

The Cost-Effectiveness of Home- and Community- Based Long-Term Care Services: Review and Synthesis of the Most Recent Evidence*

Publicly funded home- and community- based services (HCBS) have expanded rapidly over the past decade in response to popular demand and the desire to reduce long-term care (LTC) costs while improving quality of life. The programs have also evolved to include new models of payment and organization, such as capitated care programs, Medicare payment caps and consumer-directed care. This brief is a comprehensive summary of recent studies examining the costs and effectiveness of the new generation of HCBS programs. The studies do not resolve the issue of whether HCBS expansion results in budget-savings, budget neutrality, or an increase in aggregate costs such as that associated with the first generation of HCBS. They do show that HCBS increase the welfare of clients and informal caregivers. The evidence also suggests that managed care, payment changes and consumer-directed care are promising mechanisms for efficient, effective delivery of HCBS.

This policy brief is a comprehensive review and summary of recent studies examining the new generation of HCBS programs. These programs include expansive Medicaid waivers, as well as new models of payment and organization, such as capitated LTC, Medicare payment caps and consumer-directed care. The brief examines the evidence available to address three key policy questions:

- 1) How have expanded HCBS benefits and new models of payment and organization affected LTC costs?
- 2) How have they affected the welfare of clients and informal caregivers?
- 3) How can HCBS be provided more efficiently?

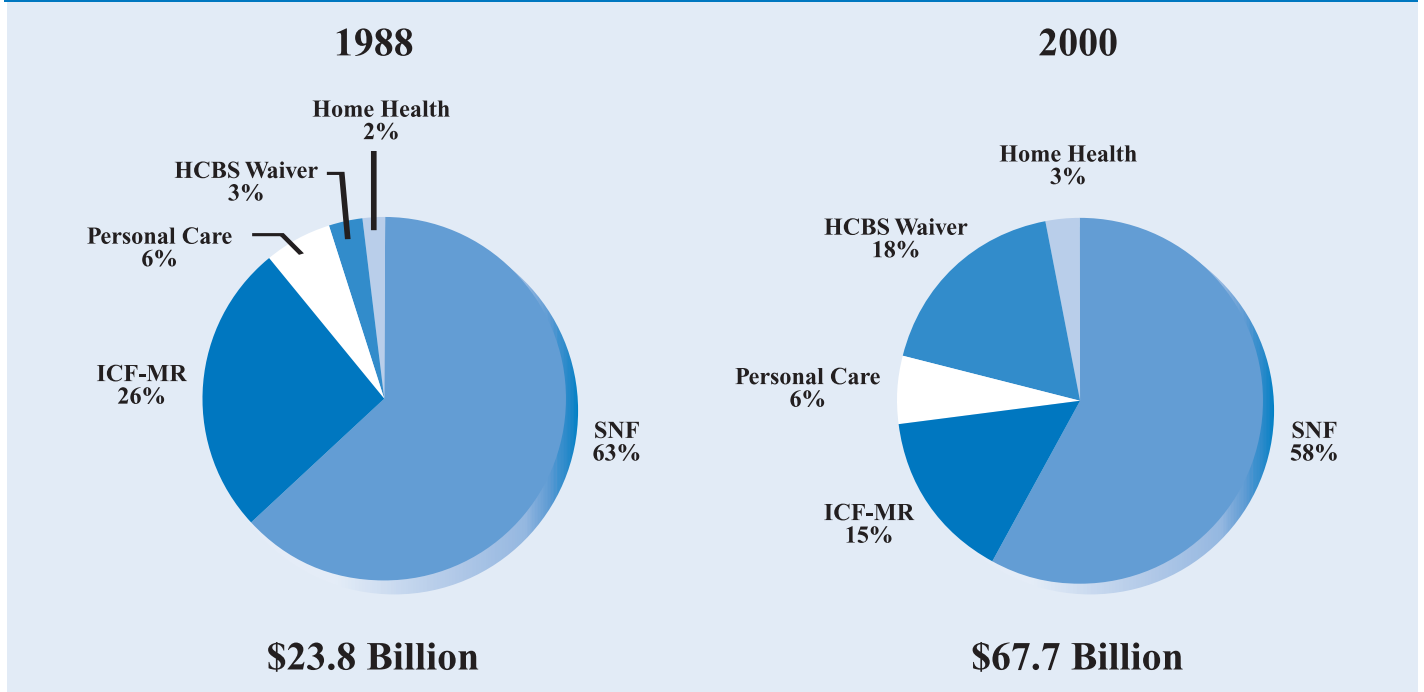
Move to Rebalance the LTC System in Favor of HCBS

Public financing has historically favored institutional care over HCBS, but recent efforts have been made to rebalance the LTC system in favor of HCBS. This shift, which has been occurring over the past decade, is based on two ideas:

- 1) Individuals prefer care in the home or community compared to in-facility care.
- 2) For certain individuals who would otherwise receive nursing home care, it is possible to improve quality of life and provide lower cost care at home or in an “alternative” residential setting.

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Figure 1. Distribution of Medicaid LTC Expenditures: 1988-2000



Note: These figures include spending for individuals with mental retardation and developmental disabilities.
 Source: Wiener, Tilly and Alecxih, 2002.²

In support of these ideas, states have expanded HCBS through a number of different coverage, financing and delivery mechanisms.

- In the period 1988 to 2000, the share of Medicaid LTC dollars allocated to skilled nursing facilities fell from 63 percent to 58 percent.
- In contrast, the share of Medicaid LTC dollars allocated to HCBS grew from 11 percent to 27 percent (see Figure 1).

1915(c) HCBS Waiver Program: One of the key sources of Medicaid HCBS expansion was authorized by Congress in 1981 to provide states with matching federal dollars to expand HCBS and shift LTC away from institutional settings.¹

Significant Expansion and Changes in HCBS Require a New Look at Costs and Outcomes

Early demonstration studies were quite useful in providing broad lessons regarding HCBS. However, they are less informative in evaluating the costs and benefits associated with new models of payment and organization that have accompanied the recent growth in HCBS. These models include capitated care programs, Medicare payment caps and consumer-directed care—all of which have spawned new research with implications for the future design of HCBS (see Table 1).

- **Early demonstration studies found increased costs, but increased client/care-giver welfare.** The studies that examined early HCBS demonstration programs found that HCBS *slightly reduced nursing home use, but increased overall LTC spending*. This find-

Table 1. Summary of Evaluations

Program	References	Effectiveness	Costs	Randomized Design	Multivariate Methods
Medicaid Waiver Evaluations					
OR, WA, WI	U.S. GAO, 1994 ³	N/A	–	No	No
CO, WA, OR	Alecxi et al., 1996 ⁴	N/A	–	No	Yes
Consumer Directed Care					
California IHSS Program	Benjamin et al., 2000 ⁵	+	N/A	No	Yes
Cash-and-Counseling	Foster et al., 2003 ⁶ Dale et al., 2003 ⁷	+	+	Yes	Yes
Capitated Programs					
ALTCS	McCall et al., 1996 ⁸ McCall and Korb, 1997 ⁹ Weissert et al., 1997 ¹⁰	+/-	–	No	Yes
MSHO	Kane et al., 2003 ¹¹ Kane and Homyak, 2003 ¹²	Stable	+	No	Yes
PACE	Chatterji et al., 1998 ¹³ White et al., 2000 ¹⁴	+	+	No	Yes
Texas STAR+PLUS	Border et al., 2002 ¹⁵	Stable	–	No	No
Wisconsin Family Care	Alecxi et al., 2003 ¹⁶ APS Healthcare Inc., 2003 ¹⁷	+	+	No	No
Medicare Home Health Care					
Demonstration payment system	Cheh, 2001 ¹⁸	Stable	–	Yes	Yes
Interim Payment System	McCall et al., 2001, 2002, 2003 ^{19, 20, 21} Laguna Research Associates, 2002 ²²	Stable	–	No	Yes

Abbreviations: ALTCS=Arizona Long-Term Care System; CO=Colorado; GAO= General Accounting Office; IHSS=In-Home Supportive Services; MSHO=Minnesota Senior Health Options; N/A=Not applicable; OR=Oregon; PACE=Program of All-Inclusive Care for the Elderly; WA=Washington; WI=Wisconsin.

ing has been attributed to a perceived “moral hazard” or “woodwork” effect whereby more people used HCBS than would have entered a nursing home had publicly funded HCBS not been available.

Early, randomized experimental studies found the main advantages of HCBS to be psychosocial: increased life satisfaction, social activity, social interaction, and informal caregiver satisfaction. Very few of the early studies found

statistically significant differences in survival or physical and mental functioning between HCBS and nursing home groups.

- **Recent evaluations of Medicaid waiver programs generally show cost-savings, but have design weaknesses.** Despite the growth of Medicaid waiver programs in the past two decades, very few studies have been conducted examining the relative costs or effectiveness of these programs. The available studies have focused on a limited number of states—Colorado, Oregon, Washington, and Wisconsin—that are not typical of most states and that have employed a variety of policies, along with expanded HCBS, to constrain LTC costs:

- A General Accounting Office (GAO) study of waiver programs in Oregon, Washington, and Wisconsin found that average expenditures on Medicaid nursing home recipients exceeded average expenditures on HCBS waiver recipients, even after accounting for Supplemental Security Income (SSI) payments that these community-dwelling residents received.²³ This study is limited, however, because it only considers *average costs per recipient* and not *aggregate* Medicaid spending when comparing HCBS waiver versus nursing home expenditures.
- Another study showed that growth in Medicaid spending on HCBS waiver programs was associated with overall Medicaid savings in three states: Colorado, Oregon, and Washington.²⁴ The study used an empirical strategy that compared projected and actual Medicaid LTC costs over time, controlling for several key variables. Concerns with the selection of states, unmeasured state and time varying factors, and the fact that the states made changes in LTC policy beyond offering HCBS (e.g., employing nursing

home diversion policies) make it difficult to conclude that HCBS waiver programs decrease Medicaid LTC costs.

- **Consumer-directed care is associated with greater client satisfaction without decreasing quality.** Initial evaluations of consumer-directed care show better (or at least equivalent) client outcomes compared to agency-directed care. Preliminary data on the cash and counseling demonstration, however, indicate that it is more costly than agency-directed care.

Initial estimates in Arkansas showed that costs were higher for the treatment group relative to the control group during the first year after enrollment for two related reasons.²⁵ First, a substantial proportion of the agency-directed control group did not receive any of the paid care for which they were eligible. Second, for individuals in the control group who did obtain paid care, they received only two-thirds of entitled services. Thus, because individuals in the treatment group generally used the services for which they were eligible and individuals in the control group did not, program costs were higher for the consumer-directed group.

Roughly 30 states offer consumer-directed care programs,²⁶ which allow consumers to recruit, train, hire, supervise, and fire care providers. Some states provide cash payments to beneficiaries to handle the financial aspects of their care as well. The literature on these programs mostly includes descriptive studies, with two notable exceptions outlined in Table 2.

- **Capitated LTC programs are associated with cost-savings without decreasing quality.** Several states have implemented demonstration programs that integrate acute and LTC services through managed care and capitated payments, providing services that neither Medicare nor Medicaid would otherwise cover (see Table 3).

Table 2. Summary of Two Studies of Consumer-Directed Care Programs

<p>California’s In-Home Supportive Services (IHSS)</p>	<p>“Cash & Counseling” Demonstration Projects: Arkansas, Florida and New Jersey</p>
<ul style="list-style-type: none"> • A recent study compared a random sample of consumer-directed care recipients in all 58 counties with agency-directed care recipients in the 12 counties that have this exception.²⁷ • Individuals who received consumer-directed care reported greater satisfaction and sense of security, along with fewer unmet needs of instrumental activities of daily living (IADLs). • No statistical difference was found between groups in measures of physical and psychological risk or unmet daily living needs. • The study’s findings are limited, however, because the two groups were not randomly assigned in the 12 counties with agency direction. 	<ul style="list-style-type: none"> • Enrollees were randomly chosen to direct their own personal care or receive agency-directed services. • Only preliminary results were available for Florida and New Jersey, but final results in Arkansas show that the consumer-directed care group was found to be more satisfied with its care, have fewer unmet needs, and report better quality of life scores.^{28, 29} • Preliminary data on costs found higher expenditures for the consumer-directed group due to the fact that many members of the agency-directed group did not access the paid care for which they were eligible while members of the consumer-directed group generally accessed all of the care for which they were eligible.³⁰

A 1995 review³¹ of the first generation of these programs (S/HMO, On Lok/Program for All-inclusive Care for the Elderly (PACE), Medicare Tax Equity and Fiscal Responsibility Act (TEFRA) HMOs, and Arizona Long Term Care System (ALTCS) found that:

- These programs may have benefited from a favorable selection of enrollees.^{32,33}
- They generally reduced hospital utilization but not utilization of nursing home or other LTC services.
- They had an inconclusive effect on enrollees’ health and well-being.
- Enrollees were generally satisfied with their care, but some individuals with more impairment were less satisfied than less impaired enrollees.

A review of more recent evaluations—while being mindful of their methodological limitations—shows these programs as having varying but promising results in terms of better client outcomes, lower utilization, and cost savings (see Table 4).

- **Payment incentives influence utilization.** Although a significant proportion of HCBS funding occurs at the state and local levels, the federal Medicare program is an important payer of home health care services. *Medicare home health care for skilled services is typically quite different than state and locally covered HCBS, but recent changes in the method of payment provides an opportunity to analyze whether payment incentives matter for HCBS costs and quality.* The Balanced Budget Act (BBA) of 1997 changed Medicare home health eligibility and cover-

Table 3. In Brief: Five Capitated LTC Programs

Program Name	Location	Dual/ Medicaid Only	Voluntary/ Mandatory	Eligibility	Services
Arizona Long-Term Care System (ALTCS)	Arizona	Medicaid Only	Mandatory	Elderly and physically disabled individuals	<ul style="list-style-type: none"> • Combines both acute and LTC services
Minnesota Senior Health Options (MSHO)	Minnesota: 7 counties	Dual	Voluntary	Individuals dually eligible for Medicaid and Medicare	<ul style="list-style-type: none"> • Integrates acute and LTC
Program of All-Inclusive Care for the Elderly (PACE)	National sites	Dual	Voluntary	Older individuals who meet Medicaid nursing home eligibility criteria	<ul style="list-style-type: none"> • Integrates social and medical services • Covers all primary, acute, and LTC including physician services, hospitalizations, nursing home care, therapies, pharmaceuticals, and equipment
Texas STAR+PLUS	Texas: Harris County	Medicaid Only	Mandatory	SSI and SSI-related aged and disabled Medicaid recipients	<ul style="list-style-type: none"> • Provides acute and LTC Medicaid services through a managed care system • Assigns enrollees with a care coordinator, who manages all enrollee services; develops an individual plan of care with enrollees, family members, and providers; and authorizes all LTC services
Wisconsin Family Care	Wisconsin: 9 counties	Medicaid Only	Voluntary (prior to 1/2002); Mandatory (after 1/2002 for anyone wishing to access waiver services)	Older adults and adults with physical or developmental disabilities who meet functional and financial criteria	<ul style="list-style-type: none"> • Provides information and advice about community resources at aging and disability resource centers • Manages and delivers LTC services through care management organizations (CMOs)

Table 4. Recent Evaluations of Capitated LTC Programs

ALTCS

- ALTCS beneficiaries had *lower utilization of costly services and more evaluation and management services than a New Mexico comparison group.*³⁴
- *The quality of care in Arizona nursing homes is lower than New Mexico’s, when measured by the incidence of pressure sores, fever, and indwelling urinary catheter use.*³⁵
- ALTCS is associated with *costs savings of 35 percent of nursing home costs (over a 24-month period).*³⁶

Minnesota Senior Health Options

- No difference in outcomes (including function, satisfaction and caregiver burden) were found when enrollees were compared to two comparison groups, which is not surprising given that the main intervention of the program is funding consolidation.³⁷ In the evaluation of costs under the MSHO, the Medicare capitated rate for MSHO was higher than the Fee for Service (FFS) rate in the control group for both community and nursing home residents after adjusting for demographic factors and prior health care utilization.³⁸

PACE

- PACE enrollees had *better client outcomes (e.g., fewer hospitalizations, better quality of life) than non-enrollees in the traditional FFS model.*
- The total capitated amount (Medicare and Medicaid costs) in the first year of enrollment for PACE enrollees was *9.7 percent higher* than non-enrollees.
 - PACE was associated with *42 percent lower Medicare spending and 86 percent higher Medicaid spending.*³⁹
 - In a sensitivity analysis that excluded two sites that were not considered representative of PACE (Bronx and On Lok), however, the PACE costs were *only 3.6 percent higher.*⁴⁰
- There is evidence of *favorable selection* into PACE, and thus, the possibility that unobservable factors are impacting study outcomes.⁴¹

Texas STAR+PLUS⁴²

- Texas STAR+PLUS ensured enrollees had access to care, while increased utilization of emergency room services was countered with lower inpatient hospital discharges and decreased average length of stay.
- Quality of care (based on studies of diabetic and depressed patients) was found to be adequate.
- Texas STAR+PLUS showed a 17 percent cost-savings compared to traditional FFS Medicaid.

Wisconsin Family Care

- Relative to a comparison group from other Wisconsin waiver participants, Family Care participants reported more positive outcomes in regards to choice and self-determination, satisfaction with services, community integration, and health and safety.⁴³
- There were no statistical differences for hospital use, emergency room use, diagnosis of decubitus ulcers and death for family care recipients.
- In Wisconsin, a sample of Family Care enrollees experienced a \$405 increase in average total monthly LTC spending compared to a matched group of Wisconsin Medicaid recipients not in the program using pre- and post-enrollment data.⁴⁴

Impact of the IPS:

- 22 percent decrease in the proportion of beneficiaries using home health services.⁴⁵
- 39 percent decrease in the number of visits per user.⁴⁶
- Limited support for worse outcomes under the IPS, possibly due to unobserved case-mix differences.⁴⁷
- Beneficiaries' functional status was not adversely affected, nor were major changes observed in satisfaction with home health care and quality of life.⁴⁸

age rules and reformed the payment methodology. The most important change under the BBA was the adoption of a prospective payment system (PPS) for home health care reimbursement.

A full evaluation of the PPS is currently underway, but there are two early sources of data on the payment system changes. First, the National Home Health Prospective Payment Demonstration was undertaken over the period 1995 through 1998 to compare a per-episode payment system relative to cost-based reimbursement. Second, while the PPS was being developed, the Health Care Financing Administration (now Centers for Medicare & Medicaid Services or CMS) instituted the interim payment system (IPS). The results from these two evaluations are strikingly similar. Both the PPS demonstration and the IPS resulted in less home health care use and stable beneficiary health outcomes. The IPS resulted in lower utilization with some increase in other health care utilization and fairly neutral health outcomes.

Research on the effect of the IPS showed cost savings due to a decrease in home health utilization in four out of the five Diagnosis Related Groups (DRGs) studied. Importantly, this savings does not take into

Impact of the PPS:⁴⁹

- A 17 percent decrease in the number of visits per patient during the first 120 days of care.
 - Skilled nursing services accounted for half of the difference.
 - The average number of therapy visits remained the same.
- A 33 percent decrease in the following eight months of care.
 - Skilled nurse and home health aide visits accounted for most of the difference.
 - *Physical and occupational therapy visits were significantly lower.*
- A decrease in average episode length by over one month.
- No significant impact was seen in quality of care in terms of decreased patient functioning, health status, and readmission rates.
 - A small negative impact was seen in terms of specific areas of patient satisfaction.
 - There was no evidence that access to care was limited.
 - The reductions in visits did not appear to affect the use of other health care services.

Note: Based on a comparison of the prospectively paid agencies versus the cost-reimbursed control agencies in the National Home Health Prospective Payment Demonstration.

account costs associated with increased rehabilitation hospital and LTC hospital care seen for all five DRGs. Overall, this research suggests that the IPS cuts in home health care have not had a large negative impact on beneficiary health.

Of the five DRGs studied—stroke, chronic obstructive pulmonary disease (COPD), heart failure, hip fracture and diabetes—only diabetes did not show a decline in home health care utilization following the BBA.

Recommendations to Policymakers

Recommendation #1: Focus on improving HCBS efficiency and outcomes.

- In general, HCBS provide benefits to enrollees. Some approaches appear more beneficial than others, however, and policymakers should continue to experiment and evaluate innovative models designed to improve a wide range of beneficiary outcomes.
- Managed care, Medicare payment changes, and consumer-directed care are all mechanisms towards providing HCBS in a more efficient manner. Policymakers should continue to experiment with and evaluate these programs.

Recommendation #2: Support solid research studies that will improve the understanding of HCBS.

- In general, the evidence on current policies is relatively weak and the accumulation of evidence quite slow.
- Most recent studies have relied predominantly on a quasi-experimental design, which leaves open the issue of selection bias among the treatment and control groups. Not a single evaluation of a capitated program is based on a randomized design. The PACE, MSHO, Texas STAR+PLUS, and Wisconsin Family Care programs would all be ideal candidates for the randomized assignment of individuals across a treatment and a control group.
- When incorporating a randomized controlled design is not feasible, emphasis should be on research that incorporate

more sophisticated statistical techniques that can compensate for a quasi-experimental research design.

- Three priority areas for further HCBS research are:

- 1) Conduct a multi-state, multi-year study to control for previously unaccounted for factors that may influence both HCBS Medicaid waiver use and LTC expenditures. Such an analysis should analyze LTC expenditures as a function of a state's Medicaid budget attributed to HCBS, a set of supply and demand side factors, and state and year fixed effects.⁵⁰ Grabowski and colleagues used this approach to analyze the effect of nursing home CON repeal on state Medicaid LTC expenditures for the period 1981 through 1998.⁵¹
- 2) Conduct more sophisticated analyses of managed LTC programs to control for the issue of “selection bias” created by the fact that individuals who volunteer to participate in a program such as PACE may differ in unmeasured ways from individuals who decline the program. For example, by finding an “instrumental variable” that predicts program enrollment but not the outcomes of interest such as costs and health outcomes, researchers could approximate a situation in which individuals were randomly assigned to the program under study.
- 3) Use the “differences-in-differences” approach to evaluate the effects of the Medicare PPS on utilization and outcomes by comparing a similar group that has not been affected by the policy of interest but has been influenced by the unobserved time trend.⁵²

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