

# Improving The Quality Of Medicaid Personal Assistance Through Consumer Direction

Findings from the Arkansas Cash and Counseling Demonstration suggest that giving consumers control over their personal care greatly increases their satisfaction and improves their outlook on life.

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**ABSTRACT:** As states seek to improve home and community-based services for people with disabilities, many are incorporating consumer-directed supportive services into their Medicaid programs. The national Cash and Counseling Demonstration uses a randomized design to compare an innovative model of consumer direction with the traditional agency-directed approach. This paper presents findings from the first demonstration program to be implemented, in Arkansas. Our survey of 1,739 elderly and nonelderly adults showed that relative to agency-directed services, Cash and Counseling greatly improved satisfaction and reduced most unmet needs. Moreover, contrary to some concerns, it did not adversely affect participants' health and safety.

**M**EDICAID BENEFICIARIES who have disabilities and receive supportive services from home care or case management agencies often report that they have little control over who provides their care, when they receive it, and how it is delivered. For some, this lack of control over basic, often intimate, assistance leads to dissatisfaction, unmet needs, and diminished quality of life.<sup>1</sup>

Many states, aided by federal Systems Change grants and President George Bush's New Freedom Initiative, are considering expanding opportunities for Medicaid beneficiaries to direct their disability-related supportive services by letting them control the budget for their approved care. This could enable users to manage their care in ways that better meet their needs, without raising public costs. However, some fear that such options jeopardize consumers' health and safety.<sup>2</sup>

The national Cash and Counseling Demonstration is an innovative model of

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consumer direction designed to weigh the advantages and disadvantages of allowing consumers to assume more responsibility for their service arrangements. This paper presents estimates of the program's effects on consumer satisfaction, unmet needs, and health from the first of the three demonstrations to be implemented, IndependentChoices, in Arkansas. Previous research has assessed quality and related outcomes associated with other, usually more limited, opportunities for consumer direction in public programs. This is the first evaluation of such programs to use experimental design methods.

## **A New Model Of Medicaid Personal Assistance**

About 1.2 million Medicaid beneficiaries receive disability-related supportive services in their homes.<sup>3</sup> Most receive them from government-regulated agencies, whose professional staff arrange services and monitor quality, but a growing number manage their services themselves.<sup>4</sup> As one model of consumer-directed supportive services, Cash and Counseling gives consumers a flexible monthly allowance to purchase disability-related goods and services (including hiring relatives as workers), provides counseling and financial assistance to help them plan and manage their responsibilities, and allows them to designate representatives (such as family members) to make decisions on their behalf. These features make the model adaptable to consumers of all ages and with all types of impairments.

■ **Cash and Counseling in Arkansas.** Arkansas designed IndependentChoices as a voluntary demonstration for people age eighteen or older who were eligible for Medicaid personal care services. Enrollment and random assignment began in December 1998 and continued until the evaluation target of 2,000 enrollees (about 11 percent of Arkansas users of personal care services) was met, in April 2001.

Prospective enrollees were told what their monthly allowance would be if they were assigned to the treatment group to direct their own personal care services. (The average allowance was \$320 per month, based on care plans recommending an average of about forty-seven hours of services.) Those who wanted to use a representative were asked to name one. Arkansas required all prospective enrollees to agree that they would use agency services should they be assigned to the control group. Enrollees completed a baseline telephone interview and were then randomly assigned to the treatment or control group.

After random assignment, control-group members continued relying on agency services or, if newly eligible for Medicaid personal care, 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 develop acceptable written plans for spending their allowance.<sup>5</sup> Arkansas consumers could use their allowance to hire workers (except spouses or representatives) and to purchase other services or goods related to their 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.

With few exceptions, consumers chose to have the program's fiscal agents maintain their accounts, write checks, withhold taxes, and file their tax returns. In addition to helping develop acceptable spending plans, program counselors could advise consumers about recruiting, training, and supervising workers. They also monitored 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.

■ **Expected effects on quality.** By shifting control over personal care services from agencies to consumers, IndependentChoices was anticipated to bring about changes in the types, providers, and scheduling of those 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.<sup>6</sup> However, this shift in control could also have negative effects, if managing the allowance or supervising workers is difficult, the loss of nurse supervision is problematic, qualified workers cannot be found, or consumers purchase insufficient assistance. In addition, effects may differ for elderly and nonelderly consumers if they have differential ability to manage their care and need a different mix of services.

## Study Methods

■ **Data collection.** Data for this analysis were drawn from two computer-assisted telephone surveys of enrollees.<sup>7</sup> We constructed control variables from responses to the baseline survey and outcome variables from responses to a follow-up 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 people. The follow-up survey, administered between September 1999 and February 2002, was completed by 1,739 people (89 percent of the treatment group and 85 percent of the control group). Although we encouraged sample members to respond to the surveys themselves if possible, the use of proxy respondents was widespread. Proxies completed 71 percent of follow-up 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 helped manage their care, to respond to the questions.

To mitigate bias in our analysis, we omitted questions about consumers' unmet needs, satisfaction, and paid caregiver performance if the proxy respondent was a paid caregiver. During analysis, we controlled for use of proxies at baseline and performed sensitivity tests to assess the effects of proxy responses on our findings.

■ **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 treatment group), rather than of actually receiving it. Some treatment-group members were not receiving the allowance at the time of the nine-month sur-

vey (because they disenrolled from IndependentChoices or never developed an acceptable spending plan) and may have been receiving assistance from other paid sources. Around the time of that survey, 83 percent of treatment-group respondents were receiving help from paid caregivers. Fourteen percent of them (11 percent of the treatment group) had disenrolled. Thus, responses from these disenrollees pertained to care from home care agencies and other sources, rather than to care purchased with the IndependentChoices allowance.

We used binary logit models to estimate program impacts on our outcome measures, all of which were categorical.<sup>8</sup> Although random assignment ensures that the treatment and control groups should be similar, restricting the sample to enrollees with available data on a given outcome could create differences between the two groups. Thus, we used the logit models to control for baseline measures of demographic characteristics, health and functioning, receipt of personal care, satisfaction with care and life, unmet needs, reasons for and month of enrollment, work and community activities, whether had a proxy respondent, and whether appointed a representative.

We derived many of the outcome measures from survey questions with four-point scales by converting each scale into two alternative binary measures—one for the most favorable rating (very satisfied) and one for an unfavorable rating (somewhat or very dissatisfied). We then estimated impacts on each measure so that readers could easily determine whether consumer direction increased the proportion giving the highest satisfaction rating, reduced dissatisfaction, or had both effects. For every outcome, we estimated the logit model separately for elderly (age sixty-five or older) and nonelderly (ages eighteen to sixty-four) sample members because impacts and the relationship of the outcomes to the control variables might differ for the two age groups.

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 variable took a value of 1, with each sample member first assumed to be a treatment-group member, and then a control-group member. The *p*-values of the estimated coefficients on the treatment status variable were used to assess the statistical significance of the impacts (in exhibits).<sup>9</sup> The impact estimates are nearly always similar to treatment-control differences in means.<sup>10</sup>

With 473 nonelderly cases and 1,266 elderly cases in the analysis sample (each split roughly equally between the treatment and control groups), we have 80 percent power to detect impacts of 11.4 and 7.0 percentage points, respectively, for binary outcome variables with a mean of .50 (assuming two-tailed tests at the .05 significance level). Although smaller impacts on quality may not be detected, they are likely to be relatively unimportant to policymakers.

■ **Baseline characteristics of the analysis sample.** The analysis sample was predominantly white, female, and of limited education (Exhibit 1). Roughly one-third lived alone, and about two-thirds lived in areas that were either rural or urban

**EXHIBIT 1**  
**Selected Baseline Characteristics Of Respondents To The Follow-Up Interview Of The Cash And Counseling Study, By Age Group**

Characteristic	Ages 18–64 (N = 473)	Age 65+ (N = 1,266)
Age (years)		
18–39	27.1%	–
40–64	72.9	–
65–79	–	49.9%
80+	–	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
Urban 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
Is not receiving publicly funded home care	40.1	20.6
Receives 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

**SOURCES:** Mathematica Policy Research baseline evaluation interview, December 1998–April 2001; and the IndependentChoices (Arkansas Cash and Counseling) program.

with high crime or poor public transportation—types of isolation that could make it difficult to recruit caregivers. Many sample members said that they were in poor health and had functional limitations. Half of the nonelderly and one-third of the elderly were allotted more than twelve hours of weekly care in their personal care plans. (The Arkansas maximum is sixteen hours weekly, unless an exception is granted.) About 40 percent of the nonelderly and 20 percent of the elderly were not receiving any publicly funded home care at baseline.

■ **Outcome measures and sample restrictions.** We asked many of the survey questions used in this analysis only of subsets of respondents. The five types of outcome measures, the observations to which they were restricted, and sample sizes were as follows: Unmet needs (669 treatments, 831 controls), excluded: (a) sample members with a proxy respondent who also was a paid caregiver. Satisfaction with overall care arrangements (625 treatments, 772 controls), excluded: group (a), plus (b) sample members who could not form opinions due to cognitive impairments and those whose proxy respondents were not comfortable assessing sample members’ opinions. Satisfaction with paid caregivers (524 treatments, 523 controls), excluded:

groups (a) and (b), plus (c) sample members who did not receive any paid assistance during a two-week reference period shortly before the nine-month interview. Quality of life (548 treatments, 713 controls), excluded: groups (a) and (b), plus (d) the 136 sample members who had died. Adverse health events, general health, and self-care (808 treatments, 795 controls), excluded: only group (d).

## Study Results

IndependentChoices generally operated smoothly.<sup>11</sup> Four-fifths of consumers received their allowance within three months of random assignment. The rest disenrolled, had not developed an acceptable spending plan, or wanted to hire a worker but could not. Almost all used the allowance to hire family members or friends, and some bought assistive equipment, personal care supplies, and medications. Nine months after random assignment, 15 percent of treatment-group members (130 out of 885) had chosen to stop participating in IndependentChoices. In addition, forty-nine had died, sixty-four were no longer eligible for Medicaid or the personal care benefit, and one had been disenrolled by program staff.

Another important consideration in interpreting our results is that 32 percent of nonelderly and 20 percent of elderly control-group members who were living in the community about nine months after random assignment were not receiving paid personal assistance. This was particularly common among control-group members who were not receiving publicly funded home care at baseline. In the treatment group, only 5 percent of each age group were not receiving paid care at follow-up.<sup>12</sup>

### ■ Satisfaction with paid caregivers' reliability, schedule, and performance.

Treatment-group members were much less likely than control-group members were to report that their paid caregivers performed poorly, and they were more likely to say that caregivers performed exceptionally well (Exhibit 2). Compared with their control-group counterparts, about 60 percent fewer treatment-group respondents in both age groups said that their paid caregivers failed to complete tasks (calculated as the estimated effect divided by the control-group mean:  $-22.7/38.7 = -.59$ ;  $-20.9/36.2 = -.58$ ). Similarly, the proportion of treatment-group members who said that their paid caregivers sometimes did not visit as scheduled was much lower than that of controls among nonelderly and elderly consumers. Treatment-group members in both age groups were much more satisfied with their caregivers' schedules. Among sample members in both age groups who recently received paid assistance, treatment-group members were much more likely to say that they were very satisfied with the way their paid caregivers performed their duties.<sup>13</sup>

■ **Satisfaction with paid caregivers' relationships and attitudes.** More than 90 percent of treatment-group members and roughly 80 percent of control-group members in both age groups said that they were very satisfied with their relationships with paid caregivers (Exhibit 3). However, IndependentChoices appears to have reduced the reported incidence of neglect by paid caregivers by 58 percent for

**EXHIBIT 2**  
**Estimated Effects Of Independent Choices On Satisfaction With Paid Caregivers' Reliability And Schedule, By Age Group**

Outcome	Ages 18-64			Age 65+		
	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)
Completed tasks <sup>a</sup>						
Always	62.0%	36.8%	25.2% (< .001)	65.8%	47.2%	18.7% (< .001)
Usually/sometimes/rarely	16.0	38.7	-22.7 (< .001)	15.4	36.2	-20.9 (< .001)
Arrived late or left early						
Never	59.3	37.6	21.8 (< .001)	56.3	36.0	20.3 (< .001)
Often	11.4	25.0	-13.6 (.002)	9.4	19.3	-9.8 (< .001)
Did not come as scheduled <sup>b</sup>	7.7	28.5	-20.9 (< .001)	17.7	30.1	-12.4 (< .001)
Very satisfied with caregivers' schedule <sup>b</sup>	85.2	66.9	18.3 (< .001)	82.9	68.7	14.2 (< .001)
Could easily change schedule	53.5	41.6	11.8 (.046)	47.8	45.1	2.6 (.497)

**SOURCE:** Mathematica Policy Research nine-month follow-up evaluation interview, September 1999–February 2002.

**NOTE:** Means were predicted with logit models.

<sup>a</sup> 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.

<sup>b</sup> Effects were estimated by pooling the two age groups and including an age-treatment status interaction term in the model.

consumers in both age groups. Nonelderly treatment-group members were about one-third as likely as nonelderly control-group members were to say that their paid caregivers had been rude or disrespectful. For the elderly, the reduction was statistically significant but less pronounced. Also, although only small percentages of both the treatment and control groups reported instances of theft, treatment-group members in both age groups were significantly less likely than their control-group counterparts were to report theft by paid caregivers.

■ **Unmet needs and satisfaction with care arrangements.** Treatment-group members were less likely than control-group members were to report unmet needs, which were measured regardless of whether sample members were receiving paid assistance around the time of the interview (Exhibit 4). A significantly lower percentage of nonelderly treatment-group members than control-group members had unmet needs for help with personal care, household activities, and transportation. In particular, the proportion of nonelderly consumers not receiving needed help with transportation was about 40 percent lower. Among elderly consumers, there were smaller, but significant, reductions in unmet needs for help with household activities and transportation. We saw no treatment-control differences in unmet needs

**EXHIBIT 3**  
**Estimated Effects Of IndependentChoices On Satisfaction With Paid Caregivers’ Relationships And Attitudes, By Age Group**

Outcome	Ages 18–64			Age 65+		
	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)
Very satisfied with relationship <sup>a</sup>	95.0%	78.5%	16.5% (< .001)	92.2%	82.8%	9.4% (< .001)
Paid caregivers						
Neglected client	14.1	33.5	-19.4 (< .001)	10.9	26.2	-15.3 (< .001)
Were rude or disrespectful	10.5	29.5	-18.9 (< .001)	11.8	16.4	-4.7 (.051)
Took something without asking <sup>a</sup>	1.7	4.4	-2.7 (.040)	4.1	7.7	-3.6 (.033)

**SOURCE:** Mathematica Policy Research nine-month follow-up evaluation interview, September 1999–February 2002.

**NOTE:** Means were predicted with logit models.

<sup>a</sup> Effects were estimated by pooling the two age groups and including an age–treatment status interaction term in the model.

for help with routine health care for either age group.

Consumers’ satisfaction with their overall arrangements for paid and unpaid care appears to have increased under IndependentChoices (Exhibit 4). About one-third of nonelderly consumers in the control group were dissatisfied with their overall care, compared with only 6 percent for the treatment group. In addition to virtually eliminating dissatisfaction, IndependentChoices increased the ranks of very satisfied consumers by twenty-nine percentage points. Elderly control-group members were much less dissatisfied than their nonelderly counterparts were, but the treatment-control difference was still significant and sizable for this age group, suggesting positive program effects.

■ **Adverse events, health problems, and general health status.** Under IndependentChoices, 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 (Exhibit 5). For most measures, treatment-group members had slightly better outcomes, but most treatment-control differences were not statistically significant.

Treatment-group members were no more likely than control-group members were to fall, see a doctor because of a fall, or sustain injuries while receiving paid help. Moreover, although only a small proportion of nonelderly control-group members saw a doctor because of a cut, burn, or scald, a significantly smaller proportion of nonelderly treatment-group members reported these accidents. Treatment-group members also were somewhat less likely than control-group members were to report certain kinds of health problems that might indicate they had received inferior or insufficiently frequent care. IndependentChoices appears to

**EXHIBIT 4**  
**Estimated Effects Of Independent Choices On Unmet Needs And Satisfaction With Care Arrangements, By Age Group**

Outcome	Ages 18-64			Age 65+		
	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)
Has an unmet need for help with						
Daily living activities <sup>a</sup>	25.8%	41.0%	-15.2% (.001)	35.9%	36.5%	-0.7% (.823)
Household activities <sup>b</sup>	41.3	56.0	-14.7 (.002)	38.1	47.2	-9.1 (.003)
Transportation <sup>c</sup>	27.0	47.2	-20.2 (< .001)	29.0	36.5	-7.5 (.009)
Routine health care <sup>d</sup>	26.6	32.3	-5.7 (.189)	29.2	32.3	-3.1 (.285)
Satisfaction with overall care arrangements <sup>e</sup>						
Very satisfied	71.0	41.9	29.2 (< .001)	68.3	54.0	14.3 (< .001)
Dissatisfied	6.0	31.4	-25.4 (< .001)	6.2	10.4	-4.3 (.026)

**SOURCE:** Mathematica Policy Research nine-month follow-up evaluation interview, September 1999–February 2002.

**NOTE:** Means were predicted with logit models.

<sup>a</sup>Daily living activities include eating, dressing, using the toilet, transferring from bed to chair, and bathing.

<sup>b</sup>Household activities include meal preparation, laundry, housework, and yard work.

<sup>c</sup>Transportation includes trips to and from a doctor’s office, shopping, school, work, and recreational activities.

<sup>d</sup>Routine health care includes help taking medications, monitoring blood pressure, and performing exercises.

<sup>e</sup>Includes arrangements for unpaid and paid help with daily living activities, activities around the house and community, routine health care, community services, and transportation and for use of care-related equipment.

have reduced the likelihood of nonelderly consumers’ developing or experiencing worsened bedsores by more than half and their likelihood of having problems with shortness of breath by one-fourth. Elderly treatment-group members reported fewer problems with muscle contractures than elderly control-group members did.

■ **Satisfaction with life.** Treatment-group members in both age groups were nearly twenty percentage points more likely than control-group members were to say that they were very satisfied with the way they were spending their lives (Exhibit 6). There was an equally large treatment-control difference, in the opposite direction, in the percentage of nonelderly adults who were dissatisfied with their lives. The treatment-control difference in the percentage of elderly consumers who were dissatisfied was statistically significant but less pronounced.

**Discussion**

The Cash and Counseling approach of increasing Medicaid beneficiaries’ choice and control over their personal assistance yielded very large, positive treatment-control differences on virtually all indicators of satisfaction and unmet

**EXHIBIT 5**  
**Estimated Effects Of Independent Choices On Adverse Events, Health Problems, And**  
**General Health Status, By Age Group**

Outcome	Ages 18–64			Age 65+		
	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)	Predicted treatment-group mean	Predicted control-group mean	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 doctor because of fall <sup>a</sup>	4.4	4.1	0.3 (.849)	5.4	4.6	0.7 (.587)
Saw doctor because of cut, burn, or scald <sup>b</sup>	1.3	4.0	-2.7 (.070)	1.4	1.9	-0.5 (.479)
Was injured while receiving paid help <sup>b</sup>	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 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 urinary tract infection	19.4	21.6	-2.2 (.560)	18.2	21.0	-2.8 (.230)
Bedsore developed or worsened <sup>a</sup>	5.9	12.6	-6.7 (.012)	7.5	6.8	0.7 (.640)
General health status						
Current health poor relative to peers <sup>a</sup>						
	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:** Mathematica Policy Research nine-month follow-up evaluation interview, September 1999–February 2002.

**NOTE:** Means were predicted with logit models.

<sup>a</sup> Effects were estimated by pooling the two age groups and including an age-treatment status interaction term in the model.

<sup>b</sup> Impacts could not be estimated with the logit model. Results presented are the unadjusted means and treatment-control differences.

needs examined. Perhaps these large effects should not be surprising. Given their expressed preference for hiring their own workers, beneficiaries who were randomly selected to receive the allowance might be expected to report greater satisfaction with their care than those who wished to have this opportunity but were denied it. However, consumers' actual program experiences might have fallen short of expectations in many ways. Had expectations not been met, the treatment group might have reported lower satisfaction levels than the control group did.

Apparently, treatment-group members find that having intimate care, such as help with bathing and dressing, performed by a person of one's own choosing is

**EXHIBIT 6**  
**Estimated Effects Of IndependentChoices On Satisfaction With Life, By Age Group**

Outcome	Ages 18–64			Age 65+		
	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)	Predicted treatment-group mean	Predicted control-group mean	Estimated effect (p-value)
Satisfaction with the way spending life these days						
Very satisfied	43.4%	22.9%	20.5% (< .001)	55.5%	37.0%	18.5 (< .001)
Dissatisfied	24.1	46.9	-22.7 (< .001)	17.0	25.3	-8.3 (.004)

**SOURCE:** Mathematica Policy Research nine-month follow-up evaluation interview, September 1999–February 2002.

**NOTE:** Means were predicted with logit models.

much more satisfactory than having it performed by a stranger. Furthermore, the ability to obtain this care at the times of day or week desired, rather than when an agency can deliver it, can be tremendously freeing (for example, someone who is an early riser would not have to wait in bed until an aide came and helped them).

The fact that treatment-group members were much more likely than control-group members were to say that their workers almost always showed up on their scheduled days, were punctual, and completed their tasks suggests that these personally selected workers were much more reliable than agency workers were. Furthermore, in interviews with some treatment-group members and their representatives, ethnographic researchers heard numerous stories about former agency workers doing few of their scheduled tasks during their visits.<sup>14</sup> This improvement in performance is not surprising when one considers that workers in IndependentChoices are actually employed by care recipients and usually have close personal relationships with them. Some treatment-group members did fire people they had hired, including relatives, who did not work out. In contrast, control-group members could only complain to the agencies, which might not respond, especially if replacement workers were not available. In addition, treatment-group members always had the option of disenrolling and accepting agency care if self-direction was not working well for them.

Finally, treatment-group members could instruct their hired workers on how they wanted their care delivered, while many control-group members were reluctant or felt they lacked authority to do so with their agency workers. For example, some treatment-group members told ethnographic interviewers that they appreciated being able to hire someone who was able and willing to cook the ethnic foods they liked.

It is also important that the health of beneficiaries in the IndependentChoices group did not suffer and, by a few measures, may have improved. Program critics were concerned that untrained family members might be less able to prevent falls or might not periodically move the limbs of or rotate beneficiaries who are not

able to move on their own. The absence of periodic visits from nurses to oversee care also raised concerns. However, family members have always provided most of the care that beneficiaries receive, so those helping treatment-group members had ample preparation, if not formal training, to provide adequate care.

The positive impacts on unmet needs and on satisfaction with life, overall care arrangements, and transportation assistance were attributable in part to the higher proportion of treatment-group members receiving any assistance from paid caregivers at follow-up. However, even when the sample is restricted to people receiving paid care, the treatment group has significantly lower proportions with unmet needs and markedly higher proportions who were very satisfied with their lives, overall care, and transportation.

One might also be concerned that any dissatisfaction with IndependentChoices is underestimated because disenrollees were asked about their recent care, rather than about care received while enrolled. However, a sensitivity test in which we excluded treatment-group members who had disenrolled from IndependentChoices did not materially change the results. The fact that 96 percent of all treatment-group respondents, including disenrollees, said that they would recommend the program to others confirms that even disenrollees found IndependentChoices to be a desirable alternative to agency care.<sup>15</sup>

■ **Study limitations.** The high rate of proxy use may raise concerns that proxy respondents would respond more favorably than would the sample members in the case of the treatment group (but not the control group), because some proxies benefited from the program. To minimize this possibility, we did not allow proxy respondents who were paid caregivers to respond to questions on satisfaction, unmet needs, or quality of life. Nonetheless, responses from the other proxy respondents could lead to inflated impact estimates for these outcomes. However, sensitivity tests show positive and statistically significant effects on all of these outcomes for sample members who responded themselves. In addition, impacts on all outcomes except unmet needs were significant for sample members who had (nonhired) proxy respondents. Thus, impacts do not appear to be overestimated by the use of proxy respondents.

Consumers' demonstration experiences and survey responses might have been affected by their participation in Medicaid home and community-based waiver programs during the evaluation follow-up. Nearly two-thirds of elderly sample members were enrolled in the Arkansas ElderChoices waiver program for at least part of their follow-up period. ElderChoices provides up to forty-three hours per month of agency-delivered homemaker services to elders who qualify for nursing home-level care. The nurse supervision that agencies provide could have reduced the likelihood that elderly treatment-group members experienced adverse health effects. 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 as or better than control-group members did.

In addition, because our findings are based on one (relatively new) consumer-directed care program in one state, they might 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 probably would also be lower in those states.

Our relatively short follow-up period also might have affected our findings. Some program effects might not persist over time, as consumers age or lose paid family caregivers. Moreover, consumers' experiences with personal assistance under consumer direction might 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 could eventually diminish.

■ **Implications for policymakers.** The estimates presented here provide support from a quality-of-care standpoint for the October 2002 decision by Arkansas and federal Medicaid administrators to renew IndependentChoices after the initial demonstration period had ended. The results of this analysis also should be useful to states that are contemplating voluntary consumer-directed program options and to organizations that advocate for the elderly.

■ **Future analyses.** Although the quality and consumer satisfaction results suggest that the Cash and Counseling model, as implemented under IndependentChoices, may be good for recipients of disability-related supportive services, other factors must be examined before the desirability of consumer-directed care can be fully confirmed in Arkansas and elsewhere. Public costs could increase or decrease under IndependentChoices—a critical factor in times of state budget crises. Companion analyses will examine how IndependentChoices affected the use and cost of Medicaid personal care services, as well as the total cost to Medicaid and Medicare for acute and long-term care. We also will examine program effects on informal caregivers and on 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's impacts on adults in the two other study states (Florida and New Jersey) and on children (in Florida). If the results of these studies support the strongly positive effects found here, states can adopt the Cash and Counseling model of consumer-directed supportive services with confidence.

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## NOTES

1. K.J. Mahoney, K. Simone, and L. Simon-Rusinowitz, "Early Lessons from the Cash and Counseling Demonstration and Evaluation," *Generations* (Fall 2000): 41-46.
2. A.E. Benjamin, R. Matthias, and T.M. Franke, "Comparing Consumer-Directed and Agency Models for Providing Supportive Services at Home," *Health Services Research* (April 2000): 351-366.
3. Includes 467,487 users of states' optional personal care benefits in 1998 and 1999. See A. LeBlanc, C. Tonner, and C. Harrington, "State Medicaid Programs Offering Personal Care Services," *Health Care Financing Review* (Summer 2001): 155-173. Also includes 688,152 users of home and community-based waiver program services in 1999. See M. Kitchener and C. Harrington, *Medicaid 1915(c) Home and Community Based Waivers: Program Data, 1992-1999* (San Francisco: University of California, San Francisco, August 2001). Because some people receive services from more than one program, the total number of users may be overestimated.
4. L. Velgouse and V. Dize, "A Review of State Initiatives in Consumer-Directed Long-Term Care," *Generations* (Fall 2000): 28-33.
5. J. Schore and B. Phillips, "Putting Consumer Direction into Practice: Implementing the Arkansas IndependentChoices Program," Draft Report (Princeton, N.J.: Mathematica Policy Research Inc., December 2002).
6. B. Phillips et al., *Evaluation of the Cash and Counseling Demonstration: Design Report for Arkansas* (Princeton, N.J.: Mathematica Policy Research Inc., April 1997).
7. A more detailed description of research methods is available from the authors upon request. Send e-mail to Randall Brown, rbrown@mathematica-mpr.com.
8. We chose to measure impacts by estimating straightforward binary logit models on key individual outcome measures rather than to create and analyze indexes that combine the various measures for several reasons: (1) The meaning of what is being measured is clearer when actual survey questions are examined; (2) the magnitude of impacts is easier for nontechnical readers to grasp; (3) indexes use arbitrary weights for the components and treat ordinal measures as if they were cardinal; and (4) indexes sometimes mask important effects on component measures.
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 the estimated effects.
10. For fifty-three of the sixty estimates in this paper, the estimated treatment-control differences from the logit models are within two percentage points of the simple difference in mean outcomes between the two groups (available from the authors on request). The statistical significance of the alternative estimates differed in only one instance. This similarity suggests that any compositional differences between the two groups introduced by survey nonresponse or necessary sample restrictions are relatively minor.
11. For a more extensive set of estimates and results of sensitivity tests, see L. Foster et al., *Does Consumer Direction Affect the Quality of Medicaid Personal Assistance in Arkansas?* (Princeton, N.J.: Mathematica Policy Research Inc., March 2003). Regarding early operation of IndependentChoices, see Schore and Phillips, "Putting Consumer Direction into Practice"; and B. Phillips and B. Schneider, *Moving to IndependentChoices: The Implementation of the Cash and Counseling Demonstration in Arkansas* (Princeton, N.J.: Mathematica Policy Research Inc., May 2002).
12. S. Dale et al., "The Effect of Consumer Direction on Personal Assistance Received in Arkansas," Draft Report (Princeton, N.J.: Mathematica Policy Research Inc., December 2002).
13. While the *p*-values on the individual coefficients may overstate the overall statistical significance of the estimates, given the multiple hypotheses being tested, jointly testing the hypotheses in this and other tables with the Bonferroni method would not change our assessment of significance. The great majority of the estimated coefficients on treatment status are significant at even the .001 level. The consistency of the estimates for the younger and older age groups also suggests that the results are robust.
14. J. Eckert, P.M. San Antonio, and K.B. Siegel, "The Cash and Counseling Qualitative Study: Stories from the IndependentChoices Program in Arkansas," Draft Report (Baltimore: University of Maryland, Baltimore County, Department of Sociology/Anthropology, 2002).
15. Schore and Phillips, "Putting Consumer Direction into Practice."