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Does Consumer Direction Affect the Quality of Medicaid Personal Assistance in Arkansas?

Final Report

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Leslie Foster
Randall Brown
Barbara Phillips
Jennifer Schore
Barbara Lepidus Carlson

Submitted to:

Center on Aging
University of Maryland
1240 HHP Building
Valley Drive
College Park, MD

Project Officer:
Kevin J. Mahoney

Submitted by:

Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, NJ 08543-2393
(609) 799-3535

Project Director:
Randall Brown

Funders:
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EXECUTIVE SUMMARY

Medicaid beneficiaries who have disabilities and receive personal care services (PCS) from home care agencies have little control over their care. As a result, some are dissatisfied, have unmet needs, and experience diminished quality of life. This study of Arkansas's Cash and Counseling demonstration program, IndependentChoices, examines how consumer direction affects these aspects of care quality relative to agency-directed services.

A Randomized Design and Comprehensive Survey Data Provided Definitive Results.

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 PCS under the state Medicaid plan. After a baseline survey, the 2,008 enrollees were randomly assigned to direct their own PCS as IndependentChoices consumers (the treatment group) or to receive 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) and to buy other services or goods needed for daily living. They could designate representatives and call on program counselors for help managing the allowance.

Quality indicators were drawn from computer-assisted telephone surveys. Nine months after baseline, we asked treatment and control group members factual questions about disability-related adverse events and health problems and elicited opinions about (1) satisfaction with care, (2) unmet needs for assistance with daily activities, (3) quality of life, (4) general health status, (5) self-care, and (6) ability to perform daily activities without help from others. We used binary logit models to separately estimate program effects for nonelderly and elderly sample members, while controlling for a comprehensive set of baseline characteristics.

IndependentChoices Dramatically Improved Consumers' Lives.

Compared to the agency-directed system, IndependentChoices markedly increased the proportions of consumers who were very satisfied with their PCS and thinned the ranks of the dissatisfied. Specifically, IndependentChoices consumers were more satisfied with the timing and reliability of their care, less likely to feel neglected or rudely treated by paid caregivers, and more satisfied with the way paid caregivers performed their tasks. The program also reduced some unmet needs and greatly enhanced quality of life. Moreover, it produced these improvements without discernibly compromising consumer health, functioning, or self-care. Both elderly and nonelderly adults fared better under IndependentChoices than they did with agencies.

While most PCS users are satisfied receiving services from agencies, IndependentChoices has clear benefits for those who wish to direct their own services. Factors such as program costs must be examined before the desirability of consumer direction can be fully confirmed. However, from a consumer satisfaction standpoint, states have compelling reasons to include programs like IndependentChoices as an option for people who are eligible for publicly funded PCS.

Medicaid beneficiaries who have disabilities and rely on government-regulated agencies for help with bathing, eating, housekeeping, shopping, and similar activities have little control over who provides these services, when they receive them, and how they are delivered. For some, this lack of control over basic, often intimate, assistance leads to dissatisfaction, unmet needs, and diminished quality of life (Mahoney et al. 2000).

Many states are addressing the potential shortcomings of agency services through programs that give interested Medicaid beneficiaries more control over their care. There were an estimated 139 publicly funded "consumer-directed supportive services" programs in the United States in 1999 (Flanagan 2001). Such programs intend to enable users to purchase and manage their care in ways that better meets their needs, without increasing public costs. However, some stakeholders fear that eliminating agency involvement jeopardizes consumer health and safety (Benjamin et al. 2000).

As states seek to improve supportive services, policymakers need to know whether consumer-directed programs deliver quality care—that which satisfies consumers' preferences and does not harm their health. The need for evidence grows daily, as states respond to federal Systems Change grants and other initiatives spurred by the Supreme Court's 1999 *Olmstead* decision and the Bush administration's subsequent New Freedom Initiative. The national Cash and Counseling Demonstration is an innovative model of consumer direction and is the first to use a randomized design to compare care quality under agency- and consumer-directed approaches. This analysis presents findings from the first of three demonstration programs to be implemented, Arkansas's 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 home- and community-based waiver services programs (LeBlanc et al. 2001; Kitchener and Harrington, 2001).[1] Under state plans, services are largely restricted to human assistance with personal care and homemaking and must be provided by licensed home care agencies. These agencies recruit, train, schedule, and supervise the aides or attendants who actually assist beneficiaries. Under waiver programs, adult day care, assistive devices and home modifications may be offered in addition to in-home aide services. However, coverage of these additional services is often limited, and someone other than the beneficiary (namely, a case manager) decides whether they are needed. In contrast to these traditional service models, states are increasingly offering Medicaid beneficiaries and their families the opportunity to obtain personal care from individual providers (Velgouse and Dize 2000). This alternative has come to be known as "consumer-directed" care, as Medicaid beneficiaries who use individual providers assume the employer's role of hiring, managing, and possibly terminating their workers (Eustis 2000).

Cash and Counseling is an expanded model of consumer-directed care in that it provides a flexible monthly allowance that consumers may use to hire their choice of workers, including family members, and to purchase other services and goods (as states permit). Cash and Counseling requires consumers to develop plans showing how they would use the allowance to meet their personal care needs and provides counseling and fiscal assistance to help them plan and manage their responsibilities. Consumers who are unable or unwilling to manage their care

[1]Because some individuals receive services from more than one program, the total number of users may be overestimated.

themselves may designate a representative, such as a family member, to help them or do it for them. These features make Cash and Counseling adaptable to consumers of all ages and with all types of impairments.

With funding from The Robert Wood Johnson Foundation and the Office of the Assistant Secretary for Planning and Evaluation of the U.S. Department of Health and Human Services, and waivers from the Centers for Medicare & Medicaid Services, the Cash and Counseling Demonstration and Evaluation was implemented in three states—Arkansas, Florida, and New Jersey. Because their Medicaid programs and political environments differed considerably from each other, the demonstration states were not required to implement a standardized intervention, but they had to adhere to basic Cash and Counseling tenets, as summarized above. The states' resulting demonstration programs differed in their particulars, so each is being evaluated separately, by Mathematica Policy Research, Inc. (MPR).

Cash and Counseling in Arkansas

Arkansas designed IndependentChoices as a voluntary demonstration for adults aged 18 or older who were eligible for personal care services (PCS) under the state's Medicaid plan.[2] It implemented the demonstration to assess the demand for and practicability of consumer-directed supportive services. It also hoped the program would be better than agencies at serving individuals during non-business hours and in rural parts of the state, where agencies and agency workers were scarce (Phillips and Schneider 2002).

[2]To receive Medicaid PCS, an Arkansan must (1) be categorically eligible for Medicaid; (2) live in his or her own residence, or in community-based residence, group or boarding home, or residential care facility; and (3) have 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 personal care services in Arkansas in 1998, when Cash and Counseling was introduced (Nawrocki and Gregory 2000).

Enrollment and random assignment began in December 1998 and continued until the evaluation target of 2,000 enrollees was met, in April 2001.[3] 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 in the 12 months before enrollment) not exceed pre-demonstration levels. This stipulation arose from the concern that the prospect of a flexible monthly allowance would induce demand for PCS and drive up costs. In fact, the new: continuing ratio for enrollees was below historic levels in each year of the demonstration, with only about 11 percent of Arkansas's Medicaid PCS users choosing to participate (Schore and Phillips 2002). 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 (although this agreement was not enforceable).

While they were deciding whether to enroll in the demonstration, beneficiaries were told what their monthly allowance would be should they be assigned to the treatment group to direct their own PCS. Allowances were based on the number of hours in beneficiaries' Medicaid personal care plans.[4] For prospective enrollees already using PCS, existing care plans, which had been developed by agency nurses, were used to calculate the allowance. For those not yet using PCS, enrollment nurses developed the care plans, using the same state-mandated process required of agencies. For all enrollees, allowances were discounted to reflect the fact that, historically, the amount of services actually delivered by agencies was 10 to 30 percent less than the amount planned. In other words, discounting was meant to ensure that treatment group

[3]Arkansas enrolled and randomly assigned beneficiaries after April 2001, but not for the evaluation.

[4]The number of hours in a Medicaid personal care plan depends on the beneficiary's physical limitations, needs, and other sources of paid and unpaid assistance. Special state authorization is needed for more than 64 hours of services per month.

members' allowances were on par with the expected cost of services that would likely be received by similar control group members. The average allowance was $320 per month, based on care plans recommending an average of about 47 hours of services.

Beneficiaries who decided to enroll in the demonstration completed a baseline telephone interview and then were randomly assigned by MPR to one evaluation group or the other. After random assignment, control group members continued relying on agency services or, if newly eligible for Medicaid PCS, received a list of home care agencies to contact for first-time services. Treatment group members were contacted by an IndependentChoices counselor, who helped them or their representatives develop acceptable written plans for spending the allowance. Arkansas consumers could use their allowance to hire workers (except spouses or representatives) and to purchase other services or goods related to their personal care needs, such as supplies, assistive devices, and home modifications. They were required to keep receipts for all but incidental expenditures, which could not exceed 10 percent of the allowance. In addition, consumers were allowed to save a designated portion of the monthly allowance toward future purchases.

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

EXPECTED EFFECTS OF INDEPENDENTCHOICES ON CARE QUALITY

By shifting control over supportive services from the home care agency to the consumer, IndependentChoices was intended to produce changes in the types, providers, and scheduling of services. These changes, in turn, were expected to improve consumer satisfaction, reduce unmet needs, and enhance quality of life without unduly compromising the safety, competence, or amount of care (Phillips et al. 1997).

The body of evidence on which to base such expectations is encouraging, but scant. Recent descriptive studies of IndependentChoices indicate that most consumers were highly satisfied with the program (Foster et al. 2000; Eckert et al. 2002; Kunkel et al. 2002; and Schore and Phillips 2002). However, these studies involved only treatment group members and did not compare their experiences with those of the control group. Benjamin et al. (2000) used a natural experiment presented by California's In-Home Supportive Services program to examine the effects of consumer direction. The study found that self-directing consumers had significantly better outcomes than those receiving agency-directed services with respect to sense of security, unmet needs with instrumental activities of daily living, technical quality of care, ability to pursue desired activities, general satisfaction, and providers' interpersonal manner. However, the results may have been due to unmeasured differences between the groups being compared.

The lack of definitive evidence about the effects of consumer direction on the quality of supportive services makes it unclear whether IndependentChoices would lead to positive or negative impacts. Greater consumer control may well lead to better care quality, as reflected in measures of satisfaction, unmet needs, and quality of life. On the other hand, care quality, adverse events, and health problems could worsen if managing the allowance or recruiting caregivers proves too burdensome, if the loss of nurse supervision is problematic, if qualified caregivers are not available for hire, or if consumers purchase too little assistance from

caregivers. In addition, consumer direction might have different effects for different types of consumers, such as the elderly and nonelderly.

METHODS[5]

Data Collection

Data for this analysis were drawn from two computer-assisted telephone surveys of treatment and control group members or their proxy respondents (see discussion below). We constructed control variables from responses to the baseline survey, and outcome variables from responses to the survey conducted nine months after each sample member's random assignment. The survey instruments used established measures and pretested questions.

The baseline survey, administered between December 1998 and April 2001, was completed by 2,008 individuals. It collected data on demographic characteristics, health and functioning, use of paid and unpaid personal assistance, reasons for enrolling in the demonstration, work and supervisory experience, and several of the quality indicators used in this analysis.

The nine-month survey, administered between September 1999 and February 2002, was completed by 1,739 individuals—89 percent of the treatment group and 85 percent of the control group. We conducted nine-month interviews with the proxies of deceased members of the analysis sample and with consumers who disenrolled from IndependentChoices, including those who returned to agency-directed services. We did this to preserve the comparability of the treatment and control groups and to obtain a complete picture of their experiences.

Although we encouraged sample members to respond to our surveys themselves if possible, the use of proxy respondents was widespread at baseline and follow up. Proxies completed 57 percent of baseline interviews for elderly sample members, and 24 percent for nonelderly

[5]The Appendix includes a more detailed description of research methods.

sample members. At follow up, they completed 71 percent of interviews for the elderly, and 29 percent for the nonelderly. Sample members used proxies because of cognitive or physical impairments or because they wanted their representatives, who made most decisions about their care, to respond to the surveys. In the latter cases, if we could not gently persuade sample members to respond for themselves, we then asked to interview the most knowledgeable proxy.

Interviews with proxies being unavoidable, we took steps to mitigate bias in our analysis. During interviews with proxies, we omitted questions about consumers' unmet needs, satisfaction, and paid caregiver performance if the proxy was also a paid caregiver. During analysis, we controlled for use of proxies at baseline (although it was quite similar for the treatment and control groups) and performed sensitivity tests to assess the effects of proxy responses on our findings.[6]

Quality Indicators

Assessing the quality of supportive services involves both objective and subjective measures (Kunkel et al. 2002; Benjamin 2001; and Kane et al. 1994). To explore concerns that consumer direction could harm consumers' health, we asked respondents factual questions about disability-related adverse events and health problems. In addition, we asked about sample members' perceptions and opinions regarding: (1) satisfaction with care, (2) unmet needs for assistance with daily activities, (3) quality of life, (4) general health status, (5) self-care, and (6) ability to perform activities of daily living. Table A.1 presents a complete list of our quality indicators and identifies the time periods referred to in survey questions.

[6]We control for proxy use at baseline, rather than at follow up, to avoid endogeneity. Seventy-eight percent of sample members who used proxy respondents at follow up also used them at baseline.

Estimation of Program Effects

Our impact estimates measure the effects of having the *opportunity* to receive the monthly allowance (by virtue of being assigned to the evaluation treatment group), rather than of actually receiving it. As noted, our results draw on the experiences of all treatment group members, including some who were not receiving the allowance (because they disenrolled or never developed a spending plan) but were receiving assistance from other paid sources. For example, many survey questions addressed respondents' experiences with paid care during a two-week period shortly before the interview. At that point, 731 treatment group members (83 percent) were receiving help from paid caregivers, 99 (14 percent) of whom were disenrolled from IndependentChoices.[7] Responses from these disenrollees pertained to care from home care agencies and other sources, rather than to care purchased with the IndependentChoices allowance. We did not exclude these disenrollees from the analysis sample because doing so could induce unmeasured, pre-existing differences between the treatment and control groups, and avoiding such potential sources of bias was the very reason for requiring random assignment. The results also do not measure the effects of a *mandatory* consumer-directed program. Program effects could be very different for those who chose not to enroll in this demonstration.

We used binary logit models to estimate program impacts, as is appropriate for categorical measures. Given that demonstration applicants were randomly assigned to the treatment or control group, we could have obtained unbiased impact estimates for most measures simply by comparing the two groups' unadjusted means. However, because members of the two evaluation

[7]Of the treatment group members not receiving help from paid caregivers during the two-week reference period, 73 were deceased, 49 were disenrolled, 24 were enrolled but had not hired a paid caregiver, 5 did not have a reference period (that is, they were not living at home for at least two weeks during the two months before the interview, because of hospitalization or other reason). Three other treatment group members did not say whether they had paid assistance.

groups were missing certain types of data and for different reasons (see discussion below), the resulting groups with data on a particular outcome may have differed on baseline characteristics. Furthermore, a few chance baseline differences arose despite random assignment. Thus, we used logit models, which controlled for baseline measures of demographic characteristics, health and functioning, use of personal assistance, satisfaction with care and life, unmet needs, reasons for and month of enrollment, work and community activities, whether used a proxy respondent, and whether appointed a representative (shown in Table A.2).

Many of our outcome measures were derived from survey questions with four-point scales (for example, degree of satisfaction). We converted each four-point scale into two binary measures—one for the most favorable rating (very satisfied) and one for an unfavorable rating (somewhat or very dissatisfied). (The moderate rating, somewhat satisfied, is not separately presented in our tables.) We then estimated impacts on each of these measures, enabling us to determine whether consumer direction increased the proportion giving the highest rating, reduced dissatisfaction, or had both effects.[8] For every outcome, the logit model was estimated separately for elderly (age 65 or older) and nonelderly (ages 18 to 64) sample members because impacts and the relationship of the outcomes to the control variables may differ for the two age groups. Impacts for other subgroups (described later) were estimated by including interaction terms for all of the subgroups (including age) in a single model.

We measured the impacts of IndependentChoices by using the estimated coefficients from the logit models to calculate the average predicted probabilities that the binary dependent

[8]While both impacts could be estimated with one multinomial logit model, such estimates would be less precise because of the relatively large numbers of parameters estimated. Ordered logit models are designed for such outcome measures, but may mask important nonlinear patterns of impacts. Thus, after examining frequencies and determining that using two binary measures would not obscure important findings, we used the approach described above.

variable took a value of 1, first with each sample member assumed to be a member of the treatment group, and then of the control group. The p-values of the estimated coefficients on the treatment status variable were used to assess the statistical significance of the impacts and are reported in the tables.[9]

With 473 nonelderly cases and 1,266 elderly cases in the analysis sample, and each age group split nearly equally between the treatment and control groups, we can be confident of detecting only sizable impacts for the nonelderly, but more moderate ones for the elderly. We have 80 percent power to detect impacts of 11.4 and 7.0 percentage points, respectively, for the two age groups for binary outcome variables with a mean of .50 (assuming two-tailed tests at the .05 significance level; Table A.3). For variables with a mean of .10 (or .90), the detectable differences are 6.9 and 4.2 percentage points for the two age groups. While smaller impacts on quality may not be detected, policymakers may be relatively unconcerned about small effects, in either direction.

Baseline Characteristics of the Analysis Sample

As expected under random assignment, treatment and control group members had similar characteristics (Table A.2). However, the nonelderly and elderly differed considerably. The analysis sample was predominantly white, female, and of limited education (54 percent of the nonelderly and 84 percent of the elderly had not graduated from high school; Table 1). Roughly one-third lived alone, and about two-thirds lived in areas that were either rural or urban with high crime or poor public transportation—types of isolation that could make it difficult to recruit caregivers. Many sample members said they were in poor health and had functional limitations

[9]This approach provides a formal two-tailed test of whether the odds ratio is significantly different from 1.0. We present predicted mean probabilities for the treatment and control groups to give readers a more intuitive feel for the magnitude of estimated effects.

(for example, nearly two-thirds could not get in or out of bed without help). Half of the nonelderly and one-third of the elderly were allotted more than 12 hours of weekly care in their Medicaid personal care plans, about three-fourths of Arkansas's maximum for most beneficiaries. Despite such apparent needs for personal assistance, about 40 percent of the nonelderly and 20 percent of the elderly were not receiving any publicly funded home care at baseline, including Medicaid PCS. Substantial minorities were dissatisfied with their care arrangements. Finally, one-quarter of the nonelderly and half the elderly appointed a representative to help them manage their PCS if they were assigned to the treatment group.

Sample Restrictions

Although 1,739 respondents completed nine-month interviews, many of the survey questions used in this analysis were posed only to subsets of respondents. Such restrictions were of four main types:

1. We did not pose questions about consumers' satisfaction or unmet needs to proxy respondents who were also paid caregivers, because they may not have been able to give objective answers to such questions. This restriction affected the treatment group far more than the control group.
2. Questions about satisfaction with paid care received during given reference periods were not posed to sample members who did not receive such care. This restriction affected the control group more than the treatment group.
3. Questions that elicited opinions were not asked if sample members were unable, as a general matter, to form opinions (for example, because of a cognitive impairment) or if proxy respondents did not feel comfortable assessing the sample member's opinion.
4. Questions about adverse events, health problems, self-care, and quality of life were not posed to the proxies of the 136 sample members who died before the reference period in question.

TABLE 1

SELECTED BASELINE CHARACTERISTICS OF RESPONDENTS TO THE NINE-MONTH INTERVIEW, BY AGE GROUP
(Percentages)

Characteristic	Ages 18 to 64	Age 65 or Older
Age in Years		
18 to 39	27.1	—
40 to 64	72.9	—
65 to 79	—	49.9
80 or older	—	50.1
Female	67.7	82.2
Race		
White	64.6	60.1
Black	29.5	34.0
Other	5.9	5.9
Lives Alone	39.1	30.5
Did Not Graduate from High School	53.9	83.9
Area of Residence		
Rural	36.7	40.4
Nonrural but high-crime or lacking adequate public transportation	33.8	26.4
In Poor Health Relative to Peers	52.6	47.1
Could Not Get In or Out of Bed Without Help in Past Week	61.1	66.9
Not Receiving Publicly Funded Home Care	40.1	20.6
More Than 12 Hours of Care Per Week in Medicaid Personal Care Plan	48.0	34.7
Dissatisfied with Overall Care Arrangements	36.3	14.7
Appointed a Representative	27.3	48.6
Number of Respondents	**473**	**1,266**

SOURCE: MPR's baseline evaluation interview, conducted between December 1998 and April 2001, and the IndependentChoices program.

Table 2 shows the resulting sample sizes. (Table A.4 provides more detail about sample restrictions.)

TABLE 2

SAMPLE SIZES FOR THE ANALYSES

Analysis	Restrictions (see above list)	Treatment Group	Control Group
Satisfaction with Paid Caregivers	1, 2, 3	524	523
Satisfaction with Overall Care Arrangements and Transportation	1, 3	625	772
Unmet Needs	1	669	831
Quality of Life	1, 3, 4	548	713
Adverse Events, Health Problems, General Health, and Self-Care	4	808	795
Number of Nine-Month Interview Respondents	**—**	**885**	**854**

RESULTS[10]

IndependentChoices operated smoothly, as described by Schore and Phillips (2002) and Phillips and Schneider (2002). Eighty percent of consumers received their allowance within three months of random assignment (the rest disenrolled from the program, had not developed an acceptable spending plan, or wanted to hire a worker but could not), and nearly everyone chose to have the program's fiscal agents write checks and handle other fiscal tasks for them. Almost all used the allowance to hire family members or friends, and some bought assistive equipment, personal care supplies, and medications. Nine months after their random assignment, 15 percent of treatment group members (130 out of 885) were not, by choice, participating in

[10]As noted throughout this section, the Appendix includes results that are not shown in our main tables.

IndependentChoices. (In addition, 49 had died, 64 were no longer eligible for Medicaid or the personal care benefit, and program staff disenrolled one consumer.)

Another important consideration in interpreting our results is that, among those living in the community during a recent reference period, 32 percent of nonelderly and 20 percent of elderly control group members were not receiving paid PCS nine months after random assignment. These rates were substantially higher than they were for the treatment group, in which only 5 percent of each age group were not receiving paid care (Dale et al. 2002). Lack of paid assistance was particularly common among control group members who were not receiving publicly funded home care at baseline.

Satisfaction with Paid Caregivers' Reliability, Schedule, and Performance

The program greatly reduced the probability that paid caregivers performed poorly, according to consumers, and increased the probability that they performed exceptionally well (Table 3). IndependentChoices reduced reports of paid caregivers failing to complete tasks by about 60 percent for sample members in both age groups (-22.7/38.7=-.59; -20.9/36.2=-.58). Similarly, the program reduced the proportion of consumers who said their paid caregivers sometimes did not come as scheduled by nearly three-fourths for younger consumers and by 40 percent for the elderly (-20.9/28.5=-.73; -12.4/30.1=-.41). Satisfaction with caregivers' schedules was substantially greater for treatment group members in both age groups. Nonelderly treatment group members also gained the flexibility to change their paid caregivers' schedules. Fifty-four percent said they could do so without difficulty, compared with 42 percent of their control group counterparts.

Among sample members in both age groups who recently received paid assistance with daily living activities (such as eating, bathing, and transferring), household and community activities (such as meal preparation and yard work), or routine health care, IndependentChoices

TABLE 3

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON SATISFACTION WITH PAID CAREGIVERS' RELIABILITY AND SCHEDULE

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Completed Tasks[a]						
Always	62.0	36.8	25.2*** (.000)	65.8	47.2	18.7*** (.000)
Usually/sometimes/ rarely	16.0	38.7	-22.7*** (.000)	15.4	36.2	-20.9*** (.000)
Arrived Late or Left Early						
Never	59.3	37.6	21.8*** (.000)	56.3	36.0	20.3*** (.000)
Often	11.4	25.0	-13.6** (.002)	9.4	19.3	-9.8*** (.000)
Did Not Come as Scheduled[b]	7.7	28.5	-20.9*** (.000)	17.7	30.1	-12.4*** (.000)
Very Satisfied with Caregivers' Schedule[b]	85.2	66.9	18.3*** (.000)	82.9	68.7	14.2*** (.000)
Could Easily Change Schedule	53.5	41.6	11.8** (.046)	47.8	45.1	2.6 (.497)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Means were predicted with logit models.

[a]This measure is derived from a survey question with a five-point scale. The binary variables shown here represent the most favorable rating (always) and a less favorable one (usually, sometimes, or rarely). The intermediate rating (almost always) is not presented.

[b]Effects were estimated by pooling the two age groups and including an age*treatment status interaction term in the model.

*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.

greatly increased the proportion who said they were very satisfied with the way their paid caregivers carried out their duties in these areas (Table A.6). The program had especially striking impacts on satisfaction with assistance with household and community activities.

Satisfaction with Paid Caregiver Relationship and Attitude

More than 90 percent of treatment group members in both age groups said they were very satisfied with their relationships with paid caregivers, compared with 79 and 83 percent of nonelderly and elderly control group members, respectively (Table 4). Moreover, IndependentChoices reduced reports of neglect by paid caregivers by 58 percent for consumers in both age groups (-19.4/33.5=-.58; -15.3/26.2=-.58). Among nonelderly adults, treatment group members were only about one-third as likely to say their paid caregivers had been rude to or disrespectful of them in that time (10.5/29.5=.36). For the elderly, the reduction was statistically significant but less pronounced. In addition, while theft by paid caregivers was rare for both treatment and control groups (reported by less than eight percent of each group's members), treatment group members in both age groups were significantly less likely than control group members to report that paid caregivers had taken money or belongings without asking in the past nine months. These findings corroborate reports from program administrators and counselors that caregivers hired with the program allowance did not abuse or neglect IndependentChoices consumers (Schore and Phillips 2002).

Finally, because of concerns that hired family members or friends might be overly solicitous or protective, relative to agency attendants, of consumers who were directing their own care, we asked sample members how often paid caregivers gave unwanted help. While substantial proportions of IndependentChoices consumers reported receiving unwanted help at least sometimes, such reports were equally common in the control group.

TABLE 4

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON SATISFACTION WITH PAID CAREGIVER RELATIONSHIP AND ATTITUDE

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with Relationship[a]	95.0	78.5	16.5** (.000)	92.2	82.8	9.4*** (.000)
Paid Caregivers:						
Neglected client	14.1	33.5	-19.4*** (.000)	10.9	26.2	-15.3*** (.000)
Were rude or disrespectful	10.5	29.5	-18.9*** (.000)	11.8	16.4	-4.7* (.051)
Took something without asking[a]	1.7	4.4	-2.7** (.040)	4.1	7.7	-3.6** (.033)
Gave unwanted help[a]	40.2	36.9	3.3 (.521)	33.4	33.0	0.4 (.898)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Means were predicted with logit models.

[a]Effects were estimated by pooling the two age groups and including an age*treatment status interaction term in the model.

*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.

Unmet Needs and Satisfaction with Overall Care Arrangements

Treatment group members were less likely than control group members to report unmet needs, which were measured whether or not sample members were receiving paid assistance around the time of the interview (Table 5). Among the nonelderly, IndependentChoices significantly reduced unmet needs for help with daily living activities, household activities, and transportation. In particular, the proportion of nonelderly consumers not receiving needed help with transportation was cut by more than 40 percent (-20.2/47.2=-.43), suggesting that the Arkansas Medicaid program's transportation policies leave many agency clients with unmet needs. Among elderly consumers, there were smaller, but significant, reductions in unmet needs for help with household activities (nine percentage points) and transportation (eight percentage points). IndependentChoices did not reduce unmet needs for help with routine health care for either age group.

IndependentChoices also had large positive effects on satisfaction with overall arrangements for paid and unpaid care, particularly among nonelderly sample members (Table 5). The program cut the proportion of nonelderly consumers who were dissatisfied with their overall care from 31 to only 6 percent. Moreover, the proportion of nonelderly control group members who were dissatisfied with their overall care arrangements was roughly the same at baseline and follow up, while dissatisfied treatment group members dropped from 1 in 3 consumers to 1 in 16 (Table A.7). In addition to virtually eliminating dissatisfaction, IndependentChoices increased the ranks of *very* satisfied consumers by a striking 29 percentage points, from about 42 percent of nonelderly control group members to 71 percent. Elderly control group members were much less dissatisfied than their nonelderly counterparts, but IndependentChoices still increased satisfaction by significant and sizable amounts for this age group.

TABLE 5

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON UNMET NEEDS AND SATISFACTION WITH CARE ARRANGEMENTS

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Has an Unmet Need for Help with:						
Daily living activities[a]	25.8	41.0	-15.2*** (.001)	35.9	36.5	-0.7 (.823)
Household activities[b]	41.3	56.0	-14.7*** (.002)	38.1	47.2	-9.1*** (.003)
Transportation[c]	27.0	47.2	-20.2*** (.000)	29.0	36.5	-7.5*** (.009)
Routine health care[d]	26.6	32.3	-5.7 (.189)	29.2	32.3	-3.1 (.285)
How Satisfied with Overall Care Arrangements[e]						
Very satisfied	71.0	41.9	29.2*** (.000)	68.3	54.0	14.3*** (.000)
Dissatisfied	6.0	31.4	-25.4*** (.000)	6.2	10.4	-4.3** (.026)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Means were predicted with logit models.

[a]Daily living activities include eating, dressing, toileting, transferring, and bathing.

[b]Household activities include meal preparation, laundry, housework, and yard work.

[c]Transportation includes trips to and from a doctor's office, shopping, school, work, and recreational activities.

[d]Routine health care includes help with medications, checking blood pressure, and doing exercises.

[e]Includes arrangements for unpaid and paid help with personal care, activities around the house and community, routine health care, community services, transportation, and for use of care-related 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.

Adverse Events, Health Problems, and General Health Status

Under IndependentChoices, consumer-directed care was at least as safe as agency-directed care, as reflected in reports of disability-related adverse events, health problems, and general health status (Table 6). For most measures, treatment group members had slightly better outcomes, but treatment-control differences were not usually statistically significant.

Treatment group members were no more likely than control group members to fall, see a doctor because of a fall, or sustain injuries while receiving paid help. Moreover, although only a small proportion (four percent) of nonelderly control group members saw a doctor because of a cut, burn, or scald, a significantly smaller proportion (just over one percent) of nonelderly treatment group members reported such accidents. Treatment group members were somewhat *less* likely than control group members to report some kinds of health problems that might indicate they had received inferior or insufficiently frequent personal assistance. In a few instances, the differences were statistically significant. Among the nonelderly, IndependentChoices reduced the likelihood of developing or experiencing worsened bedsores by more than half and the likelihood of having problems with shortness of breath by one-fourth. Among elderly treatment group members, problems with muscle contractures were substantially reduced.

Self-Care and Functioning

We found a statistically significant program effect on whether consumers considered themselves sufficiently knowledgeable about caring for their chronic conditions, but no significant effect on missing a dose of prescribed medicine in the past week or in activities of daily living (Table A.8). Among nonelderly sample members, IndependentChoices reduced the proportion who said they did not know enough about their conditions (by eight percentage points). No such effect was observed among the elderly. Regardless of treatment status, bathing

TABLE 6

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON ADVERSE EVENTS, HEALTH PROBLEMS, AND GENERAL HEALTH STATUS

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Adverse Events in Past Month						
Fell	28.4	28.7	-0.4 (.931)	19.0	18.6	0.4 (.869)
Saw a Doctor Because of a Fall[a]	4.4	4.1	0.3 (.849)	5.4	4.6	0.7 (.587)
Saw a Doctor Because of a Cut, Burn, or Scald[b]	1.3	4.0	-2.7* (.070)	1.4	1.9	-0.5 (.479)
Was Injured While Receiving Paid Help[b]	0.9	2.3	-1.4 (.221)	1.8	1.4	0.3 (.673)
Health Problems in Past Month						
Shortness of Breath Developed or Worsened	29.8	39.7	-10.0** (.016)	32.3	36.1	-3.8 (.161)
Had a Respiratory Infection	31.4	32.1	-0.7 (.872)	23.3	25.3	-2.1 (.404)
Contractures Developed or Worsened	26.0	25.2	0.8 (.826)	15.9	19.7	-3.9* (.089)
Had a Urinary Tract Infection	19.4	21.6	-2.2 (.560)	18.2	21.0	-2.8 (.230)
Bedsores Developed or Worsened[a]	5.9	12.6	-6.7** (.012)	7.5	6.8	0.7 (.640)

TABLE 6 *(continued)*

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
General Health Status						
Current Health Is Poor Relative to Peers[a]	56.4	53.5	2.9 (.476)	48.0	50.0	-2.0 (.462)
Spent Night in Hospital or Nursing Home in Past Two Months	16.6	15.9	0.7 (.842)	25.2	23.7	1.5 (.551)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Means were predicted with logit models.

[a]Effects were estimated by pooling the two age groups and including an age*treatment status interaction term in the model.

[b]Impacts could not be estimated with the logit model. Results presented are the unadjusted means and treatment-control differences.

*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.

without help would have been very difficult or impossible for a majority of sample members (73 percent of the elderly and more than 55 percent of the nonelderly). Getting in or out of bed and using the toilet without help would each have been very difficult or impossible for about 38 percent of the elderly and roughly 30 percent of the nonelderly. Because IndependentChoices was designed primarily to increase satisfaction, rather than improve functioning, these treatment-control similarities are not surprising. They suggest that treatment group members did not suffer functional declines as a result of hiring their own caregivers.

Quality of Life

In a striking commendation of the program, treatment group members in both age groups were nearly 20 percentage points more likely than control group members to say they were very satisfied with the way they were spending their lives around the time of the follow-up interview (Table 7). There was an equally large reduction in the percentage of nonelderly adults who were dissatisfied in this regard. (Moreover, nonelderly control group members were about as likely to be dissatisfied at follow up as they were at baseline; Table A.7.) The reduction for dissatisfied elderly consumers was statistically significant, but less pronounced, at eight percentage points.

In examining other quality of life measures, we found no compelling evidence that IndependentChoices affected consumers' abilities to pursue desired age-appropriate activities, such as recreation, education, or paid work (Table A.9). Large proportions (79 to 99 percent) of treatment and control group members said health problems or lack of assistance limited such pursuits, reflecting the frailty of these individuals.

Subgroup Effects

Strong, positive program effects on quality indicators were seen not only for nonelderly and elderly subgroups, but also for subgroups defined by whether sample members received publicly

TABLE 7

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON SATISFACTION WITH LIFE

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
How Satisfied with the Way Spending Life These Days						
Very satisfied	43.4	22.9	20.5*** (.000)	55.5	37.0	18.5*** (.000)
Dissatisfied	24.1	46.9	-22.7*** (.000)	17.0	25.3	-8.3*** (.004)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Means were predicted with logit models.

*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.

funded home care at baseline, had unmet needs, lived in rural areas, or described their health as poor (Tables A.10 – A.15). For the most part, differences in the magnitude of program effects for the subgroups we compared were not statistically significant (as described in the Appendix). However, given the sample sizes, only quite large differences would likely be detected.

DISCUSSION

IndependentChoices was more successful than agencies at meeting consumer preferences.

We conclude from our results that consumers, all of whom voluntarily enrolled in the demonstration, fared far better in IndependentChoices than they would have had they relied on home care agencies for their PCS. Among sample members who were receiving paid assistance, IndependentChoices consumers had consistently better outcomes than those receiving agency care. In particular, they were:

- More satisfied with the timing of their paid care (and their paid caregivers were more likely to come as scheduled, stay as long as scheduled, and complete their tasks).
- More satisfied with their relationships with paid caregivers, less likely to feel neglected or rudely treated by them, and less likely to report that paid caregivers took from them without asking (though such reports were rare for both groups). The fact that most consumers hired family members and friends as caregivers likely explains such improvements in part.
- More satisfied with the way their paid caregivers assisted with daily living activities, household activities, and routine health care.

For unmet needs and satisfaction with life, overall care arrangements, and transportation assistance, positive impacts were partly due to the higher proportion of treatment group members receiving assistance from paid caregivers. However, even if the sample is restricted to those receiving paid care, the treatment group has a significantly lower proportion with unmet needs and a higher proportion who were very satisfied with their lives, overall care, and transportation (Tables A.16 – A.17).

Similarly, one might be concerned that dissatisfaction with IndependentChoices is underestimated for the treatment group because disenrollees were asked about their recent care rather than care received while they were enrolled. However, a sensitivity test in which we excluded treatment group members who had disenrolled from IndependentChoices did not materially change the results (Tables A.18 – A.19). The fact that 96 percent of all treatment group respondents, including disenrollees, said they would recommend the program to others confirms that even disenrollees found IndependentChoices to be a desirable alternative to agency care.

Consumer direction did not lead to increased health problems or adverse events.

Our estimates suggest that participation in IndependentChoices did not result in greater health problems or accidents, as might occur if lack of agency supervision gave way to inadequate or incompetent personal assistance. On the contrary, nonelderly treatment group members were significantly less likely than their control group counterparts to report that bedsores or shortness of breath developed or worsened, and fewer elderly treatment group members had problems with contractures.

Study limitations create little concern about the validity of the findings.

Although our study is somewhat limited by sample restrictions, sample members' participation in other programs, potential problems with generalizability, and lack of direct observation, the limitations do not seriously temper our conclusions. The most important limitation pertains to impact estimates for unmet needs, and satisfaction with life, overall care arrangements, and transportation assistance. These estimates may be distorted by the necessary exclusion of sample members with proxy respondents who were also paid caregivers. Because this exclusion applied to 24 percent of the treatment group but only 3 percent of the control

group, impact estimates for these measures may not be based on statistically equivalent comparison groups. This could result in biased estimates if our control variables did not adequately account for the influence of any pre-existing differences between the two groups created by this restriction.

A subgroup analysis showed that IndependentChoices increased the proportion of consumers who were very satisfied with life, overall care arrangements, and transportation assistance regardless of whether sample members responded themselves or through (non-hired) proxies (Table A.20). Although the impacts were somewhat smaller for sample members with proxies, they were still positive and statistically significant.[11]

For unmet needs, however, the program brought about large reductions in unmet needs among self-responders, but no reductions for those with proxies. This may be because proxies see unmet needs where sample members do not, or because sample members who need proxies begin with greater unmet needs (due to more severe impairments, for example) and still have them despite the program. In any case, reductions in unmet needs were concentrated solely in the subset of sample members who were physically and mentally capable of responding for themselves to questions about their well-being. Furthermore, because IndependentChoices did not affect unmet needs according to the proxies who remained in the sample, we infer that our impact estimates for unmet needs might be overstated to some degree (that is, treatment group outcomes might have been less positive if cases with proxies who were paid caregivers had been included).[12]

[11]The magnitude of estimated effects was similar, whether subgroups were defined by use of proxy respondents at baseline or nine months later.

[12]For satisfaction measures analyzed only for sample members receiving assistance from paid caregivers, we are somewhat less concerned about bias. Our analysis of such outcomes

Consumers' demonstration experiences and survey responses may have been affected by their participation in Medicaid home- and community-based waiver services programs during the evaluation follow up. Specifically, 62 percent of elderly sample members in both the treatment and control groups were enrolled in the ElderChoices program for at least part of their follow-up period. ElderChoices provides up to 43 hours per month of nurse-supervised homemaker, chore, and respite services to elders who qualify for nursing-home level care. This nurse supervision may have *reduced* the likelihood that elderly treatment group members experienced adverse effects on their health. However, sensitivity tests for health-related outcomes showed that, within the subgroup of elders who did not participate in ElderChoices, treatment group members fared as well or better than control group members (Table A.21). For some measures, including problems with shortness of breath and contractures, the program had favorable impacts for those *not* participating in ElderChoices but no impacts for participants. Furthermore, the presence of agency workers in the homes of IndependentChoices consumers may have *reduced* some of the favorable effects of self-direction: the program had larger impacts on satisfaction with life and overall care arrangements for sample members who were not participating in ElderChoices than it did for those who were.

(continued)
excludes both sample members with proxies who were paid caregivers (mostly treatment group members) and those without paid care in a given period (mostly control group members). We believe the exclusions do not substantially distort our findings given that (1) roughly equal proportions of the treatment and control groups were excluded for these reasons; (2) the exclusions have countervailing effects (that is, the former might be expected to bias estimates upward, the latter downward); and (3) we control for a comprehensive set of baseline characteristics. The large proportion who would recommend the program to others and the statistically significant effects among self-respondents receiving care further justifies this conclusion.

Among nonelderly sample members, six percent participated in Alternatives, a program in which a Medicaid beneficiary's relatives and friends may become certified, paid care providers (Phillips and Schneider 2002). Although the percentage of sample members in Alternatives was small, 18 nonelderly control group members (eight percent) had an experience akin to consumer direction during the demonstration, which would slightly attenuate program effects.

In addition, because our findings are based on one (relatively new) consumer-directed care program in one state, they may not be broadly generalizable. For example, the potential impact of consumer-directed care could be lower in states whose Medicaid personal care benefits are more generous than those of Arkansas, because levels of dissatisfaction and unmet needs would probably also be lower in such states. Findings may also be limited by our relatively short follow-up period. Some program effects may not persist over time, as consumers age or lose paid family caregivers. Moreover, consumers' experiences with consumer direction may have been unusually positive during the first nine months of the program because of the novelty of the service model. In that case, the strong effects might eventually diminish.

A final limitation of this analysis is that it did not include direct observation of care. Because personal care is nonmedical and the consumer is an important judge of its quality, our reliance on self-reports of satisfaction, unmet needs, adverse outcomes, and health problems is appropriate. Nonetheless, it is possible that some control group members exaggerated their dissatisfaction because they were disappointed by not being assigned to the treatment group, and that some treatment group members experienced health hazards not reflected in survey data. Direct observation would be needed to identify any such tendencies.

These limitations notwithstanding, this analysis was based on a strong, randomized research design and yielded estimated program effects that were large, compelling, consistent across numerous types of measures, and widespread across subgroups. Overall, it offers unambiguous

evidence that IndependentChoices improved the quality of personal assistance from consumers' perspectives, with no discernible adverse effects on safety or health.

Consumer-directed Medicaid personal assistance warrants stakeholders' consideration.

From a quality of care standpoint, the state of Arkansas and federal Medicaid administrators have compelling evidence to support their recent decision, in October 2002, to continue IndependentChoices after the demonstration period. The program clearly benefits Medicaid PCS users who wish to direct their own care and leads to health outcomes that are at least as good as those reported by control group members. While consumer-directed care will not appeal to all, or even a majority, of consumers, Arkansas is making clear its commitment to improving consumer well-being by including it as an option for individuals eligible for Medicaid PCS.

The results of this analysis should also be encouraging to others interested in the public debate over consumer-directed supportive services. These parties include states that are contemplating consumer-directed program options to expand the availability of publicly funded home care and organizations that advocate for the elderly. While the elderly community has not advocated as aggressively as younger adults with disabilities for consumer direction, an important lesson from IndependentChoices is that the elderly, too, can benefit from this service model. In this study, elders randomly assigned to IndependentChoices were more satisfied with their personal care and with how they were spending their lives than were elders who relied on agency services. The ability to hire family members and get help from representatives, which nearly half the elders did under IndependentChoices, undoubtedly contributed to their success.

Our results may also be useful to stakeholders concerned about home care agencies losing market share to consumer-directed programs. Dissatisfaction with agency services was fairly low even in our control group, which was designed to consist of Medicaid PCS users who wished to direct their own care. However, the findings do suggest possible improvements. For

example, agencies could solicit and be responsive to input from clients about their satisfaction with the timing of their care and how attendants interact with them and perform their tasks. Incorporating such input into attendants' performance evaluations would give them material incentive to satisfy their clients. Such methods might increase consumers' willingness to rely on agency care and would benefit all PCS users. Our results also suggest that Arkansas explore ways to help Medicaid PCS users with transportation.

Future analyses will examine the effects of IndependentChoices on the use and costs of PCS and other health care services, the experiences of informal and paid caregivers, and program implementation.

While quality and consumer satisfaction results were strongly favorable in Arkansas, other factors must be examined before the desirability of consumer-directed care can be fully confirmed there and in other states. IndependentChoices may be more or less expensive than agency-directed services—a critical factor in times of state budget crises. Companion analyses will examine how IndependentChoices affected the use and cost of PCS, as well as the total cost to Medicaid and Medicare for acute and long-term care. We will also examine program effects on informal caregivers and the experiences of workers hired by consumers, as well as implementation issues important to states. Finally, we will assess the robustness and generalizability of our findings by examining Cash and Counseling impacts on adults in the other two study states, Florida and New Jersey, and on children (in Florida). If the results of forthcoming studies do not offset the strongly positive effects found here, states can adopt the Cash and Counseling model of consumer-directed supportive services with confidence.

REFERENCES

Allen, Susan M., and Vincent Mor. "The Prevalence and Consequences of Unmet Need: Contrasts Between Older and Younger Adults with Disability." *Medical Care*, vol. 35, no. 11, November 1997, pp. 1132-1148.

Arkansas Medicaid Program. *Arkansas Medicaid Manual: Personal Care.* Revised 1998. Available at [www.medicaid.state.ar.us/arkansasmedicaid/manuals/manlmain.htm]. Accessed March 25, 2002.

Benjamin, A.E. "Consumer-Directed Services at Home: A New Model for Persons with Disabilities." *Health Affairs*, vol. 20, no. 6, 2001, pp. 80-95.

Benjamin, A.E. "Alternative Models of Personal Assistance Services: Paperwork Reduction Act Submission Supporting Statement." Los Angeles: University of California, February 1996.

Benjamin, A.E., Ruth Matthias, and Todd M. Franke. "Comparing Consumer-Directed and Agency Models for Providing Supportive Services at Home." *Health Services Research*, April 2000, vol. 35, no. 1, pp. 351-366.

Connally, Patrick. "The California Quality of Life Project: A Project Summary." In *Quality of Life for Persons with Disabilities: International Perspectives and Issues*, edited by David Goode. Cambridge, MA: Brookline Books, Inc., 1994.

Dale, Stacy, Randall Brown, Barbara Phillips, Jennifer Schore, and Barbara Carlson. "The Effect of Consumer Direction on Personal Assistance Received in Arkansas." Draft report. Princeton, NJ: Mathematica Policy Research, Inc., December 2002.

Eckert, J. Kevin, Patricia M. San Antonio, and Karen B. Siegel. "The Cash and Counseling Qualitative Study: Stories from the IndependentChoices in Arkansas." Draft report. Baltimore, MD: University of Maryland, Baltimore County, Department of Sociology/Anthropology, 2002.

Eustis, Nancy N. "Consumer-Directed Long-Term Care Services: Evolving Perspectives and Alliances." *Generations*, vol. 20, no. 3, 2000, pp. 10-15.

Eustis, Nancy N., Rosalie A. Kane, and Lucy Rose Fischer. "Home Care Quality and the Home Care Worker: Beyond Quality Assurance as Usual." *Gerontologist*, vol. 33, no. 1, 1993, pp. 64-73.

Flanagan, Susan. "An Inventory of Consumer-Directed Support Service Programs: Overview of Key Program Characteristics." Presentation at the Cash and Counseling annual meeting, Arlington, VA, 2001.

Foster, Leslie, Randall Brown, Barbara Carlson, Barbara Phillips, and Jennifer Schore. "Cash and Counseling: Consumers' Early Experiences in Arkansas Part II: Uses of Cash and Satisfaction at Nine Months." Interim memo. Princeton, NJ: Mathematica Policy Research, Inc., October 2000.

Goode, David. *Discussing Quality of Life: Framework and Findings of the Work Group on Quality of Life for Persons with Disabilities.* Valhalla, NY: Mental Retardation Institute, 1988.

Kane, Rosalie A., Robert L. Kane, Laurel H. Illston, and Nancy N. Eustis. "Perspectives on Home Care Quality." *Health Care Financing Review*, vol. 16, no. 1, fall 1994, pp. 69-89.

Kitchener, Martin, and Charlene Harrington. "Medicaid 1915(c) Home and Community Based Waivers: Program Data: 1992-1999." San Francisco, CA: University of California, San Francisco, August 2001.

Kunkel, Suzanne, Robert Appelbaum, Shawn Davis, and Barbara Schneider. "Quality and Consumer Directed Care: Lessons Learned from Arkansas' IndependentChoices Program." Oxford, OH: Miami University, Scripps Gerontology Center, January 2002.

LeBlanc, Allen, Christine Tonner, and Charlene Harrington. "State Medicaid Programs Offering Personal Care Services." *Health Care Financing Review*, vol. 22, no. 4, summer 2001, pp. 155-173.

Mahoney, Kevin J., Kristin Simone, and Lori Simon-Rusinowitz. "Early Lessons from the Cash and Counseling Demonstration and Evaluation." *Generations*, vol. 20, no. 3, fall 2000, pp. 41-46.

Nawrocki, Heather, and Steven R. Gregory. *Across the States 2000: Profiles of Long-Term Care Systems.* Washington, DC: AARP, 2000.

Phillips, Barbara, and Barbara Schneider. "Moving to IndependentChoices: The Implementation of the Cash and Counseling Demonstration in Arkansas." Princeton, NJ: Mathematica Policy Research, Inc., June 2002.

Phillips, Barbara, Randall Brown, Steven Hill, Deborah Lewis-Idema, Michael Ponza, Jennifer Schoff, Jennifer Schore, Cheryl Ulmer, and Amy Zambrowski. "Evaluation of Cash and Counseling Demonstration: Design Report for Arkansas." Draft report. Princeton, NJ: Mathematica Policy Research, Inc., April 1997.

Schore, Jennifer, and Barbara Phillips. "Putting Consumer Direction into Practice: Implementing the Arkansas IndependentChoices Program." Draft report. Princeton, NJ: Mathematica Policy Research, Inc., November 2002.

Shaughnessy, Peter, Kathryn S. Crisler, Robert E. Schlenker, Angela G. Arnold, Andrew M. Kramer, Martha C. Powell, and David F. Little. "Measuring and Assuring the Quality of Home Health Care." *Health Care Financing Review*, vol. 16, no. 1, fall 1994, pp. 35-68.

Velgouse, Linda, and Virginia Dize. "A Review of State Initiatives in Consumer-Directed Long-Term Care." *Generations*, vol. 24, no. 3, fall 2000, pp. 28-33.

Woodill, Gary, Rebecca Renwick, Ivan Brown, and Dennis Raphael. "Being, Belonging, Becoming: An Approach to the Quality of Life of Persons with Developmental Disabilities." In *Quality of Life for Persons with Disabilities: International Perspectives and Issues*, edited by David Goode. Cambridge, MA: Brookline Books, Inc., 1994.

APPENDIX

METHODS AND ADDITIONAL RESULTS

METHODS

ADDITIONAL INFORMATION ABOUT DATA COLLECTION

Reference Periods

The survey questions used in this analysis referred to a variety of periods. These periods were the day of the interview (the "present"); the most recent two weeks the sample member was living at home (instead of in a hospital, nursing home, or long-term care facility); the past month; and the entire nine months since random assignment. For example, we asked about sample members' present satisfaction with overall care arrangements, unmet needs, quality of life, and health status because that is what they could report most accurately. We used the two-week reference period for questions about daily activities or events (such as satisfaction with how paid caregivers provided specific types of assistance) because the interview day may have been atypical and the use of a two-week reference period should not have led to serious recall problems. When we asked about less frequent activities or events, we extended the reference period accordingly. For example, we asked about the occurrence of falls and other accidents in the past month. Finally, we used the nine-month reference period for questions about paid caregivers' attitudes and their relationships with sample members so that we would be measuring long-term tendencies rather than isolated disagreements or vagaries of mood.

Interviewing Considerations

In advance letters and during interviews, we mentioned that we preferred sample members and proxies to be alone during interviews. However, we assumed some interviews would be conducted within hearing range of paid caregivers. We were particularly concerned that this would be true for treatment group members because they might be more likely than control group members to have live-in paid caregivers. Therefore, most of the survey questions used in

this analysis called only for one-word replies (such as yes/no, very/somewhat, always/sometimes/rarely/ never) that would not reveal the question's content to a third party who might have a personal interest in the response. By soliciting nonrevelatory responses, we ensured that treatment and control group members were equally likely to give candid responses to questions about satisfaction and unmet needs, thus reducing a potential source of biased impact estimates.

Quality Indicators

As noted in the body of the report, Table A.1 presents a complete list of the quality indicators used in the analysis and specifies the reference periods used in our survey questions.

ADDITIONAL INFORMATION ABOUT ESTIMATING PROGRAM EFFECTS

Baseline Characteristics Controlled for in the Analysis

The logit models used in this analysis control for baseline measures of demographic characteristics, health and functioning, use of personal assistance, satisfaction with care and life, unmet needs, reasons for and month of enrollment, work and community activities, whether used a proxy respondent for most or all of the survey, and whether appointed a representative to make (or help make) decisions about managing the monthly allowance (shown in Table A.2). When sample members were missing data on one or two control variables, we imputed the sample mean of the missing variable(s) to keep the case in the analysis. Relatively few sample members refused to answer any given question or did not know the answer. Cases with proxy respondents at baseline had missing data on several control variables, however, because proxy respondents could not give reliable answers to certain questions (for example, about quality of life at baseline). The binary variable for whether had a proxy respondent at baseline is included in the

TABLE A.1

QUALITY INDICATORS USED IN THE ANALYSIS, BY TYPE

Satisfaction with Paid Caregivers' Reliability and Schedule	**Satisfaction with Paid Caregiver Relationship and Attitude**[a]	**Adverse Events**[c]	**Functioning**[c]
Whether paid caregiver ever failed to complete tasks in past nine months How often paid caregiver arrived late or left early in past nine months Whether visiting paid caregiver did not come as scheduled in recent two weeks How satisfied with times of day paid caregiver came in recent two weeks Whether could change paid caregiver's schedule without difficulty in recent two weeks **Satisfaction with Paid Caregiver Performance**[a] How satisfied with the way paid caregiver helped with daily living activities in recent two weeks How satisfied with the way paid caregiver helped around the house/community in recent two weeks How satisfied with the way paid caregiver helped with routine health care in recent two weeks	How satisfied with relationship with paid caregivers who helped in recent two weeks During past nine months, paid caregiver: -Neglected client -Was rude or disrespectful -Took money or other belongings without asking -Gave unwanted help **Satisfaction with Overall Care Arrangements and Transportation**[a] How satisfied with overall care arrangements How satisfied with ability to get help with transportation when needed **Unmet Needs for Personal Assistance**[b] Whether needed help but was not getting it or needed more help with: -Daily living activities -Household activities -Transportation -Routine health care	In past month: -Was injured while receiving paid help -Fell -Saw a doctor because of a fall -Saw a doctor because of cut, burn, or scald **Health Problems**[c] In past month: -Had a urinary tract infection -Had a respiratory infection -Bedsores developed or worsened -Contractures developed or worsened -Shortness of breath developed or worsened **General Health Status**[c] Current health is poor relative to that of peers Spent night in hospital or nursing home in past two months **Self-Care Knowledge and Behavior** Whether knows enough about chronic conditions to care for them, among those with chronic conditions Whether missed a dose of prescribed medication in past week, among regular users	In recent two weeks: -How difficult to bathe without help -How difficult to get in or out of bed without help -How difficult to use toilet without help **Quality of Life**[d] How satisfied with way spending life these days Whether health problems or lack of assistance limit: -Recreational, cultural, religious or social activities -Educational pursuits -Ability to work for pay

[a]Adapted from Eustis et al. (1993) and Benjamin (1996).

[b]Adapted from Allen and Mor (1997).

[c]Adapted from Shaughnessy et al. (1994).

[d]Adapted from Woodill et al. (1994); Connally (1994); and Goode (1988).

TABLE A.2

BASELINE CHARACTERISTICS OF RESPONDENTS TO THE NINE-MONTH INTERVIEW (CONTROL VARIABLES), BY AGE GROUP AND EVALUATION STATUS
(Percentages)

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Demographics				
Age in Years				
18 to 39	24.3	30.0	—	—
40 to 64	75.7	70.0	—	—
65 to 79	—	—	49.1	50.8
80 or older	—	—	50.9	49.2
Female	67.9	67.4	81.9	82.5
Race				
White	67.2	61.7	59.5	60.8
Black	26.1	33.0	35.2	32.8
Other	6.6	5.2	5.3	6.4
Of Hispanic Origin[a]	1.2	0.9	1.4	0.8
Living Arrangement/Marital Status				
Lives alone	39.1	39.1	30.8	30.1
Lives with spouse only	8.2	7.4	9.0	9.1
Lives with others but not married or married and lives with two or more others	52.7	53.5	60.1	60.7
Education				
8 years or fewer	21.8	27.6	66.0	66.2
9 to 12 years (no diploma)	30.9	27.6	18.8	16.7
High school diploma or GED	25.9	25.4	12.2	14.1
At least some college	21.4	19.3	3.0	3.0
Described Area of Residence As:				
Rural	38.0	35.3	40.3	40.6
Not rural but high-crime or lacking in adequate public transportation	32.9	34.8	28.1	24.8
Not rural, not high-crime, having adequate public transportation	29.1	29.9	31.7	34.6
Health and Functioning				
Relative Health Status		*		
Excellent or good	20.6	19.1	21.7	18.6
Fair	31.4	23.3	31.6	33.6
Poor	47.9	57.5	46.6	47.7

TABLE A.2 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Compared to Past Year:				
Health was better or about the same	49.4	49.6	45.5	47.0
Was more physically active or about the same	41.2	46.9	33.2	40.9 ***
Next Year, Expects Health to:				
Improve	18.5	21.3	13.9	14.3
Stay the same	38.7	36.5	27.0	28.0
Decline	30.0	30.9	39.3	41.0
Doesn't know	12.8	11.3	19.9	16.7
Not Independent in Past Week in:[b]				
Getting in or out of bed	61.3	60.9	65.7	68.1
Bathing	86.4	84.4	90.3	93.1 *
Using toilet/diapers	61.7	55.2	67.4	67.8
Cognitively Impaired (Inferred)[c]	16.1	16.1	27.1	31.1
Use of Personal Assistance				
Received Any Help in Past Week with:				
Household activities[d]	93.8	91.3	96.1	96.8
Daily living activities[e]	84.0	83.5	89.4	90.3
Transportation[f]	70.0	68.3	57.8	59.9
Routine health care[g]	69.1	62.6	77.4	77.2
Used Special Transportation Services in Past Year	35.0	38.4	24.3	23.6
Modified Home or Vehicle in Past Year	35.0	35.2	39.8	36.6
Purchased Assistive Equipment in Past Year	30.2	27.0	31.1	33.4
Number of Unpaid Caregivers Who Provided Help in Past Week				
0	9.1	13.5	8.6	7.9
1	24.3	28.3	29.0	30.3
2	26.8	25.2	29.4	28.3
3 or more	39.9	33.0	33.0	33.6

TABLE A.2 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Relationship of Primary Informal Caregiver to Client				*
Daughter or son	30.5	21.7	64.0	68.6
Parent	18.5	23.5	0.0	0.0
Spouse	6.2	6.5	5.0	4.2
Other relative	20.6	17.0	15.7	15.5
Nonrelative	15.2	17.0	6.5	3.4
No primary informal caregiver	9.1	14.4	8.7	8.3
Primary Unpaid Caregiver Is Employed	32.8	35.4	32.7	32.5
Length of Time with Publicly Funded Home Care:				
Less than 1 year	14.0	14.4	22.5	22.4
1 to 3 years	18.9	14.4	25.0	23.3
More than 3 years	17.7	17.8	22.5	22.8
Respondent said no care in past week, but program says current user	7.8	14.8	9.1	11.1
Not a current recipient	41.6	38.7	20.8	20.4
Number of Paid Caregivers in Past Week				
0	44.9	45.7	27.5	28.2
1	35.4	32.2	42.2	41.8
2	14.4	16.5	20.6	19.7
3 or more	5.4	5.7	9.7	10.3
Number of Hours Per Week in Medicaid Care Plan				
1 to 6	18.1	14.8	25.7	28.5
7 to 11	34.6	36.1	39.6	35.7
12 or more	47.3	49.1	34.7	35.7
Received Paid Help from Private Source in Past Week	11.5	13.5	14.4	11.9
Had Live-In Paid Caregiver[a]	1.2	2.2	1.7	1.1
Satisfaction with Paid Care				
How Satisfied with the Way Paid Caregiver Helped with Daily Living Activities, Household Activities, Routine Health Care[d,e,g]				
Very satisfied	25.1	23.3	31.3	34.5
Satisfied	14.0	13.6	25.0	20.6
Dissatisfied	14.0	14.9	14.3	15.9

TABLE A.2 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Did not receive help in past week	46.9	48.3	29.3	29.1
How Satisfied with Time of Day Paid Worker Helped				
Very satisfied	13.6	13.6	22.1	23.5
Satisfied	9.9	12.3	19.6	17.2
Dissatisfied	18.2	17.1	15.5	16.7
Did not receive help in past week	58.3	57.0	42.7	42.6
How Satisfied with Overall Care Arrangements				**
Very satisfied	29.4	25.8	42.7	45.1
Satisfied	25.1	29.0	35.7	33.1
Dissatisfied	30.6	31.7	15.2	11.7
No paid services or goods in past week	14.9	13.6	6.4	10.2
Unmet Needs for Personal Assistance				
Not Getting Enough Help with:				
Household activities[d]	75.9	76.4	63.1	63.9
Daily living activities[e]	67.2	68.7	59.2	64.3 *
Transportation[f]	58.1	57.8	40.9	45.0
Quality of Life				
How Satisfied with Way Spending Life				
Very satisfied	10.9	12.5	14.0	14.0
Satisfied	25.5	21.4	16.4	13.1
Dissatisfied	39.3	41.1	11.4	14.2
Question not asked of proxy	24.3	25.0	58.3	58.7
Attitude Toward IndependentChoices				
Being Allowed to Pay Family Members or Friends Was Very Important	86.4	85.7	85.9	85.9
Having a Choice About Paid Workers' Schedule Was Very Important	80.7	86.1	81.1	79.8
Having a Choice About Types of Services Received Was Very Important	88.1	86.5	84.9	86.9
Primary Informal Caregiver Expressed Interest in Being Paid	33.9	40.4	28.6	33.1*

TABLE A.2 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Work Experience and Community Activities				
Ever Supervised Someone	44.4	37.3	24.0	25.1
Ever Hired Someone Privately	44.6	38.4	28.7	28.7
Ever Worked for Pay	83.1	76.5	84.1	85.6
Attended Social/Recreational Programs in Past Year	11.6	7.9	8.4	8.2
Attended Adult Day Care in Past Year	4.5	4.8	5.9	5.3
Other				
Proxy Completed All or Most of Survey	23.5	23.9	57.0	57.7
Appointed a Representative at Enrollment	25.9	28.7	46.4	50.8
Enrollment Month Was in:				
1998 or 1999	56.0	55.7	47.4	48.9
2000 or 2001	44.0	44.4	52.7	51.1
Sample Size	**243**	**230**	**642**	**624**

SOURCE: MPR's baseline evaluation interview, conducted between December 1998 and April 2001, and the IndependentChoices Program.

[a]Because this characteristic was rare, we did not include it in our logit models.

[b]Needed hands-on or standby help or did not perform activity at all.

[c]We inferred the presence of a cognitive impairment if sample member appointed a representative upon enrollment and was physically or mentally unable to respond to the baseline survey.

[d]Household activities may include meal preparation, laundry, housework, and yard work.

[e]Daily living activities may include eating and bathing.

[f]Transportation may include transportation to a doctor's office, shopping, school, work, or social and recreational activities.

[g]Routine health care may include checking blood pressure or doing exercises.

*Difference between treatment and control groups significantly different from 0 at the .10 level, two-tailed test.
**Difference between treatment and control groups significantly different from 0 at the .05 level, two-tailed test.
***Difference between treatment and control groups significantly different from 0 at the .01 level, two-tailed test.

model to capture any outcome differences between sample members with proxy respondents at baseline and those responding for themselves.[1]

Use of Logit Models

As noted in the body of the report, we measured impacts of IndependentChoices by using the estimated coefficients from logit models to calculate the treatment-control difference in average predicted probabilities that the binary dependent variable takes a value of 1. That is, we calculated two predicted probabilities that Y = 1 (for example, whether very satisfied with care) for each case in the sample—first assuming the case was a treatment group member, then assuming it was a control group member—then calculated the mean predicted probability for these two series to get predicted treatment and control group values, and the difference in these means. This approach provides a more intuitive measure of the size and importance of the impact than would the traditional odds ratio, which is obtained by exponentiating the logit coefficient on the treatment status variable.

For every outcome, the logit model was estimated separately for elderly and nonelderly sample members, since impacts and the relationship of the outcomes to the control variables

[1]A different imputation procedure was used for a handful of variables when the proxy respondent was the sample member's representative. For such cases, the baseline survey asked the representatives about four of their own characteristics related to directing PCS (education; and prior experience with work, hiring, and supervising). However, for all other consumers with representatives, whether the respondent was the consumer or a proxy who was not the representative, the survey collected information on the sample members' characteristics. To provide consistently defined variables, we have replaced the values for these variables for those cases where the representative was the respondent. We replaced them with imputed values designed to represent the sample members' values, rather than the representatives'. The imputed values were drawn from a "donor" group—those cases who had both a representative and a proxy respondent at baseline, but for whom the proxy was not the representative. For each case for which imputation was required (those where the respondent was the representative), we selected at random a case from the donor group who fell into the same demographic cell defined by age, race, and sex. That donor case's values for the four variables were imputed to the case requiring imputation.

might have differed for the two age groups.[2] Impacts for other subgroups were estimated by including interaction terms for all of the subgroups (including age) in a single model.[3]

Statistical Power

We had 80 percent power to detect impacts of sizes listed in Table A.3 for binary outcome variables with a mean of 10 or 90 percent, assuming two-tailed tests at the .05 significance level.

TABLE A.3

MINIMUM DETECTABLE EFFECTS

	Detectable Effects (Percentage Points)	
Binary Variable Mean	Ages 18 to 64	Age 65 or Older
.50	11.4	7.0
.30 or .70	10.5	6.4
.10 or .90	6.9	4.2

The detectable effects are much larger for outcome variables (such as satisfaction with care measures) for which we necessarily excluded cases with proxy respondents who were also paid caregivers and cases with no paid caregiver at nine months. For example, the detectable effect on satisfaction for a quality indicator with a mean of .50 is 9.3 percentage points for the elderly

[2]In a few instances, where the sample was small and a given outcome rare, age-specific logit models failed to estimate reliable impacts because the dependent variable was perfectly classified with one or more independent variables for a small number of cases. In these instances, we used an alternative model in which the sample was pooled across age groups and an interactive term (age group times treatment status) was used to estimate impacts for nonelderly and elderly sample members.

[3]When estimating impacts for subgroups defined by characteristics other than age, the variance of the estimated impact was approximated by calculating the variance of the difference in the predicted probabilities for a treatment and control group member with all independent variables set at their sample means. A t-statistic was then constructed and used to test whether the estimated impact was significantly different from zero (p-values are reported in Tables A.10 to A.15).

and 14.0 points for the nonelderly. Thus, we can be confident of detecting only fairly sizable effects on such outcome measures.

COMPARISON OF TREATMENT AND CONTROL GROUPS

As expected under random assignment, the treatment and control groups had similar characteristics, but the two age groups differed considerably (Table A.2). Of 49 baseline characteristics, 6 treatment-control differences in the elderly age group were statistically significant at the .10 level. This is roughly the number of false-positive differences that would be expected to occur by chance, and none of the differences were large. In the nonelderly age group, only one treatment-control difference was statistically significant.

Detailed Description of Sample Restrictions

(*Note*: The following description consists of text found in the body of the report plus additional detail.)

Although 1,739 respondents completed a nine-month interview, many of the survey questions used in this analysis were posed only to subsets of respondents. Such restrictions were of four main types:

1. We did not pose questions about satisfaction or unmet needs to proxy respondents who were also paid caregivers, because they may not have been able to give objective answers to such questions.
2. Questions about satisfaction with paid care received during a given reference period were not posed to sample members who did not receive such care.
3. Questions that elicited opinions were not asked if sample members were unable, as a general matter, to form opinions (for example, because of a cognitive impairment) or if proxy respondents did not feel comfortable assessing the sample member's opinion.
4. Questions about adverse events, health problems, self-care, and quality of life were not posed to proxies of sample members who died before the reference period in question.

Table A.4 shows the sample sizes that result from the above restrictions and identifies the sections of the analysis to which they apply.

As the table shows, some restrictions affected the treatment and control groups differently. Compared to control group members, treatment group members were (as expected) much more likely to have proxy respondents who were also paid caregivers. On the other hand, control group members were relatively more likely to have lacked paid help during the two-week reference period. Because treatment and control group members drop from the sample differentially, the advantage of random assignment—having statistically equivalent comparison groups—is jeopardized.[4] As noted, regression techniques help control for such differences, producing unbiased estimates of program effects.

[4]To examine the threat to randomization, we compared the treatment-control means on baseline characteristics for Sample B, the most restricted sample in the analysis. We found 6 statistically significant differences for the nonelderly sample (versus 1 for the full nonelderly sample), and 10 statistically significant differences for the restricted elderly sample (versus 6 for the full elderly sample (Table A.5 compared with Table A.2). Thus, even with sample restrictions, the treatment and control groups were very similar, on average.

TABLE A.4

SAMPLES USED IN THE ANALYSIS

Sample	Sample Size: Treatment Group	Sample Size: Control Group	Used in the Analysis of:
A. Full Sample	885	854	
B. Full Sample minus:			Satisfaction with paid caregivers[b]
Sample members without paid help in two-week reference period[a]	-101	-249	
Proxies who were paid caregivers	-216	-23	
Sample members unable to form opinions	-37	-42	
Proxies who could not assess sample member's opinion	-7	-17	
Sample Size	524	523	
C. Full Sample minus:			Satisfaction with overall care arrangements and transportation
Proxies who were paid caregivers	-216	-23	
Sample members unable to form opinions	-37	-42	
Proxies who could not assess sample member's opinion	-7	-17	
Sample Size	625	772	
D. Full Sample minus:			Unmet needs
Proxies who were paid caregivers	-216	-23	
Sample Size	669	831	
E. Full Sample minus:			Quality of life
Proxies who were paid caregivers	-216	-23	
Deceased sample members	-77	-59	
Sample members unable to form opinions	-37	-42	
Proxies who could not assess sample member's opinion	-7	-17	
Sample Size	548	713	
F. Full Sample minus:			Adverse events, health problems, general health status, and self-care
Deceased sample members	-77	-59	
Sample Size	808	795	

[a]For some satisfaction measures, we used a nine-month reference period to minimize sample loss. During their nine-month reference period, 18 treatment group members and 122 control group members did not receive help from paid caregivers.

[b]For some measures, the sample also excludes those who did not receive paid help with a particular type of activity.

TABLE A.5

BASELINE CHARACTERISTICS OF SAMPLE USED IN THE ANALYSIS OF SATISFACTION WITH CARE, BY AGE GROUP AND EVALUATION STATUS
(Percentages)

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Demographics				
Age in Years				
18 to 39	24.7	24.3	—	—
40 to 64	75.3	75.7	—	—
65 to 79	—	—	57.7	51.7
80 or older	—	—	42.3	48.3
Female	69.9	62.5	81.1	84.5
Race				
White	66.9	63.2	62.9	62.9
Black	25.5	32.4	32.9	32.2
Other	7.6	4.4	4.2	4.9
Of Hispanic Origin	0.5	0.7	0.9	0.8
Living Arrangement/Marital Status				
Lives alone	43.0	46.3	37.9	34.9
Lives with spouse only	7.5	8.1	9.2	9.6
Lives with others but not married or married and lives with two or more others	49.5	45.6	53.0	55.6
Education				
8 years or fewer	16.7	22.8	61.5	64.6
9 to 12 years (no diploma)	28.5	29.4	19.8	17.8
High school diploma or GED	29.0	30.1	14.5	14.7
At least some college	25.8	17.6	4.1	2.9
Described Area of Residence As:				**
Rural	33.7	32.3	38.5	39.5
Not rural but high-crime or lacking in adequate public transportation	35.9	38.5	32.4	24.0
Not rural, not high-crime, having adequate public transportation	30.4	29.2	29.1	36.6
Health and Functioning				
Relative Health Status				
Excellent or good	20.4	22.8	21.6	17.8
Fair	30.3	21.5	29.0	35.2
Poor	49.2	55.6	49.3	46.9

TABLE A.5 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Compared to Past Year:				
Health was better or about the same	45.7	49.3	49.0	50.1
Was more physically active or about the same	38.2	46.7	35.2	45.9***
Next Year, Expects Health to:				
Improve	19.4	25.7	16.6	14.0
Stay the same	38.2	30.9	28.1	29.2
Decline	30.1	31.6	34.3	38.5
Doesn't know	12.4	11.8	21.0	18.4
Not Independent in Past Week in:[a]				
Getting in or out of bed	58.6	58.1	53.5	59.7
Bathing	84.4	82.4	87.6	93.3***
Using toilet/diapers	58.6	50.0	59.2	63.3
Cognitively Impaired (Inferred)[b]	10.2	9.6	20.4	26.4*
Use of Personal Assistance				
Received Any Help in Past Week with:				
Household activities[c]	93.0	91.2	94.7	96.9
Daily living activities[d]	82.3	83.1	86.7	90.9*
Transportation[e]	70.4	66.2	58.0	57.4
Routine health care[f]	66.7	63.2	70.4	74.4
Used Special Transportation Services in Past Year	36.0	41.5	27.0	24.6
Modified Home or Vehicle in Past Year	34.4	38.2	33.8	37.5
Purchased Assistive Equipment in Past Year	29.7	30.9	27.2	32.1
Number of Unpaid Caregivers Who Provided Help in Past Week		*		
0	10.2	19.1	12.4	10.4
1	19.9	22.8	26.0	30.8
2	26.9	23.5	30.8	29.3
3 or more	43.0	34.6	30.8	29.5
Relationship of Primary Informal Caregiver to Client		**		
Daughter or son	32.3	16.9	60.4	63.8
Parent	15.6	19.1	0.0	0.0
Spouse	5.9	8.8	44.4	46.5
Other relative	18.8	16.9	15.1	17.1
Nonrelative	17.2	17.7	7.4	3.4
No primary informal caregiver	10.2	20.6	12.7	11.1
Primary Unpaid Caregiver Is Employed	38.0	36.3	33.3	32.5

TABLE A.5 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Length of Time with Publicly Funded Home Care:		*		
Less than 1 year	12.9	17.7	22.6	21.3
1 to 3 years	19.9	17.7	26.8	28.3
More than 3 years	18.3	25.7	25.6	29.1
Respondent said no care last week, but program says current user	8.6	12.5	9.8	9.1
Not a current recipient	40.3	26.5	15.2	12.2
Number of Paid Caregivers in Past Week		**		
0	43.0	30.2	22.3	18.4
1	38.7	39.0	43.6	50.1
2	12.9	22.8	24.6	22.0
3 or more	5.4	8.1	9.5	9.6
Number of Hours Per Week in Medicaid Care Plan				
1to 6	15.6	14.0	32.2	35.9
7 to 11	37.1	37.5	39.1	33.3
12 or more	47.3	48.5	28.7	30.7
Received Paid Help from Private Source in Past Week	12.9	15.4	13.7	11.4
Had Live-In Paid Caregiver	1.1	2.2	2.4	0.5**
Satisfaction with Paid Care				
How Satisfied with the Way Paid Caregiver Helped with Daily Living Activities, Household Activities, Routine Health Care[c,d,f]		*		
Very satisfied	25.8	31.6	31.9	38.4
Satisfied	14.5	15.4	27.8	25.1
Dissatisfied	14.5	21.3	16.7	17.8
Did not receive help in past week	45.2	31.6	23.6	18.8
How Satisfied with Time of Day Paid Worker Helped				
Very satisfied	13.5	16.9	22.2	26.2
Satisfied	11.4	15.4	21.9	20.5
Dissatisfied	17.3	23.5	18.0	19.7
Did not receive help in past week	57.8	44.1	37.8	33.5
How Satisfied with Overall Care Arrangements				
Very satisfied	28.3	23.5	38.4	44.2
Satisfied	25.6	33.3	39.3	36.1
Dissatisfied	33.9	34.9	16.5	13.9
No paid services or goods in past week	12.2	8.3	5.7	5.8

TABLE A.5 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Unmet Needs for Personal Assistance				
Not Getting Enough Help with:				
Household activities[c]	78.8	80.0	61.3	62.6
Daily living activities[d]	66.3	75.0*	57.1	59.9
Transportation[e]	62.2	66.2	42.3	42.9
Quality of Life				
How Satisfied with Way Spending Life				**
Very satisfied	10.4	14.2	17.5	14.5
Satisfied	31.3	22.4	23.3	15.8
Dissatisfied	42.9	44.8	16.3	17.7
Question not asked of proxy	15.4	18.7	42.9	52.0
Attitude Toward IndependentChoices				
Being Allowed to Pay Family Members or Friends Was Very Important	83.3	82.4	85.9	84.6
Having a Choice About Paid Workers' Schedule Was Very Important	81.7	88.2	83.2	81.1
Having a Choice About Types of Services Received Was Very Important	88.2	86.8	83.3	87.0
Primary Informal Caregiver Expressed Interest in Being Paid	32.4	40.7	20.9	31.0***
Work Experience and Community Activities				
Ever Supervised Someone	47.3	39.7	29.8	26.0
Ever Hired Someone Privately	47.0	42.6	32.2	31.3
Ever Worked for Pay	85.5	82.4	87.3	86.3
Attended Social/Recreational Programs in Past Year	13.4	11.0	8.9	7.0
Attended Adult Day Care in Past Year	4.3	5.9	5.4	3.9
Other				
Proxy Completed All or Most of Survey	14.5	17.7	42.0	50.9**
Appointed a Representative at Enrollment	19.4	21.3	37.0	46.3**
Enrollment Month Was in:				
1998 or 1999	53.8	58.1	52.7	51.7
2000 or 2001	46.2	41.9	47.3	48.3

TABLE A.5 *(continued)*

Characteristic	Ages 18 to 64		Age 65 or Older	
	Treatment Group	Control Group	Treatment Group	Control Group
Sample Size	**186**	**136**	**338**	**387**

SOURCE: MPR's baseline evaluation interview, conducted between December 1998 and April 2001, and the IndependentChoices Program.

[a]Needed hands-on or standby help or did not perform activity at all.

[b]We inferred the presence of a cognitive impairment if sample member appointed a representative upon enrollment and was physically or mentally unable to respond to the baseline survey.

[c]Household activities may include meal preparation, laundry, housework, and yard work.

[d]Daily living activities may include eating and bathing.

[e]Transportation may include transportation to a doctor's office, shopping, school, work, or social and recreational activities.

[f]Routine health care may include checking blood pressure or doing exercises.

*Difference between treatment and control groups significantly different from 0 at the .10 level.
**Difference between treatment and control groups significantly different from 0 at the .05 level.
***Difference between treatment and control groups significantly different from 0 at the .01 level.

ADDITIONAL RESULTS

Satisfaction with Paid Caregiver Performance and Transportation Assistance

Among sample members in both age groups *who recently received paid assistance* with daily living activities, household and community activities, and routine health care, IndependentChoices greatly increased the proportion who said they were very satisfied with the way their paid caregivers carried out their duties in these areas (Table A.6). The program had especially striking impacts on satisfaction with assistance around the house and community.

IndependentChoices had large positive effects on satisfaction with transportation assistance, which was measured whether or not sample members were receiving paid assistance around the time of the interview. The program cut the proportion of nonelderly consumers who were dissatisfied with their ability to get help with transportation by 60 percent (-20.3/32.3 = -.63; Table A.6). In addition, the program increased the proportion of nonelderly consumers who were very satisfied with their transportation assistance by 30 percentage points. Elderly consumers also enjoyed significantly greater satisfaction with transportation assistance, although impacts were somewhat less pronounced.

Quality Indicators Measured at Baseline and Nine Months

For descriptive purposes, we compared the distribution of treatment and control group members on quality indicators that were measured at baseline and nine months. For most indicators, distributions changed for both groups, although more markedly for the treatment group. As noted in the body of the report, however, the proportion of nonelderly control group members who were dissatisfied with their overall care arrangements was roughly the same at baseline and followup, while dissatisfied treatment group members dropped from 1 in 3 consumers to 1 in 16 (Table A.7). In addition, nonelderly control group members were about as

TABLE A.6

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON PAID CAREGIVER PERFORMANCE AND TRANSPORTATION ASSISTANCE

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
How Satisfied with the Way Paid Caregivers Helped with Daily Living Activities in Recent Two Weeks[a]						
Very satisfied[b]	95.9	75.7	20.2*** (.000)	84.6	75.7	8.9*** (.003)
How Satisfied with the Way Paid Caregivers Helped Around the House/Community in Recent Two Weeks[c]						
Very satisfied	90.4	64.0	26.4*** (.000)	87.3	68.3	19.0*** (.000)
Dissatisfied[e]	1.6	14.9	-13.2*** (.000)	2.8	7.6	-4.7*** (.007)
How Satisfied with the Way Paid Caregivers Helped with Routine Health Care in Recent Two Weeks[d]						
Very satisfied[b]	92.2	74.7	17.5*** (.000)	92.1	78.3	13.8*** (.000)
Dissatisfied[e]	1.4	13.4	-12.0*** (.000)	1.0	2.5	-1.5 (.212)
How Satisfied with Ability to Get Help with Transportation When Needed						
Very satisfied	72.2	42.5	29.7*** (.000)	73.7	63.6	10.1*** (.001)
Dissatisfied	12.0	32.3	-20.3*** (.000)	7.8	13.8	-6.0*** (.005)

TABLE A.6 *(continued)*

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Means were predicted with logit models.

[a]Daily living activities include eating, dressing, toileting, transferring, and bathing.

[b]Effects were estimated by pooling the two age groups and including an age*treatment status interaction term in the model.

[c]Help doing things around the house/community does not include help with transportation.

[d]Routine health care activities include help with medications, checking blood pressure, and doing exercises.

[e]Impacts could not be estimated with the logit model. Results presented are the unadjusted means and treatment-control differences.

*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 A.7

QUALITY INDICATORS MEASURED AT BASELINE AND NINE MONTHS, BY TREATMENT STATUS

Characteristic	Baseline		Nine Months	
	Treatment Group	Control Group	Treatment Group	Control Group
Ages 18 to 64				
How Satisfied with Times of Day Paid Workers Helped				
Very satisfied	32.7	31.6	85.5	64.9
Dissatisfied	43.6	39.8	2.7	16.4
How Satisfied with Overall Care Arrangements				
Very satisfied	34.5	29.8	70.7	41.6
Dissatisfied	36.0	36.6	6.3	30.6
Has an Unmet Need for Help with:				
Daily living activities	67.2	68.7	26.8	39.7
Household activities	75.9	76.4	42.3	54.9
Transportation	58.1	57.8	27.9	45.7
In Poor Health Relative to Peers	47.9	57.5	53.4	54.2
How Satisfied with the Way Spending Life				
Very satisfied	14.4	14.3	43.6	23.4
Dissatisfied	51.9	46.9	23.5	47.8
Age 65 or Older				
How Satisfied with Times of Day Paid Workers Helped				
Very satisfied	38.6	40.9	81.6	68.3
Dissatisfied	27.1	29.1	5.1	8.1
How Satisfied with Overall Care Arrangements				
Very satisfied	45.6	50.2	67.6	54.7
Dissatisfied	16.3	13.0	5.8	10.8
Has an Unmet Need for Help with:				
Personal care	59.2	64.3	35.4	36.8
Household activities	63.1	63.9	39.0	46.5
Transportation	40.9	45.0	29.5	36.1
In Poor Health Relative to Peers	46.6	47.7	47.7	50.3
How Satisfied with the Way Spending Life				
Very satisfied	33.5	34.0	54.9	37.4
Dissatisfied	27.4	34.4	16.8	25.6

TABLE A.7 (*continued*)

SOURCE: MPR's baseline evaluation, interview, conducted between December 1998 and April 2001, and nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Baseline means for satisfaction measures were calculated only for sample members who met certain criteria (for example, received paid assistance or responded to the survey without a proxy); thus they differ from the means presented in Table A.1, which were calculated over all sample members. The nine-month means presented in this table are not adjusted for baseline characteristics; thus, they differ slightly from the predicted means presented in Tables 2 through 7.

likely to be dissatisfied with their lives at followup as they were at baseline. The proportion of elderly control group members dissatisfied with their overall care arrangements was also roughly the same at baseline and nine months (13 and 11 percent, respectively), while dissatisfaction among treatment group members fell (by 10 percentage points).

Self-Care and Functioning

As noted in the body of the report, we found only one statistically significant program effect in examining whether consumers (1) considered themselves sufficiently knowledgeable about caring for their chronic conditions, (2) missed a dose of prescribed medication in the past week, and (3) had problems performing activities of daily living (Table A.8). Among nonelderly sample members, IndependentChoices reduced by eight percentage points the proportion who said they did not know enough about their conditions.

Pursuit of Desired Activities

We found no compelling evidence that IndependentChoices affected sample members' abilities to pursue desired age-appropriate activities, such as recreation, education, or paid work (Table A.9). Large proportions (78 to 99 percent) of treatment and control group members said health problems or lack of assistance limited such pursuits. To the extent that health problems were the major impediment, we would not expect treatment group members to fare better than control group members. Furthermore, binary outcome measures do not allow us to assess whether the *degree* to which lack of assistance limited such activities was different for the treatment and control groups. Although the treatment-control difference for the percentage of elderly sample members who were not limited in educational pursuits was statistically significant (in favor of the treatment group) at the .10 level, it appears to be a statistical anomaly; this outcome is relatively unlikely to be directly affected by IndependentChoices.

TABLE A.8

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON SELF-CARE KNOWLEDGE, BEHAVIOR, AND FUNCTIONING

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Self-Care Knowledge and Behavior						
Among Those with Chronic Conditions, Sample Member/Family Does Not Know Enough About Condition to Care for It[a]	3.9	12.0	-8.1*** (.003)	6.5	7.8	-1.3 (.412)
Among Those Taking Prescribed Medicines, Missed at Least One Dose in Past Week	32.2	39.3	-7.1 (.114)	17.9	19.4	-1.5 (.517)
Functioning						
Performing Activity Without Help Would Have Been Very Difficult or Impossible in Past Two Weeks:						
Bathing	59.5	56.5	3.0 (.466)	73.2	73.0	0.2 (.934)
Getting in or out of bed	26.9	28.8	-1.8 (.661)	37.3	37.4	-0.0 (.970)
Using the toilet	29.7	30.3	-0.7 (.868)	37.7	38.8	-1.1 (.677)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

[a]Impacts could not be estimated with the logit model. Results presented are the unadjusted means and treatment-control differences.

TABLE A.9

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON
PURSUIT OF DESIRED ACTIVITIES

Outcome	Ages 18 to 64			Age 65 or Older		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Health Problems or Lack of Assistance Currently Limit:						
Recreational, cultural, religious, or social activities	78.3	82.0	-3.7 (.323)	85.8	86.7	-0.9 (.683)
Educational Pursuits[a,b]	90.0	89.0	1.0 (.680)	92.0	96.7	-4.7* (.090)
Ability to Work for Pay[b,c]	96.2	95.9	0.3 (.873)	98.7	98.9	-0.2 (.891)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

[a]Effects were estimated by pooling age groups and including an age*treatment status interaction term in the model.

[b]Only sample members younger than age 75 were asked about this activity.

[c]Impacts could not be estimated with the logit model. Results presented are the unadjusted means and treatment-control differences.

Subgroup Effects

Although IndependentChoices improved care quality and well-being for both elderly and nonelderly consumers, we wanted to assess whether there were other subgroups of consumers for whom the program worked less well. Specifically, we estimated program effects on key quality outcomes for subgroups defined by whether sample members:

- Were receiving publicly funded home care at baseline[5]
- Lived in a (self-described) rural area at baseline
- Had unmet needs at baseline for help with daily living activities, household activities, or transportation (each examined separately)
- Were in poor health relative to their peers at baseline

We compared impacts for sample members who were and were not receiving publicly funded home care at baseline because this could affect how an ongoing program should be designed. If those not already receiving paid care at enrollment had, say, worse program outcomes, on average, then administrators of an ongoing program like IndependentChoices might wish to require consumers to first use PCS under the traditional system before they direct their own care. We examined effects on rural/nonrural subgroups because Arkansas wanted to improve personal care services to rural residents, whom home agencies were sometimes unable to serve (Phillips and Schneider 2001). We examined effects on subgroups defined by having or not having unmet needs because it was hoped that IndependentChoices would have the greatest impacts for those with the greatest needs, even though the program was not intended to meet *all* needs. Finally, we

[5]We hypothesized that prior experience with any publicly funded home care program—not merely that provided under the Arkansas state Medicaid plan—could affect experience with consumer direction. The subgroup is defined accordingly.

examined effects for the subset of sample members in relatively poor health out of concern that they might be most vulnerable to adverse health outcomes.

We found that, for all subgroups, IndependentChoices improved consumers' well-being relative to agency-directed services. Program effects for sample members not receiving publicly funded home care at baseline were about equal to those for recipients, with a notable exception (Table A.10). Among those not receiving care at baseline, treatment and control group members were equally likely to be very satisfied with their relationships with paid caregivers—almost all were. However, among those already receiving care at baseline, the program greatly increased satisfaction, with 77 percent of controls being satisfied, compared with nearly 94 percent of treatment group members. This difference may suggest that expectations affect satisfaction, and those with prior experience may have had very different expectations than those without. In addition, the fact that 92 percent of control group members in the subgroup without care at baseline were very satisfied with their relationships may suggest that home care agencies made a special effort to provide good service to new clients because of competition from IndependentChoices. We also found no effect on unmet need for daily living activities among those who were receiving paid care at baseline, whereas we saw a sizeable reduction in such unmet need among those with no paid care at baseline. This may be due to the fact that over half of these "new" PCS applicants in the control group were not receiving paid care at nine months.

Program effects on key quality outcomes were large, positive, and about equal for consumers who lived in rural areas and those who did not (Table A.11). Thus, Arkansas seems to have achieved its goal of improving services to consumers in rural areas (although it did not improve them more in rural areas than it did elsewhere).

For most measures, program effects were somewhat larger for consumers who had unmet needs at baseline than they were for those without unmet needs, but the effects were significantly

TABLE A.10

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES FOR SUBGROUPS, DEFINED BY WHETHER RECEIVING PUBLICLY FUNDED HOME CARE AT BASELINE

Outcome	Not Receiving Publicly Funded Home Care at Baseline			Receiving Publicly Funded Home Care at Baseline		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregiver's schedule	83.1	72.8	10.2* (.094)	83.6	67.2	16.4*** (.000)
Overall care arrangements	71.6	53.8	17.8*** (.001)	68.1	50.1	18.0*** (.000)
Ability to get help with transportation	85.1	73.7	11.4*** (.008)	69.0	53.4	15.6*** (.000)
Relationship with paid caregivers†††	90.2	92.1	-1.9 (.602)	93.7	77.1	16.7*** (.000)
How spending life these days	58.6	37.3	21.2*** (.000)	50.7	32.1	18.6*** (.000)
Has Unmet Need for Help with Daily Living Activities	32.1	42.8	-10.7** (.049)	33.0	35.5	-2.6 (.460)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Sample sizes vary from measure to measure (from 1,038 to 1,483) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 1,111 members were and 372 were not receiving publicly funded home care at baseline.

TABLE A.10 *(continued)*

*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 .01 level, two-tailed test.

TABLE A.11

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES FOR SUBGROUPS, DEFINED BY WHETHER LIVED IN A RURAL AREA AT BASELINE

Outcome	Lived in Rural Area at Baseline			Lived in Nonrural Area at Baseline		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregiver's schedule	86.8	68.3	18.5*** (.000)	81.7	68.8	12.9*** (.000)
Overall care arrangements	71.8	51.8	20.1*** (.000)	67.3	50.7	16.6*** (.000)
Ability to get help with transportation	74.9	57.3	17.6*** (.000)	73.8	60.5	13.4*** (.000)
Relationship with paid caregivers	93.4	81.9	11.5*** (.001)	92.1	82.0	10.2*** (.000)
How spending life	51.8	36.6	15.2*** (.001)	53.5	31.4	22.0*** (.000)
Has Unmet Need for Help with Daily Living Activities	30.0	37.7	-7.6* (.067)	34.4	37.1	-2.6 (.486)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Sample sizes vary from measure to measure (from 1,038 to 1,483) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 564 members said they lived in a rural area at baseline and 919 said they did not.

TABLE A.11 *(continued)*

*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.

different from each other in only a few instances (Tables A.12 to A.14). Most important, among sample members who reported an unmet need for help with daily living activities at baseline, treatment group members were nearly 10 percentage points less likely than those in the control group to report the same unmet need at the nine-month interview (Table A.12). Not surprisingly, there was no such treatment-control difference for those who did not report this unmet need at baseline. Compared to consumers without unmet needs for help with daily living activities at baseline, consumers with unmet needs were also significantly more likely to be very satisfied with their relationships with paid caregivers. However, the impact on overall satisfaction with life was *smaller* (though still significant) for those reporting an unmet need for daily living activities at baseline. Thus, no consistent picture emerges regarding which of these subgroups benefited most from IndependentChoices.

Finally, program impacts on all satisfaction measures were markedly larger for consumers reporting an unmet need for help with household activities at baseline than for those without such prior need. For example, the program increased the proportion who were very satisfied with their ability to get transportation nine months later by 18 percentage points (Table A.13). The program effect for those who did not report this unmet need at baseline was significantly smaller and not significant, at 8 percentage points.

Program impacts were about the same for consumers who were in poor health at baseline as they were for consumers whose health was at least fair. The only meaningful difference was that consumers' satisfaction with their relationships with paid caregivers was increased more by IndependentChoices for those in poor health (15 percentage points) than for those in better health (7 points) (Table A.15).

TABLE A.12

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES FOR SUBGROUPS DEFINED BY WHETHER HAD AN UNMET NEED FOR HELP WITH DAILY LIVING ACTIVITIES AT BASELINE

Outcome	Had an Unmet Need for Personal Care at Baseline			Did Not Have an Unmet Need for Personal Care at Baseline		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregivers' schedule	84.8	69.4	15.5*** (.000)	81.0	67.1	13.9*** (.005)
Overall care arrangements	66.0	50.4	15.5*** (.000)	74.2	52.0	22.2*** (.000)
Ability to get help with transportation	74.4	58.6	15.7*** (.000)	74.0	60.5	13.5*** (.005)
Relationship with paid caregivers†	93.3	79.8	13.5*** (.000)	91.5	86.2	5.2 (.106)
How spending life††	53.2	38.0	15.2*** (.000)	52.2	26.7	25.6*** (.000)
Has Unmet Need for Help with Daily Living Activities†††	32.8	42.7	-9.9*** (.002)	32.8	27.1	5.7 (.232)

SOURCE: MPR'S nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Sample sizes vary from measure to measure (from 1,038 to 1,483) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 956 members had and 527 did not have an unmet need for help with daily living activities at baseline.

TABLE A.12 *(continued)*

*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.13

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES FOR SUBGROUPS, DEFINED BY WHETHER HAD AN UNMET NEED FOR HOUSEHOLD HELP AT BASELINE

Outcome	Had an Unmet Need for Household Help at Baseline			Did Not Have an Unmet Need for Household Help at Baseline		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregiver's schedule	85.1	67.0	18.1*** (.000)	79.8	72.1	7.8 (.132)
Overall care arrangements	70.9	49.3	21.6*** (.000)	64.6	54.6	10.0* (.056)
Ability to get help with transportation†	74.5	56.2	18.3*** (.000)	73.6	65.9	7.7 (.135)
Relationship with paid caregivers	92.3	80.6	11.7*** (.000)	93.1	85.2	7.9** (.036)
How spending life	55.3	32.1	23.2*** (.000)	47.8	35.9	11.9** (.024)
Has Unmet Need for Help with Daily Living Activities	35.8	38.4	-2.6 (.499)	26.4	34.6	-8.2 (.109)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Sample sizes vary from measure to measure (from 1,038 to 1,483) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 1,017 members had and 466 did not have an unmet need for help with household activities at baseline.

TABLE A.13 *(continued)*

*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.

TABLE A.14

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES FOR SUBGROUPS DEFINED BY WHETHER HAD AN UNMET NEED FOR TRANSPORTATION ASSISTANCE AT BASELINE

Outcome	Had an Unmet Need for Transportation Assistance at Baseline			Did Not Have an Unmet Need for Transportation Assistance at Baseline		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregiver's schedule	79.9	67.3	12.6*** (.002)	86.6	69.9	16.8*** (.000)
Overall care arrangements	65.5	48.7	16.8*** (.000)	72.2	53.2	19.1*** (.000)
Ability to get help with transportation	65.1	48.8	16.4*** (.000)	82.2	68.9	13.3*** (.000)
Relationship with paid caregivers	91.9	81.3	10.6*** (.001)	93.2	82.7	10.6*** (.001)
How spending life	51.3	31.9	19.4*** (.000)	54.1	34.7	19.4*** (.000)
Has Unmet Need for Help with Daily Living Activities	35.0	40.5	-5.5 (.159)	30.7	34.3	-3.5 (.349)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

TABLE A.14 *(continued)*

NOTE: Sample sizes vary from measure to measure (from 1,038 to 1,483) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 720 members had and 763 did not have an unmet need for transportation assistance at baseline.

*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 A.15

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES FOR SUBGROUPS, DEFINED BY WHETHER HAD DESCRIBED HEALTH AS POOR AT BASELINE

Outcome	Described Health as Poor at Baseline			Described Health as at Least Fair at Baseline		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregiver's schedule	83.3	67.1	16.3*** (.000)	83.6	70.0	13.6*** (.000)
Overall care arrangements	68.9	51.3	17.6*** (.000)	69.1	50.9	18.3*** (.000)
Ability to get help with transportation	71.1	58.5	12.6*** (.001)	77.2	60.0	17.2*** (.000)
Relationship with paid caregivers††	95.2	80.7	14.5*** (.000)	90.2	83.2	7.0** (.030)
How spending life	50.6	29.8	20.8*** (.000)	54.9	36.7	18.2*** (.000)
Has Unmet Need for Help with Daily Living Activities	31.4	36.5	-5.2 (.160)	34.2	38.1	-3.9 (.316)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTE: Sample sizes vary from measure to measure (from 1,038 to 1,483) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 733 members said they were in poor health compared with their peers, and 750 said they were in at least relatively fair health.

TABLE A.15 *(continued)*

*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 .05 level, two-tailed test.

Sensitivity Tests

As discussed in the body of the report, sensitivity tests showed that our results were not substantially affected by:

- The relatively large proportion of control group members not receiving assistance from paid caregivers at the time of our interview; effects persisted when the sample was restricted only to those receiving paid help (Tables A.16 and A.17).
- The inclusion of disenrolled treatment group members in the analysis sample (Tables A.18 and A.19). Excluding these individuals led to minimal changes in the estimated program effects or made them more favorable.
- Elderly sample members' participating in the ElderChoices program during their follow-up period; effects were similar whether or not the elderly also participated in ElderChoices (Table A.21).

We also examined the effects of proxy respondents who remained in the analysis sample (because they were not also paid caregivers) for measures of satisfaction and unmet needs.[6] For satisfaction measures, we found that IndependentChoices increased the proportion of consumers who were very satisfied with life, overall care arrangements, and transportation assistance, whether sample members responded themselves or through proxies (Table A.20).[7] Estimated impacts were somewhat smaller for sample members with proxies, but they were still positive and statistically significant.

[6]The magnitude of estimated effects was similar whether subgroups were defined by use of proxy respondents at baseline or nine months later.

[7]For satisfaction measures examined only for sample members receiving assistance from paid caregivers, we are somewhat less concerned about bias. Our analysis of such outcomes excludes both sample members with proxies who were paid caregivers (mostly treatment group members) and those without paid care in a given period (mostly control group members). We believe the exclusions do not substantially distort our findings given that (1) roughly equal proportions of the treatment and control groups were excluded for these reasons; (2) the exclusions have countervailing effects (that is, the former tends to bias estimates upward, the latter downward); and (3) we control for a comprehensive set of baseline characteristics. The large proportion who would recommend the program to others and the statistically significant effects among self-respondents receiving care further justifies this conclusion.

TABLE A.16

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES, BY WHETHER SAMPLE INCLUDES RECIPIENTS OF PAID CARE
(Nonelderly)

Outcome	All Nonelderly Sample Members[a]			Nonelderly Sample Members Who Received Paid Care[b]		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Overall care arrangements	71.0	41.9	29.2*** (.000)	71.0	50.7	20.3*** (.000)
Ability to get help with transportation	72.2	42.5	29.7*** (.000)	69.6	45.8	23.8*** (.000)
How spending life	43.4	22.9	20.5*** (.000)	42.8	26.3	16.5*** (.003)
Has Unmet Need for Help with:						
Daily living activities	25.8	41.0	-15.2*** (.001)	24.1	37.0	-12.9** (.014)
Household activities	41.3	56.0	-14.7*** (.002)	41.6	53.4	11.9** (.032)
Transportation	27.0	47.2	-20.2*** (.000)	27.5	45.9	-18.4*** (.000)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

TABLE A.16 *(continued)*

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[a]Sample sizes vary from measure to measure (from 400 to 439) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sampled used, 334 members received paid care.

[b]Includes sample members who received help from paid caregivers with daily living activities, household and community activities, routine health care, and transportation during a recent two-week period.

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

TABLE A.17

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES,
BY WHETHER SAMPLE INCLUDES RECIPIENTS OF PAID CARE
(Elderly)

Outcome	All Elderly Sample Members[a]			Elderly Sample Members Who Received Paid Care[b]		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Overall care arrangements	68.3	54.0	14.3*** (.000)	70.6	55.6	15.0*** (.000)
Ability to get help with transportation	73.7	63.6	10.1*** (.001)	74.2	64.6	9.5*** (.006)
How spending life	55.5	37.0	18.5*** (.000)	56.8	36.6	20.2*** (.000)
Has Unmet Need for Help with:						
Daily living activities	35.9	36.5	-0.7 (.823)	26.7	28.5	-1.8 (.564)
Household activities	38.1	47.2	-9.1*** (.003)	29.5	40.1	-10.6*** (.002)
Transportation	29.0	36.5	-7.5*** (.009)	20.6	32.6	-12.0*** (.000)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

TABLE A.17 *(continued)*

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[a]Sample sizes vary from measure to measure (from 872 to 1,137) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sampled used, 931 members received paid care.

[b]Includes sample members who received help from paid caregivers with daily living activities, household and community activities, routine health care, and transportation during a recent two-week period.

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

TABLE A.18

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES, BY WHETHER SAMPLE INCLUDES DISENROLLED TREATMENT GROUP MEMBERS
(Nonelderly)

Outcome	All Nonelderly Sample Members[a]			All Nonelderly Sample Members Except Disenrolled Treatment Group Members[b]		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregivers' schedule[c]	85.2	66.9	18.3*** (.000)	86.8	68.5	18.3*** (.000)
Overall care arrangements	71.0	41.9	29.2*** (.000)	74.1	42.6	31.5*** (.000)
Ability to get help with transportation	72.2	42.5	29.7*** (.000)	73.8	43.1	30.7*** (.000)
Relationship with paid caregivers[c]	95.0	78.5	16.5*** (.000)	93.2	75.2	18.6*** (.001)
How spending life	43.4	22.9	20.5*** (.000)	43.7	23.1	20.6*** (.000)
Has Unmet Need for Help with Daily Living Activities	25.8	41.0	-15.2*** (.001)	27.2	39.7	-12.5*** (.008)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

TABLE A.18 *(continued)*

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[a]Sample sizes vary from measure to measure (from 320 to 437) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 32 treatment group members were disenrolled from IndependentChoices.

[b]Disenrolled treatment group members are those who were living at the time of the nine-month interview but who said they were not currently participating in IndependentChoices.

[c]Effects were estimated by pooling nonelderly and elderly sample members and including an age*treatment status interaction term in the model.

**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.

TABLE A.19

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES, BY WHETHER SAMPLE INCLUDES DISENROLLED TREATMENT GROUP MEMBERS
(Elderly)

Outcome	All Elderly Sample Members[a]			All Elderly Sample Members Except Disenrolled Treatment Group Members[b]		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Very Satisfied with:						
Paid caregivers' schedule[c]	82.9	68.7	14.2*** (.000)	88.0	67.9	20.8*** (.000)
Overall care arrangements	68.3	54.0	14.3*** (.000)	76.4	54.0	22.5*** (.000)
Ability to get help with transportation	73.7	63.6	10.1*** (.001)	78.0	63.9	14.3*** (.000)
Relationship with paid caregivers	92.2	82.8	9.4*** (.000)	94.1	83.1	11.0*** (.000)
How spending life	55.5	37.0	18.5*** (.000)	64.9	37.1	27.8*** (.000)
Has Unmet Need for Help with Daily Living Activities	35.9	36.5	-0.7 (.823)	34.9	36.4	-1.6 (.619)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

TABLE A.19 *(continued)*

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[a]Sample sizes vary from measure to measure (from 718 to 1,046) because some questions were posed only to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 112 treatment group members were disenrolled from IndependentChoices.

[b]Disenrolled treatment group members are those who were living at the time of the nine-month interview but who said they were not currently participating in IndependentChoices.

[c]Effects were estimated by pooling nonelderly and elderly sample members and including an age*treatment status interaction term in the model.

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

TABLE A.20

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON KEY QUALITY OUTCOMES,
BY WHETHER HAD A PROXY RESPONDENT AT BASELINE
(Both Age Groups)

Outcome	Did Not Have a Proxy Respondent			Had a Proxy Respondent		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Has Unmet Need for Help with:						
Daily living activities†††	26.4	37.2	-10.8*** (.001)	40.6	37.7	2.9 (.453)
Household activities†††	36.5	54.6	-18.1*** (.000)	42.4	42.1	0.2 (.949)
Transportation†††	23.7	40.1	-16.4*** (.000)	34.6	35.7	-1.1 (.775)
Routine health care††	20.9	30.9	-10.0*** (.001)	36.5	33.5	2.9 (.434)
How Satisfied with Overall Care Arrangements						
Very satisfied†	67.0	44.7	22.3*** (.000)	70.7	58.7	12.0*** (.004)
Dissatisfied	5.8	16.7	-10.9*** (.000)	5.8	14.3	-8.5*** (.012)

TABLE A.20 *(continued)*

Outcome	Did Not Have a Proxy Respondent			Had a Proxy Respondent		
	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
How Satisfied with Ability to Get Help with Transportation						
Very satisfied	71.3	55.5	15.8*** (.000)	78.2	63.8	14.4*** (.001)
Dissatisfied	10.5	23.6	-13.1*** (.000)	5.7	9.8	-4.1 (.124)
How Satisfied with Way Spending Life These Days						
Very satisfied††	50.0	26.2	23.8*** (.000)	54.8	41.8	13.0*** (.004)
Dissatisfied††	17.7	36.3	-18.6*** (.000)	20.8	26.2	-5.4 (.168)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

NOTES: Only proxy respondents who were not paid caregivers are represented in this table; these outcomes were not measured for sample members with proxy respondents who were paid caregivers. Control group members were somewhat more likely than treatment group members to have unpaid proxies. For example, among those asked about transportation assistance, 47 percent of control group members had a proxy respondent, compared with 40 percent of treatment group members.

Sample sizes vary from measure to measure (from 1,281 to 1,483) because some questions were posed to sample members who met certain criteria and because of item nonresponse. In the largest sample used, 831 members had a proxy respondent and 655 did not.

*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.21

ESTIMATED EFFECTS OF INDEPENDENTCHOICES ON ADVERSE EVENTS, HEALTH PROBLEMS, GENERAL HEALTH STATUS, SELF-CARE, AND SATISFACTION BY WHETHER ENROLLED IN ELDERCHOICES DURING FOLLOW UP
(Elderly Sample Members Only)

Outcome	Enrolled in ElderChoices			Not Enrolled in ElderChoices		
	Predicted Treatment Group Mean (Percent	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)	Predicted Treatment Group Mean (Percent)	Predicted Control Group Mean (Percent)	Estimated Effect (p-Value)
Adverse Events in Past Month						
Fell	21.3	18.3	3.1 (.307)	16.0	19.8	-3.8 (.304)
Saw a Doctor Because of a Fall	6.0	5.5	0.5 (.759)	4.6	3.3	1.3 (.504)
Saw a Doctor for a Cut, Burn, or Scald[a]	2.1	1.7	0.4 (.705)	0.4	2.4	-2.0* (.077)
Was Injured While Receiving Paid Help[a]	2.1	2.3	-0.2 (.860)	1.3	0.0	1.3 (.105)
Health Problems in Past Month						
Shortness of Breath Developed or Worsened†	34.3	34.3	0.1 (.984)	29.2	39.0	-9.8** (.024)
Had Respiratory Infection	23.9	26.1	-2.2 (.496)	22.2	23.9	-1.7 (.658)
Contractures Developed or Worsened††	18.7	18.6	0.1 (.973)	11.7	22.9	-11.2*** (.003)
Had Urinary Tract Infection	20.2	24.9	-4.8 (.133)	15.9	14.8	1.1 (.756)
Bedsores Developed or Worsened[a]	9.4	7.9	1.5 (.488)	5.1	5.5	-0.4 (.857)
General Health Status						
In Poor Health Relative to Peers†	53.6	51.0	2.6 (.441)	41.4	49.4	-8.3* (.052)
Spent Night in Hospital or Nursing Home in Past Two Months	29.5	29.0	0.5 (.880)	19.9	16.1	3.7 (.313)

TABLE A.21 *(continued)*

Outcome	Enrolled in ElderChoices: Predicted Treatment Group Mean (Percent	Enrolled in ElderChoices: Predicted Control Group Mean (Percent)	Enrolled in ElderChoices: Estimated Effect (p-Value)	Not Enrolled in ElderChoices: Predicted Treatment Group Mean (Percent)	Not Enrolled in ElderChoices: Predicted Control Group Mean (Percent)	Not Enrolled in ElderChoices: Estimated Effect (p-Value)
Self-Care Knowledge and Behavior						
Among Those with Chronic Conditions, Sample Member/Family Does Not Know Enough About Condition to Care for It[a]	7.5	8.6	-1.1 (.630)	5.0	6.6	-1.6 (.498)
Among Those Taking Prescribed Medicine, Missed at Least One Dose in Past Week	14.6	18.1	-3.5 (.222)	22.1	20.6	1.5 (.706)
Satisfaction						
Very Satisfied with:						
Paid caregivers' schedule	78.7	65.9	12.8*** (.003)	89.2	73.0	16.1*** (.001)
Overall care arrangements†	62.2	52.2	10.0** (.015)	78.1	59.1	19.1*** (.000)
Relationship with paid caregivers	90.4	83.6	6.9** (.027)	95.3	82.4	12.9*** (.002)
Way spending life†	48.9	35.1	13.8*** (.002)	66.4	41.4	25.0*** (.000)

SOURCE: MPR's nine-month evaluation interview, conducted between September 1999 and February 2002.

[a]Impacts could not be estimated with the logit model. Results presented are the unadjusted means and treatment-control differences.

*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.

For unmet needs, however, the program brought about large reductions in unmet needs among self-responders but no reductions for those with proxies. In other words, reductions in unmet needs were concentrated solely in the subset of sample members who were physically and mentally capable of responding for themselves to questions about their well-being. Furthermore, because IndependentChoices did not affect unmet needs according to the proxies who remained in the sample, we infer that our impact estimates for unmet needs might be overstated to some degree (that is, treatment group outcomes would have been less positive if cases with proxies who were paid caregivers had been included).