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Does Arkansas' Cash and Counseling Affect Service Use and Public Costs?

Final Report

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EXECUTIVE SUMMARY

Medicaid Personal Care Services (PCS) assist beneficiaries with routine activities, such as bathing and getting in and out of bed. These services are intended to improve beneficiaries' quality of life and allow them to live in their homes, rather than in nursing facilities. However, beneficiaries often do not receive authorized services, which raises concerns about whether they receive adequate care. Moreover, because the PCS benefit is traditionally provided through agencies, beneficiaries' choices are sometimes limited about how and when their care is provided, especially since most agencies do not provide care on weekends or outside normal business hours. This study of IndependentChoices, Arkansas' Cash and Counseling Demonstration program, examines the ways in which consumer direction affects the cost of Medicaid PCS, as well as the cost and use of other Medicaid and Medicare services.

Demonstration enrollment, which occurred between December 1998 and April 2001, was open to interested Arkansans who were at least 18 years old and eligible for personal care services under the state's Medicaid plan. After completing a baseline survey, enrollees were randomly assigned to direct their own personal assistance through IndependentChoices (the treatment group) or to seek services as usual from agencies (the control group). IndependentChoices consumers had the opportunity to receive a monthly allowance, which they could use to hire their choice of caregivers (except spouses) or to buy other services or goods needed for daily living. They also were assigned counselors to receive support and advice about managing the allowance.

Outcome measures were drawn from Medicaid and Medicare claims data for the first postenrollment year for the full sample (2,008 individuals), and for the first two years postenrollment for a cohort of early enrollees (the 1,312 sample members who enrolled in the demonstration prior to May 2000). We used regression models to estimate program effects, while controlling for a comprehensive set of baseline characteristics.

Findings for the full sample for the first-year postenrollment:

- The IndependentChoices program brought many benefits to consumers, such as increasing their satisfaction with care and reducing their unmet needs, at a cost that was slightly less than agencies would have incurred in supplying the expected hours calculated from their baseline care plan.

- Compared to the control group, however, PCS expenditures were about twice as high ($4605 versus $2349) for the treatment group, due mainly to the control group receiving far less care than it was authorized to receive. About 28 percent of the control group received no personal care services during the follow-up period; recipients received only two-thirds of the hours in their care plan.

- Because the increase in PCS costs of $2,256 was partly offset by savings ($726) in their expenditures on nursing facility, home health, and other Medicaid services, total Medicaid costs were only 14 percent higher for the treatment group than for controls.

- The use and costs of hospital services were similar for the treatment and control groups, as were total Medicare costs.
- Results were similar for those under age 65 as for those 65 and over.

Findings for the cohort of early enrollees for the second year post-enrollment:

- Compared to the control group, PCS expenditures were $2,014 higher for the treatment group.
- The treatment group's spending on long-term care and other Medicaid expenditures was $1,514 lower than that of the control group.
- Compared to the control group, total Medicaid costs were only 5 percent (or $500) higher for the treatment group, a statistically insignificant difference.
- Other results were similar to those for the first postenrollment year.

Implications of Results

Our findings suggest that adopting a Cash and Counseling model of consumer direction *can* be a cost-effective way to substantially improve the access to care and well-being of people eligible for Medicaid personal care. Even if costs are higher for participants than they would have been without the Cash and Counseling option, the Arkansas experience shows that the costs can be held to no more than what the state would have expected to pay had the existing system met the needs of those eligible for PCS. Policymakers in states that might experience similar under-service in their traditional program need to decide whether they are willing to pay the higher initial costs under Cash and Counseling in order to reap its beneficial effects on quality and access to care. On the other hand, if the savings in long-term care and other Medicaid costs persist or continue to grow, as they did over the first two years, the program could eventually yield net savings despite the higher personal care costs.

States considering a Cash and Counseling program, but concerned about costs, have some options for controlling those costs. First, they can consider adopting steeper discount rates and monitoring these rates routinely, to ensure that the program continues to pay no more than it would expect to pay under the traditional system. Second, states might consider opening the program only to those who have been in the traditional program for some period of time to limit the enrollment of individuals who would not have sought PCS had the cash allowance option not existed. While such a waiting period would not guarantee the prevention of such "induced demand," it is likely to reduce it considerably.

NOTE: Many of the cost results presented here appeared as a *Health Affairs* Web-exclusive article by the same authors on November 19, 2003. This report, while dated later, provides more-detailed descriptions of the results presented in that paper, along with supplementary findings. Future analysis will include analysis of data for the third year after enrollment for the full sample, and a fourth year for the consumers who enrolled in the study through 1999.

Medicaid personal care services (PCS) assist beneficiaries with routine activities, such as bathing and getting in and out of bed. These services are intended to improve beneficiaries' quality of life and allow them to live in their homes, rather than in nursing facilities. However, beneficiaries often do not receive authorized services, which raises concerns about whether they receive adequate care (U.S. General Accounting Office 2003). Moreover, because the PCS benefit traditionally is provided through agencies, beneficiaries' choices are sometimes limited as to how and when their care is provided, especially since many agencies do not provide care on weekends or outside normal business hours. Finally, the PCS benefit does not cover assistive technologies or home modifications that could reduce dependency on human assistance.

The Cash and Counseling model of consumer-directed care, which gives people more control over their care, is designed to improve consumer well-being without increasing public costs. Recent research suggests that the model does increase consumer well-being (Foster et al. 2003). However, because the program increased access to paid care, it also increased PCS costs and total Medicaid costs during the 12 months after enrollment (Dale et al. 2003). In the current environment of tight state Medicaid budgets, costs are a critical determinant of whether these programs are feasible. Therefore, a more detailed examination of the program's effects on various types of Medicaid costs and service use, and over a longer period, is warranted.

The Cash and Counseling model could affect public costs in several ways. The model could decrease costs for personal care if the fiscal agent and counseling costs under consumer direction are lower than agency overhead. On the other hand, the prospect of receiving a flexible monthly allowance might drive up costs by inducing demand for PCS among people who were eligible for personal care but who had not sought the services from agencies. The model also could increase PCS costs if eligible consumers are more likely to receive the benefits authorized for them if they are in a self-directed program than if they have to rely on traditional agency-

supplied PCS. Finally, personal care costs under consumer direction could also increase (or decrease) if a state sets a monthly allowance for self-directing consumers that is higher (or lower) than the amount it would have paid for authorized services.

Medicaid and Medicare reimbursements for other (nonpersonal care) services could also be affected by Cash and Counseling. These costs could increase or decrease if changes in the way that consumers manage their personal care dollars under consumer direction lead to changes in the consumers' need for hospital services, home health care providers, nursing facilities, and other Medicaid service providers.

The evaluation of the national Cash and Counseling Demonstration enables researchers to rigorously analyze costs under agency-directed and consumer-directed approaches. In this report, we use results from Arkansas' IndependentChoices, the first of three Cash and Counseling demonstration programs to be implemented, to explore the program's effect on Medicaid PCS costs and on Medicaid and Medicare costs and service use under consumer-directed and agency-directed programs for the one-year period after enrollment in the demonstration. To determine whether any treatment-control differences changed over time, we also examine effects over a two-year follow-up period for those individuals who enrolled during the first year of the demonstration. In addition, we present data on the costs of administering IndependentChoices.

BACKGROUND

A New Model of Medicaid Personal Assistance

About 1.2 million individuals receive disability-related supportive services in their homes through state Medicaid plans or through home- and community-based waiver services programs (Kitchener and Harrington 2001). Most of these individuals receive services from government-regulated agencies, whose professional staff select, schedule, and monitor the quality of the

services provided; however, a growing percentage of clients handle these responsibilities themselves (Velgouse and Dize 2000).

Cash and Counseling expands upon more common models of consumer-directed care, in that it allows consumers do more than choose their paid providers. While the program does not provide an unrestricted cash benefit, it does provide a flexible monthly allowance that consumers—or the parents of consumers younger than age 18—may use to hire their choice of caregivers and to purchase other services and goods as states permit. Cash and Counseling requires consumers, or parents, to develop plans showing how they would use the allowance to meet their needs or those of their child. Instead of the case management or support coordination that some traditional programs provide, Cash and Counseling offers counseling and fiscal services to help consumers or parents plan and manage their responsibilities. These tenets of Cash and Counseling—a flexible allowance, availability of counseling and fiscal services, and use of representative decision makers (such as parents, adult caregivers, or other designees)—are meant to make Cash and Counseling adaptable to consumers of all ages and with all types of impairments.

With funding from the Robert Wood Johnson Foundation (RWJF) and the Office of the Assistant Secretary for Planning and Evaluation (ASPE) of the U.S. Department of Health and Human Services (DHHS), and waivers from the Center for Medicare and Medicaid Services (CMS), the Cash and Counseling Demonstration and Evaluation was implemented in Arkansas, Florida, and New Jersey. Because each state's Medicaid programs and political environments differed considerably from one another, the demonstration states were not required to implement a standardized intervention; they did, however, have to adhere to the basic Cash and Counseling tenets. The states' demonstration programs differed in their particular features, so each is being evaluated separately.

Cash and Counseling in Arkansas

Arkansas' IndependentChoices was open to adults who were at least 18 years old and who were eligible for PCS under the state's Medicaid plan. Arkansas implemented the demonstration to assess the demand for and practicability of consumer-directed personal assistance in the state. It also hoped that the program would be better than agencies at serving individuals during nonbusiness hours and in rural parts of the state, where agencies and agency workers were scarce (Phillips and Schneider 2002).

Enrollment and random assignment began in December 1998 and continued until the evaluation target of 2,000 enrollees was met, in April 2001.[1,2] The demonstration waiver stipulated that, among Arkansas program enrollees, the ratio of "new" to "continuing" beneficiaries (defined by whether the beneficiary had Medicaid claims for PCS during the 12 months before enrollment) could not exceed predemonstration levels. This stipulation arose from concern that the prospect of receiving a flexible monthly allowance would induce demand for PCS and drive up costs. In fact, the ratio of new to continuing beneficiaries among enrollees during each year of the demonstration was below historical levels. In addition, Arkansas tried to avoid inducing demand for PCS by requiring prospective enrollees to agree to use agency services if they were assigned to the control group. (This agreement was not enforceable.) Furthermore, demonstration participants represented only about 11 percent of the number of

[1] To receive Medicaid PCS, an Arkansan must (1) be categorically eligible for Medicaid; (2) live in his or her own residence or in a community-based residence, group or boarding home, or residential care facility; and (3) have both physical dependency needs related to the activities of daily living and a physician's prescription for personal care (Arkansas Medicaid Program 1998). Slightly more than 18,000 Medicaid beneficiaries received PCS in Arkansas in 1998, when Cash and Counseling was introduced (Nawrocki and Gregory 2000).

[2] To meet budget neutrality requirements, Arkansas continued to enroll beneficiaries after April 2001 (and randomly assign them to treatment and control groups as required for budget neutrality assessment); however, these beneficiaries were not included in the evaluation.

personal care or waiver recipients in the year preceding the demonstration, indicating that there was no large influx of consumers who were eligible for personal care but who had not sought those services from agencies.

Beneficiaries who were in the process of deciding whether to enroll in the demonstration were told what their monthly allowance would be if they were assigned to the treatment group. Allowances were based on the number of hours in the beneficiaries' Medicaid personal care plans.[3] Existing care plans developed by agency nurses were used to calculate the allowances for prospective enrollees already using PCS. To determine allowances for those who were not yet using PCS, enrollment nurses employed by IndependentChoices developed care plans, using the same state-mandated process required of agencies, including a standardized assessment form. The care plans were cashed out at $8.00 per hour, after "discounting."

The purpose of discounting was to ensure that treatment group members' allowances were in line with the expected costs of services that similar control group members were likely to receive. To discount, the number of hours in the plans were reduced by 9 to 30 percent (by multiplying by a discount rate ranging from 70 to 91 percent) to reflect the historical differences observed between the amount of services actually delivered by different agencies and the amount authorized in the care plan.[4] (In practice, labor shortages in Arkansas made it difficult for agencies to provide even the discounted number of hours in the control group members' care plans.) The program paid a fixed monthly fee for each enrollee for counseling and fiscal agent

[3] The number of hours in a beneficiary's Medicaid personal care plan depends on his or her physical limitations, needs, and other sources of paid and unpaid assistance. In Arkansas, special state authorization must be obtained to receive more than 64 hours of services per month.

[4] Arkansas developed provider-specific discount rates by comparing, for the previous year, the hours in the care plans of random samples of people served by providers of traditional personal assistance and the hours used (according to claims data).

services. These costs were expected to be covered, in the aggregate, by the difference between the standard rate of $12.36 per hour that the state paid agencies and the $8.00 per hour in the cash allowance. Treatment group members were authorized to receive an average of 45 hours of care per month at baseline; thus, after discounting, their average initial allowance was $320 per month.

CMS required the program to be "budget neutral." In practice, over the course of the five-year demonstration waiver, the cost per recipient per month for "core services" (PCS, home health, waiver services, targeted case management, hospice, direct medical equipment, and transportation) for beneficiaries in IndependentChoices had to be comparable to the cost of core services for personal care recipients in the traditional program.[5]

Beneficiaries who decided to enroll in the demonstration completed baseline telephone interviews and were randomly assigned to one of the two evaluation groups. Control group members continued to receive agency services or, if newly eligible for Medicaid PCS, received lists of home care agencies to contact for first-time services. Treatment group members were contacted by IndependentChoices counselors who helped them develop acceptable written plans for spending their allowances.

Treatment group members could use their allowances to hire workers (except spouses or representatives) and to purchase other services or goods for their personal care needs, such as supplies, assistive devices, and home modifications. They were required to keep receipts for purchases, although 10 percent of the allowance could be kept as cash to purchase permissible services that could not readily be invoiced (such as paying a neighbor to mow a lawn). In

[5] Core services were designated prior to the demonstration and included services that seemed likely to be affected by the cashing out of PCS.

addition, consumers were allowed to save a designated portion of the monthly allowance toward a specified future purchase.

With few exceptions, consumers in the treatment group chose to have the program's fiscal agents maintain their accounts, write checks, withhold taxes, and file their payroll tax returns. Many also asked program counselors for advice about recruiting, training, and supervising workers. These services were provided at no direct cost to consumers. In addition to helping consumers manage their responsibilities, counselors monitored consumers' satisfaction, safety, and use of funds through initial home visits; monthly telephone calls; semiannual home visits; semiannual reassessments; and reviews of spending plans, receipts, and workers' time sheets (Schore and Phillips 2002). [6]

Consumers participating in the demonstration were allowed to participate in other Medicaid home- and community-based waiver services programs. About 62 percent of elderly demonstration participants participated in ElderChoices, a program that provided as many as 43 hours per month of nurse-supervised homemaker services, as well as chore, respite, and related services, to elderly people who qualified for nursing home-level care. Nine percent of nonelderly sample members participated in the Alternatives program, which allowed consumers to hire friends and relatives as caregivers and provided as many as eight hours of paid care per day (Phillips and Schneider 2002).

Research presented in companion reports to this one showed that IndependentChoices operated smoothly, with 80 percent of consumers receiving their allowances within three months of random assignment (Schore and Phillips 2002). Most consumers used at least part of their

[6] During the demonstration, Arkansas changed the reassessment rules such that enrollees who were in both ElderChoices (another 1915c waiver program) and IndependentChoices needed only annual reassessments.

allowance to hire a worker, with two-thirds hiring family members and most others hiring friends (Schore and Phillips 2002a). The program increased consumers' satisfaction with their care, reduced their unmet needs, and did not increase the likelihood that they would experience certain adverse health events (Foster et al. 2003a). Our findings from previous research (Dale et al. 2003) on the effects of IndependentChoices on Medicaid service use and costs during the first postenrollment year include:

- The program increased the likelihood that consumers would receive paid assistance, partly because agency worker shortages prevented many control group members from receiving any PCS
- Control group members who were able to obtain some paid PCS received far fewer hours of service than were authorized
- Because the control group received less care than expected, PCS costs for the treatment group were higher than those for the control group
- The treatment group's higher PCS costs were partly offset by a decrease in costs for other Medicaid services, particularly for home health and nursing facility services for the nonelderly.

EXPECTED EFFECTS

Consumer-directed care appeals to many policymakers because agency overhead is eliminated. If the costs for other services associated with consumer direction (such as costs for fiscal agents) are less than agency overhead, consumer-directed services may be cheaper than agency services per hour of service delivered (Benjamin 2001). Indeed, one study found that individuals in a cash assistance program in the Netherlands could buy more hours of services than could a randomly assigned control group because the privately provided services were less expensive than the agency-provided ones (Miltenburg et al. 1996).

While no agency overhead costs are incurred under IndependentChoices, the program does incur costs for fiscal agents and counseling. Nonetheless, the program could save money if the aggregate costs for fiscal agent and counseling services were less than the pool of money

generated from the difference between the $12.36 paid to agencies and the $8 per hour paid for the allowance.[7] Compared to the control group, the costs for personal care could also be greater or (lower) for the treatment group if:

- The program increased (or decreased) the likelihood of receiving any PCS
- The amount of the allowance was too high (or too low) due to the control group receiving fewer services (or more services) than they had historically received

In fact, as noted, research by Dale et al. (2003) showed that costs for personal care were substantially higher for the treatment group than for the control group during the first year after followup due to the fact that control group members received far less service than they had historically received, and many received no PCS at all.[8] In this report, we will investigate whether the cost differences change during the second year of followup. It is possible that program changes, such as reductions in counseling costs, could reduce the treatment group's personal care costs during the second year. In addition, the severe labor shortages during the first year that prevented control group members from receiving many of their authorized hours of care might subside; in this case, the control group's PCS expenditures during the second year might increase.

[7]The program expected to break even on fiscal agent and counseling fees as long as consumers had at least 19 hours per month in their care plans, and expected to save money if the average consumer had 20 or more hours per month in their care plans. Consumers enrolled in IndependentChoices had an average of about 45 hours per month in their care plans.

[8] As noted, the budget-neutrality requirements for IndependentChoices meant that the costs per recipient per month for personal care and other core services could not be greater than the historic per person per month cost for those receiving agency services. However, we examine the cost per sample member (rather than per PCS recipient). The program could affect this measure, even if the program is budget-neutral. Also, we compare treatment group costs to what they would have been in the absence of the demonstration (not to historical measures).

We also will explore in depth the reasons for any treatment-control difference in personal care expenditures.[9] First, we will assess whether the discount rate was set at a rate consistent with actual experience during the demonstration. To do this, we will compare the number of hours of care that the control group received with the number of hours that they were expected to receive (in other words, with their discounted care plan hours).[10] Second, we will examine whether different reassessment procedures for the treatment group and for the control group contributed to the treatment-control difference in personal care expenditures. Treatment and control group members had comparable care plans at baseline and were required to be reassessed with the same frequency. However, the two groups' reassessments differed in ways that might have led to differences in the number of their care plan hours over time. For example, people who were new to PCS initially were assessed by enrollment nurses. Although the care plans based on those assessments were cashed out for treatment group members, traditional agencies were not required to honor the enrollment nurses' assessments for control group members. Instead, the agencies could have reassessed new control group members and then changed the care plan hours on the basis of the reassessments. Furthermore, control group members were reassessed by agencies, but IndependentChoices' counselors conducted the treatment group members' reassessments. Faced with labor shortages, agencies might have been reluctant to increase the number of hours in consumers' care plans, even if increases were justified by changes in the consumers' conditions or circumstances. In contrast, because treatment group

[9] We use the term "personal care expenditures" to refer to the cost of PCS provided by agencies, and to the cost to Medicaid of the services that were cashed out under IndependentChoices (for treatment group members receiving the allowance).

[10] The discount rate applied during the demonstration could have been inaccurate. The rate may have been based on the experiences of small samples of PCS recipients. It also is possible that the ratio of hours of PCS received to hours planned varied over the course of the demonstration.

members were permitted to hire friends and relatives, labor shortages were not a factor during the counselors' assessments.

In addition to affecting personal care costs, IndependentChoices could affect the costs and use of other Medicaid services—for example, nursing facility services, home health services, and the ElderChoices and Alternatives waiver programs. We will examine whether expenditures for the Medicaid services that decreased modestly during the first year (Dale et al. 2003) changed during the second follow-up year. We also will examine whether IndependentChoices affected *Medicare* expenditures for home health and nursing facility services.

Finally, we will investigate whether the program affected the use and cost of Medicaid and Medicare services that may reflect the adequacy of PCS, such as inpatient hospital admissions. On the one hand, these costs could be higher for the treatment group if workers neglect consumers, improperly perform health care tasks, or wait too long to request medical attention for their clients. In this case, compared with control group members, consumers might fall more frequently, or they might develop more infections, bed sores, or contractures. On the other hand, according to self-reported data in Foster et al. (2003a), treatment group members were no more likely than control group members to fall or to experience the other adverse health events considered. In fact, this research showed that IndependentChoices' consumers were less likely than control group members to develop pressure sores, to have existing bed sores worsen, or to experience shortness of breath. Thus, if claims data are consistent with survey reports, we would expect the treatment group's expenditures for other Medicaid and Medicare services for these problems to be similar to (or even less than) the control group's expenditures.

DATA

Data for this analysis were drawn primarily from Medicaid claims data, Medicare claims data, and a computer-assisted telephone baseline survey administered to treatment and control

group members or to their proxy respondents between December 1998 and April 2001. Medicaid and Medicare claims data for the first 12 months after enrollment were used to construct outcome measures for the full sample; outcome measures also were constructed for 13 to 24 months after enrollment for the subsample of "early enrollees" (individuals who enrolled in IndependentChoices before May 2000).

We constructed control variables from claims data for the year preceding enrollment and from the baseline survey. Control variables from the claims data included the sample members' preenrollment Medicaid and Medicare expenditures, as well as their diagnoses. Control variables from the baseline survey include the consumers' demographic characteristics, measures of health and functioning, and measures of unmet need for personal care.

Outcome Measures

Medicaid expenditure measures were compiled from Medicaid claims data supplied by Arkansas. Medicare expenditure measures were constructed from Medicare claims data. All the measures are listed in Table A.1. Although most of the measures are fairly straightforward, two require additional explanation.

Personal care expenditures for the control group were equal to the actual cost of the hours of care delivered according to the Medicaid claims data (which was equal to the number of hours multiplied by $12.36, the hourly rate paid by Arkansas for agency services). The treatment group's personal care expenditures included costs for the allowance, as well as the costs for counseling and fiscal agent fees, both of which were reported in the Medicaid claims data. As noted, the allowance was equal to the number of care plan hours (discounted to reflect historical

differences between actual hours and care plan hours) multiplied by $8 per hour.[11] The program paid a fixed monthly fee for each consumer's counseling and fiscal agent services. Treatment group members' personal care costs included payments for agency services received after randomization but before receipt of the cash allowance, and for any agency services received by disenrollees after leaving the IndependentChoices program. ***Personal care expenditures per recipient month*** included expenditures only for the months during which treatment group members received either a cash allowance or PCS from an agency, and during which control group members received agency services.

Estimation of Program Effects

Our impact estimates measure the effects of having the *opportunity* to receive the monthly allowance (by virtue of being randomly assigned to the treatment group), rather than of actually *receiving* it. Treatment group members did not necessarily receive the allowance during the full postenrollment period that we examined; they may have disenrolled from IndependentChoices, may have taken several months to submit their spending plans, or may never have submitted spending plans. Likewise, control group members may not have received PCS in every postenrollment month. (Some did not receive any PCS during the postenrollment period.) To avoid introducing selection bias, most of our analyses were based on the expenditures of all treatment group and all control group members; our examination of expenditures per month of personal care benefit receipt, which included only individuals who received PCS, was the exception.

[11] After the demonstration began, treatment group members could choose how many hours of care they would purchase with their allowance. They also were permitted to set their workers' wages, but workers' wages did have to be at or above the state's minimum wage.

We estimated program impacts for continuous outcome measures (including all of our expenditure outcomes) using ordinary least squares regression models. For binary outcome measures (such as whether a sample member had any visits to the emergency room), we used logit models to estimate program impacts. For continuous outcome measures with a high proportion of zero values, such as the number of nursing facility days, we used tobit models. For outcome measures that range from zero to five or six, such as the number of hospital admissions, we used ordered logit models. All the models controlled for the sample members' baseline measures of demographic characteristics, health and functioning, unmet needs for personal care, preenrollment Medicaid and Medicare expenditures, and preenrollment diagnoses. The control variables used in each of the models are listed on Table A.2. These models increased the precision of the impact estimates and ensured that any differences between treatment and control groups in these preexisting characteristics that may have arisen by chance did not distort our impact estimates. For many outcomes, we estimated models separately for elderly sample members (aged 65 years or older) and nonelderly sample members (aged 18 to 64), as impacts and the relationship between the outcomes and the control variables might differ for the two age groups. Finally, so that we could examine a longer follow-up period, we estimated models separately for a cohort of early enrollees. To increase the cohort's sample size, it included both elderly enrollees and nonelderly enrollees.

For continuous outcome measures, we measured impacts by calculating the treatment-control difference in predicted means. We measured the impacts of IndependentChoices on binary outcomes by using the estimated coefficients from the logit models to calculate the average predicted probabilities that the binary dependent variable would take a value of 1, with each sample member first assumed to be a treatment group member, and then assumed to be a control group member. For each type of model, the p-values of the estimated coefficients on the

treatment status variable were used to assess the statistical significance of the impacts; they are reported in the tables. The impact estimates are almost always similar to the treatment-control differences in means.

SAMPLE DESCRIPTION

Our sample includes the 2,008 individuals (1,452 elderly and 556 nonelderly) who enrolled in IndependentChoices and who completed baseline surveys. Nearly all of the elderly enrollees in the sample (96 percent) and 43 percent of the nonelderly ones were dually eligible for Medicaid and Medicare. The majority of the sample was female and white (see Table 1). Many sample members reported that they were in poor health and that they had functional limitations. For example, 67 percent of the elderly enrollees and 62 percent of the nonelderly ones reported that they had to have assistance to get in and out of bed. According to their Medicaid and Medicare claims data, many sample members had diagnoses related to the central nervous system (such as epilepsy, cerebral palsy, muscular dystrophy, or quadriplegia), cardiovascular system (such as congestive heart failure), renal conditions, cerebrovascular conditions, or diabetes.[12]

[12] We used the Chronic Illness and Disability Payment System (CDPS) to classify individuals' diagnoses (according to their Medicaid and Medicare claims data) into major categories that have been shown to be predictive of future costs. A diagnosis is captured only if there is a Medicaid or Medicare claim related to the diagnosis in the year prior to the Demonstration. Individuals could have a chronic condition (such as a psychiatric condition) that would not be captured in the claims data if they did not receive treatment for that condition in the preenrollment year. Many of the diagnostic categories are divided into subcategories (such as high cost, medium cost, and low cost) according to the level of Medicaid expenditures that would be expected for a particular diagnosis; these subcategories have been collapsed for the purposes of Table 1. Individuals could have multiple diagnoses. See Kronick et al. (2000) for a description of the CDPS.

TABLE 1

CHARACTERISTICS OF THE ANALYSIS SAMPLE, BY AGE GROUP

Characteristic	Aged 18 to 64	Aged 65 or Older
Demographic Characteristics		
Age in Years (Percent)		
18 to 39	27.5	—
40 to 64	72.5	—
65 to 79	—	50.4
80 or older	—	50.6
Female (Percent)	67.6	81.4
White (Percent)	63.5	59.2
CDPS Diagnosis Category in the 12 Months Preceding Baseline[a]		
Cancer (Percent)	6.3	14.4
Cardiovascular Diagnoses (Percent)	34.6	64.8
Cerebrovascular Diagnoses (Percent)	14.1	33.1
Central Nervous System Diagnoses (Percent)	52.1	36.6
Diabetes (Percent)	25.2	32.1
Renal-Related Diagnoses (Percent)	33.1	46.7
Mean Monthly Medicaid Reimbursements for Selected Services in the 12 Months Preceding Baseline		
Medicaid PCS (Dollars)	2,330	2,167
Nursing Facility Services (Dollars)	144	149
Home Health Services (Dollars)	748	230
Health Status, Functional Status, and Need for Personal Care at Baseline		
Said Health Was Fair (Percent)	26.7	32.6
Said Health Was Poor (Percent)	54.2	47.2
Needed Help Getting in and out of Bed (Percent)	62.1	67.4
Had Unmet Personal Care Need (Percent)	69.1	61.4
Weekly Hours in Care Plan	11.8	10.0
Sample Size	**556**	**1,452**

Source: Medicare and Medicaid claims, December 1997 to April 2000 Medicare and Medicaid enrollment files; and MPR's baseline evaluation survey, conducted between December 1998 and April 2001.

[a]The CDPS was used to classify individuals into major diagnostic categories. See Kronick et al. (2000) for a description of the CDPS. The CDPS also divides major diagnostic categories into cost subcategories (such as high cost or medium cost); these cost subcategories were collapsed for this table. A diagnosis is captured only if there is a Medicaid or Medicare claim related to the diagnosis in the year prior to enrollment.

CDPS = Chronic Illness and Disability Payment System; PCS = personal care services.

RESULTS

Personal Care Expenditures

During the first-year postenrollment, treatment group members had average annual personal care expenditures of $4,605, an amount that was nearly twice as high as that of the control group members (Table 2). The treatment-control difference in these expenditures for the nonelderly enrollees ($3,005) was greater than the difference for the elderly enrollees ($2,021).[13] The control group's lower annual personal care expenditures were not surprising, given that only 75 percent of elderly control group members and 63 percent of nonelderly ones received *any* PCS during the postenrollment year, even though these services had been authorized (Table 3). Particularly striking was the fact that only 34 percent of control group members who were new to PCS received any PCS during that year. Thus, the treatment group's higher costs partly reflect the fact that many control group members did not receive any PCS. In contrast, nearly every treatment group member received at least some personal care during the postenrollment year; 84 percent received the cash allowance, and nearly all of the remaining 16 percent received traditional PCS.

However, even among enrollees who did receive at least some PCS, the treatment group's expenditures were higher than the control group's. In particular, the expenditures *per month of personal care benefit received* were, on average, $86 (24 percent) higher for the treatment group ($445) than for the control group ($359; see Table 4). (The treatment-control difference in personal care costs per recipient month was similar for elderly and nonelderly enrollees, as well as for the first and second postenrollment years.) The difference in personal care costs per

[13] These impacts are similar to (but not the same as) those reported in Dale et al. (2003). We have the full sample of demonstration enrollees, whereas the Dale et al. sample included only enrollees who also responded to the nine-month follow-up survey.

TABLE 2

EFFECT OF INDEPENDENTCHOICES ON ANNUAL EXPENDITURES FOR MEDICAID AND MEDICARE SERVICES DURING THE FIRST POSTENROLLMENT YEAR

	Nonelderly			Elderly			All		
Expenditure Category	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)
Medicaid									
Personal care	5,435	2,430	3,005*** (0.000)	4,313	2,292	2,021*** (0.000)	4,605	2,349	2,256*** (0.000)
Non-personal care	8,689	10,432	-1,743** (0.035)	7,211	7,530	-320 (0.197)	7,613	8,339	-726** (0.014)
Total	14,125	12,862	1,263 (0.136)	11,523	9,822	1,701*** (0.000)	12,219	10,688	1,531*** (0.000)
Medicare	5,986	5,884	102 (0.942)	10,888	10,806	82 (0.917)	9,434	9,539	-105 (0.878)
Combined Medicaid and Medicare	20,111	18,746	1,365 (0.418)	22,411	20,628	1,784** (0.044)	21,653	20,227	1,426* (0.071)
Medicaid Type of Service									
Personal care	5,435	2,430	3,005*** (0.000)	4,313	2,292	2,021*** (0.000)	4,605	2,349	2,256*** (0.000)
Nursing facility	18	242	-224** (0.030)	821	917	-96 (0.592)	592	737	-146 (0.269)
Home health	594	916	-322 (0.123)	187	231	-43 (0.125)	311	410	-99 (0.106)
ElderChoices	11	13	-2 (0.917)	2,673	2,810	-137 (0.282)	1,919	2,053	-134 (0.147)
Alternatives	934	1,122	-188 (0.565)	NA	NA	NA	265	304	-40 (0.714)
Inpatient care	1,087	1,911	-824** (0.036)	437	439	-2 (0.946)	629	833	-205* (0.061)
Prescription drugs	2,717	2,495	221 (0.317)	1,799	1,851	-51 (0.511)	2,048	2,035	12 (0.881)
Transportation	266	322	-56 (0.492)	53	61	-8 (0.604)	113	133	-20 (0.410)

TABLE 2 *(continued)*

Expenditure Category	Nonelderly			Elderly			All		
	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)
Case management	22	15	7 (0.413)	111	115	-4 (0.705)	85	89	-3 (0.657)
DME	567	719	-152 (0.106)	283	282	1 (0.929)	361	403	-42 (0.134)
Hospice	112	19	94 (0.465)	28	9	19 (0.428)	49	13	36 (0.346)
Other services[a]	2,362	2,659	-297 (0.313)	818	815	2 (0.970)	1,243	1,328	-84 (0.343)
Medicare Type of Service									
Nursing facility	56	37	19 (0.689)	639	656	-16 (0.891)	476	486	-10 (0.913)
Home health	216	359	-143 (0.207)	1,050	1,060	-9 (0.945)	823	862	-39 (0.705)
DME	741	686	54 (0.751)	952	1,038	-86 (0.351)	908	926	-18 (0.824)
Inpatient	2,947	3,105	-158 (0.887)	5,465	5,488	-23 (0.966)	4,646	4,949	-303 (0.540)
Hospice	98	6	92 (0.403)	42	146	-103 (0.138)	56	109	-52 (0.367)
Other	1,928	1,690	238 (0.492)	2,739	2,419	320 (0.174)	2,525	2,207	318 (0.103)
Combined Medicaid and Medicare									
Nursing facility	75	280	-205* (0.078)	1,461	1,573	-112 (0.637)	1,068	1,223	-155 (0.374)
Home health	810	1,275	-465** (0.044)	1,238	1,291	-53 (0.701)	1,134	1,272	-138 (0.241)
DME	1,307	1,405	-98 (0.607)	1,235	1,320	-85 (0.375)	1,269	1,329	-60 (0.490)
Inpatient	4,034	5,016	-982 (0.404)	5,902	5,927	-25 (0.964)	5,275	5,783	-508 (0.326)

TABLE 2 *(continued)*

Expenditure Category	Nonelderly			Elderly			All		
	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean (Dollars)	Predicted Control Group Mean (Dollars)	Estimated Effect (*p*-Value)
Hospice	211	25	186 (0.270)	70	154	-84 (0.253)	106	122	-17 (0.812)
Sample Size	**556**			**1,452**			**2,008**		

Source: Medicaid and Medicare claims data, for the period from December 1997 through April 2002.

Note: Means were predicted using ordinary least squares regression models.

[a]Mainly laboratory services, x-rays, and physicians' services.

DME = durable medical equipment.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

TABLE 3

SAMPLE MEMBERS WHO RECEIVED PCS DURING THE POSTENROLLMENT YEAR

	New to PCS[a]			Previous PCS User			All		
Group	N	Received PCS or Allowance (Percent)	Received Allowance (Percent)	N	Received PCS or Allowance (Percent)	Received Allowance (Percent)	N	Received PCS or Allowance (Percent)	Received Allowance (Percent)
Control									
Nonelderly	107	32.7	n.a.	170	82.4	n.a.	277	63.2	n.a.
Elderly	184	34.2	n.a.	543	89.1	n.a.	727	75.2	n.a.
All	291	33.7	n.a.	713	87.5	n.a.	1,004	71.9	n.a.
Treatment									
Nonelderly	102	100.0	95.1	177	100.0	85.3	279	100.0	88.9
Elderly	180	100.0	93.3	545	99.1	77.8	725	99.3	81.7
All	282	100.0	94.0	722	99.3	79.6	1004	99.5	83.7

Source: Medicaid claims data for the period from December 1997 through April 2002.

[a]Enrollees who had no Medicaid PCS expenditures at any time during the preenrollment year.

n.a. = not applicable; PCS = personal care services.

TABLE 4

EFFECT OF INDEPENDENTCHOICES ON PERSONAL CARE EXPENDITURES PER MONTH AMONG ENROLLEES RECEIVING THE PERSONAL CARE BENEFIT

Expenditure Outcome	Sample Size	Predicted Treatment Group Mean	Predicted Control Group Mean	Estimated Effect (*p*-Value)
All Enrollees				
Nonelderly				
Expenditures per recipient month, first follow-up year	454	513	422	91*** (0.000)
Elderly				
Expenditures per recipient month, first follow-up year	1,269	420	336	84*** (0.000)
Elderly and Nonelderly				
Expenditures per recipient month, first follow-up year	1,723	445	359	86*** (0.000)
Early Enrollees Only[a]				
Nonelderly and Elderly				
Expenditures per recipient month, first follow-up year	1,125	465	363	102*** (0.000)
Expenditures per recipient month, second follow-up year	879	467	369	98*** (0.000)

Source: Medicaid claims data for the period from December 1997 through April 2002.

Note: Means were predicted using ordinary least squares regression models.

[a]Early enrollees were those who enrolled in the demonstration before May 2000.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

recipient is due mainly to the treatment group's receipt of an allowance that was equivalent to more hours of care per month than the number of hours of care that the control group received.

REASONS FOR DIFFERENCES IN EXPENDITURES FOR PERSONAL CARE

The difference in cost per recipient month of personal care benefits was unanticipated, since the two groups had equal, average hours of care per week in their care plans at enrollment (about 10.5 hours), and the cash allowance was discounted to account for the historical discrepancy between planned and actual hours. However, during the months of PCS receipt, control group members received only about 80 percent of the discounted hours contained in their care plans. In contrast, by program design, treatment group members received an allowance equivalent to the value of their discounted care plan hours. Thus, the treatment group's expenditures per recipient per month were greater than those of control group members, primarily because agencies delivered far less care than expected given the hours of care authorized for them.

The nature of the cost differences between the treatment and control groups is made clearer by comparing, respectively, the number of hours of care received and personal care expenditures relative to the expected number of hours of care and expected personal care expenditures during specific months after demonstration enrollment. For example, during the second month postenrollment, control group PCS recipients were authorized to receive an average of 41.5 hours of care.[14] After adjusting for the average discount rate of 84 percent, control group members were expected to receive 34.9 hours on average. However, control group members actually received only 70 percent of the hours in their care plans, on average, or 27.5 hours of care (Table 5). The fact that control group PCS recipients received even fewer hours of care than

[14] We use the term "authorized" to refer to care plan hours prior to discounting, and the term "expected" to refer to care plan hours after discounting.

TABLE 5

ACTUAL VERSUS EXPECTED PCS EXPENDITURES DURING THE MONTHS OF ALLOWANCE RECEIPT (TREATMENT GROUP) OR PCS SERVICES RECEIPT (CONTROL GROUP)

	Treatment Group		Control Group	
Outcome	Month 2	Month 12	Month 2	Month 12
Baseline Care Plan Hours per Month	46.1	47.6	41.5	41.8
Current Care Plan Hours per Month[a]	48.8	53.0	42.1	44.3
Discount Rate	0.87	0.87	0.84	0.84
Hours Used (Control Group) or Hours Cashed Out (Treatment Group) per Month[b]	43.0	51.1	27.5	29.2
Ratio of Hours Used to Baseline Care Plan Hours (Mean Ratio)[c]	0.94	1.20	0.70	0.78
Ratio of Hours Used to Baseline Care Plan Hours (Median)	0.90	0.94	0.74	0.80
Monthly Cash Allowance (Mean; Dollars)	344	410	n.a.	n.a.
Monthly Payment to Counseling/Fiscal Agency (Mean; Dollars)	112	96	n.a.	n.a.
Actual Monthly PCS Expenditures (Mean; Dollars)[d]	456	507	340	361
Expected Monthly Expenditures (Mean; Dollars)[e]	509	513	432	439
Recipients (Number)	661	604	577	484

Source: Medicaid claims data and reassessment data supplied by agencies and IndependentChoices' staff.

[a]Based on reassessment data.

[b]Hours cashed out per month are computed by dividing the monthly allowance by $8. Hours used are computed by dividing monthly PCS expenditures by $12.36.

[c]Computed across individuals.

[d]Actual PCS expenditures include the allowance expenditures and fiscal agent/counseling expenditures for the treatment group, and the agency expenditures for the control group.

[e]Expected PCS expenditures are equal to the weekly hours in the care plan*4.33 weeks per month*$12.36 per hour*discount rate.

n.a.= not applicable; PCS = personal care services.

implied by the discount rate probably can be explained by the labor shortages at the time, which prevented agencies from supplying all the care to which these individuals were entitled.[15]

Moreover, the average allowance for treatment group members during the second postenrollment month (among those who received allowances) was even higher than would have been expected based on their discounted baseline care plan hours. This difference was due to the fact that a small percentage of the treatment group members who had reassessments during the first two months were authorized to receive more hours of care than had been authorized for them at baseline (see Appendix B for a more detailed analysis of reassessment data). Treatment group members' allowances were equivalent to 94 percent of the hours in their baseline care plans, on average. At the average discount rate, these individuals were expected to receive 87 percent of the hours in their care plans.

Even though treatment group members' allowances were slightly higher than their baseline care plan hours would have suggested, their total personal care expenditures (fiscal agent and counseling costs plus allowance costs) were less than the historical cost to agencies of providing their care. Based on their initial discounted care plan hours multiplied by $12.36 (the hourly rate paid to agencies), the average personal care expenditure of recipients who received allowances was expected to be $509. However, these individuals actually incurred personal care expenditures during the second-month postenrollment of only $456. Their personal care costs

[15] It is possible that agencies did not honor the baseline care plans (designed by IndependentChoices' enrollment nurses) for enrollees who were new to PCS. This explanation could partly explain why the control group received less care than expected. Indeed, new PCS recipients received only 51 percent of the hours in their baseline care plans during the second month of postenrollment, despite having an average discount rate of 89 percent (not shown). Even enrollees who previously had received PCS (and whose care plans were designed by agency nurses) received only 72 percent of the hours in their plans, despite having an average discount rate of 84 percent.

were lower than expected because fiscal agent and counseling costs were, on average, only $112 per allowance recipient; the pool of money set aside for fiscal agents and counseling would have covered about $175 per treatment group member per month (46 baseline care plan hours x .87 discount rate x $4.36 per hour difference in agency payment fees and the rate at which the allowance was cashed out).

By the 12th-month postenrollment, the average control group member received about 29.2 hours of care per month, an increase of about six percent from the 27.5 hours of care received during the 2nd month postenrollment. In contrast, treatment group members received an average allowance equivalent to 51 hours of care, nearly 20 percent more than the 43 hours of care received during the second month.

The increase in treatment group allowances over the course of the year raises concerns about differences in reassessment procedures for the treatment and control groups. Indeed, according to our analysis of reassessment data, about seven percent of treatment group members received sizeable increases in their care plans between baseline and month 12 (of more than 8 hours per week, or about 32 hours per month; see Appendix B). Only 2 percent of control group members received increases of this magnitude. In addition, the average increase in care plan hours for treatment group members was somewhat higher than that for control group members (even though reassessments for treatment group members were based on the consumer's needs and authorized by a physician.

However, the main difference between the treatment and control groups during the 12th-month postenrollment could be attributed *not* to the number of care plan hours but, rather, to the fact that control group members still received far fewer hours of care than expected. During month 12, control group recipients of PCS obtained an average of only 29 hours of care, only two-thirds of the 44 hours in their care plans at the time; in contrast, recipients of allowances

received an average of 51 of hours of care, nearly all of the 53 hours in their current care plans (Table 5).

Finally, even though the treatment group's average allowance increased during the year (and was higher than the allowance implied by their baseline care plan hours), the average *total* personal care expenditures among allowance recipients in month 12 ($506) was slightly less than it would have cost agencies to supply the average discounted baseline care plan hours ($513). Monthly fiscal agent/counseling expenditures decreased over time because Arkansas changed the amount that it paid per enrollee per month; the decrease in fiscal agent/counseling costs offset the increased average allowance.

PROGRAM IMPACTS ON NONPERSONAL CARE MEDICAID AND MEDICARE EXPENDITURES

The treatment group's higher PCS expenditures were partially offset by lower expenditures for other Medicaid services during the first-year postenrollment. Annual hospital inpatient expenditures for the full sample were $205 lower for the treatment group than for the control group; this difference was driven by the program's reduction in hospital expenditures for the nonelderly enrollees of $824 annually (Table 2).[16] The overall pattern of impacts for the other types of services suggests that, particularly for the nonelderly, the program decreased expenditures for services for which PCS was a close substitute: home health and nursing facility services, as well as expenditures for the ElderChoices and Alternatives waiver programs. The

[16] It is possible that the lower inpatient expenditures for the small sample of nonelderly treatment group members were due to beneficial effects of consumer direction on consumers' health, such as fewer pressure sores or fewer contractures. However, the treatment-control difference in the proportion of nonelderly consumers with any inpatient expenditure was not statistically significant, nor was there a significant reduction in inpatient expenditures during the second year. Thus, the reduction in inpatient expenditures seems more likely to have been due to chance than to large effects on the need for or cost of hospitalizations.

expenditures for each of these services were lower for the treatment group than for the control group, although the effects generally were not statistically significant. The sole exception was that nonelderly treatment group members had nursing facility expenditures that were significantly lower, on average, than were those of nonelderly control group members.

Overall, the treatment group's lower expenditures for nonpersonal care only partly offset the group's higher personal care expenditures. Therefore, for the full sample, total Medicaid expenditures were $1,531 (14 percent) higher for the treatment group than for the control group during the first year postenrollment, a statistically significant difference.

Medicare expenditures for particular services and in total were not significantly affected by IndependentChoices. Due to the increase in total Medicaid expenditures, for the full sample, the treatment group's combined Medicaid and Medicare expenditures ($21,653) were significantly higher than were the control group's ($20,227). However, nonelderly enrollees had significant reductions in combined Medicare and Medicaid expenditures for home health services. For the nonelderly, the treatment group's combined Medicaid and Medicare expenditures for home health services ($810) were $465 less than those for the control group. Similarly, nonelderly treatment group members had significantly lower combined Medicare and Medicaid expenditures for nursing facility services than did their control group counterparts.

PROGRAM IMPACTS ON MEDICAID AND MEDICARE SERVICE USE

During the first year postenrollment, the effect of IndependentChoices on service use exhibited a pattern similar to the effect on expenditure impacts. Relative to the control group, treatment group members were less likely (although not significantly less likely) to use any inpatient services, any home health services, and any nursing facility services (see Table 6). The treatment group also had fewer nursing facility days, nursing facility admissions, and home health visits from skilled nurses; again, however, the effects were not statistically significant.

TABLE 6

EFFECT OF INDEPENDENTCHOICES ON SELECTED MEDICAID AND MEDICARE SERVICE USE AND EXPENDITURE MEASURES

	Full Sample, First Year		
	Predicted Treatment Group Mean	Predicted Control Group Mean	Estimated Effect (*p*-Value)
Nursing Facility Measures			
Any Medicaid Nursing Facility Expenditures (Percent)[a]	7.4	8.6	-1.2 (0.333)
Any Medicare Nursing Facility Expenditures (Percent)[a]	9.6	10.9	-1.3 (0.325)
Any Medicaid or Medicare Facility Admissions (Percent)[a]	13.9	15.4	-1.4 (0.350)
Medicaid or Medicare Nursing Facility Days (Percent)[b]	11.7	13.3	-1.6 (0.309)
Home Health Measures			
Medicare Skilled Nurse Visits (Number)[b]	4.4	4.8	-0.3 (0.537)
Medicaid Home Health Therapy Visits (Number)[b]	0.2	0.2	0.1 (0.366)
Any Home Health Visit (Percent)[a]	18.0	18.2	-0.2 (0.885)
Inpatient Measures			
Inpatient Admissions (Number)[c]			(0.838)[d]
0 (percent)	52.8	52.4	0.4
1 (percent)	24.1	24.2	-0.1
2 (percent)	10.2	10.3	-0.1
3 (percent)	6.1	6.1	-0.1
4 (percent)	2.9	2.9	0.0
5 (percent)	1.9	1.9	0.0
6 or more (percent)	2.1	2.1	0.0
Inpatient Days (Number)[b]	9.1	9.7	-.6 (0.336)
Any Inpatient Admission (Percent)[a]	47.1	47.7	-0.6 (0.784)
Sample Size	**1,004**	**1,004**	

TABLE 6 *(continued)*

Source: Medicaid and Medicare claims data for the period from December 1997 through April 2002.

[a]Means predicted using logit models.

[b]Means predicted using tobit models.

[c]Means predicted using ordered logit models.

[d]*p*-Value is the coefficient in treatment status from an ordered logit predicting the number of inpatient admissions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

COMPARISON OF FIRST-YEAR AND SECOND-YEAR IMPACTS

We examined second-year expenditure impacts on the cohort of beneficiaries who enrolled in IndependentChoices prior to May 2000 (1,312 elderly and nonelderly individuals). The treatment-control difference in total Medicaid expenditures was significant during the first year ($1,420 or 13 percent), but was much smaller and *not* statistically significant during the second year ($500 or 5 percent; Table 7). The treatment-control difference in combined Medicaid and Medicare expenditures was smaller during the second year than during the first year. However, even during the first year, the effect of the program on combined Medicaid and Medicare expenditures was statistically insignificant for this smaller cohort.

The change in expenditure impacts from the first to the second year was due to two factors: (1) the narrowing of the treatment-control gap in personal care costs, and (2) the increase in the savings in nonpersonal care costs. In both groups, the percentage of sample members who received any personal care services fell between the first and second years by about 20 percent.[17] However, treatment group expenditures per recipient month (about $466 during both years; see Table 4) were higher than control group expenditures per recipient month (about $365 in both years). Thus, the decrease in the proportion receiving any personal care led to a larger reduction in average expenditures per treatment group member between the first and second years than in average expenditures per control group member. The treatment-control difference in personal care expenditures during the second year ($2,014) was therefore smaller than the groups' first-year difference ($2,453).

[17] Most of those who received PCS in the first year, but not in the second year, had died or were in a nursing facility.

TABLE 7

EFFECTS OF INDEPENDENTCHOICES ON EARLY ENROLLEES' ANNUAL EXPENDITURES FOR MEDICAID AND MEDICARE SERVICES, BY YEAR

Expenditure Category	First Year Postenrollment			Second Year Postenrollment		
	Predicted Treatment Group Mean	Predicted Control Group Mean	Estimated Effect	Predicted Treatment Group Mean	Predicted Control Group Mean	Estimated Effect
Medicaid						
Personal care	4,855	2,402	2,453 ***	3,852	1,839	2,014 ***
			(0.000)			(0.000)
Non-personal care	7,229	8,261	-1,033 ***	7,229	8,743	-1,514 ***
			(0.006)			(0.003)
Total	12,083	10,663	1,420 ***	11,082	10,582	500
			(0.000)			(0.359)
Medicare	8,827	9,261	-435	7,948	8,091	-143
			(0.606)			(0.859)
Combined Medicaid and Medicare	20,910	19,924	986	19,030	18,673	357
			(0.309)			(0.736)
Medicaid Type of Service						
Personal care	4,855	2,402	2,453 ***	3,852	1,839	2,014 ***
			(0.000)			(0.000)
Nursing facility	460	696	-235	1,149	1,749	-600 **
			(0.125)			(0.045)
Home health	337	479	-142	218	373	-156 **
			(0.109)			(0.012)
ElderChoices	1,752	1,961	-209 **	1,384	1,585	-202
			(0.047)			(0.147)
Alternatives	344	260	83	503	602	-99
			(0.512)			(0.577)
Inpatient	594	853	-259 *	594	743	-149
			(0.086)			(0.218)
Prescription drugs	1,988	2,026	-38	1,817	1,917	-99

TABLE 7 *(continued)*

Expenditure Category	First Year Postenrollment: Predicted Treatment Group Mean	First Year Postenrollment: Predicted Control Group Mean	First Year Postenrollment: Estimated Effect	Second Year Postenrollment: Predicted Treatment Group Mean	Second Year Postenrollment: Predicted Control Group Mean	Second Year Postenrollment: Estimated Effect
			(0.707)			(0.388)
Transportation	85	137	-52 **	102	150	-48
			(0.029)			(0.263)
Case management	80	80	-1	51	61	-9
			(0.950)			(0.258)
DME	349	406	-57	289	294	-5
			(0.113)			(0.894)
Hospice	54	3	50	43	14	29
			(0.335)			(0.326)
Other services[a]	1,187	1,360	-173	1,079	1,254	-175
			(0.120)			(0.309)
Medicare Type of Service						
Nursing facility	381	383	-2	384	649	-265 **
			(0.984)			(0.027)
Home health	791	671	120	635	634	1
			(0.337)			(0.992)
DME	803	878	-75	689	854	-164
			(0.422)			(0.116)
Inpatient	4,504	5,079	-575	3,953	3,811	142
			(0.370)			(0.796)
Hospice	84	169	-85	15	78	-64
			(0.341)			(0.154)
Other	2,264	2,081	182	2,272	2,065	207
			(0.326)			(0.391)
Sample Size	**658**	**654**		**658**	**654**	

Source: Medicaid and Medicare claims data, for the period from December 1997 through April 2002.

Note: Early enrollees were those who enrolled in the demonstration before May 2000.

TABLE 7 *(continued)*

[a]Mainly laboratory services, x-rays, and physicians' services.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

The second reason for the change in total expenditure impacts between the first and second years pertains to nonpersonal care expenditures. Mainly as a result of the program's savings on nursing facility expenditures, the treatment-control difference in nonpersonal care Medicaid expenditures during the second year (-$1,514) was greater than the savings during the first year (-$1,033). In particular, the treatment group's savings in Medicaid nursing facility expenditures was -$600 during the second year, which was more than twice the -$235 savings observed during the first year.

In general, the effect of IndependentChoices on both Medicaid and Medicare expenditures and the use of nursing facility and home health services was greater during the second year than during the first. Although the program had virtually no effect on expenditures for Medicare skilled nursing facilities during year 1, the treatment group's expenditures for this service were $265 lower than were the control group's during year 2. Likewise, during the second year, treatment group members spent significantly fewer days in a nursing facility, were less likely to have any Medicaid nursing facility expenditures, were less likely to have any (Medicaid or Medicare) nursing facility admission, and had fewer home health therapy visits (Table 8).

DEATH RATES

The IndependentChoices program was not expected to affect mortality. However, because living longer usually results in higher health care costs, it is possible that the treatment group's lower nonpersonal care costs could be explained by differences in the two groups' death rates.

TABLE 8

EFFECT OF INDEPENDENTCHOICES ON SELECTED MEDICAID AND MEDICARE SERVICE USE AND EXPENDITURE MEASURES, BY YEAR

	First Year			Second Year		
	Predicted Treatment Group Mean	Predicted Control Group Mean	Estimated Effect (*p*-Value)	Predicted Treatment Group Mean	Predicted Control Group Mean	Estimated Effect (*p*-Value)
Nursing Facility Measures						
Any Medicaid Nursing Facility Expenditures (Percent)[a]	6.2	7.9	-1.7 (0.224)	7.9	13.5	-5.6*** (0.001)
Any Medicare Nursing Facility Expenditures (Percent)[a]	8.9	9.8	-0.9 (0.582)	8.9	10.2	-1.3** (0.042)
Any Medicaid or Medicare Facility Admissions (Percent)[a]	13.3	13.9	-0.6 (0.754)	13.5	17.4	-3.9** (0.043)
Medicaid or Medicare Nursing Facility Days (Percent)[b]	11.1	12.5	-1.4 (0.460)	19.1	26.3	-7.3** (0.035)
Home Health Measures						
Medicare Skilled Nurse Visits (Number)[b]	5	5.7	-0.6 (0.376)	3.1	4	-0.9 (0.108)
Medicaid Home Health Therapy Visits (Number)[b]	0.1	0.1	0.0 (0.852)	0.1	0.2	-0.2** (0.013)
Any Home Health Visit (Percent)[a]	19.7	20.4	-0.7 (0.726)	12.9	14.9	-2.0 (0.289)
Inpatient Measures						
Inpatient Admissions (Number)[c]			(0.533)[d]			(0.519)[d]
0 (percent)	53.2	51.7	1.5	60.7	59.2	1.6
1 (percent)	24.3	24.7	-0.4	20.5	21.1	-0.5
2 (percent)	10.5	10.9	-0.4	9.9	10.4	-0.5
3 (percent)	6.0	6.3	-0.3	4.8	5.1	-0.3
4 (percent)	2.5	2.7	-0.1	1.9	2.0	-0.1
5 (percent)	1.8	2.0	-0.1	1.0	1.0	-0.1
6 or more (percent)	1.7	1.8	-0.1	1.1	1.2	-0.1
Inpatient Days (Number)[b]	8.6	9.5	-0.9 (0.202)	7.3	7.8	-0.5 (0.482)
Any Inpatient Admission (Percent)[a]	46.8	48.3	-1.5 (0.575)	40.3	41.4	-1.0 (0.691)
Sample Size	**1,312**			**1,312**		

TABLE 8 *(continued)*

Source: Medicaid and Medicare claims data for the period from December 1997 through April 2002.
[a]Means predicted using logit models.

[b]Means predicted using tobit models.

[c]Means predicted using ordered logit models.

[d]*p*-Value indicates the significance level for whether the distribution of the number of inpatient admissions for the treatment group is different from the distribution of the number of inpatient admissions for the control group.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

To determine whether differences in death rates explained those findings, we compared the percentages of Medicare beneficiaries in the two groups that had died.[18] Nine percent of nonelderly treatment group members, but only 4 percent of control group members, died during the first year postenrollment (Table 9). This difference was likely due to chance, as it was not statistically significant even at the .10 level, and the pattern reversed during the second year postenrollment. In fact, the percentage of nonelderly treatment group members who died between enrollment and the end of the second year (15.2 percent) was nearly identical to the percentage of nonelderly control group members who died during that period (15.3 percent). By the same token, death rates for the elderly were not significantly different for the treatment and control groups, with approximately 30 percent of sample members dying by the end of the second enrollment year.

SUBGROUP RESULTS

We estimated the effect of IndependentChoices for key expenditure outcomes, by subgroups. We first explored whether program effects might differ if benefits were more generous by comparing outcomes for beneficiaries whose care plans included more than 12 hours per week (the sample mean for younger adults) with those for beneficiaries whose plans included fewer than 12 hours of care per week. In particular, we investigated whether savings on nonpersonal care Medicaid costs or for Medicare costs were greater for those with many care plan hours than for those with few care plan hours. We found that the effects of the program on

[18] Because Medicaid claims data did not reliably report whether beneficiaries had died, we analyzed death rates for the 96 percent of elderly sample members and the 43 percent of nonelderly sample members who were Medicare beneficiaries. The death rate for nonelderly sample members who were not enrolled in Medicare may differ from the 15 percent reported for the dually eligible consumers.

TABLE 9

EFFECT OF INDEPENDENTCHOICES ON THE LIKELIHOOD OF DYING
(MEDICARE ENROLLEES ONLY)

	Sample Size	Predicted Treatment Group Percentage	Predicted Control Group Percentage	Estimated Effect (*p*-Value)
All Enrollees				
Nonelderly, died by end of first year	241	9.0	4.3	4.7 (0.143)
Elderly, died by end of first year	1,400	15.5	15.2	0.3 (0.881)
Elderly and nonelderly, died by end of first year	1,641	14.6	13.7	0.9 (0.359)
Early Enrollees				
Nonelderly				
Died by end of first year	165	8.9	4.3	4.6 (0.255)
Died by end of second year	165	15.2	15.3	-0.2 (0.977)
Elderly				
Died by end of first year	901	14.7	14.6	0.1 (0.971)
Died by end of second year	901	31.9	28.5	3.4 (0.225)
Nonelderly and Elderly				
Died by end of first year	1,066	13.9	13.2	0.7 (0.501)
Died by end of second year	1,066	29.7	26.8	3.0 (0.307)

Source: Medicaid and Medicare Claims data for the period from December 1997 through April 2002.

Notes: Medicaid claims data did not reliably report whether beneficiaries had died. Therefore, we analyzed death rates for the 96 percent of elderly sample members and the 43 percent of nonelderly sample members who were Medicare beneficiaries as of the first month prior to demonstration enrollment. Means were predicted using logit models.

nonpersonal care Medicaid costs and on Medicare costs were not significantly different for these two groups (see Table A.4).

We then explored whether program effects were different for new PCS recipients and for continuing PCS recipient (that is, by whether or not sample members had received any PCS during the year preceding enrollment). Because the program had a large effect on the receipt of any paid care for new PCS users, it is possible that new PCS users also might have realized greater savings in their non-PCS expenditures (for example, if new PCS users in the treatment group substituted paid caregivers for home health services). In addition, because some states allow only continuing PCS users to participate in their consumer-directed programs, it is important to determine whether program effects are different for that group than for new PCS users. We found that, because few new PCS users in the control group received any paid care, the increase in personal care expenditures was significantly greater for new PCS users than for continuing PCS users. However, the effects of the program on nonpersonal care Medicaid expenditures and on Medicare expenditures were not significantly different for the two groups of PCS users (Table A.5).

ADMINISTRATIVE COSTS

When deciding whether to adopt a consumer-directed program, policymakers might want to consider how much the program will cost to administer. We initially intended to estimate the difference between the ongoing cost of administering IndependentChoices and the cost of administering the traditional PCS program. However, although Arkansas was able to supply data on the costs of processing claims for the traditional program and for IndependentChoices, data on the traditional program's other administrative costs (such as the salaries of staff who certified and oversaw providers or who directed the program) were not available. Thus, it was not possible to compare these nonclaims-related costs for the traditional program with those of

IndependentChoices. Nonetheless, we do report the other administrative costs for IndependentChoices, because this information may help policymakers to assess the full cost of running a Cash and Counseling model of consumer direction. (The administrative costs reported in the following discussion are *not* included in the treatment or control group's Medicaid PCS expenditures reported previously.)

Claims Processing. The traditional program incurred costs of 17 cents per claim for processing, and PCS recipients had an average about three claims per month; thus, claims-processing costs were about $6 per PCS recipient per year (.17*3*12). In contrast, IndependentChoice's allowance recipients incurred costs of 10 cents per claim detail. Allowance recipients generally had two claims per month (one for fiscal agent/counseling services, and one for the cash allowance), or about $2.40 per recipient per year (2*.10*12). Thus, IndependentChoices' cost for claims processing was somewhat lower than that of the traditional program, but the costs were trivial in either case.

Other Administrative Costs. The IndependentChoices' program employed the following staff in 2003: 15 to 25 percent of the time of a high-level administrator to oversee the program, a full-time project manager, a full-time programmer/analyst, and a half-time clerical person. The annual salary and fringe benefit costs for these staff members was about $100,000 for the period from July 2002 through July 2003.[19] During that year, the program also incurred administrative costs of about $5,000 for travel and supplies. In total, then, the program had administrative costs

[19] Note that the cost of 2.7 full-time equivalent positions is likely to be lower in Arkansas (where the cost of labor is relatively lower) than it would be in many other states.

of about $105,000, or roughly $105 per treatment group member per year.[20] These administrative costs represent less than 2.5 percent of the total PCS costs per treatment group member ($105/$4,605).

DISCUSSION

PCS expenditures were about twice as high for the treatment group as for the control group during the first year postenrollment, primarily due to the control group receiving less care than it was authorized to receive. Nearly one-fourth of control group members did not receive any paid PCS, and those who did received only 68 percent of the hours of care to which they were entitled, rather than the 86 percent they were expected to receive. A secondary reason for this difference was that treatment group members were more likely than control group members to have reassessments that authorized increases in the hours of care, which resulted, in turn, in increases in the treatment group's personal care expenditures over the course of the year. Nonetheless, the average personal care expenditures among allowance recipients during the 12th-month postenrollment was slightly *less* than the cost that agencies would have incurred, on average, in supplying the expected number of baseline care plan hours.

The treatment group's large increase in PCS costs was partly offset by savings in their expenditures on nursing facility, home health, and other Medicaid services. Thus, the treatment group's total Medicaid costs were only about 14 percent higher (about $1,500) than those of the control group during the first postenrollment year. Because the savings in other Medicaid services (particularly nursing facility, home health, and other home care waiver services) grew between the first and second year and the difference in personal care costs fell, the treatment-

[20] During the program's first several years, Arkansas also incurred start-up costs for outreach and enrollment; thus, costs for the first two years of the demonstration were about 50 percent higher than those reported here. Our focus is on the ongoing costs of a program.

control difference in total Medicaid costs during the second year fell to 5 percent of the control group mean, a statistically insignificant difference. Thus, over the whole two-year period, costs were about 9 percent higher for the treatment group. We do not yet have evidence after the two-year study period. However, over time, as people age and their health worsens, they are even more likely to become eligible for nursing facility care. The lower nursing home and home health costs for the treatment group suggest that Cash and Counseling may better enable consumers to substitute personal care at home for these more expensive long-term care services, and may prevent caregiver burnout. Indeed, findings from Foster et al. (2003b) suggest that caregivers suffer less physical, emotional, and financial strain under IndependentChoices, likely enabling them to better care for the consumer at home. Thus, the potential for savings in the other long-term care costs for nursing facility services may continue to increase over a longer period than the one examined in this study.

Even if the ongoing Medicaid costs under consumer direction are similar to the Medicaid costs under the traditional program, some state policymakers might be troubled by the high initial costs of IndependentChoices. However, the agency worker shortages that had plagued Arkansas would not necessarily be a factor for other states adopting consumer-directed care (nor for Arkansas, perhaps, at a different time). Had control group members received their expected care (based on their discounted care plan hours), personal care expenditures per recipient would have been similar for the treatment and control groups.

In states that might experience similar under-service in their traditional program, policymakers need to consider whether they are willing to pay a higher initial cost for a consumer-directed program, in order to reap its sizeable benefits. Notably, the program greatly increased consumer's satisfaction with services and decreased their unmet needs (Foster et al.

2003). It also increased the likelihood that people received the paid help with the services they needed, and that were authorized for them.

States considering adopting a Cash and Counseling program, but concerned about program costs, could adopt cost-cutting measures. States might reduce allowances by adopting a steeper discount rate. For example, in Germany, beneficiaries receive an allowance under consumer direction that is equal to only 50 percent of the value of the services that agencies would be authorized to provide (Tilly and Wiener 2000). States could also consider making the program open only to those already in the traditional program in order to limit "induced demand"—enrollment of people who would not have signed up for PCS had the monthly allowance not been an option. Based on Arkansas' experience during the second-year postenrollment, this strategy of limiting enrollment to continuing PCS users might effectively contain costs. During the second year, IndependentChoices had no effect on the total Medicaid costs of continuing PCS users; in contrast, among new PCS users, these costs were about $2,000 higher for the treatment group than for the control group. However, if policymakers change program features in order to cut costs, the program's favorable effects might be smaller as well.

The fact that so many control group members who were new to PCS did not receive any paid assistance at all during the year after enrollment might also be troubling to policymakers. These enrollees may not have received paid assistance because of agency worker shortages; in this case, IndependentChoices helped consumers obtain paid assistance they would not have been able to get under the traditional program. It also is possible that some control group members simply did not seek agency services because they were interested only in the monthly allowance. If true, this explanation implies that the traditional program was unacceptable to some eligible beneficiaries; however, it also suggests that IndependentChoices may have

increased state Medicaid expenditures by providing cash payments to individuals who (although entitled to services) would not have sought agency care.

We do not know what proportion of control group members who did not receive paid assistance actually tried to obtain it. The fact that agencies supplied a substantially smaller-than-usual proportion of the hours authorized in the care plan suggests that they had insufficient staff to meet the needs even of their existing clients. Furthermore, we know from discussions with agencies that worker shortages were common and at times severe during the demonstration period, sometimes forcing agencies to turn away clients, especially new clients. However, although worker shortages probably account for why some control group members failed to receive PCS, the very high percentage of new control group members who did not receive any PCS (66 percent) suggests that some of the difference probably was due to induced demand. Whatever the reason, IndependentChoices increased the likelihood that individuals would receive paid help with the services they need and to which they are entitled.

Finally, from a budget-neutrality perspective (as defined by CMS), Arkansas' experience has demonstrated that states can design a Cash and Counseling program that meets beneficiaries' needs at lower cost per month of service than historically incurred under the traditional agency approach. States would be ill-advised to base their Medicaid cost control policies on an expectation that traditional providers will be permanently and pervasively unable to meet the assessed level of need authorized in beneficiaries' care plans. The better the traditional agency model is at meeting authorized needs, the greater the potential savings from a Cash and Counseling alternative. The worse the agency model performs, the more difficult it will be to keep total costs down by offering a consumer-directed option; but the greater the need for such options to ensure adequate access to care for beneficiaries with disabilities.

Limitations

The randomized evaluation design ensures that the impact estimates are valid; thus, the limitations of the study described here do not cast doubt on the basic findings. Because our study pertained to one program in one state, however, our findings may not apply to all programs featuring consumer-directed care. Impacts may differ for programs with other features (for example, those that target children, allow spouses to serve as paid workers, or have more-generous or less-generous PCS benefits). Estimated program effects also may, in part, depend on the extent to which the local supply of personal care workers in an area is adequate to meet the demand for services. While there continues to be a nationwide shortage of home care workers, the shortage was particularly severe during the 1999-2001 study period in Arkansas.

Related Research

This report addresses only one aspect of consumer-directed care. Other research conducted under this evaluation has examined the effect of IndependentChoices on the use of personal assistance and the quality of care in Arkansas. The evaluation team also is preparing reports that estimate program effects on informal caregivers, examine the experiences of workers hired by consumers, and describe implementation issues that are important to states. Additional reports will assess the robustness and generalizability of the findings for Arkansas by examining the impacts of Cash and Counseling on Medicaid and Medicare expenditures for adults in the two other demonstration states—Florida and New Jersey—and on children in Florida.

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APPENDIX A

In this appendix, we provide methodological details and tables that were not reported in the text.

Estimation Methods

As noted in the text, we use regression models to estimate program effects on the outcome measures reported in Table A.1. We estimated program impacts for continuous outcome measures (including all of our expenditure outcomes) using ordinary least squares regression models. For binary outcome measures (such as whether a sample member had any visits to the emergency room), we used logit models to estimate program impacts. For continuous outcome measures with a high proportion of zero values, such as the number of nursing facility days, we used tobit models. For outcome measures that range from zero to five or six, such as the number of hospital admissions, we used ordered logit models.[21]

For the full sample, each regression model includes all the control variables listed on Table A.2, except for one omitted race variable and one omitted age variable. For the nonelderly and elderly samples, we also exclude the age variables that that do not apply to that age category. (For example, the over-80 age category is excluded from the nonelderly model.)

Table A.3 shows the statistical power to detect impacts of 5 and 10 percent of the control group mean for our key outcome measure, total Medicaid expenditures, assuming two-tailed tests at the .05 significance level. We have over 90 percent power to detect a 10 percent change in total Medicaid expenditures for the full sample and the elderly sample and 77 percent power to detect a 10 percent change for the early enrollee sample.

[21] We chose to use ordered logit models rather than count models because ordered logit models are flexible and tend to produce more stable estimates than count models.

TABLE A.1

OUTCOME MEASURES

Medicaid Expenditure Measures

Expenditures for:
- All Medicaid services
- PCS
- All non-PCS services
- Inpatient hospital services
- Waiver programs (ElderChoices/Alternatives)
- Prescription drugs
- Nursing facility services
- Home health
- Transportation
- Case management
- DME
- Hospice services
- Other[a]

Medicare Expenditure Measures

Expenditures for:
- All Medicare services
- DME
- Home health services
- Inpatient services
- Nursing facility services
- Hospice services
- Other

Total Combined Medicaid and Medicare Expenditures

Nursing Facility Services Use Measures
- Any admissions (Medicare or Medicaid)
- Number of days (Medicare or Medicaid)

Home Health Service Use Measures
- Any visits (Medicare or Medicaid)
- Number of skilled nurse visits
- Number of home health therapy

Hospital Inpatient Service Use Measures
- Any admissions
- Number of admissions
- Number of days

Notes: All expenditure and service use measures were examined for the first-year postenrollment for the full sample. For a cohort of early enrollees, measures were examined for the first and second years postenrollment.

[a]Mainly laboratory services, x-rays, and physicians' services.

TABLE A.2

BASELINE CHARACTERISTICS OF THE ANALYSIS SAMPLE USED AS REGRESSION CONTROL VARIABLES

Characteristic	Treatment Group	Control Group
Demographic Characteristics		
Age at Baseline, in Years		
18 to 39 (Percent)	7.2	8.1
40 to 64 (Percent)	20.6	19.5
65 to 79 (Percent)	36.4	36.6
80 or older (Percent)	35.9	35.9
Female (Percent)	77.7	77.6
Race/Ethnicity		
White (Percent)	61.2	59.6
Black (Percent)	32.9	33.8
Other (Percent)	5.9	6.6
Hispanic (Percent)	1.3	1.1
Enrollment in Public Programs		
Months in Medicaid (Number)	11.3	11.4
Months in Medicare (Number)	9.6	9.8
Enrolled in Alternatives or ElderChoices Waiver Program (Percent)	0.43	0.43
CDPS Diagnosis Category[a]		
Cancer (Percent)	12.6	11.8
Cardiovascular (Low Cost; Percent)	22.2	21.6
Cardiovascular (Medium or High Cost; Percent)	35.3	33.8
Cerebrovascular; Percent	26.2	29.5
Central Nervous System (Medium or High Cost; Percent)	6.3	7.4
Central Nervous System (Low Cost; Percent)	35.0	33.3
Diabetes (Medium or High Cost; Percent)	17.5	16.4
Diabetes (Low Cost; Percent)	12.9	13.5
Eye; Percent	26.2	23.9
Gastrointestinal (Medium or High Cost; Percent)	4.9	5.5
Gastrointestinal (Low Cost; Percent)	23.6	21.9
Hematological (Percent)	6.9	5.1*
Infectious (Percent)	4.8	6.1
Metabolic (Medium or High Cost; Percent)	4.3	6.6**
Metabolic (Very Low Cost; Percent)	6.2	7.3
Psychiatric (Percent)	1.7	2.7

TABLE A.2 (*continued*)

Characteristic	Treatment Group	Control Group
Pulmonary (Percent)	9.1	8.0
Renal (Very High Cost; Percent)	5.4	4.2
Renal (Medium Cost; Percent)	33.1	34.2
Renal (Low Cost; Percent)	4.2	5.9*
Skeletal (Percent)	15.5	15.9
Skin (High Cost; Percent)	6.6	7.4
Skin (Low or Very Low Cost; Percent)	10.4	11.4
Medicaid Expenditures in the 12 Months Preceding Baseline		
Medicaid PCS (Dollars)	$2,199	$2,226
ElderChoices or Alternatives Expenditures (Dollars)	$1,446	$1,534
Nursing Facility Services (Dollars)	$126	$170
Inpatient Hospital Services (Dollars)	$877	$687
Home Health Services (Dollars)	$373	$373
DME (Dollars)	$331	$328
Selected Other Services (Dollars)	$1,250	$1,290
Self-Reported Health Status, Unmet Needs, Health and Functioning		
Said Health Was Fair at Baseline (Percent)	30.9	31.0
Said Health Was Poor at Baseline (Percent)	47.5	50.8
Said Health Was Worse at Baseline than in Preceding Year (Percent)	54.0	53.6
Needs Help Getting in and out of Bed (Percent)	61.9	65.2
Had Unmet Personal Care Need (Percent)	65.1	66.7
Weekly Hours in Care Plan at Baseline (Number)	10.6	10.3
Sample Size	**1,004**	**1,004**

Source: Medicare and Medicaid claims, December 1997 to April 2000; Medicare and Medicaid enrollment files; MPR's baseline evaluation survey, conducted between December 1998 and April 2001.

TABLE A.2 (*continued*)

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[a]The Chronic Illness and Disability Payment System (CDPS) was used to classify individuals into major diagnostic categories; many of the diagnostic categories are divided into subcategories (such as high cost, medium cost, low cost) according to the level of Medicaid expenditures that would be expected for a particular diagnosis. A diagnosis is only captured if there is a Medicaid or Medicare claim related to the diagnosis in the year prior to enrollment in the demonstration. See Kronick et al. (2000) for a description of the CDPS.

*Treatment group mean significantly different from the control group mean at the .10 level, two-tailed test.

**Treatment group mean significantly different from the control group mean at the .05 level, two-tailed test.

CDPS = Chronic Illness and Disability Payment System; DME = durable medical equipment; PCS = personal care services.

TABLE A.3

STATISTICAL POWER

	Power for 10 Percent Change in Total Medicaid Expenditures	Power for 5 Percent Change in Total Medicaid Expenditures
Non-Elderly	32	11
Elderly	95	43
Full Sample	93	40
Early Enrollees, All Ages	77	27

Note: Assumes a two-tailed test at the .05 significance level. Power calculations are based on standard errors estimated from regression models. Statistical power here represents the probability that any test statistics for the sample available will correctly reject the hypothesis of no effect on total Medicaid expenditures if the true (unknown) effect is 10 percent or 5 percent of the control group mean.

Subgroup Results

Tables A.4 and A.5 present the subgroups results reported in the text.

TABLE A.4

ESTIMATED EFFECTS OF INDEPENDENT CHOICES ON MEDICAID AND MEDICARE EXPENDITURES, BY BASELINE CARE PLAN HOURS

Expenditure Category	≥12 Baseline Care Plan Hours per Week: Predicted Treatment Group Mean (n=401)	≥12 Baseline Care Plan Hours per Week: Predicted Control Group Mean (n=395)	≥12 Baseline Care Plan Hours per Week: Estimated Effect (*p*-Value)	≤12 Baseline Care Plan Hours per Week: Predicted Treatment Group Mean (n=603)	≤12 Baseline Care Plan Hours per Week: Predicted Control Group Mean (n=609)	≤12 Baseline Care Plan Hours per Week: Estimated Effect (*p*-Value)
All Enrollees: Year 1 Expenditure Results						
Medicaid						
Personal care†††	5,712	2,439	3,273*** (0.000)	3,905	2,256	1,649*** (0.000)
Non-personal care	7,996	8,746	-750 (0.109)	7,373	8,061	-687* (0.070)
Total ††	13,708	11,185	2,523*** (0.000)	11,278	10,317	961** (0.018)
Medicare	9,113	8,678	436 (0.689)	9,706	10,041	-335 (0.703)
Combined Medicaid and Medicare	22,821	19,862	2,959** (0.019)	20,983	20,358	-625 (0.539)
Selected Medicaid Expenditures						
Nursing facility	550	703	-153 (0.466)	618	762	-144 (0.397)
Home health††	309	544	-235** (0.016)	311	323	-11 (0.885)

Expenditure Category	≥12 Baseline Care Plan Hours per Week: Predicted Treatment Group Mean (n=272)	≥12 Baseline Care Plan Hours per Week: Predicted Control Group Mean (n=265)	≥12 Baseline Care Plan Hours per Week: Estimated Effect (*p*-Value)	≤12 Baseline Care Plan Hours per Week: Predicated Treatment Group Mean (n=386)	≤12 Baseline Care Plan Hours per Week: Predicted Control Group Mean (n=389)	≤12 Baseline Care Plan Hours per Week: Estimated Effect (*p*-Value)
Early Enrollees: Year 1 Expenditure Results						
Medicaid						
Personal care†††	6,032	2,392	3,640*** (0.000)	4,112	2,323	1,789*** (0.000)
Non-personal care	7,817	8,917	-1,100* (0.058)	6,849	7,779	-931* (0.055)
Total††	13,850	11,309	2,541*** (0.000)	10,961	10,103	858* (0.097)
Medicare	8,471	9,052	-581 (0.658)	9,192	9,290	-99 (0.928)
Combined Medicaid and Medicare	22,321	20,360	1,960 (0.195)	20,152	19,393	759 (0.548)
Selected Medicaid Expenditures						
Nursing facility	395	772	-377 (0.114)	506	644	-137 (0.491)
Home health†††	310	671	-362*** (0.009)	354	349	5 (0.964)

TABLE A.4 *(continued)*

Expenditure Category	≥12 Baseline Care Plan Hours per Week: Predicted Treatment Group Mean (n=272)	≥12 Baseline Care Plan Hours per Week: Predicted Control Group Mean (n=265)	≥12 Baseline Care Plan Hours per Week: Estimated Effect (*p*-Value)	≤12 Baseline Care Plan Hours per Week: Predicted Treatment Group Mean (n=386)	≤12 Baseline Care Plan Hours per Week: Predicted Control Group Mean (n=389)	≤12 Baseline Care Plan Hours per Week: Estimated Effect (*p*-Value)
Early Enrollees: Year 2 Expenditure Results						
Medicaid						
Personal care†††	4,695	1,700	2,996*** (0.000)	3,310	1,883	1,427*** (0.000)
Non-personal care	8,295	9,346	-1,052 (0.180)	6,507	8,304	-1,798*** (0.006)
Total†	12,990	11,046	1,944** (0.022)	9,816	10,187	-371 (0.601)
Medicare	7,231	8,402	-1,171 (0.352)	8,466	7,868	598 (0.570)
Combined Medicaid and Medicare	20,220	19,448	773 (0.639)	18,282	18,055	227 (0.869)
Selected Medicaid Expenditures						
Nursing facility	1,007	1,792	-786* (0.092)	1,239	1,729	-490 (0.208)
Home health	229	419	-190** (0.049)	201	351	-150* (0.064)

Source: Medicaid and Medicare claims data for the period from December 1997 through April 2002.

Note: Means were predicted using ordinary least squares regression models. *P*-values are for tests of whether estimated effects are different from zero, for each group.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

†Estimated effects for the two subgroups were significantly different from each other at the .10 level, two-tailed test.
††Estimated effects for the two subgroups were significantly different from each other at the .05 level, two-tailed test.
†††Estimated effects for the two subgroups were significantly different from each other at the .01 level, two-tailed test.

TABLE A.5

ESTIMATED EFFECTS OF INDEPENDENT CHOICES ON MEDICAID AND MEDICARE EXPENDITURES, BY NEW OR CONTINUING PCS USER

Expenditure Category	Continuing PCS User: Predicted Treatment Group Mean (n=722)	Continuing PCS User: Predicted Control Group Mean (n=713)	Continuing PCS User: Estimated Effect (*p*-Value)	New PCS User[a]: Predicted Treatment Group Mean (n=282)	New PCS User[a]: Predicted Control Group Mean (n=291)	New PCS User[a]: Estimated Effect (*p*-Value)
All Enrollees: Year 1 Expenditure Results						
Medicaid						
Personal care†††			1,609***			4,029***
	4,558	2,949	(<.0001)	4,819	790	(<.0001)
Non-personal care			-640*			-894
	7,840	8,480	(0.065)	7,067	7,961	(0.106)
Total†††			969***			3,135***
	12,398	11,429	(0.009)	11,885	8,751	(<.0001)
Medicare			-396			902
	9,409	9,805	(0.624)	9,646	8,744	(0.483)
Combined Medicaid and Medicare			573			4,036***
	21,807	21,234	(0.539)	21,531	17,495	(0.007)
Selected Medicaid Expenditures						
Nursing facility			-61			-366
	665	727	(0.693)	400	766	(0.140)
Home health			-161**			56
	333	494	(0.026)	257	201	(0.628)

	Continuing PCS User: Predicted Treatment Group Mean (n=478)	Continuing PCS User: Predicted Control Group Mean (n=467)	Continuing PCS User: Estimated Effect (*p*-Value)	New PCS User[a]: Predicated Treatment Group Mean (n=180)	New PCS User[a]: Predicted Control Group Mean (n=187)	New PCS User[a]: Estimated Effect (*p*-Value)
Early Enrollees: Year 1 Expenditure Results						
Medicaid						
Personal care†††			1,857***			4,363***
	4,833	2,976	(<.0001)	5,126	763	(<.0001)
Non-personal care			-804*			-1,514**
	7,502	8,306	(0.066)	6,569	8,083	(0.032)
Total††			1,053**			2,849***
	12,336	11,282	(0.024)	11,696	8,846	(0.000)
Medicare			-902			1,285
	8,411	9,313	(0.361)	10,178	8,893	(0.420)
Combined Medicaid and			152			4,134**
Medicare†	20,747	20,595	(0.894)	21,874	17,739	(0.025)
Selected Medicaid Expenditures						
Nursing facility			-133			-505*
	519	652	(0.459)	301	806	(0.082)
Home health			-216**			38
	360	576	(0.038)	275	237	(0.822)

TABLE A.5 *(continued)*

Expenditure Category	Continuing PCS User: Predicted Treatment Group Mean (n=478)	Continuing PCS User: Predicted Control Group Mean (n=467)	Continuing PCS User: Estimated Effect (*p*-Value)	New PCS User[a]: Predicated Treatment Group Mean (n=180)	New PCS User[a]: Predicted Control Group Mean (n=187)	New PCS User[a]: Estimated Effect (*p*-Value)
Early Enrollees: Year 2 Expenditure Results						
Medicaid						
Personal care†††			1,563***			3,403***
	3,743	2,180	(<.0001)	4,268	865	(<.0001)
Non-personal care			-1,519**			-1,417
	7,458	8,977	(0.010)	6,683	8,100	(0.138)
Total			44			1,986*
	11,201	11,157	(0.945)	10,951	8,965	(0.055)
Medicare			304			-1,263
	8,500	8,197	(0.749)	6,524	7,787	(0.410)
Combined Medicaid and Medicare			348			723
	19,702	19,354	(0.779)	17,475	16,752	(0.718)
Selected Medicaid Expenditures						
Nursing facility			-633*			-556
	1,348	1,981	(0.072)	616	1,173	(0.327)
Home health			-135*			-249**
	242	377	(0.064)	134	383	(0.035)

Source: Medicaid and Medicare claims data for the period from December 1997 through April 2002.

Note: Means were predicted using ordinary least squares regression models.

[a]Enrollees who had no Medicaid PCS during the preenrollment year.

PCS = personal care services.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

†Estimated effects for the two subgroups were significantly different from each other at the .10 level, two-tailed test.
††Estimated effects for the two subgroups were significantly different from each other at the .05 level, two-tailed test.
†††Estimated effects for the two subgroups were significantly different from each other at the .01 level, two-tailed test.

APPENDIX B

In this appendix, we provide a more detailed analysis of the reassessment data than reported in the text.

ANALYSIS OF REASSESSMENT DATA

Treatment group members and control group members had care plans with comparable numbers of hours at baseline. Scheduled reassessments were required for both groups at the same frequencies, and members of each group could receive additional "event-based" reassessments if their circumstances changed (for example, if their health deteriorated).[22] However, the procedures for reassessment differed, which could have led to differences in care plan hours and, possibly, to differences in the two groups' PCS expenditures over time. First, as noted in the text, those who were new to PAS were initially assessed by outreach/enrollment nurses, and traditional agencies were not required to honor these care plans.[23] Thus, agencies may have immediately reassessed and changed the care plan hours of new control group members. Second, reassessments for control group members were conducted by agencies while reassessments for treatment group members were conducted by IndependentChoices counselors. Faced with labor shortages, agencies may have been reluctant to increase consumer's care plan hours (even if increases were justified). In contrast, treatment group members did not face the same labor shortages as they could hire friends and relatives. Thus, labor shortages were not an issue when counselors reassessed consumers.

Because the differing reassessment procedures might have affected the personal care expenditures of the two groups in different ways, we examined whether treatment and control

[22] Partway through the demonstration, Arkansas changed the reassessment rules, and required only annual reassessments for sample members who were also in ElderChoices.

[23] Sometimes enrollment nurses referred new clients to agencies so that they could get personal care right away. In those cases, the agencies did the initial assessment.

group members differed in terms of (1) the number of reassessments received, (2) the timing of reassessments, and (3) changes in care plan hours over time. In the following analysis, we present reassessment data for the first year postenrollment for people who received PCS at the end of the year (month 12). We excluded those who did not have any reassessment data, but who were receiving personal care at around the time that a reassessment was scheduled to be conducted (about 10 percent of each group).[24] We would not have been able to determine whether these people did not receive reassessments—and thus would not have had any care plan data—or whether their care plan data were missing.[25]

Number of Reassessments

During the year after enrollment, treatment group members received slightly more reassessments than did control group members (an average of 1.8 versus an average of 1.6), and they were more likely to receive at least one reassessment (92 percent of treatment group members were likely to have that many reassessments, versus 79 percent of control group members; Table B.1). The difference in the number of reassessments appears to be due primarily to the greater likelihood that treatment group members would have any reassessments. However, due to the uncertainty about those we excluded from the sample, we cannot state conclusively that treatment group members were more likely to be reassessed. If we

[24] Some individuals without reassessment data were obtained PCS during month 12. These individuals were retained in the analysis.

[25] Data were supplied by agencies and by IndependentChoices' staff. According to IndependentChoices' staff, several reasons may explain why data on care plan hours were missing. Some agencies refused to provide any care plan data; others provided data only when a beneficiary's care plan changed. Other agencies inadvertently might have provided care plan data for only some reassessments. We cannot differentiate among these cases. Furthermore, our understanding is that IndependentChoices did not attempt to obtain care plan data from traditional agencies for treatment group members who disenrolled from IndependentChoices.

TABLE B.1

REASSESSMENT DATA FOR THOSE RECEIVING PERSONAL CARE IN THE 12TH-MONTH POSTENROLLMENT

	Not in ElderChoices		In ElderChoices		New PCS User[a]		Continuing PCS User		All	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Reassessments During Year										
Average Number of Reassessments	1.8	1.6	1.8	1.6	1.8	1.2	1.8	1.7	1.8	1.6
Percentage Receiving at Least One Reassessment	93.8	78.5	93.8	79.3	97.7	61.4	92.1	80.8	92.1	78.9
Percentage Receiving Two Reassessments	81.1	77.3	78.1	78.3	79.7	61.4	80.0	79.6	80.0	77.8
Change in Weekly Care Plan Hours										
Weekly Care Plan Hours										
At baseline	11.7	11.0	9.4	8.0	12.3	12.2	10.2	9.3	10.9	9.6
During month 2	12.0	11.2	9.7	7.9	12.5	12.1	10.5	9.5	11.1	9.9
During month 12	12.8	11.7	10.9	8.5	12.6	12.0	11.8	10.0	12.1	10.2
Percentage Change in Hours										
Baseline to month 2	3.8	4.0	6.0	2.7	3.6	0.0	5.1	3.7	4.7	3.4
Baseline to month 12	16.1	14.4	32.4	15.9	8.2	-2.6	28.4	16.9	22.2	15.1
Change in Weekly Care Plan Hours, Baseline to Month 2 (Percentage Distribution)										
Decrease										
>8 hours	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2
4 to 8 hours	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.3	0.0	0.2
2 to 4 hours	0.0	0.4	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.5
1 to 2 hours	0.0	0.4	0.0	1.6	0.0	0.0	0.0	1.1	0.0	1.0
0 to 1 hour	0.0	0.4	0.0	1.0	0.0	0.0	0.0	0.8	0.0	0.7
No change	95.9	89.8	94.6	88.0	98.6	100.0	94.0	87.9	95.4	89.0
Increase										
0 to 1 hour	0.0	2.7	0.4	2.1	0.0	0.0	0.2	2.6	0.1	2.4
1 to 2 hours	0.5	0.9	0.4	2.1	0.0	0.0	0.6	1.6	0.4	1.4
2 to 4 hours	0.2	2.2	2.3	1.0	0.0	0.0	1.5	1.8	1.0	1.7
4 to 8 hours	2.1	1.3	1.5	3.1	0.5	0.0	2.5	2.4	1.9	2.2

TABLE B.1 (*continued*)

	Not in ElderChoices		In ElderChoices		New PCS User[a]		Continuing PCS User		All	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
>8 hours	1.4	1.3	0.8	0.0	0.9	0.0	1.3	0.8	1.1	0.7
Change in Care Plan Hours, Baseline to Month 12 (Percentage Distribution)										
Decrease										
>8 hours	0.7	1.4	0.4	1.1	0.4	1.4	0.9	0.0	0.6	1.2
4 to 8 hours	0.0	2.8	0.0	1.1	0.0	1.4	0.0	8.1	0.0	2.0
2 to 4 hours	0.5	1.4	0.0	3.2	0.4	2.2	0.0	2.7	0.3	2.2
1 to 2 hours	0.2	2.3	0.0	3.2	0.2	3.0	0.0	0.0	0.1	2.7
0 to 1 hour	0.5	4.6	0.4	3.7	0.6	4.3	0.0	2.7	0.4	4.2
No change	78.2	51.4	74.2	43.6	70.8	45.0	89.8	75.7	76.7	47.8
Increase										
0 to 1 hour	0.5	8.3	1.5	17.0	1.3	13.3	0.0	2.7	0.9	12.3
1 to 2 hours	2.1	6.4	1.2	9.6	1.9	8.4	1.4	2.7	1.7	7.9
2 to 4 hours	3.4	10.6	3.5	4.8	4.2	8.4	1.9	2.7	3.5	7.9
4 to 8 hours	8.3	7.8	9.6	11.7	11.3	10.6	3.3	0.0	8.8	9.6
>8 hours	5.7	3.2	9.2	1.1	9.0	2.2	2.8	2.7	7.1	2.2
Timing of Reassessments										
Had Reassessment Within 60 Days of Enrollment	15.1	21.9	19.6	20.7	2.8	2.3	23.1	23.4	16.7	21.3
Months from Enrollment Until First Reassessment (Percentage Distribution)[b]										
0 to 4	35.3	53.7	43.9	57.1	8.0	18.5	53.0	58.3	38.5	55.3
4 to 5	8.0	18.9	12.7	21.7	5.2	3.7	12.0	21.6	9.8	20.2
5 to 7	47.9	26.3	34.4	19.9	77.8	77.8	26.2	18.8	42.9	23.4
7 to 8	3.9	0.0	2.5	0.0	4.2	0.0	2.9	0.0	3.4	0.0
8 to 12	4.9	1.1	6.6	1.2	4.7	0.0	5.9	1.2	5.5	1.1
Months from First to Second Reassessments (Percentage Distribution)[c]										
0 to 4	3.1	0.0	1.5	0.0	0.6	0.0	3.4	0.0	2.5	0.0
4 to 5	2.0	1.1	1.0	0.0	1.7	0.0	1.6	0.6	1.6	0.6
5 to 7	83.4	98.9	86.2	99.4	95.4	100.0	79.5	99.1	84.4	99.1
7 to 8	8.5	0.0	8.9	0.6	1.7	0.0	11.7	0.3	8.6	0.3
8 to 12	3.1	0.0	2.5	0.0	0.6	0.0	3.9	0.0	2.9	0.0

TABLE B.1 (*continued*)

	Not in ElderChoices		In ElderChoices		New PCS User[a]		Continuing PCS User		All	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Sample Size	**438**	**242**	**260**	**203**	**217**	**44**	**481**	**401**	**698**	**445**

Source: Data supplied by agencies and IndependentChoices' staff.

Notes: Care plan hours are reported as of the middle of month 2 and the middle of month 12.

[a]Enrollees who had no Medicaid PCS during the preenrollment year.

[b]Among those reassessed.

[c]Among those reassessed twice.

PCS = personal care services.

compare only individuals who did have reassessment data, control group members averaged 2 reassessments, and treatment group members averaged 1.95 (not shown).

Timing of Reassessments

Although regularly scheduled reassessments were required with the same frequency for treatment and control group members (annually or semiannually, depending on whether a beneficiary also participated in ElderChoices), event-based reassessments could be conducted at any time, as the need arose.[26] Because IndependentChoices' nurses conducted the initial assessments of new PCS users, we analyzed the timing of reassessments for this group in order to investigate whether agencies immediately reassessed and/or revised the care plans of the new users.

New PCS Users. Only 2 percent of new control group members (one person) received a reassessment within two months postenrollment (see Table B.1). A similar percentage of treatment group members (2.8 percent) also was reassessed within that time frame, implying that agencies did not *immediately* conduct reassessments of control group members who were new users. However, 19 percent of new control group members who received reassessments were reassessed within four months postenrollment, compared with only 8 percent of treatment group members. Thus, these new control group members were reassessed earlier than would have been expected if reassessments were conducted according to a semiannual or annual reassessment schedule.

All PCS Users. Among all (both new and continuing) PCS recipients who received reassessments, treatment group members were more likely than control group members to have

[26] Reassessments for continuing PCS users were to be conducted six months from the date of the users' last reassessment. New PCS users were first assessed soon after enrollment, and their reassessments were due six months after the first assessment.

their reassessments delayed. Overall, nine percent of treatment group members but only one percent of control group members did not have their first reassessments within than seven months of program enrollment.[27]

Change in Care Plan Hours

By the end of the first postenrollment year, the treatment group's care plan hours had changed by an average of 22 percent; the average change for the control group's care plan hours was 16 percent. This difference was driven by a small percentage of extreme cases: by month 12, 7 percent of the treatment group, but only 2 percent of the control group, had an increase of more than eight hours in their *weekly* care plan hours.

Over the postenrollment year, control group members were more likely to have a change in their care plan hours (either positive or negative) than were treatment group members. By 12 months, a greater percentage of the control group had had their care plan hours increased (40 percent had increases, compared with 22 percent of treatment group members), and a greater percentage had had their hours decreased (12 percent had decreases, compared with less than 2 percent of treatment group members). However, although 40 percent of control group members were authorized to receive more hours of care by the 12th month, many received only small increases in care plan hours. For example, 12 percent received an increase of one hour or less per week, and another 8 percent received an increase of one to two hours per week. In contrast, only 22 percent of treatment group members received an increase in hours, but the magnitude of the changes was greater than for control group members. Less than 1 percent of

[27] It is possible that this difference is an artifact, as IndependentChoices counselors had to learn how to conduct reassessments.

treatment group members received an increase of only one hour or less per week, and less than 2 percent received an increase of only one to two hours per week.

Cost Implications

The main implications of this analysis for PCS costs is that, over the course of the year, treatment group members' average care plan hours increased by more, on average, than did those of control group members. This difference was due mainly to the fact that a small percentage of treatment group members received large increases in their care plan hours.

There also were some timing differences in the number and timing of reassessments between treatment and control group members. Treatment group members had more reassessments, but this seems to be due mainly to their being more likely to receive any reassessments at all. Among those who were reassessed, the average number of reassessments was similar for treatment and control group members. Compared with treatment group members, control group members were more likely to have timely reassessments; the fact that control group members were reassessed earlier than were treatment group members should have increased the control group's PCS expenditures relative to the treatment group. (On average, reassessments led to increases in care plan hours.) However, as discussed in the body of the report, control group members received far few hours of care than indicated by their care plans. Thus, it is unclear whether increases in the number of the control group's care plan hours would result in the group's receiving more hours of care.