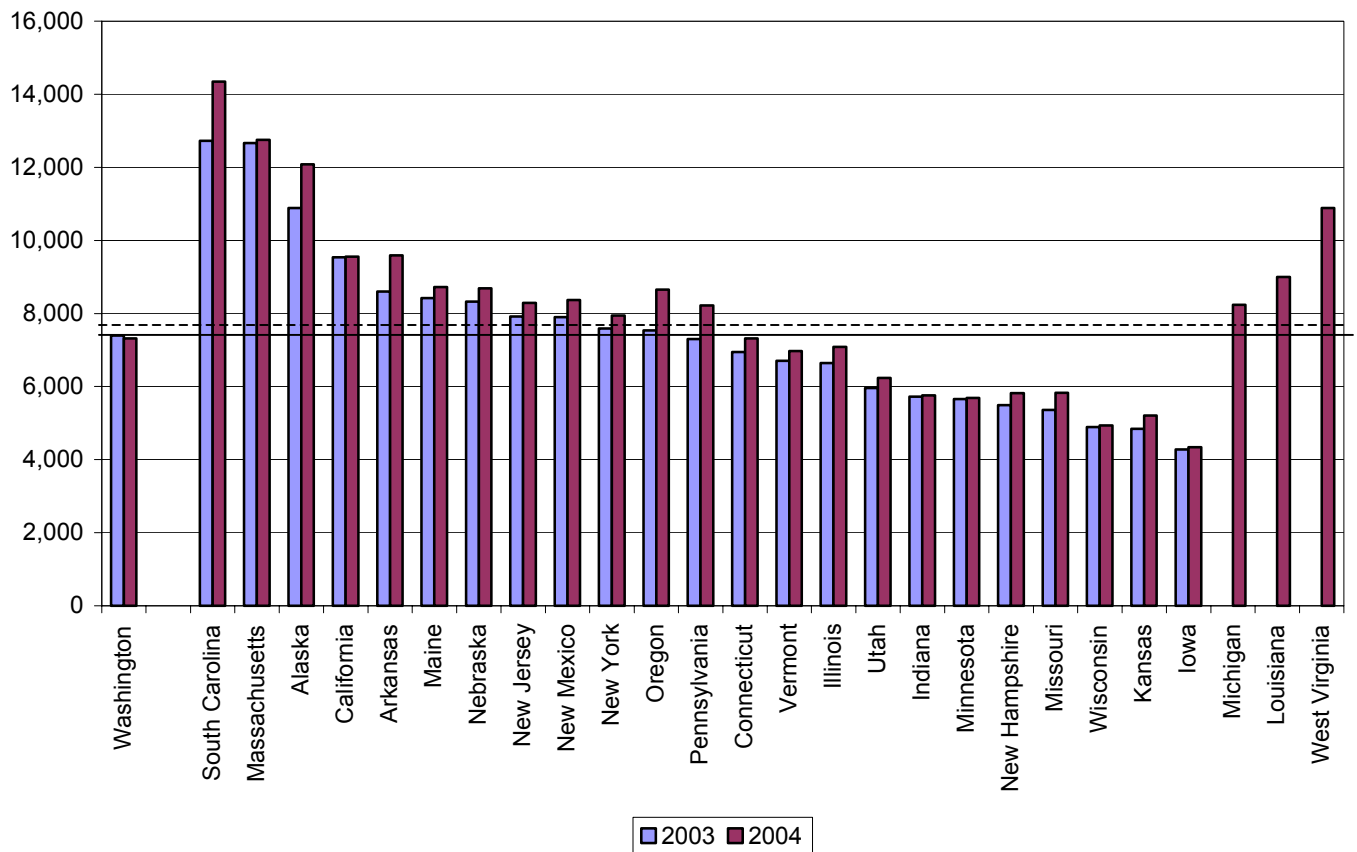
## **METHODS**

Average annual earnings were calculated for ever-enrolled Buy-In participants in 2003 or 2004 with positive earnings reported in the MEF for 2003 or 2004, correspondingly. That is, if an individual was in the MEF but found to have missing, zero, or negative earnings, he or she was not included in the calculations for that year. If the averages were calculated using all Buy-In participants in the denominator, regardless of whether individuals had any reported earnings in a year, the average earnings would be smaller than the amounts shown in Exhibit IV.5.



# EXHIBIT IV.5

## AVERAGE ANNUAL EARNINGS (IN \$) AMONG MEDICAID BUY-IN PARTICIPANTS WITH REPORTED EARNINGS, BY STATE, 2003-2004



Data Source: Buy-In finder files from 27 states and MEF

Analytic Group: Ever-enrolled Buy-In participants in 2003 or 2004 with reported earnings in the MEF for the corresponding year (see Exhibit IV.1 for number of participants analyzed)

Notes: States are ordered by the difference between average earnings in 2003 and 2004 among participants with reported earnings.

The solid line toward the bottom of the figure indicates average 2003 annual earnings among all qualified individuals in 27 states. The dotted line indicates the average earnings in 2004.

Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

West Virginia, Louisiana and Michigan had no data for 2003, because their Buy-In programs were implemented in 2004.

See Appendix Table E.1 for information for earlier years.

## **KEY FINDINGS ON EARNINGS: STATE VARIATION ON TWO MEASURES**

Combining two important measures of performance—the percentage of ever-enrolled participants who had reported earnings in 2004 (Exhibit IV.2) and average annual earnings among participants with reported earnings in 2004 (Exhibit IV.5) leads to Exhibit IV.6, which shows that:

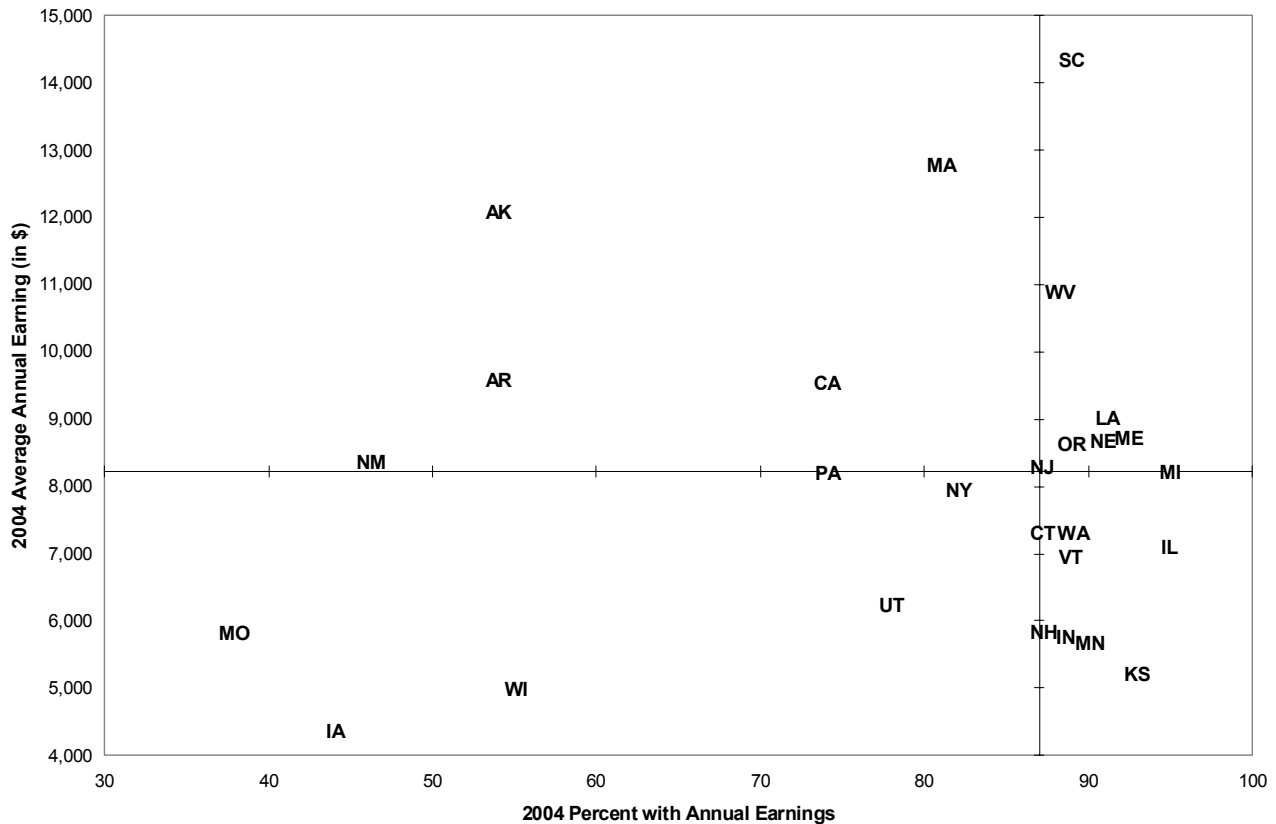
- Some Medicaid Buy-In programs (South Carolina, West Virginia, Louisiana, Maine, Nebraska, and Oregon) had both a large percentage of participants with earnings reported in the MEF and relatively high average annual earnings among those with earnings (upper right quadrant, Exhibit IV.6). For example, in 2004, about 89 percent of participants in South Carolina had earnings (which is slightly above the median of 87 percent), and on average they earned about \$14,342 that year (which is well above the median of \$8,221).
- In some other Buy-In programs (Missouri, Iowa, Wisconsin, Utah, and New York), the percentage of participants with earnings and their average earnings were both below the medians (lower left quadrant, Exhibit IV.6).
- Buy-In programs in Arkansas, New Mexico, Arizona, California, and Massachusetts had a comparatively low percentage of participants with reported earnings, but on average they earned above the median of the average earnings (upper left quadrant, Exhibit IV.6).
- Buy-In programs in Kansas, Illinois, Indiana, Minnesota, Washington and Vermont had higher-than-median percentage of participants with reported earnings, but on average they earned below the median of the average earnings (lower right quadrant, Exhibit IV.6).
- New Jersey represents the median of both measures, whereas Connecticut and New Hampshire cluster at the median percentage of participants with earnings, and Pennsylvania and Michigan cluster at the median average earnings among participants with reported earnings.

## **METHODS**

Average earnings were calculated only for participants with earnings reported in the MEF in 2004.

# EXHIBIT IV.6

## DISTRIBUTION OF STATES WITH MEDICAID BUY-IN PROGRAMS BY PERCENTAGE OF PARTICIPANTS WITH REPORTED EARNINGS AND THEIR AVERAGE EARNINGS, 2004



Data Source: Buy-In finder files from 27 states and MEF

Analytic Group: 94,963 ever-enrolled Buy-In participants in 2004

Notes: The horizontal axis represents the percentage of Buy-In participants with reported earnings in 2004. The vertical axis represents the amount of average annual earnings among participants with reported earnings in 2004. The two lines intersect at the median percentage of participants with annual earnings reported in the MEF (87 percent) and the median level of average annual earnings (\$8,221) across the 27 states. Therefore, in half of the states, the share of participants who had reported annual earnings was less than 87 percent, and they earned on average less than \$8,221, and in the other half, the percentage of participants who had reported annual earnings was more than 87 percent, and they earned on average more than \$8,221.

The position of each state denotes its percentage of participants who had reported earnings (horizontally) and their average annual earnings (vertically). The six states in the upper right quadrant are above the median on both indices. Relative to the other states, therefore, these states had a large percentage of participants who had earnings reported in the MEF and their average annual earnings were high.

Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

See Appendix Table E.1 for information on both measures for earlier years.

## **KEY FINDINGS ON PARTICIPANTS WITH EARNINGS ABOVE SGA AND FPL**

The substantial gainful activity (SGA) level and the federal poverty level (FPL) are two important benchmarks for measuring outcomes in the Medicaid Buy-In program. Many participants may intentionally keep their earnings under the SGA amount for fear of losing their SSDI benefits. The FPL provides a standard measure used in many other policy studies. In 2004, 23 percent of participants in the Medicaid Buy-In program earned over the annualized SGA level (\$9,720), and more than seven percent earned above 200 percent of FPL (\$18,620 for a single person) (Exhibit IV.7). This exhibit also shows that:

- In 2004, the share of Medicaid Buy-In participants who earned above the SGA level varied from 56 percent in South Carolina to 8 percent in Iowa.
- States also varied somewhat in the share of participants earning above 200 percent of the FPL. Again, in South Carolina, nearly 24 percent of Buy-In participants earned above this level in 2004; in the majority of states, less than 10 percent of participants earned above this level.

The distribution of Buy-In participants across more detailed earnings categories (see Appendix Table E.2), showed that nearly a quarter of ever-enrolled Buy-In participants with reported earnings in 2004 earned above 100 percent of the FPL (\$9,310), ranging from 10 percent in Iowa and 59 percent in West Virginia.

Additional analyses also provided information on participants with any earnings from self-employment (see Appendix Table E.3): on average, about four percent of Buy-In participants had self-employment earnings each year and nearly 50 percent of those who had such earnings earned less than \$2,400 annually from self-employment in 2004.

## **METHODS**

Because the SGA amount is set monthly and only annual earnings data are available in the MEF, the annualized SGA amount was used for this analysis. Individuals may earn above SGA amount in one month and below SGA in another month. Total earnings for a given year must be above \$9,270 for an individual to be counted as earning more than the SGA annualized amount.

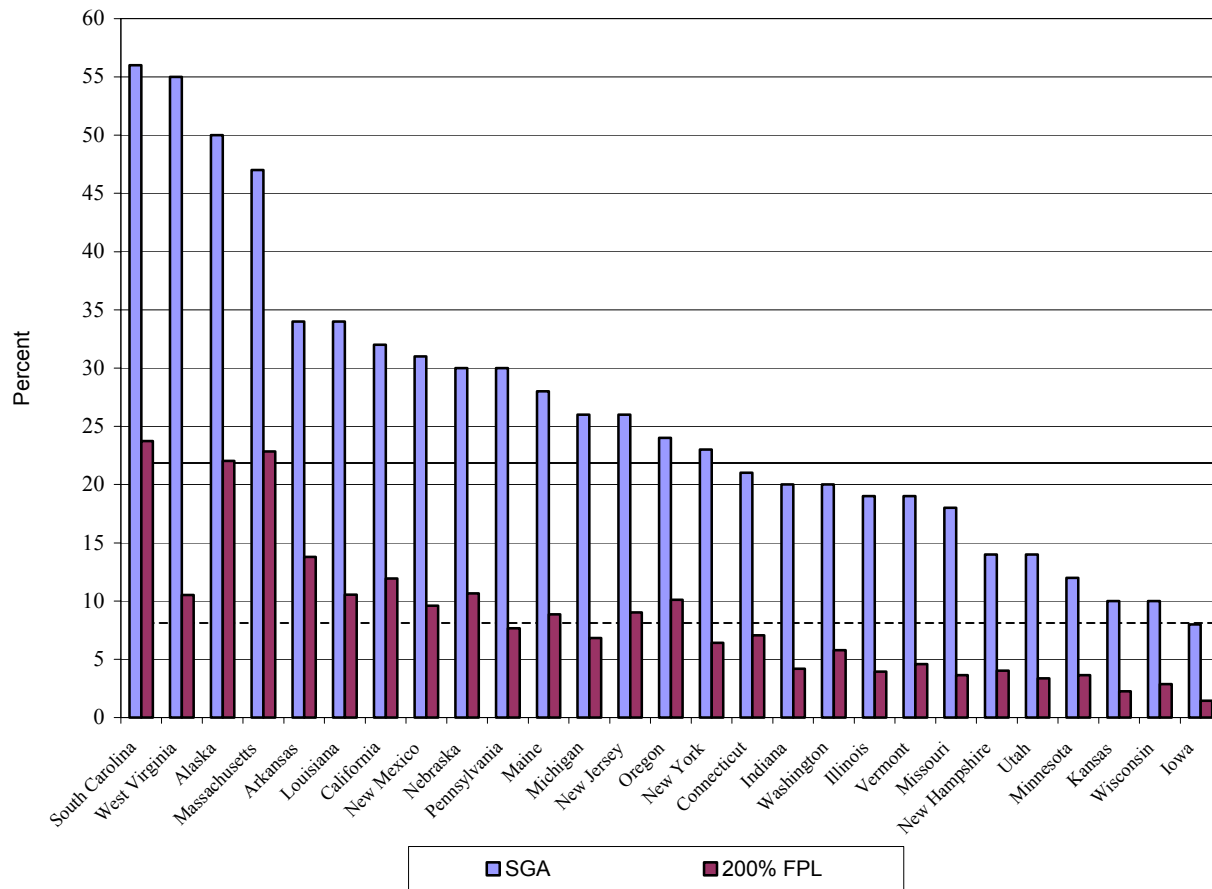
The FPL varies by family size. For simplicity, the amount for a single person was used in the analysis. Alaska has a separate poverty guideline (\$11,630 in 2004), but this was not used for the sake of cross-state comparability. If this amount were to be used, less than 22 percent of Alaska's Buy-In participants would be earning above 200 percent of the FPL.

Unearned incomes are not counted here. If included, there would be more Buy-In participants above poverty than shown in Exhibit IV.7.

See Glossary for a definition of SGA.

# EXHIBIT IV.7

## PERCENTAGE OF PARTICIPANTS WITH REPORTED EARNINGS WHO EARNED MORE THAN THE ANNUALIZED SGA LEVEL AND MORE THAN 200 PERCENT OF FPL, BY STATE, 2004



Data Source: Buy-In finder files from 27 states and MEF

Analytic Group: 62,528 ever-enrolled Buy-In participants in 2004, with reported 2004 earnings in MEF

Notes: Annualized SGA level in 2004 was \$9,720 (i.e. 12 times \$810 monthly SGA level). In 2004, 200 percent of the FPL level for a single person was \$18,620.

States are ordered by percentage with earnings more than the SGA level.

The solid line toward the top of the figure indicates the percentage of individuals who earned over the SGA level for all states combined. The dotted line indicates the percentage of individuals who earned over 200 percent of FPL for all states combined.

Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

See Appendix Table E.2 and E.3 for further information.

## **KEY FINDINGS ON CHARACTERISTICS OF PARTICIPANTS WITH THE HIGHEST EARNINGS**

Exhibit IV.8 compares characteristics of high-earners (defined as individuals whose 2004 earnings were in the top 10 percent of all earners in 2004, that is, \$16,205 or higher) with characteristics of all participants in the Medicaid Buy-In program in 2004. High-earners in the Medicaid Buy-In program are different from participants in general. More specifically:

- Younger participants are disproportionately represented in the high-earner group: individuals in the 21-44 age group account for 60 percent of the high-earners but only 45 percent of the participants overall.
- Older participants are less likely to be in the high-earner group: individuals in the 45-64 age group are 37 percent of the high earners but 53 percent of the participants overall.
- Non-white individuals are disproportionately represented in the high earner group: they make up 37 percent of the high earners but only 19 percent of the participants overall.
- Individuals receiving SSDI make up the large majority (more than 70 percent) of participants in the Medicaid Buy-In program in general but only 20 percent of the high earners. Participants with no involvement in SSI or SSDI a year before Buy-In enrollment account for 25 percent of the participants overall but 79 percent of the high earners.
- The data on type of impairment are inconclusive because the disability of a substantial proportion (62 percent) of the high earners is unknown, in part because a large proportion of them have not been receiving SSI or SSDI benefits (thus have no disability record in TRF).

## **METHODS**

Because only Buy-In participants in 2004 were included in Exhibit IV.8, the distribution of participants in general here may be different from the distribution shown earlier in Exhibits III.4 through III.6, where all participants between 2000 and 2004 were included.

See the methods notes for Exhibits III.4 through III.6 for the definitions of the categories used here.

## EXHIBIT IV.8

## CHARACTERISTICS OF MEDICAID BUY-IN PARTICIPANTS WITH THE HIGHEST EARNINGS COMPARED WITH ALL PARTICIPANTS EVER ENROLLED IN 2004

	2004 Buy-In Participants with Top 10 Percent Earnings		All 2004 Buy-In Participants	
	Number	Percent	Number	Percent
Total	6,254	100	94,963	100
<b>Demographics</b>				
Age <21	141	2.3	1,142	1.2
Age 21-44	3,749	59.9	42,665	44.9
Age 45-64	2,315	37.0	50,032	52.7
Age 65+	49	0.8	1,105	1.2
Male	3,245	51.9	46,672	49.1
Female	3,009	48.1	48,291	50.9
White	3,808	60.9	74,715	78.7
Non-White	2,329	37.2	18,453	19.4
<b>Prior Program Participation</b>				
SSDI Only	1,266	20.2	66,977	70.5
SSI Only	46	0.7	1,186	1.2
SSI/SSDI Concurrent	29	0.5	2,745	2.9
No SSI or SSDI	4,913	78.6	24,055	25.3
<b>Type of Impairment</b>				
Mental Illness and other mental disorders	777	12.4	22,188	23.4
Mental Retardation	158	2.5	11,991	12.6
Musculoskeletal Disorder	198	3.2	9,541	10.0
Sensory Disorder	134	2.1	1,818	1.9
All Other	1,134	18.1	26,968	28.4
Unknown	3,853	61.6	22,457	23.6

Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants in 2004

Notes: High earners are defined as participants with earnings in the top ten percent (\$16,205 or higher), based on data from all participants with reported earnings in 2004.

Because there are missing data on age and race, the sum of age categories as well as white and non-white may not be equal to the total number of participants.

Prior program participation is defined as the latest type of participation in Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI) program during the year *before* the *first ever* month of Buy-In enrollment from 2000 through 2004.

Individuals with an unknown type of impairment are those either not found in the Ticket Research File (TRF) or were found but had a missing or unidentifiable disabling condition.

## **KEY FINDINGS ON EFFECT OF CURRENT EARNINGS ON FUTURE EARNINGS**

The benefits of participating in the Medicaid Buy-In program are not spread evenly among all participants. Analyses of earnings data show that high earners in one year increase their earnings to a greater extent in a subsequent year compared with low earners. Exhibit IV.9 demonstrates the benefits of higher earnings by showing that:

- As the 2003 (base-year) earnings become higher, a greater proportion of individuals move to higher brackets in 2004 than they did in 2003, compared with individuals with lower based-year earnings.
  - Thirty-seven percent of individuals who earned \$16,801 to \$18,620 in 2003 had earnings above \$18,620 in 2004.
  - By comparison, 18 percent of individuals who earned \$1 to \$2,400 in 2003 had earnings above \$2,400 in 2004.
  - Only 10 percent of those with no reported earnings in 2003 had earnings in 2004.
- Among participants with earnings just below poverty in 2003 (\$7,201-\$9,310), only 22 percent were able to earn above poverty in 2004.
- Among participants who earned above poverty but below annualized SGA level in 2003 (\$9,311- \$9,720), nearly 36 percent actually earned above annualized SGA level in 2004, thus overcome the so-called “cash cliff.”

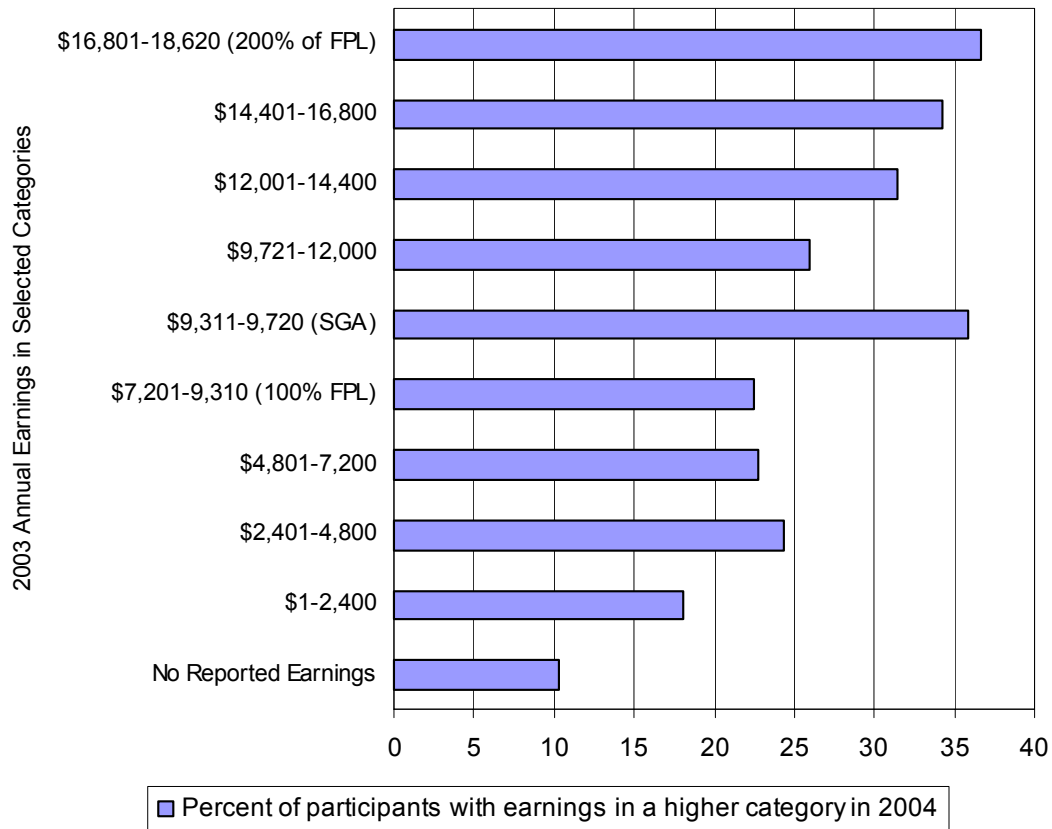
## **METHODS**

Income categories correspond to those used by states for their annual report on Buy-In participation (see Black and Ireys 2006) and take into consideration three key thresholds: the annualized SGA amount, 100 percent of the FPL, and 200 percent of the FPL. The thresholds for 2004 were used to define earnings categories in both 2003 and 2004.



# EXHIBIT IV.9

PERCENT OF BUY-IN PARTICIPANTS FOUND IN THE MEF WITH A HIGHER EARNINGS CATEGORY IN 2004 COMPARED WITH 2003, BY SELECTED EARNINGS CATEGORIES IN 2003, 24 STATES



Data Source: Buy-In finder files from 24 states and Master Earnings File (MEF)

Analytic Group: 75,148 ever-enrolled Buy-In participants in 2003, found in MEF

Notes: Substantial gainful activity (SGA) and federal poverty level (FPL) amounts were determined by 2004 guidelines.

West Virginia, Louisiana, and Michigan are not included because their Buy-In programs were implemented in 2004.

See Appendix Table E.4 for further details.

## KEY FINDINGS ON EARNINGS CHANGE IN THE FIRST YEAR OF ENROLLMENT

It is not surprising that policymakers interested in the Medicaid Buy-In program want to know whether participants' earnings start to increase when they first participate in the program and whether they continue to increase in subsequent years. Exhibits IV.10 through IV.13 provide a partial answer to this question from several different angles. First, Exhibit IV.10 presents information on participants' earnings in the year in which they enrolled relative to the year immediately preceding enrollment:

- Across 27 states, average earnings among all 2004 first-time Buy-In participants stayed about the same in 2004 compared with their earnings in 2003.
- In 19 of the 27 states, participants who enrolled in the program for the first time in 2004 had higher annual earnings on average in 2004 than they did in 2003.
  - In South Carolina, Buy-In participants enrolling in the program for the first time in 2004 earned \$12,067 in that year, which was seven percent higher than what they earned in 2003, when they were not enrolled in the Buy-In program.
  - In Nebraska, average earnings increased 62 percent, from \$5,598 to \$9,082.
- In eight states, participants who enrolled in the program for the first time in 2004 had lower annual earnings on average in that year than they did in 2003.
  - In Arkansas, Buy-In participants enrolling in the program for the first time in 2004 earned \$9,837 in that year, but on average, they earned three percent less than that in 2003 (\$10,164).
  - In Iowa, average earnings dropped by almost 50 percent, from \$3,337 to \$1,717.

## METHODS

Earnings in 2004 were counted as 2004 annual earnings regardless of which month in 2004 an individual enrolled in the Buy-In program. Thus, most individuals in the analytic group for this table were not enrolled in the Buy-In program for 12 months because they enrolled at some point during the year.

Unlike the average calculation in other exhibits, where the average was calculated using positive reported earnings only, here in Exhibit IV.10 the average was calculated including zero and negative earnings as reported in MEF, so that average earnings for the same population can be compared between years. Negative reported earnings (usually a small amount) were changed to zero. Participants with no matched MEF record were excluded.

Comparisons between 2003 and 2004 were based on averages calculated at the state level, not the individual level. That is, for each state, the overall average for the same population in 2003 and 2004 was compared.

## EXHIBIT IV.10

AVERAGE ANNUAL EARNINGS IN 2003 AND 2004 FOR FIRST-TIME  
BUY-IN PARTICIPANTS IN 2004 FOUND IN MEF, BY STATE

State	Average Annual Earnings in 2003 (in \$)	Average Annual Earnings in 2004 (in \$)	Average Annual Earnings in 2004 as a Percentage of 2003 Earnings
South Carolina	11,230	12,067	107
Arkansas	10,164	9,837	97
West Virginia	9,132	9,730	107
Nebraska	5,598	9,082	162
Massachusetts	7,397	8,955	121
Louisiana	8,872	8,251	93
Michigan	4,958	7,830	158
Maine	5,965	7,745	130
California	6,572	7,457	113
Illinois <sup>a</sup>	6,101	7,401	121
New Jersey	6,056	7,022	116
Alaska	6,224	7,008	113
Oregon	4,857	6,652	137
Pennsylvania	6,886	6,590	96
New York	5,351	6,479	121
Connecticut	4,539	6,462	142
Washington	5,049	6,268	124
Vermont	4,456	5,927	133
Indiana	5,114	5,830	114
Utah	5,736	5,712	100
Minnesota	5,498	5,447	99
New Hampshire	4,522	5,292	117
Kansas	3,686	4,570	124
New Mexico	5,889	3,443	58
Missouri	4,457	3,061	69
Wisconsin	3,468	2,501	72
Iowa	3,337	1,717	51
Total	5,196	5,069	98

Data Source: Buy-In finder files from 27 states and the MEF

Analytic Group: 30,283 first-time Buy-In participants in 2004, found in MEF

Notes: The table is sorted in descending order on the basis of average annual earnings in 2004.

See Appendix Table E.5 for more comparison for other first-time Buy-In participants in earlier years.

<sup>a</sup>Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

## **KEY FINDINGS ON DIFFERENCE BETWEEN PRE- AND POST-ENROLLMENT EARNINGS: A STATE PERSPECTIVE**

In addition to using two years of data to examine the short-term change in earnings during the first year of Buy-In enrollment, longer-term effects can be investigated as well. Exhibit IV.11 compares earnings data at the state level during the three-year period before enrollment and a two- or three-year period following the first year of enrollment.

- The average annual earnings for the 43,062 participants who enrolled for the first time in one of 23 state Medicaid Buy-In programs in 2001 or 2002 and had matched MEF records were slightly lower (by \$763) in the two to three years after enrollment compared with three years before enrollment.
- States varied widely on this index of earnings:
  - In Alaska, for example, earnings were higher after enrollment by \$2,674. In Iowa, earnings were lower by \$3,710.
  - Overall, earnings rose after enrollment in 10 states and fell in 13 states.

## **METHODS**

In defining the pre- and post-enrollment period, the year of enrollment is excluded in both periods, because individuals can participate in the Buy-In program in any given month, but earnings data are only available annually. For example, for people who first enrolled in 2001, the pre-enrollment period includes 1998, 1999, and 2000; the post-enrollment period for these individuals includes 2002, 2003, and 2004.

Average amounts were calculated across years at the individual level first, then across individuals at the state level, including only participants with at least one year of positive reported earnings during the period. Only reported earnings are included in the average calculation. For example, if an individual had no reported earnings in two of the three pre-enrollment years, and \$6,000 in the third year, the average pre-enrollment annual earnings would be \$6,000 (i.e.  $\$6,000/1$ ), not \$2,000 (i.e.  $\$6,000/3$ ). If an individual had no reported earnings in any of the three years, he or she was excluded from the average calculation. An alternative approach is to assume zero earnings when there's no reported earnings in a year, and include zero in the average calculation. This approach is likely to underestimate Buy-In participants' earnings, because individuals are likely to have some earnings in order to meet eligibility criteria for the Buy-In program, and for various reasons, did not report. Future work will further examine this issue.

Differences in average annual pre- and post-enrollment earnings were calculated on the basis of the state averages in the table, not on the basis of individual-level data. In other words, the pre- and post-enrollment averages could include different individuals because some participants had reported earnings in one period but not the other. Therefore, Exhibit IV.11 should not be used to infer changes in earnings for any single individual. See Exhibits IV.12 and IV.13 for further analyses of individuals who had higher post-enrollment earnings.

EXHIBIT IV.11

ANNUAL EARNINGS BEFORE AND AFTER ENROLLMENT AMONG FIRST-TIME BUY-IN PARTICIPANTS IN 2001 OR 2002 FOUND IN MEF, BY STATE

State	Number of Participants	Average Annual Earnings before Buy-In Enrollment <sup>a</sup>	Average Annual Earnings after Buy-In Enrollment <sup>b</sup>	Difference
Alaska	238	7,168	9,842	2,674
California	824	8,348	9,974	1,626
New Jersey	727	6,089	7,533	1,444
Massachusetts	6,600	10,846	12,151	1,305
Maine	988	7,239	8,084	845
Connecticut	3,061	6,322	7,153	831
Oregon	606	7,049	7,816	767
Illinois <sup>c</sup>	159	5,524	6,248	724
Nebraska	118	6,308	7,023	715
Vermont	568	6,445	6,899	455
New Hampshire	1,085	5,560	5,495	-65
Washington	156	6,521	6,405	-115
Arkansas	214	7,035	6,589	-445
Kansas	523	5,223	4,596	-627
Indiana	4,248	5,547	4,797	-751
South Carolina	47	11,627	10,726	-901
Pennsylvania	1,460	8,299	7,326	-973
Wisconsin	3,652	6,460	4,815	-1,645
Minnesota	4,076	7,635	5,579	-2,056
Missouri	8,114	7,058	4,462	-2,597
New Mexico	1,150	10,055	7,260	-2,796
Utah	450	8,807	5,829	-2,978
Iowa	3,998	7,973	4,263	-3,710
Total	43,062	7,649	6,886	-763

Data Source: Buy-In finder files from 23 states and MEF

Analytic Group: First-time Buy-In participants in either 2001 or 2002, found in MEF

Notes: The table is sorted by the difference column in descending order.

New York, West Virginia, Louisiana, and Michigan are not included because they did not have a Medicaid Buy-In program as of December 2002.

<sup>a</sup>Figures are based on average annual earnings for three years before the year of enrollment.

<sup>b</sup>Depending on whether the participants first enrolled in 2001 or 2002, there were either two or three years of earnings data with which average annual earnings after Buy-In enrollment could be calculated. For example, for people who first enrolled in 2001, average annual earnings after enrollment would be calculated across 2002, 2003, and 2004; for people first enrolled in 2002, average annual earnings after enrollment would be calculated across 2003 and 2004.

<sup>c</sup>Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

## **KEY FINDINGS ON PARTICIPANTS WITH HIGHER POST-ENROLLMENT EARNINGS**

Although some states experienced decreasing post-enrollment average earnings among those with reported earnings (Exhibit IV.11), many individuals have earned more after the first year of enrollment. Exhibit IV.12 shows the amount of this increase for individuals who did earn more in the two to three years after enrollment than they did before enrollment.

- Overall, 32 percent of the 43,062 individuals who enrolled for the first time in one of 23 state Medicaid Buy-In programs in 2001 or 2002 and had matched MEF records had reported earnings in both pre- and post-enrollment periods and earned more after enrollment than before enrollment.
- States varied widely in the share of individuals with higher post-enrollment earnings, ranging from 65 percent in Illinois (including only participants in its original finder file) to 15 percent in New Mexico.
- For those with higher post-enrollment earnings, the difference between the three years before enrollment and the two to three years after enrollment was \$4,657 overall, ranging from \$9,606 in Alaska to \$2,504 in Illinois (including only participants in its original finder file).

## **METHODS**

See methods for Exhibit IV.11 for a detailed discussion of the definition of pre- and post-enrollment periods, as well as the calculation of the average earnings.

To be consistent with previous exhibits, only participants with at least one year of reported earnings in both pre- and post-enrollment periods were included in these analyses.

The average increase in earnings after enrollment was obtained for those with higher post-enrollment earnings first by calculating the difference in individual-level pre- and post-enrollment average earnings and then averaging these differences for each state.

EXHIBIT IV.12

PERCENTAGE OF FIRST-TIME BUY-IN PARTICIPANTS IN 2001 OR 2002 FOUND  
IN MEF WITH HIGHER POST-ENROLLMENT EARNINGS COMPARED  
WITH PRE-ENROLLMENT EARNINGS, BY STATE

State	Number of Participants	Percent with Higher Earnings after Enrollment	Average Increase in Earnings after Enrollment (in \$)
Illinois <sup>a</sup>	159	65	2,504
New Jersey	727	53	4,964
Massachusetts	6,600	47	7,414
Washington	156	47	3,277
Maine	988	45	5,438
Connecticut	3,061	44	5,054
Oregon	606	43	4,765
Nebraska	118	43	5,347
Kansas	523	43	2,639
Vermont	568	42	4,777
New Hampshire	1,085	41	3,730
South Carolina	47	40	6,390
California	824	37	7,643
Indiana	4,248	36	2,937
Pennsylvania	1,460	34	4,499
Minnesota	4,076	34	3,688
Alaska	238	28	9,606
Wisconsin	3,652	28	2,966
Utah	450	26	4,147
Arkansas	214	24	5,064
Missouri	8,114	18	2,563
Iowa	3,998	17	3,016
New Mexico	1,150	15	5,305
Total	43,062	32	4,657

Data Source: Buy-In finder files from 23 states and MEF

Analytic Group: First-time Buy-In participants in either 2001 or 2002, found in MEF

Notes: The table is sorted in descending order by the percentage of participants with higher earnings after enrollment.

The first year of enrollment is excluded in both pre- and post-enrollment periods.

New York, West Virginia, Louisiana, and Michigan are not reported because they did not have a Medicaid Buy-In program as of December 2002.

<sup>a</sup>Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

## **KEY FINDINGS ON CHARACTERISTICS OF PARTICIPANTS WITH HIGHER POST-ENROLLMENT EARNINGS**

Earnings for Medicaid Buy-In participants can be examined for major subgroups defined by age, gender, race, enrollment in SSA's other programs, and type of impairment. Exhibit IV.13 builds on data in Exhibit IV.11 and IV.12 by addressing the following question: What are the characteristics of Buy-In participants who have increased their earnings? The findings are generally similar to characteristics of participants with the highest earnings in a year with Exhibit IV.8:

- Younger participants are more likely than older participants to earn more after enrollment. For example, 40 percent of participants in the 21-44 age group versus 24 percent of participants in the 45-64 age group earned more after enrollment. Moreover, they increased their average annual earnings by more (\$5,040 compared with \$3,945).
- Although there are substantially more white participants than non-white participants in the Medicaid Buy-In program, a greater percentage of the latter earned more after enrollment: 31 percent of white participants and 41 percent of non-white participants did so.
- A smaller percentage of participants who received SSDI payments alone (30 percent) or both SSDI and SSI (20 percent) earned more after enrollment than did participants who received only SSI payments (40 percent), or neither SSI nor SSDI payments (42 percent).
- Participants differ substantially in the percent with higher post-enrollment earnings depending on type of disability. For example, 42 percent of individuals with mental retardation earned more after enrollment, whereas 18 percent of individuals with musculoskeletal disorders did so. Of those with mental illness and other mental disorders, 35 percent earned more after enrolling in the Buy-In program.

## **METHODS**

See methods for Exhibit IV.11 and Exhibit IV.12 for a detailed discussion of the definition of pre- and post-enrollment periods, as well as the calculation of the "percent" column and "average increase" column.

See methods note for Exhibits III.5 through III.7 for the definitions of characteristics categories used here.



## EXHIBIT IV.13

PERCENTAGE OF FIRST-TIME BUY-IN PARTICIPANTS IN 2001 OR 2002 FOUND IN MEF WITH  
HIGHER POST-ENROLLMENT EARNINGS COMPARED WITH PRE-ENROLLMENT EARNINGS,  
BY SELECTED CHARACTERISTICS

	Number of Participants	Percent with Higher Earnings after Enrollment	Average Increase in Earnings after Enrollment (in \$)
<b>Demographic Characteristics</b>			
Age <21	516	68	6,517
Age 21-44	20,419	40	5,040
Age 45-64	21,524	24	3,945
Age 65+	581	24	3,851
Male	21,441	33	4,674
Female	21,621	32	4,639
White	33,113	31	4,030
Non-White	8,801	41	6,404
<b>Prior Program Participation</b>			
SSDI Only	30,527	30	3,473
SSI Only	493	40	5,602
SSI/SSDI Concurrent	1,197	20	4,092
No SSI or SSDI	10,845	42	7,020
<b>Type of Impairment</b>			
Mental Illness and Other			
Mental Disorders	10,404	35	4,442
Mental Retardation	5,987	42	1,909
Musculoskeletal Disorder	3,724	18	5,225
Sensory Disorder	933	37	5,261
All Other	12,223	25	5,321
Unknown	9,791	38	6,007
Total	43,062	32	4,657

Data Source: Buy-In finder files from 23 states and TRF and MEF

Analytic Group: First-time Buy-In participants in 2001 or 2002, found in MEF

Notes: Because there are missing data of age and race, the sum of age categories as well as white and non-white may not be equal to the total number of participants.

Prior program participation is defined as the latest type of participation in SSI or SSDI during 12 months *before* the *first ever* month of Buy-In enrollment from 2000 through 2004.

Individuals with an unknown type of impairment are those either not found in TRF or found but with a missing or unidentifiable disabling condition.

New York, West Virginia, Louisiana and Michigan are not reported, because they did not have a Medicaid Buy-In program as of December 2002.

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## **V. PROFILE OF MEDICAL EXPENDITURES**

The Medicaid Buy-In program plays an essential role in the lives of many people with disabilities by providing them with coverage for the medical services that allow them to remain healthy and functional to stay employed. Because the Buy-In program is an optional expansion of Medicaid, both state and federal policymakers are eager to understand the costs associated with the program and its potential for increasing overall Medicaid costs.

However, the extent to which the Buy-In program will affect Medicaid spending is unclear. On the one hand, costs can increase because the Buy-In program increases the number of new Medicaid beneficiaries or because participants may need special services or continuing treatments to stay employed. On the other hand, regular employment can have a positive effect on health and mental health status, thereby leading to a reduction in service use.

Moreover, Medicaid is not the only payer of medical services for Buy-In participants. More than 70 percent of Buy-In participants are eligible for Medicare as well. Any analysis of medical expenditures for Buy-In participants must also incorporate Medicare costs.

In exploring the issue of medical expenditures among Buy-In participants, this chapter focuses on two questions: What were per member per month (PMPM) Medicare and Medicaid expenditures among Buy-In participants? How did medical expenditures differ for Buy-In participants with different characteristics, such as types of impairments and prior receipt of SSI or SSDI benefit?

## **KEY FINDINGS ON MEDICAL EXPENDITURES: A STATE PERSPECTIVE**

Medical expenditures of Medicaid Buy-In participants vary across states. As Exhibit V.1 shows:

- When Medicaid and Medicare expenditures are combined, total PMPM expenditures in 2002 for Medicaid Buy-In participants in the analytic group averaged \$1,467—ranging from \$833 in Washington to \$3,024 in Indiana—with 73 percent paid by Medicaid and 27 percent paid by Medicare.
- States vary in the proportion of Buy-In participants' expenditures paid by Medicaid and Medicare. Indiana, with the highest combined PMPM expenditures, has the largest share (92 percent) paid by Medicaid; Illinois and Arkansas have the largest share (46 percent) paid by Medicare.
- In the 22 states with a Buy-In program as of 2002, average PMPM Medicaid expenditures among Buy-In participants in 2002 were \$1,076, slightly higher comparing with an average of \$1,046 PMPM Medicaid expenditures for Blind and Disabled population in the regular Medicaid program (Black and Ireys 2006).
- PMPM Medicaid expenditures ranged from \$460 in Washington to \$2,771 in Indiana. In 7 of the 22 states, PMPM Medicaid expenditures were more than \$1,000.
- PMPM Medicare expenditures averaged \$391, ranging from \$156 in New Mexico to \$699 in Utah.

## **METHODS**

The analytic group includes all individuals who (1) were enrolled in the Buy-In program during 2002, (2) were eligible for Medicare and had a record in the EDB, and (3) had Medicaid claims data from the second quarter of FY 2002 through the fourth quarter of FY 2003 in MSIS claims files.

PMPM expenditures were calculated by summing payments across all types of services (capitation payments were excluded) for all individuals in the analytic group (defined above) in calendar year 2002 while they were in the Buy-In program and dividing the sum of payments by the total number of Buy-In enrollment months for all individuals included.

EXHIBIT V.1

PER MEMBER PER MONTH (PMPM) MEDICAL EXPENDITURES AMONG SELECTED PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2002, BY STATE

State	Number of Participants	PMPM Medicare and Medicaid Combined Expenditures (in \$)	Expenditures Paid by Medicaid		Expenditures Paid by Medicare	
			PMPM (in \$)	Percent	PMPM (in \$)	Percent
Washington	130	833	460	55	373	45
Oregon	388	903	675	75	227	25
Pennsylvania	1,159	942	554	59	389	41
Nebraska	147	948	637	67	311	33
Vermont	634	965	646	67	319	33
New Mexico	910	1,046	890	85	156	15
Illinois <sup>a</sup>	137	1,096	593	54	502	46
New Jersey	590	1,098	724	66	373	34
California	820	1,099	606	55	493	45
Maine	888	1,109	836	75	273	25
Wisconsin	4,037	1,135	793	70	342	30
Massachusetts	5,984	1,161	796	69	366	31
Alaska	191	1,185	764	64	422	36
Iowa	5,570	1,212	760	63	452	37
Arkansas	78	1,263	681	54	582	46
South Carolina	65	1,374	1,138	83	236	17
Connecticut	2,921	1,535	1,090	71	446	29
Missouri	7,571	1,804	1,359	75	445	25
Minnesota	7,598	1,872	1,465	78	407	22
New Hampshire	977	1,942	1,623	84	319	16
Utah	324	2,064	1,365	66	699	34
Indiana	3,048	3,024	2,771	92	253	8
Total	44,167	1,467	1,076	73	391	27

Data Source: Buy-In finder files from 22 states, Medicaid Statistical Information System (MSIS) claims files, and Medicare Eligibility DataBase (EDB) and claims files

Analytic Group: Ever-enrolled Buy-In participants in 2002, matched with Medicaid claims data and Medicare EDB

Notes: Kansas is not included in the exhibit because it resubmitted its finder file too late for Medicare matching.

New York, Louisiana, Michigan, and West Virginia are not included in the exhibit because they did not have a Buy-In program as of December 2002.

Table is sorted in ascending order by PMPM Medicare and Medicaid combined expenditures.

<sup>a</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

## **KEY FINDINGS ON MEDICAL EXPENDITURES BY TYPE OF IMPAIRMENT**

Total medical costs, as well as the proportions paid by Medicaid and Medicare, vary for Buy-In participants with different types of impairment. Exhibit V.2 shows medical expenditures among selected Buy-In participants in 2002, by type of impairment.

- Buy-In participants who had a type of impairment other than those in Exhibit V.2 had the highest PMPM Medicaid and Medicare combined expenditures (\$1,761).
- Those with musculoskeletal disorders had the lowest PMPM combined expenditures, at \$1,042.
- The proportion of total PMPM expenditures paid by Medicaid varied from 60 percent for participants with musculoskeletal disorders to 90 percent for those with mental retardation.
- Buy-In participants with mental retardation had the highest PMPM Medicaid expenditures (\$1,519) but the lowest PMPM Medicare expenditures (\$176), compared with other participants.
- Among Buy-In participants with mental illness and other mental disorders (the most frequent type of impairment), PMPM Medicaid expenditures were \$902, compared with a PMPM of \$1,076 for all Buy-In participants.
- Buy-In Participants whose type of impairment is unknown had PMPM combined expenditures of \$1,692, the second highest among all participants, with 82 percent of the cost paid by Medicaid and 18 percent paid by Medicare.

## **METHODS**

The analytic group includes all individuals who (1) were enrolled in the Buy-In program during 2002, (2) were eligible for Medicare and had a record in the EDB, and (3) had Medicaid claims data from the second quarter of FY 2002 through the fourth quarter of FY 2003 in MSIS claims files.

Type of impairment was based on the primary disabling condition in the TRF data in the first month of Buy-In enrollment in 2002.

PMPM expenditures were calculated by summing payments across all types of services (capitation payments were excluded) for all individuals in the analytic group (defined above) in each impairment category in calendar year 2002 while they were in the Buy-In program and dividing the sum of payments by the total number of enrollment months for all individuals in each category.

# EXHIBIT V.2

## PER MEMBER PER MONTH (PMPM) MEDICAL EXPENDITURES AMONG SELECTED PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2002, BY TYPE OF IMPAIRMENT, 22 STATES

Impairment	Number of Participants	PMPM Medicare and Medicaid Combined Expenditures (in \$)	Expenditures Paid by Medicaid		Expenditures Paid by Medicare	
			PMPM (in \$)	Percent	PMPM (in \$)	Percent
All Other	10,228	1,761	1,092	62	669	38
Mental Retardation	7,055	1,695	1,519	90	176	10
Unknown <sup>a</sup>	5,371	1,692	1,390	82	302	18
Mental Illness and Other Mental Disorders	16,488	1,254	902	72	352	28
Sensory Disorder	991	1,055	728	69	327	31
Musculoskeletal Disorder	4,034	1,042	623	60	419	40
Total	44,167	1,467	1,076	73	391	27

Data Source: Buy-In finder files from 22 states, Ticket Research File (TRF), Medicaid Statistical Information System (MSIS) claims files, and Medicare Eligibility Database (EDB) and claims files

Analytic Group: Ever-enrolled Buy-In participants in 2002, matched with Medicare EDB, and Medicaid claims data

Notes: Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

Kansas is not included in the exhibit because it resubmitted its finder file too late for Medicare matching.

Data from New York, Louisiana, Michigan and West Virginia are not included in the exhibit because the states did not have a Buy-In program as of December 2002.

Table is sorted in descending order by PMPM Medicare and Medicaid combined expenditures.

<sup>a</sup> This group includes participants who were not matched with TRF data, and participants whose primary disabling condition was missing or could not be categorized in the TRF at the first month of Buy-In enrollment.

## **KEY FINDINGS ON MEDICAL EXPENDITURES BY SSI AND SSDI PARTICIPATION STATUS**

Total medical costs and the share paid by Medicaid and Medicare also vary by participation status in SSI and SSDI. Exhibit V.3 shows medical expenditures among selected Buy-In participants in 2002, by prior SSI and SSDI program participation status.

- When Medicaid and Medicare expenditures are combined, total PMPM expenditures were the highest (\$1,491) among Buy-In participants who received only SSDI benefits before enrolling in the Buy-In program, and the lowest (\$1,179) among Buy-In participants who received only SSI benefits before enrollment.
- The share of combined expenditures paid by Medicaid was the highest (84 percent) for Buy-In participants who received only SSI benefits before enrolling in the Buy-In program, and the lowest (72 percent) for those who received only SSDI benefits before Buy-In enrollment.
- The PMPM Medicaid expenditures were the highest (\$1,091) among Buy-In participants who received neither SSDI nor SSI benefits before enrolling in the Buy-In program, compared with a PMPM of \$1,076 for all Buy-In participants.

## **METHODS**

The analytic group includes all individuals who (1) were enrolled in the Buy-In program during 2002, (2) were eligible for Medicare and had a record in the EDB, and (3) had Medicaid claims data from the second quarter of FY 2002 through the fourth quarter of FY 2003 in MSIS claims files.

SSI participants are individuals receiving SSI cash benefits only, including participation in 1619(a) but not 1619(b); SSDI participants include individuals receiving SSDI benefits who may be in a trial work period (TWP) but not in an extended period of eligibility (EPE). “Prior program participation” was defined as the latest participation status in SSI or SSDI during the 12 months before the first ever month of Buy-In enrollment in 2002.

PMPM expenditures were calculated by summing payments across all types of services (capitation payments were excluded) for all individuals in the analytic group (defined above) in each category of SSI and SSDI participation status in calendar year 2002 while they were in the Buy-In program and dividing the sum of payments by the total number of enrollment months for all individuals in each category.



### EXHIBIT V.3

#### PER MEMBER PER MONTH (PMPM) MEDICAL EXPENDITURES AMONG SELECTED PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2002, BY PRIOR PROGRAM PARTICIPATION, 22 STATES

Prior Program Participation	Number of Participants in Analytic Group	PMPM Medicare and Medicaid Combined Expenditures (in \$)	Expenditures Paid by Medicaid		Expenditures Paid by Medicare	
			PMPM (in \$)	Percent	PMPM (in \$)	Percent
SSDI Only	37,567	1,491	1,077	72	414	28
No SSI or SSDI <sup>a</sup>	5,024	1,361	1,091	80	270	20
SSI/SSDI Concurrent	1,137	1,204	992	82	212	18
SSI Only	439	1,179	995	84	183	16
Total	44,167	1,467	1,076	73	391	27

Data Source: Buy-In finder files from 22 states, Ticket Research File (TRF), Medicaid Statistical Information System (MSIS) claims files, and Medicare Eligibility Database (EDB) and claims files

Analytic Group: Ever-enrolled Buy-In participants in 2002, matched with Medicare EDB, and Medicaid claims data

Notes: Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

Kansas is not included in the exhibit because it resubmitted its finder file too late for Medicare matching.

New York, Louisiana, Michigan, and West Virginia are not included in the exhibit because they did not have a Buy-In program as of December 2002.

Table is sorted in descending order by PMPM Medicare and Medicaid combined expenditures.

<sup>a</sup> This category includes participants who were not matched with TRF data, and participants who did not have any "current pay" status code in the TRF during the 12 months before the first month of Buy-In enrollment in 2002.

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## GLOSSARY

<b>1619(a)</b>	The 1619(a) provision of the Social Security Act allows SSI recipients to continue receiving cash benefits at a reduced level when their countable income exceeds the substantial gainful activity (SGA) level until earnings reach a level at which they can completely replace cash benefits.
<b>1619(b)</b>	The 1619(b) provision of the Social Security Act requires states to provide Medicaid coverage to workers who remain disabled but whose earnings are not high enough to replace the SSI payment, Medicaid benefits, and other social services they would have received in the absence of their earnings.
<b>BBA</b>	The Balanced Budget Act of 1997 allows states to provide Medicaid coverage to workers with disabilities who cannot qualify for Medicaid because their income or assets are too high. The BBA was the first law that authorized the Medicaid Buy-In program, which has certain eligibility requirements, including an income limit.
<b>Enrollment Spell</b>	A single period of continuous enrollment in a Medicaid Buy-In program.
<b>EVS</b>	The Enumeration Verification System is used by the Social Security Administration to validate social security numbers (SSNs) by matching individuals' names, dates of birth, and gender codes with information for corresponding SSNs on SSA's files.
<b>EPE</b>	The extended period of eligibility is period of at least 36-months after the 9-month Trial Work Period (TWP) in which an individual is eligible to receive SSDI benefits for any month his or her countable earnings are below the substantial gainful activity (SGA) amount.
<b>SGA</b>	Substantial gainful activity is the amount of monthly earnings above which a person is no longer eligible for disability cash benefits. To be eligible for disability benefits, a person must be unable to engage in SGA. A person who is earning more than a certain monthly amount (net of impairment-related work expenses) is ordinarily considered to be engaging in SGA. The amount of monthly earnings considered as SGA depends on the nature of a person's disability, and changes every year. In 2004, the SGA level for a non-blind person was \$810.
<b>SSDI</b>	Social Security Disability Insurance pays monthly cash benefits to people with a long enough work history who are unable to work for a year or more because of a disability. After a 24-month waiting period, SSDI eligibility allows beneficiaries to receive Medicare benefits even if they are under age 65.
<b>SSI</b>	Supplemental Security Income pays monthly cash benefits to people who are age 65 or older, those who are blind, or those who have a disability and have few assets or low income.

- TWP** The trial work period is a nine-month period that occurs within a five-year window when an individual works and continues to receive *full* SSDI benefits. These work months can occur consecutively or intermittently.
- TWWIA** The Ticket to Work and Work Incentives Improvement Act of 1999 is the second law that established the Medicaid Buy-In program. It permits states to establish their own income and resource standards, including the possibility of no income limits.

## **APPENDIX A**

### **CLEANING PROCESS AND DATA QUALITY IN THE FINDER FILES**

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## A. FINDER FILES CLEANING PROCESS

MPR received finder files from 27 states by April 2005. These files contained key identifying information that was used to link the other four data sources together for more than 100,000 participants in the Buy-In program during the five-year period (2000-2004). The information included social security number (SSN), date of birth (DOB), gender, race, enrollment start date and end date, Medicaid identification number, and state abbreviation.<sup>1</sup> Because states are more likely to separately record each continuous enrollment period, or “spell,” for individuals enrolled more than once in the Buy-In program, we requested that each record in the finder files represent a single spell. Except for New Mexico, all 27 states submitted their Buy-In finder files as requested.

Although the quality of Buy-In finder files varies from state to state, several problems are common to many states:

- Missing or invalid key personal identifying information, such as DOB and gender, sometimes even SSN
- Inconsistent personal information within the same file—for example, two records with the same SSN but a different DOB
- Missing value specifications for gender or race code
- Inconsistent enrollment dates (for example, enrollment end date is earlier than the start date)
- Continuous enrollment divided into two or more successive spells

To create a national Buy-In finder file with person-level records, we addressed these and other quality issues by cleaning each state’s finder file. The cleaning process, described below, involved several iterations of data checking, fixing, and dropping (Table A.1).

**Missing or Invalid SSN.** We began the cleaning process with the SSN because it is the most important identifier used to distinguish individuals and to link different data sources. We found missing and/or invalid SSNs in 13 of the 27 states’ finder files (California, Connecticut, Illinois, Indiana, Iowa, Maine, Missouri, New Hampshire, New Mexico, New York, Pennsylvania, Utah, and Wisconsin). We prefixed any eight-digit SSN with a zero; corrected some obvious typos, such as replacing z with 2; and dropped records with missing or other unfixable invalid SSNs. The number of unique and valid SSNs remaining in each finder file is presented in Table A.1, column A.

**Inconsistent Demographic and Personal Information.** States used different values to code gender and racial groups. We uniformly recoded gender and constructed a binary indicator

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<sup>1</sup> New Mexico did not submit race information, therefore data on race for all of its Buy-In participants are missing.

for “white”. After recoding gender and race, we combined SSNs with multiple records into one record. However, DOB, gender and race sometimes differed across records. If only one of the three demographic variables differed, then we first checked the demographic information in the TRF. If the SSN was not in the TRF, we used the information from the record that reflected the most recent enrollment spell. If two or more of the three demographic variables differed, we assumed the enrollment spells most likely belonged to different individuals. A total of 13 SSNs were dropped because of such unresolvable demographic discrepancies (Table A.1, column B).

**Enrollment Start and End Dates.** We built a monthly enrollment indicator for each Buy-In participant based on the enrollment start and end dates in the finder file. Spells having an end date earlier than the start date were dropped. We also dropped records in which the end date was before 2000 or the start date was after 2004 (Table A.1, column C). Seven states—Arkansas, Michigan, Missouri, New Hampshire, New York, West Virginia and Wisconsin—submitted records in which the enrollment preceded the program implementation date. We excluded these records as well (Table A.1, column D). We then collapsed all spells with the same start dates but different end dates into one spell with the latest end date, and then combined continuous spells coded separately into one record.

**Other Quality Issues.** After making the preceding changes, we had some records reflecting very few days of enrollment, which seemed implausible. To determine which of these records to drop, we established the “seven-day rule,” which defines a person as a Buy-In enrollee in a certain month only if he or she is enrolled for more than seven days during that month. Those not enrolled for seven days were dropped (Table A.1, column E). We then created 60 monthly Buy-In enrollment indicators covering the 2000-2004 period.

Table A.2 compares the number of records before and after the cleaning process. We started with 163,540 spell-level records distributed among 128,464 Buy-In participants with unique and valid SSNs. Through the data cleaning process, we created the final analytic file with 126,606 person-level records and only eliminated 1,858 participants (less than 2 percent of the original 128,464 participants). The final file included more than 99 percent of the Buy-In participants from the original finder files submitted by 18 of the 27 states. In nine states (Alaska, Connecticut, Indiana, Iowa, Louisiana, Maine, New Jersey, South Carolina, and Washington), no participant with a valid SSN was dropped in the data cleaning process. Michigan and West Virginia are the only two states in which more than 10 percent of participants in the original finder file were dropped.

## **B. RESUBMISSION OF FINDER FILES**

Two states—Kansas and Illinois—were asked to resubmit their finder files. The original finder file submitted by Kansas appeared to include individuals not enrolled in the Buy-In program. Kansas revised and resubmitted its file in May 2005. We were able to include the Kansas data in all analyses except the analysis of Medicare expenditures. The revised file was received too late to be included in the matching with Medicare data.

The original Illinois finder file omitted individuals who disenrolled before 2004. Illinois revised and resubmitted its finder file in October 2005, but it was too late to be integrated with the other data from other finder files. Therefore, only data from the original file are reflected in this document.

### C. COMPARISON OF FINDER FILES WITH OTHER DATA SOURCES

To understand how Buy-In enrollment, as recorded in the finder files, resembles what states report elsewhere, we compared the number of Buy-In participants in 2004 using three other data sources: the Annual Buy-In Reports, the Quarterly MIG Progress Reports, and MSIS eligibility files (Tables A.3 and A.4).

First we counted the number of people in the national Buy-In finder file whose Buy-In indicator equaled one in the last three months of 2004 and compared this number with what states reported in their 2004 annual Buy-In report as the “fourth-quarter” group. We also compared the number of December 2004 Buy-In participants in the national Buy-In finder file to those in the quarterly MIG progress report submitted online by states to CMS. Both comparisons show only a small difference in enrollment between data sources (Table A.3).

In most states, differences between the finder files and other sources were less than 10 percent. In Illinois, however, we were not surprised to find a significant difference in enrollment from one measure to the next, given that not all Buy-In participants were included in its original finder file. There was also a difference of more than 10 percent in both comparisons with the finder files of Arkansas, Michigan, and Nebraska, each of which had a relatively small number of Buy-In enrollees. California seemed to have coded the first day of each month as the enrollment end date and December 1, 2004, as the end date for any participants with enrollment through the end of 2004 and continuing in 2005. Therefore, as a result of the “seven-day” rule, nobody is counted as a December Buy-In participant in California.

Another way to identify Buy-In participants is through the state-specific eligibility codes for Medicaid Buy-In program in the MSIS data. However, not every state includes the Buy-In indicator in its MSIS eligibility files. Table A.4 compares the number of 2001 Buy-In participants in five states as identified in their Buy-In finder files and in MSIS eligibility files. The largest difference between the two data sources occurred in California—for the same reason that led to the missing December data in the state’s finder file. Nevertheless, in all five states, more than 90 percent of individuals were identified as Buy-In participants in both the finder files and MSIS eligibility files. This suggests that the finder file submitted by these states is an accurate source for identifying Buy-In participants.

TABLE A.1

## RECONCILIATION OF STATE-SUBMITTED FINDER FILES, BY STATE

	(A)	Number of SSNs Dropped Because				(F)
		(B)	(C)	(D)	(E)	
State	Unique Valid Social Security Numbers (SSNs)	Irreconcilable Demographic Discrepancies	No Enrollment During 2000 - 2004	Enrollment Started Earlier than Program Implementation Date	No Enrollment in Any Month for More Than 7 Days	Person-Level Records in the Final Analytical File (Column A-B-C-D-E)
Alaska	613	0	0	0	0	613
Arkansas	281	1	3	12	2	263
California	2,346	0	0	0	151	2,195
Connecticut	6,389	0	0	0	0	6,389
Illinois	799	1	0	0	0	798
Indiana	11,144	0	0	0	0	11,144
Iowa	11,349	1	0	0	0	11,348
Kansas	1,184	5	1	0	0	1,178
Louisiana	499	0	0	0	0	499
Maine	2,404	0	0	0	0	2,404
Massachusetts	19,420	0	0	0	59	19,361
Michigan	169	0	44	2	0	123
Minnesota	14,437	0	369	0	3	14,065
Missouri	24,871	2	179	3	1	24,686
Nebraska	319	0	0	0	2	317
New Hampshire	2,284	0	1	7	30	2,246
New Jersey	1,911	0	0	0	0	1,911
New Mexico	2,755	0	15	0	0	2,740
New York	2,726	1	0	172	10	2,543
Oregon	1,514	2	1	0	2	1,509
Pennsylvania	6,824	0	0	0	621	6,203
South Carolina	155	0	0	0	0	155
Utah	1,017	0	56	0	1	960
Vermont	1,486	0	0	0	6	1,480
Washington	601	0	0	0	0	601
West Virginia	131	0	0	1	44	86
Wisconsin	10,836	0	0	46	1	10,789
Total	128,464	13	669	243	933	126,606

Data Source: State-submitted Buy-In finder files

Analytic Group: Ever-enrolled Buy-In participants, 2000-2004

TABLE A.2  
RESULTS OF DATA CLEANING OF STATE-SUBMITTED FINDER FILES

State	Spell-Level Records from Original Finder File	Unique Valid Social Security Numbers (SSNs)	Person-Level Records in the Final Analytical File	Percent of Original SSNs Remaining in Final Analytical File
Alaska	781	613	613	100.0
Arkansas	308	281	263	93.6
California	2,597	2,346	2,195	93.6
Connecticut	8,684	6,389	6,389	100.0
Illinois	868	799	798	99.9
Indiana	12,940	11,144	11,144	100.0
Iowa	12,898	11,349	11,348	100.0
Kansas	1,273	1,184	1,178	99.5
Louisiana	505	499	499	100.0
Maine	2,860	2,404	2,404	100.0
Massachusetts	27,861	19,420	19,361	99.7
Michigan	169	169	123	72.8
Minnesota	18,286	14,437	14,065	97.4
Missouri	25,828	24,871	24,686	99.3
Nebraska	364	319	317	99.4
New Hampshire	7,064	2,284	2,246	98.3
New Jersey	2,210	1,911	1,911	100.0
New Mexico	4,911 <sup>a</sup>	2,755	2,740	99.5
New York	2,743	2,726	2,543	93.3
Oregon	1,739	1,514	1,509	99.7
Pennsylvania	10,043	6,824	6,203	90.9
South Carolina	192	155	155	100.0
Utah	2,101	1,017	960	94.4
Vermont	2,101	1,486	1,480	99.6
Washington	629	601	601	100.0
West Virginia	132	131	86	65.6
Wisconsin	18,364	10,836	10,789	99.6
Total	163,540	128,464	126,606	98.6

Data Source: State-submitted Buy-In finder files

Analytic Group: Ever-enrolled Buy-In participants, 2000-2004

<sup>a</sup> New Mexico submitted its finder file as person-level records. Spells were counted after receiving the data.

TABLE A.3

## COMPARISON OF 2004 BUY-IN ENROLLMENT, BY STATE AND DATA SOURCE

State	Number of Participants Enrolled for the Entire 4th Quarter			Number of Participants Enrolled as of December 31		
	Cleaned Buy- In Finder File	Annual Buy-In Report	Difference (Percent)	Cleaned Buy- In Finder File	Quarterly MIG Progress Report	Difference (Percent)
Alaska	177	173	2.3	208	194	6.7
Arkansas	101	45	55.4	103	48	53.4
California	N/A <sup>a</sup>	1,085	N/A	N/A <sup>a</sup>	1,165	N/A
Connecticut	3,033	2,940	3.1	3,341	3,365	-0.7
Illinois	489	558	-14.1	563	656	-16.5
Indiana	5,753	5,899	-2.5	6,283	6,117	2.6
Iowa	7,507	7,540	-0.4	7,896	7,695	2.5
Kansas	751	782	-4.1	812	823	-1.4
Louisiana	381	385	-1.0	453	424	6.4
Maine	585	591	-1.0	644	644	0.0
Massachusetts	6,966	6,521	6.4	7,450	7,520	-0.9
Michigan	43	84	-95.3	122	140	-14.8
Minnesota	5,727	5,731	-0.1	6,294	6,165	2.0
Missouri	18,029	17,126	5.0	18,797	18,610	1.0
Nebraska	94	125	-33.0	94	67	28.7
New Hampshire	999	1,027	-2.8	1,368	1,268	7.3
New Jersey	1,288	1,276	0.9	1,381	1,351	2.2
New Mexico	1,137	1,155	-1.6	1,225	1,181	3.6
New York	2,106	2,597	-23.3	2,331	2,480	-6.4
Oregon	548	543	0.9	586	583	0.5
Pennsylvania	3,879	3,721	4.1	4,510	4,865	-7.9
South Carolina	50	50	0.0	52	52	0.0
Utah	174	168	3.4	237	260	-9.7
Vermont	468	443	5.3	540	520	3.7
Washington	388	369	4.9	455	448	1.5
West Virginia	48	49	-2.1	82	90	-9.8
Wisconsin	7,052	7,092	-0.6	7,771	7,713	0.7
Total	67,773	68,075	-0.4	73,598	74,444	-1.1

Data Source: State-submitted Buy-In finder files, the annual Buy-In reports, and the quarterly MIG progress reports.

Analytic Group: Buy-In participants enrolled for the entire fourth quarter in 2004 and Buy-In participants enrolled as of December 31, 2004

<sup>a</sup> Because of coding convention used for start and end dates in California's finder file, we can not identify participants in December 2004

N/A = Not applicable

TABLE A.4

BUY-IN ENROLLEES IDENTIFIED IN FINDER FILE VERSUS MSIS  
ELIGIBILITY FILE, FIVE STATES, 2001

State	Number of Enrollees Identified in Either File	Number of Enrollees Identified in Both Files		Number of Enrollees Identified Only in Finder File		Number of Enrollees Identified Only in MSIS File	
		Number	Percent	Number	Percent	Number	Percent
California	773	700	90.6	12	1.6	61	7.9
Iowa	4154	4029	97.0	124	3.0	1	<0.05
Massachusetts	7715	7240	93.8	417	5.4	58	0.8
Minnesota	8323	8245	99.1	25	0.3	53	0.6
Wisconsin	2041	2028	99.4	10	0.5	3	0.1

Data Source: State-submitted Buy-In finder files and MSIS eligibility files

Analytic Group: Ever-enrolled Buy-In participants in California, Iowa, Massachusetts, Minnesota, and Wisconsin during 2001

## **APPENDIX B**

### **SUPPORTING TABLES FOR DATA ASSEMBLY**



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TABLE B.1

NUMBER AND PERCENT OF PARTICIPANTS EVER ENROLLED IN MEDICAID BUY-IN  
PROGRAMS BETWEEN 2000 AND 2004 THAT MATCHED WITH OTHER DATA SOURCES,  
BY STATE AND DATA SOURCES

State	Number of Participants	Matched with TRF (Buy-In TRF Extract)		Matched with MEF (Buy-In MEF Extract)		Matched with Medicare EDB (Buy-In Medicare Extract)	
		Number	Percent	Number	Percent	Number	Percent
Alaska	613	546	89	587	96	504	82
Arkansas	263	220	84	241	92	189	72
California	2,195	1,921	88	2,132	97	1,956	89
Connecticut	6,389	5,934	93	6,331	99	5,347	84
Illinois	798	705	88	794	99	660	83
Indiana	11,144	8,140	73	11,044	99	7,236	65
Iowa	11,348	10,949	96	10,836	95	10,171	90
Kansas <sup>a</sup>	1,178	1,101	93	1,178	100	N/A	N/A
Louisiana	499	371	74	496	99	309	62
Maine	2,404	1,886	78	2,390	99	1,940	81
Massachusetts	19,361	13,045	67	19,116	99	12,348	64
Michigan	123	113	92	123	100	104	85
Minnesota	14,065	13,246	94	13,897	99	12,885	92
Missouri	24,686	20,531	83	22,959	93	18,716	76
Nebraska	317	314	99	317	100	305	96
New Hampshire	2,246	2,083	93	2,222	99	1,927	86
New Jersey	1,911	1,671	87	1,891	99	1,572	82
New Mexico	2,740	2,368	86	2,652	97	1,932	71
New York	2,543	2,325	91	2,467	97	2,235	88
Oregon	1,509	1,391	92	1,499	99	1,348	89
Pennsylvania	6,203	4,409	71	6,048	98	3,901	63
South Carolina	155	121	78	154	99	107	69
Utah	960	785	82	935	97	742	77
Vermont	1,480	1,389	94	1,466	99	1,367	92
Washington	601	554	92	599	100	533	89
West Virginia	86	11	13	85	99	5	6
Wisconsin	10,789	9,810	91	10,231	95	9,484	88
Total	126,606	105,939	84	122,690	97	97,823	77

Data Source: Buy-In finder files, Ticket Research File (TRF) and Master Earnings File (MEF), and Medicare Eligible Database (EDB)

Analytic Group: Ever-enrolled Buy-In participants, 2000-2004

<sup>a</sup> Kansas revised and resubmitted its finder file. The revised finder file did not arrive in time for the matching to Medicare data.

N/A = Not applicable

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## **APPENDIX C**

### **SUPPORTING TABLES FOR PROFILE OF ENROLLMENT AND PARTICIPANT CHARACTERISTICS**

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TABLE C.1

TOTAL LENGTH OF ENROLLMENT AMONG FIRST-TIME BUY-IN ENROLLEES  
IN 2001 AND 2002, BY YEAR OF IMPLEMENTATION AND STATE

Year of Implementation	State	Number of Participants	Average Enrollment Months	Enrollment Duration in months				
				1-6	7-12	Percent		
						13-18	19-23	24
Before 2000	Massachusetts	6,691	15	20	17	22	10	30
	South Carolina	47	16	23	6	15	19	36
	Oregon	609	16	19	15	17	11	38
	Alaska	247	13	32	22	12	11	23
	Minnesota	4,110	16	21	15	13	9	42
	Nebraska	118	15	25	19	10	7	39
	Maine	994	12	29	26	19	10	17
	<b>Average</b>	<b>1,831</b>	<b>15</b>	<b>24</b>	<b>17</b>	<b>15</b>	<b>11</b>	<b>32</b>
2000	Vermont	574	13	31	22	14	11	22
	New Jersey	739	20	7	10	15	7	61
	Iowa	4,221	20	9	8	8	9	65
	Wisconsin	3,832	19	11	11	10	10	58
	California	871	16	23	17	9	10	40
	Connecticut	3,083	16	19	16	14	15	35
	<b>Average</b>	<b>2,220</b>	<b>17</b>	<b>17</b>	<b>14</b>	<b>12</b>	<b>10</b>	<b>47</b>
2001	New Mexico	1,199	16	12	23	21	18	26
	Arkansas	236	17	5	18	34	3	40
	Utah	465	9	52	20	12	10	7
	<b>Average</b>	<b>633</b>	<b>14</b>	<b>23</b>	<b>20</b>	<b>22</b>	<b>10</b>	<b>24</b>
2002	Illinois	160	23	0	0	5	26	69
	Pennsylvania	1,511	18	14	13	11	10	52
	Washington	157	20	6	11	10	10	64
	New Hampshire	1,102	19	9	12	16	10	53
	Indiana	4,297	17	16	14	12	10	48
	Kansas	523	19	11	12	10	8	59
	Missouri	8,919	21	4	7	9	9	72
	<b>Average</b>	<b>2,381</b>	<b>20</b>	<b>8</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>60</b>

Data Source: Buy-In finder files from 23 states

Analytic Group: 44,705 first-time Buy-In participants in 2001 and 2002

TABLE C.2

## PREVALENCE OF CHURNING AMONG PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY YEAR OF IMPLEMENTATION AND STATE

Year of Implementation	State	Number of Participants	Percent with a Single Enrollment Spell	Percent with Multiple Enrollment Spells		Maximum Number of Enrollment Spells
				Two	Three or More	
Before 2000	Massachusetts	19,361	78	18	3	7
	South Carolina	155	97	3	0	2
	Oregon	1,509	89	10	2	5
	Alaska	613	81	16	3	4
	Minnesota	14,065	80	16	4	6
	Nebraska	317	91	8	1	4
	Maine	2,404	84	14	2	4
	<b>Average</b>	<b>5,489</b>	<b>86</b>	<b>12</b>	<b>2</b>	<b>5</b>
2000	Vermont	1,480	74	19	7	7
	New Jersey	1,911	96	3	<0.5	3
	Iowa	11,348	89	10	2	5
	Wisconsin	10,789	87	11	2	7
	California	2,195	92	7	1	4
	Connecticut	6,389	72	22	6	7
	<b>Average</b>	<b>5,685</b>	<b>85</b>	<b>12</b>	<b>3</b>	<b>6</b>
2001	New Mexico	2,740	96	4	<0.5	3
	Arkansas	263	100	<0.5	0	2
	Utah	960	70	18	13	16
	<b>Average</b>	<b>1,321</b>	<b>88</b>	<b>7</b>	<b>4</b>	<b>7</b>
2002	Illinois	798	92	8	0	3
	Pennsylvania	6,203	93	6	<0.5	4
	Washington	601	96	4	<0.5	4
	New Hampshire	2,246	84	14	1	3
	Indiana	11,144	87	12	2	6
	Kansas	1,178	93	6	<0.5	3
	Missouri	24,686	98	2	<0.5	4
	<b>Average</b>	<b>6,694</b>	<b>92</b>	<b>7</b>	<b>1</b>	<b>4</b>
2003	New York	2,543	100	<0.5	<0.5	3
2004	Louisiana	499	99	1	0	2
	Michigan	123	100	0	0	1
	West Virginia	86	100	0	0	1
	<b>Average</b>	<b>236</b>	<b>100</b>	<b>&lt;0.5</b>	<b>0</b>	<b>1</b>

Data Source: Buy-In finder files from 27 states

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

Note: An enrollment spell is defined as a single period of continuous enrollment in the Medicaid Buy-In Program.

TABLE C.3

DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY FEDERAL AUTHORIZATION AND STATE

State	Number of Participants	Average Age	Percent in Age Group				Percent Male	Percent White
			<21	21-44	45-64	65+		
Federal Authorization: BBA 1997								
Alaska	613	47	<0.5	42	47	10	53	62
California	2,195	50	<0.5	33	57	9	56	74
Iowa	11,348	46	1	42	57	<0.5	50	73
Maine	2,404	45	1	50	40	8	50	94
Nebraska	317	41	0	60	40	<0.5	52	89
New Mexico	2,740	47	1	40	56	3	52	N/S
Oregon	1,509	44	1	52	45	3	48	92
South Carolina	155	40	3	61	36	1	45	52
Utah	960	45	1	48	48	3	50	97
Vermont	1,480	45	<0.5	50	44	6	51	78
Wisconsin	10,789	47	1	40	53	7	50	86
All BBA states	34,510	46	1	42	53	4	51	74
Federal Authorization: TWWIIA								
Arkansas	263	45	3	37	49	0	47	87
Connecticut	6,389	41	2	60	38	<0.5	51	74
Illinois	798	43	1	55	44	0	49	86
Indiana	11,144	42	2	54	44	<0.5	51	88
Kansas	1,178	43	1	54	45	0	48	51
Louisiana	499	44	2	46	52	0	41	56
Massachusetts	19,361	43	2	51	46	1	49	43
Michigan	123	43	0	53	46	0	50	79
Minnesota	14,065	43	1	53	46	<0.5	51	91
Missouri	24,686	48	1	35	64	<0.5	47	89
New Hampshire	2,246	42	2	57	41	0	50	98
New Jersey	1,911	42	1	59	40	<0.5	49	73
New York	2,543	44	1	53	47	<0.5	54	82
Pennsylvania	6,203	44	1	47	52	0	48	87
Washington	601	44	<0.5	49	51	0	49	80
West Virginia	86	41	2	56	42	0	36	94
All TWWIIA states	92,096	44	2	48	50	<0.5	49	77
Total	126,606	45	1	46	51	1	49	77

Data Source: Buy-In finder files from 27 states

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

BBA = the Balanced Budget Act of 1997

N/S = not submitted

TWWIIA = the Ticket to Work and Work Incentives Improvement Act of 1999



TABLE C.4

TYPES OF IMPAIRMENT AT START OF ENROLLMENT AMONG PARTICIPANTS EVER  
ENROLLED IN MEDICAID BUY-IN PROGRAMS BETWEEN 2000 AND 2004, BY STATE

State	Number of Participants	Percent with the Following Primary Disabling Conditions					
		Mental Illness and other Mental Disorders	Mental Retardation	Musculoskeletal System	Sensory Disorder	All Other	Unknown <sup>a</sup>
Alaska	613	26	5	14	4	30	21
Arkansas	263	24	8	13	3	28	25
California	2,195	33	7	9	3	28	19
Connecticut	6,389	41	19	4	3	18	15
Illinois	798	44	18	4	2	14	18
Indiana	11,144	17	26	2	1	10	43
Iowa	11,348	35	12	13	2	27	10
Kansas	1,178	45	16	7	3	19	10
Louisiana	499	17	7	9	5	27	35
Maine	2,404	33	9	8	3	17	31
Massachusetts	19,361	27	6	6	2	15	44
Michigan	123	46	12	9	2	14	16
Minnesota	14,065	42	17	5	2	19	14
Missouri	24,686	20	8	17	1	29	25
Nebraska	317	40	12	10	5	29	4
New Hampshire	2,246	56	13	4	2	11	13
New Jersey	1,911	45	11	4	4	18	19
New Mexico	2,740	23	3	15	3	36	21
New York	2,543	37	23	5	3	15	17
Oregon	1,509	34	13	8	4	26	15
Pennsylvania	6,203	27	6	9	2	22	35
South Carolina	155	11	12	4	5	23	45
Utah	960	35	6	6	2	24	26
Vermont	1,480	44	8	11	4	21	12
Washington	601	55	11	4	2	15	12
West Virginia	86	5	0	0	1	1	93
Wisconsin	10,789	33	12	11	2	23	18
Total	126,606	30	12	9	2	21	25

Data Source: Buy-In finder files from 27 states and Ticket Research File (TRF)

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

<sup>a</sup> Includes participants who were not matched with TRF data (16 percent), and participants whose primary disabling condition was missing or could not be categorized in the TRF at the first month of Buy-In enrollment (9 percent).

TABLE C.5

PRIOR SSI AND SSDI PARTICIPATION STATUS AMONG PARTICIPANTS EVER  
ENROLLED A BUY-IN PROGRAM, FROM 2000 THROUGH 2004, BY STATE

State	Number of Participants	Percent with SSDI <sup>a</sup> Only	Percent with SSI <sup>b</sup> Only	Percent with SSI <sup>b</sup> /SSDI <sup>a</sup> Concurrent	No SSI or SSDI <sup>c</sup>
Alaska	613	65	7	3	26
Arkansas	263	66	2	5	27
California	2,195	78	1	1	20
Connecticut	6,389	70	7	7	16
Illinois	798	78	1	1	20
Indiana	11,144	53	3	4	40
Iowa	11,348	83	2	6	9
Kansas	1,178	86	1	2	11
Louisiana	499	59	4	2	36
Maine	2,404	64	1	1	33
Massachusetts	19,361	50	1	<0.5	49
Michigan	123	83	2	1	15
Minnesota	14,065	84	1	2	13
Missouri	24,686	70	3	3	24
Nebraska	317	88	2	4	6
New Hampshire	2,246	76	3	6	14
New Jersey	1,911	77	1	2	19
New Mexico	2,740	59	7	14	20
New York	2,543	85	<0.5	<0.5	14
Oregon	1,509	78	2	2	19
Pennsylvania	6,203	61	1	2	36
South Carolina	155	34	5	5	57
Utah	960	68	1	2	28
Vermont	1,480	83	1	2	13
Washington	601	85	1	<0.5	14
West Virginia	86	6	0	1	93
Wisconsin	10,789	81	2	1	16
Total	126,606	69	2	3	26

Data Source: Buy-In finder files from 27 states and Ticket Research File (TRF)

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

<sup>a</sup>Social Security Disability Insurance (SSDI) benefits; may include a trial work period but not an extended period of eligibility.

<sup>b</sup>Supplemental Security Income (SSI) cash benefits only, including participation in 1619(a), but not 1619(b)

<sup>c</sup>Includes participants who were not matched with TRF data (16 percent), and participants who did not have any “current pay” status code in the TRF during the 12 months before the first month of Buy-In enrollment between 2000 and 2004 (10 percent)

TABLE C.6

PRIOR PARTICIPATION STATUS IN OTHER WORK INCENTIVE PROGRAMS AMONG PARTICIPANTS  
EVER ENROLLED IN A MEDICAID BUY-IN PROGRAM FROM 2000 THROUGH 2004, BY STATE

State	Number of Participants	Percent with 1619(a)	Percent with 1619(b)
Alaska	613	0.5	6.4
Arkansas	263	0.0	2.3
California	2,195	0.3	1.4
Connecticut	6,389	1.8	11.2
Illinois	798	0.5	6.9
Indiana	11,144	0.5	3.4
Iowa	11,348	0.3	1.7
Kansas	1,178	0.3	1.4
Louisiana	499	1.0	2.8
Maine	2,404	0.6	9.2
Massachusetts	19,361	0.1	1.2
Michigan	123	0.0	7.3
Minnesota	14,065	0.2	2.7
Missouri	24,686	0.2	2.0
Nebraska	317	0.9	4.7
New Hampshire	2,246	0.4	6.4
New Jersey	1,911	0.2	2.5
New Mexico	2,740	0.3	2.2
New York	2,543	0.1	1.3
Oregon	1,509	0.5	5.0
Pennsylvania	6,203	0.2	2.2
South Carolina	155	0.6	13.5
Utah	960	0.1	3.9
Vermont	1,480	0.3	7.2
Washington	601	0.8	2.3
West Virginia	86	0.0	2.3
Wisconsin	10,789	0.1	1.3
Total	126,606	0.3	2.8

Data Source: Buy-In finder files from 27 states and Ticket Research File (TRF)

Analytic Group: 126,606 ever-enrolled Buy-In participants from 2000 through 2004

Note: See Glossary for definitions of 1619(a) and 1619(b).

## **APPENDIX D**

### **SSA DISABLING CONDITION GROUPING**

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TABLE D.1

## SSA DISABLING CONDITION GROUPING

6 Major Types of Impairment	23 Disability Conditions in Ticket Research File (TRF)	SSA Primary Diagnosis Codes (PDX and RPDx)
Mental illness and other mental disorders	Schizophrenia/psychoses/neur.	2950-2959
	Major affective disorders	2960-2969
	Other mental disorders	2900-2949, 2970-3029, 3050-3151, 3154-3169, 3195
Mental retardation	Mental retardation	3170-3194, 3196-3199
Musculoskeletal disorder	Musculoskeletal system	7100-7399
Sensory disorder	Severe visual impairment	3610-3699, 3780-3789
	Severe hearing impairment	3890-3899
	Severe speech impairment	7840-7849
All other	Infectious & parasitic diseases	0020-0419, 0450-1359, 1370-1399
	HIV/AIDS	0420-0449
	Neoplasms	1400-2399
	Endocrine/nutritional	2400-2479, 2490-2799
	Blood/blood-forming diseases	2800-2899
	Nervous system	3200-3609, 3700-3749, 3760-3779, 3790-3889
	Circulatory system	3900-4599, 3750-3759
	Respiratory system	4600-5199
	Digestive system	5200-5799
	Genitourinary system	5800-6299
	Skin/subcutaneous tissue	6800-7099
	Congenital anomalies	7400-7599
	Injuries	8000-9989
	Other	3030-3049, 3152-3153, 6300-6489, 6500-6769, 7600-7839, 7850-7999
Unknown	Missing	0000-0019, 1360-1369, 2480-2489, 6490-6499, 6770-6779, 6780-6789, 6790-6799, 9990-9999, blank

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## **APPENDIX E**

### **SUPPORTING TABLES FOR EARNINGS PROFILE**



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TABLE E.1

## EARNINGS OF PARTICIPANTS EVER ENROLLED IN MEDICAID BUY-IN PROGRAMS, BY STATE AND YEAR, 2001-2004

State	2001			2002			2003			2004		
	Percent with Reported Annual Earnings Above SGA	Among Participants with Reported Earnings		Percent with Reported Annual Earnings Above SGA	Among Participants with Reported Earnings		Percent with Reported Annual Earnings Above SGA	Among Participants with Reported Earnings		Percent with Reported Annual Earnings Above SGA	Among Participants with Reported Earnings	
		Annual Earnings	Average Earnings		Annual Earnings	Average Earnings		Annual Earnings	Average Earnings		Annual Earnings	Average Earnings
Massachusetts	91	52	13,047	88	49	12,814	85	47	12,660	81	47	12,751
South Carolina	89	61	12,663	91	56	11,900	91	49	12,726	89	56	14,342
Oregon	90	34	9,776	90	27	8,825	86	21	7,538	89	24	8,648
Alaska	59	47	10,589	53	41	10,261	57	43	10,879	54	50	12,077
Minnesota	85	14	5,347	86	13	5,530	86	13	5,655	90	12	5,682
Nebraska	95	21	7,076	94	26	8,703	91	24	8,319	91	30	8,685
Maine	91	33	8,069	93	33	8,432	91	30	8,418	92	28	8,725
Vermont	92	23	6,564	88	21	6,797	87	18	6,704	89	19	6,969
New Jersey	93	22	7,237	91	20	7,387	90	24	7,917	87	26	8,284
Iowa	64	9	4,268	55	8	4,228	49	8	4,280	44	8	4,337
Wisconsin	82	12	5,197	71	10	4,901	62	10	4,892	55	10	4,930
California	77	28	8,128	76	31	9,268	74	31	9,534	74	32	9,555
Connecticut	93	20	6,701	90	20	6,934	87	19	6,940	87	21	7,317
New Mexico	40	30	7,720	40	29	7,562	43	29	7,894	46	31	8,365
Arkansas	42	17	6,030	49	20	6,511	44	35	8,597	54	34	9,586
Utah	80	24	7,032	69	17	5,991	72	14	5,963	78	14	6,236
Illinois <sup>a</sup>	--	--	--	98	11	6,015	98	17	6,638	95	19	7,086
Pennsylvania	--	--	--	75	20	6,676	76	24	7,296	74	30	8,221
Washington	--	--	--	96	12	6,015	93	19	7,394	89	20	7,318
New Hampshire	--	--	--	91	12	5,269	87	13	5,494	87	14	5,814
Indiana	--	--	--	89	17	5,087	89	20	5,718	88	20	5,753
Kansas	--	--	--	96	7	4,540	95	9	4,845	93	10	5,207
Missouri	--	--	--	42	11	4,582	40	17	5,359	38	18	5,825
New York	--	--	--	--	--	--	87	23	7,590	82	23	7,941
Louisiana	--	--	--	--	--	--	--	--	--	91	34	8,995
Michigan	--	--	--	--	--	--	--	--	--	95	26	8,232
West Virginia	--	--	--	--	--	--	--	--	--	88	55	10,882
Total	83	27	7,965	74	22	7,226	69	22	7,125	66	23	7,246

Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants, by year (2001-2004).

<sup>a</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

SGA = Substantial Gainful Activity

TABLE E.2

## NUMBER AND PERCENT OF PARTICIPANTS EVER ENROLLED IN MEDICAID BUY-IN PROGRAMS, 2004, BY STATE AND ANNUAL EARNINGS CATEGORIES

State	Number of Participants	Percent with No Reported earnings	Percent among Participants with Reported Annual Earnings in Selected Categories												\$16,801- 18,620	\$18,621+ <sup>c</sup>
			\$1-2,400	\$2,401- 4,800	\$4,801- 7,200	\$7,201- 9,310 <sup>a</sup>	\$9,311- 9,720 <sup>b</sup>	\$9,721- 12,000	\$12,001- 14,400	\$14,401- 16,800						
Alaska	347	46	15	11	11	11	2	9	11	6	3	22				
Arkansas	107	46	21	17	9	16	3	2	9	5	5	14				
California	1,502	26	15	16	20	15	4	9	6	3	3	12				
Connecticut	4,318	13	23	19	18	16	2	6	3	3	2	7				
Illinois <sup>d</sup>	798	5	15	21	25	19	2	7	3	2	2	4				
Indiana	8,862	12	38	17	14	9	1	7	5	3	2	4				
Iowa	9,246	56	42	23	15	10	2	3	2	1	1	1				
Kansas	1,001	7	30	27	19	12	2	4	2	1	1	2				
Louisiana	499	9	14	15	18	16	2	10	7	3	3	11				
Maine	1,027	8	11	17	22	18	2	8	4	5	3	9				
Massachusetts	10,858	19	10	13	15	13	2	8	6	6	4	23				
Michigan	123	5	11	19	27	14	3	14	3	2	1	7				
Minnesota	8,094	10	32	22	19	13	2	5	2	1	1	4				
Missouri	22,783	62	35	20	15	10	1	6	4	3	2	4				
Nebraska	134	9	13	15	25	16	2	9	2	3	4	11				
New Hampshire	1,909	13	30	23	19	12	2	4	2	2	1	4				
New Jersey	1,626	13	19	20	18	15	2	8	5	3	2	9				
New Mexico	1,797	54	22	19	14	12	1	8	6	5	3	10				
New York	2,541	18	16	20	22	17	3	7	4	3	2	6				
Oregon	782	11	14	22	24	14	2	6	4	3	1	10				
Pennsylvania	5,463	26	18	18	17	15	2	9	7	4	3	8				
South Carolina	66	11	7	7	17	12	2	5	15	3	8	24				
Utah	496	22	25	20	23	18	1	4	2	3	1	3				
Vermont	840	11	19	21	22	16	3	7	4	3	1	5				
Washington	545	11	21	17	23	16	3	6	3	4	2	6				
West Virginia	86	12	9	11	12	9	4	14	18	5	7	11				
Wisconsin	9,113	45	40	21	17	10	1	4	2	1	1	3				
Total	94,963	34	27	19	17	12	2	6	4	3	2	7				

Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants in 2004.

<sup>a</sup> 100 percent of Federal Poverty Level (FPL) <sup>b</sup> Annualized Substantial Gainful Activity (SGA) level <sup>c</sup> Above 200 percent of FPL<sup>d</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

TABLE E.3

NUMBER AND PERCENT OF PARTICIPANTS EVER ENROLLED IN MEDICAID BUY-IN PROGRAMS, 2004,  
BY STATE AND ANNUAL SELF-EMPLOYMENT EARNINGS CATEGORIES

State	Number of Participants	Percent with No Reported Self- Employment Earnings	Percent Among Participants with Reported Self-Employment Earnings in Selected Categories													
			\$1-2,400	\$2,401- 4,800	\$4,801- 7,200	\$7,201- 9,310 <sup>a</sup>	\$9,311- 9,720 <sup>b</sup>	\$9,721- 12,000	\$12,001- 14,400	\$14,401- 16,800	\$16,801- 18,620	\$18,621+ <sup>c</sup>				
Alaska	347	97	56	11	11	11	0	0	11	0	0	0				
Arkansas	107	98	0	100	0	0	0	0	0	0	0	0				
California	1,502	95	33	25	18	3	3	6	8	0	1	3				
Connecticut	4,318	97	43	33	10	7	0	3	3	0	0	2				
Illinois <sup>d</sup>	798	98	67	20	7	0	0	7	0	0	0	0				
Indiana	8,862	97	43	22	14	8	2	3	3	2	2	1				
Iowa	9,246	97	54	22	14	5	1	2	1	1	<0.5	<0.5				
Kansas	1,001	96	70	25	0	3	0	0	0	0	0	3				
Louisiana	499	95	50	4	25	4	0	13	4	0	0	0				
Maine	1,027	96	41	18	18	14	2	0	5	0	2	0				
Massachusetts	10,858	94	33	23	14	6	2	6	4	3	2	8				
Michigan	123	98	0	0	100	0	0	0	0	0	0	0				
Minnesota	8,094	94	69	17	7	3	0	1	1	0	<0.5	1				
Missouri	22,783	98	50	21	11	5	1	4	2	2	1	4				
Nebraska	134	96	83	17	0	0	0	0	0	0	0	0				
New Hampshire	1,909	97	58	18	13	7	0	0	0	0	2	2				
New Jersey	1,626	98	33	20	20	13	0	5	0	3	5	3				
New Mexico	1,797	96	36	31	15	10	1	3	3	0	0	1				
New York	2,541	98	40	22	21	6	2	3	2	0	2	3				
Oregon	782	96	49	14	20	9	0	0	9	0	0	0				
Pennsylvania	5,463	95	40	22	16	9	1	4	2	2	<0.5	4				
South Carolina	66	92	80	0	0	20	0	0	0	0	0	0				
Utah	496	95	42	23	15	8	4	0	0	0	0	4				
Vermont	840	92	49	21	16	9	1	1	1	1	0	0				
Washington	545	97	47	41	12	0	0	0	0	0	0	0				
West Virginia	86	90	33	22	0	0	0	0	33	0	0	11				
Wisconsin	9,113	98	65	18	7	4	1	1	0	1	1	2				
Total	94,963	96	48	21	12	5	1	3	2	1	1	3				

Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants in 2004.

<sup>a</sup> 100 percent of Federal Poverty Level (FPL)    <sup>b</sup> Annualized Substantial Gainful Activity (SGA) level    <sup>c</sup> Above 200 percent of FPL<sup>d</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.

TABLE E.4

PERCENT OF PARTICIPANTS EVER ENROLLED IN THE MEDICAID BUY-IN PROGRAM IN 2003,  
BY ANNUAL EARNINGS CATEGORIES IN 2003 AND 2004

2003 Annual Earnings in Selected Categories	2004 Annual Earning in Selected Categories											Percent with 2004 Earnings in a Higher Category (sum after the bold figure)	
	All	No Reported Earnings	\$1-2,400	\$2,401- 4,800	\$4,801- 7,200	\$7,201- 9,310 <sup>a</sup>	\$9,311- 9,720 <sup>b</sup>	\$9,721- 12,000	\$12,001- 14,400	\$14,401- 16,800	\$16,801- 18,620		\$18,621 <sup>c</sup>
No Reported Earnings	100	<b>89.7</b>	6.8	1.7	0.8	0.3	0.1	0.2	0.1	0.1	<0.05	0.2	10.2
\$1-2,400	100	26.8	<b>55.1</b>	10.8	4.1	1.5	0.2	0.6	0.3	0.2	0.1	0.3	18.1
\$2,401-4,800	100	14.4	21.0	<b>40.3</b>	14.8	5.0	0.6	1.6	0.9	0.6	0.2	0.6	24.3
\$4,801-7,200	100	8.9	10.8	17.1	<b>40.4</b>	14.9	1.0	3.2	1.3	0.9	0.4	1.0	22.8
\$7,201-9,310 <sup>a</sup>	100	5.8	6.9	8.4	16.4	<b>40.0</b>	5.6	9.3	3.3	1.6	0.9	1.8	22.5
\$9,311-9,720 <sup>b</sup>	100	6.3	7.5	6.0	9.9	20.4	<b>14.1</b>	23.5	4.5	2.5	1.3	4.0	35.8
\$9,721-12,000	100	8.5	6.4	6.8	8.9	12.8	3.8	<b>26.9</b>	11.9	4.9	3.0	6.2	25.9
\$12,001-14,400	100	6.5	6.0	5.3	6.4	7.9	1.5	11.5	<b>23.4</b>	14.7	6.1	10.7	31.5
\$14,401-16,800	100	6.9	4.7	4.2	4.8	5.4	0.8	6.1	10.8	<b>22.1</b>	13.9	20.3	34.2
\$16,801-18,620	100	5.5	4.0	3.4	3.9	3.1	1.1	4.5	6.7	10.7	<b>20.2</b>	36.7	36.7
\$18,621 <sup>c</sup>	100	3.9	2.1	2.4	2.1	2.0	0.5	2.7	2.9	4.0	3.7	<b>73.8</b>	--

Data Source: Buy-In finder files from 27 states Master Earnings File (MEF)

Analytic Group: Ever-enrolled Buy-In participants, by year

<sup>a</sup> 100 percent of Federal Poverty Level (FPL)<sup>b</sup> Annualized Substantial Gainful Activity (SGA) level<sup>c</sup> Above 200 percent of FPL

TABLE E.5

## AVERAGE ANNUAL EARNINGS BEFORE AND AFTER ENROLLMENT AMONG FIRST-TIME BUY-IN ENROLLEES, BY STATE AND YEAR, 2001-2004

State	2001 First-Time Participants				2002 First-Time Participants				2003 First-Time Participants				2004 First-Time Participants			
	Earnings in 2000 as a Percentage of Earnings in 2001	Average Annual Earnings in 2001	Earnings in 2002 as a Percentage of Earnings in 2001	Earnings in 2001 as a Percentage of Earnings in 2002	Average Annual Earnings in 2002	Earnings in 2003 as a Percentage of Earnings in 2002	Earnings in 2002 as a Percentage of Earnings in 2003	Average Annual Earnings in 2003	Earnings in 2004 as a Percentage of Earnings in 2003	Earnings in 2003 as a Percentage of Earnings in 2004	Average Annual Earnings in 2004	Earnings in 2004 as a Percentage of Earnings in 2004	Earnings in 2003 as a Percentage of Earnings in 2004	Average Annual Earnings in 2004	Earnings in 2004 as a Percentage of Earnings in 2004	Average Annual Earnings in 2004
Massachusetts	84	11,596	91	91	10,554	93	86	9,723	96	83	8,955	83	83	8,955	83	8,955
South Carolina	109	11,324	82	88	12,287	78	165	6,561	74	93	12,067	93	93	12,067	93	12,067
Oregon	72	8,074	91	89	6,880	89	85	4,790	98	73	6,652	73	73	6,652	73	6,652
Alaska	78	6,409	89	77	5,446	85	82	7,585	100	89	7,008	89	89	7,008	89	7,008
Minnesota	101	4,936	95	108	4,864	96	107	5,126	98	101	5,447	101	101	5,447	101	5,447
Nebraska	67	6,376	89	58	9,242	84	70	6,672	114	62	9,082	62	62	9,082	62	9,082
Maine	78	7,549	96	90	7,659	82	82	7,838	89	77	7,745	77	77	7,745	77	7,745
Vermont	70	5,969	92	84	5,913	96	88	6,221	95	75	5,927	75	75	5,927	75	5,927
New Jersey	74	6,867	108	82	6,301	98	85	7,602	98	86	7,022	86	86	7,022	86	7,022
Iowa	150	2,529	92	176	2,095	92	194	2,002	95	194	1,717	194	194	1,717	194	1,717
Wisconsin	107	4,218	97	122	3,162	92	141	2,922	91	139	2,501	139	139	2,501	139	2,501
California	76	6,728	102	84	7,332	94	78	7,701	93	88	7,457	88	88	7,457	88	7,457
Connecticut	78	6,199	99	78	6,200	100	73	5,818	104	70	6,462	70	70	6,462	70	6,462
New Mexico	194	3,233	77	180	3,358	82	165	3,512	91	171	3,443	171	171	3,443	171	3,443
Arkansas	97	2,841	93	82	8,361	101	85	9,773	86	103	9,837	103	103	9,837	103	9,837
Utah	101	5,842	65	115	4,502	72	104	5,235	82	100	5,712	100	100	5,712	100	5,712
Illinois <sup>a</sup>	--	--	--	94	5,940	106	88	6,719	97	82	7,401	82	82	7,401	82	7,401
Pennsylvania	--	--	--	101	5,163	102	100	5,845	98	104	6,590	104	104	6,590	104	6,590
Washington	--	--	--	97	5,784	98	92	7,971	92	81	6,268	81	81	6,268	81	6,268
New Hampshire	--	--	--	93	4,881	96	81	4,871	97	85	5,292	85	85	5,292	85	5,292
Indiana	--	--	--	98	4,581	91	95	5,921	88	88	5,830	88	88	5,830	88	5,830
Kansas	--	--	--	98	4,341	99	89	4,965	108	81	4,570	81	81	4,570	81	4,570
Missouri	--	--	--	139	2,138	92	150	2,695	90	146	3,061	146	146	3,061	146	3,061
New York	--	--	--	--	--	--	89	6,759	110	83	6,479	83	83	6,479	83	6,479
Louisiana	--	--	--	--	--	--	--	--	--	108	8,251	108	108	8,251	108	8,251
Michigan	--	--	--	--	--	--	--	--	--	63	7,830	63	63	7,830	63	7,830
West Virginia	--	--	--	--	--	--	--	--	--	94	9,730	94	94	9,730	94	9,730
Total	92	6,437	93	104	4,640	93	106	4,893	94	103	5,069	103	103	5,069	103	5,069

Data Source: Buy-In finder files from 27 states and Master Earnings File (MEF)

Analytic Group: First-time Buy-In participants, by year, found in MEF.

<sup>a</sup> Illinois revised its finder file and added 324 participants. This new information was received too late to incorporate into the exhibit.