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One of the many challenges today in health care is providing long-term care to the elderly. Those of the elderly who are frail, particularly those who are frail and poor or near poor, face limited options. Appropriate community resources which could enable them to continue residing in their own homes are scarce, fragmented, or nonexistent. Private insurance and public financing covering the cost of needed services are even more scarce. Yet outpatient clinics and hospitals are disproportionately utilized by the elderly population, and Medicare and Medicaid resources are stretched to the breaking point.

As the population ages, the problem will intensify. The number of persons over the age of 85—the group most likely to require long-term care services—will more than double over the next three decades (from 3.5 million to 7.2 million) (1). Meanwhile, public response to the plight of the frailest and oldest is immobilized by the cost implications of covering long-term care services. The private sector seems equally unlikely to devise ways to meet the demand.

A new managed care program offers a possible solution. The Program of All-inclusive Care for the Elderly (PACE) is a workable approach to caring for this high-cost, heavy care population. The PACE model can be financed with existing resources, using some creativity in restructuring public health care financing. As a handful of organizations throughout the country are now demonstrating, the PACE model—developed first by On Lok in San Francisco—is entirely possible for health care providers to operate.

The PACE Model

The PACE model consolidates care and financing to meet the needs of nursing home-eligible elderly persons (2). The features of the model are: 1) a philosophy of care that emphasizes maximum independence and dignity; 2) a focus on the frail elderly exclusively; 3) a comprehensive package of services; 4) vigorous management of all care by a multidisciplinary team of health care providers; and 5) financing through capitation rather than fee-for-service payments, with the provider at financial risk.

History

This care model was pioneered by On Lok, a community-based nonprofit agency in the Chinatown–North Beach–Polk Gulch area of San Francisco. At On Lok, which means "peaceful, happy abode," the model evolved over a period of 15 years in response to community needs. Service development for the frail elderly commenced in 1972 under grants and fee-for-service funding. By 1983, On Lok was operating the comprehensive, consolidated program with capitation financing from Medicare and Medicaid. Today, On Lok's PACE program serves 325 frail older persons in an area with about 16,000 persons over the age of 65.

Philosophy

The philosophy of the program is to maintain participants (PACE program enrollees) in the community for as long as medically, socially, and economically feasible. Continued community residence, independence, family support, and minimal disruption of the older person's life are the guiding precepts.

Focus on the frail

The target population for PACE is restricted to individuals who meet all of the following criteria: 1) over age 55 years, 2) certified for nursing home placement (not just "at risk"), and 3) reside in a defined geographical area.

At On Lok the average age of program participants is 83 years. Most are female (71%) and widowed (69%). Many are living alone in the community (24%), and less than 6% reside in nursing homes. Multiple acute and chronic medical problems are the norm, with each participant having an average of more than five serious medical conditions (i.e., heart disease, respiratory disease, stroke, diabetes, and Alzheimer's disease). Participants as a group are functionally impaired, with the vast majority needing assistance with the normal activities of daily living (84% need help to bathe, 60% to dress, 60% to walk, 65% to transfer from bed to chair, and 56% with toileting). Many are incontinent (43% bladder, 23% bowel).

Participants join PACE voluntarily and agree to receive all services through PACE while enrolled. Most are enrolled for life. The program cannot disenroll anyone because of increased frailty, but participants are free to disenroll and return to the fee-

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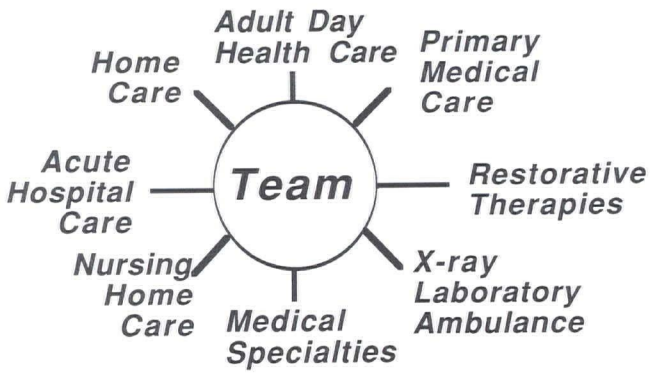

Figure—Model of care management by PACE multidisciplinary team.

for-service system at any time. Satisfaction with PACE has been high—only 2% have disenrolled due to dissatisfaction. Most disenrollment occurs through death or moving out of the service area. The average length of enrollment is 3.1 years. Thus, PACE takes care of these elderly people for the last few years of their lives.

Comprehensive, consolidated service package

The PACE service strategy incorporates prevention, rehabilitation, and maintenance. All the traditional Medicare and Medicaid covered services are provided, from acute care to personal care in the home. Nontraditional services are also given, including transportation, meals, and friendly visiting.

Most services are delivered in an adult day health center, which also serves as a clinic. At On Lok, there are four such centers. Participants are scheduled to attend the center at least weekly to receive monitoring, nursing, rehabilitation or maintenance therapy, personal care, and primary medical care. Participants who cannot manage at home on their own (i.e., at night) receive home care. Home care generally consists of home chore and personal care services, rather than home health services. A typical care plan includes three or four days of day center attendance each week, home-delivered meals on days of nonattendance, and some home care.

If an acute episode so requires, a participant is hospitalized. If the participant can no longer be cared for in the community, permanent placement in a nursing home under contract with PACE occurs. However, at no point is control of participant care relinquished to other providers.

Team-managed care

PACE is a *staff* model in all primary service areas, including adult day health care, primary medical care, and home care. Other services are provided through contracts, including inpatient care, laboratory and x-ray services, durable medical equipment, and medical specialty services. Key to the vigorous management of care, which is central in the PACE model, is the multidisciplinary team (Figure).

All health care disciplines serve on the team. The team includes registered nurses, social workers, primary care physician, nurse practitioner, rehabilitation therapists (physical, occupational), recreation therapists, dietitian, drivers, and health workers.

The multidisciplinary team manages, integrates, and provides care. Together team members assess need, plan treatment, provide most care, oversee contract services, monitor care and the participant's changing situation, and make adjustments to the care plan as needed. At least quarterly, each participant is reassessed by the team at weekly intake and assessment meetings. The team also meets at the beginning of each day to review changes in participants during the previous 24 hours and to make any adjustments to the care plan that may be indicated. Thus, the team's care planning at PACE is continuous (3).

Capitation financing

The rich array of services available through PACE and its intensive care management are made possible by Medicare and Medicaid waivers granted to PACE provider organizations. These waivers override the normal benefit definitions and limitations and allow "lock in." (Freedom of choice in the selection of fee-for-service providers is suspended for enrollees.) Program funding comes from Medicare, Medicaid, and, for those not eligible for Medicaid, private pay. All payments are per capita, i.e., in the form of capitation, and are pooled.

Rate-setting is independent of program performance and guarantees savings to the payers relative to existing fee-for-service costs. The Medicare portion is based on the Adjusted Average Per Capita Cost methodology used for Tax Equity and Fiscal Responsibility Act (TEFRA) health maintenance organizations (HMOs). However, rather than the age, sex, welfare, and institutional rate cells, the PACE rate incorporates a single frailty adjustor of 2.39 times Medicare's average county cost. This rate is estimated to save Medicare at least 5%. On Lok's Medicaid (Medi-Cal) rate is negotiated annually with the state Medicaid agency and currently equals 56% of nursing home costs in San Francisco County. On Lok's 1990 capitation rates and estimated savings to each of the payers are shown in the Table.

Since a single pool of funds results from these payments, the PACE multidisciplinary team is able to manage the resources considering only the needs of the participants. Fee-for-service restrictions do not apply, allowing the team complete freedom in prescribing, developing, and delivering services.

Analysis of the distribution of On Lok's cost experience reveals that most costs are incurred for adult day health care (47%), with home care second (16%). Inpatient care—both acute hospital and nursing home—accounts for just 13%.

Program performance

The PACE team clearly has reshaped the pattern of care given to the frailest elderly. Although all participants must meet state nursing home certification criteria to enroll in PACE, recent On Lok data indicate that less than 6% of enrollees are actually placed in nursing homes. Hospital care also has been effectively controlled. In 1990, On Lok's hospital utilization was just 1,200

Table
On Lok Capitation Rate Versus Estimated Fee-for-Service Costs for Frail Elderly Eligible for Medicare/Medicaid in San Francisco County (1990)

	On Lok Capitation Rate	Fee-for-Service Costs	Savings to Payers
Medicare	$914	$962	5%
Medicaid	$1,700	$3,035	44%
Total	$2,614	$3,997	49%

days per 1,000 per annum, compared to a rate of 2,202 per 1,000 per annum for urban California's entire 65+ age group (which includes both well and frail elderly) (4). Although this rate is extraordinarily low, On Lok's three-year average is just 2,000 per 1,000 per annum. Furthermore, a comparison group study conducted in San Francisco between 1983 and 1986, which looked at a community population of comparable frailty, found that On Lok's hospitalization rate was five times lower (comparison group rate at 10,017/1,000/annum); On Lok's nursing home utilization was 1.4 times lower than that of the comparison group (comparison group rate 7.9% of study days) (5).

Given that PACE participants are institutionalized less frequently than their peers in the fee-for-service system, it is important to compare their mortality rates. At On Lok, the mortality rate of 105 per 1,000 per annum compares favorably to the 186 per 1,000 per annum seen among nursing home residents (6).

From a cost perspective, On Lok's PACE program clearly is cost-competitive. Medicare saves 5%; Medi-Cal estimates savings at 44% over nursing home costs; and the overall public sector savings are conservatively estimated at between 5% and 15%.* At the same time, On Lok has been able to put aside 5% of its capitation revenues annually into a risk reserve fund as a means of self-insuring for future risks.

In operating the PACE model, On Lok has been able to provide quality long-term care in a community setting, at a cost to the public sector which is lower than that available in the traditional system, and has remained solvent despite having been at full financial risk for the last eight years.

The PACE Model Versus Other Models

PACE is a specialized approach. It controls risk through targeting a homogeneous, exclusively high-cost population; creates an extensive multidisciplinary team which manages and provides the care; and develops an organizational culture that fosters team spirit, commitment to the care of the elderly, and cost consciousness. As such, PACE differs from two other current approaches to the care of the elderly: case management programs and the Social HMOs (S/HMOs).

In contrast to the comprehensive package of services in PACE, most case management programs have access to fewer services, mostly nonskilled day or home care services. Medical care or rehabilitation services are, as a rule, not under the control of the case management team. The team, usually a combination of nurses and social workers, is also segregated from direct service delivery, limiting their ability to effect timely intervention as the elderly person's needs change. Finally, the case management model is hampered by the constraints of the fee-for-service reimbursement system which may limit the type and amount of services given and favor institutional over community-based care.

PACE differs from the S/HMO, which is also financed through capitation, in three important ways. First, PACE targets, and has its rate based on serving, the frailest elderly, while the S/HMO seeks to serve all elderly and must control for adverse selection by limiting enrollment of long-term care clients. PACE, with its small enrollment (no more than 400), manages risk at the individual client level, whereas the S/HMO manages risk actuarially by enrolling thousands of well and frail elderly (7). Second, by managing risk at the individual level, PACE can offer an open-ended, long-term care benefit, whereas the S/HMO must have a ceiling (depending on the program, from $6,000 to $12,000 per enrollee per year). Third, for its long-term care clients, the S/HMO relies on a brokerage/case management model of care rather than the consolidated model provided by PACE.

Replication of the PACE Model

Several questions have been raised about the replicability of On Lok's success with the PACE model. Are there characteristics which are unique to On Lok's primarily Chinese population which contribute to the model's success—a value to provide family support for the elderly, a less demanding approach to medical care, or epidemiological differences? Does the large immigrant population of San Francisco's Chinatown provide a low-cost labor pool? Will the elderly persons in communities less familiar with managed care be willing to give up their own private physicians to enroll in the PACE total care system? Will other providers be willing to assume the financial risk and are they capable of creating the kind of smooth-functioning team so crucial in tailoring care at PACE? These questions are being addressed through a national demonstration testing the replicability of PACE.

In 1986, Congress made On Lok's financing and service demonstration a permanent program. Shortly thereafter, the Robert Wood Johnson Foundation awarded On Lok a grant to study the feasibility of replicating the PACE model elsewhere. By the end of 1986, Congress made waivers available, on a three-year demonstration basis, for a test of the On Lok (PACE) model by up to 10 public or private nonprofit organizations. In 1990 the number of waivers was increased to 15, shortly after the first four PACE replication sites began operations under waivers.

Under a risk-sharing arrangement with the Health Care Financing Administration (Medicare) and each state Medicaid

*Public sector savings estimate is based on a comparison of the total public sector spending—including Medicare, Medicaid, Supplemental Security Income, housing subsidies, Title XX, and Older Americans Act Title III services—for On Lok's PACE participants and for a similarly frail comparison group (5).

agency involved, the financial risk to the replication sites for the first year is negligible, but increases gradually such that they will be at full financial risk at the close of the demonstration period. Assuming they are successful, authorization to operate the model will be permanent with Medicare and Medicaid capitation funding and full financial risk, so long as operations are effective.

In May 1991, the first two sites, in Portland, OR, and Boston, MA, completed the first of their three demonstration years under the waivers. The next two sites, in Columbia, SC, and Milwaukee, WI, will have completed their first year at the end of September and October, 1991, respectively. Four other sites have submitted their waiver applications and hope to begin operations in late 1991 or early 1992. Another seven are in earlier stages of development, with projected start dates from mid-1992 through as late as 1994.

The initial experiences of the replication effort are positive. All four of the first sites have found the transition from fee-for-service to capitation financing challenging but manageable. They have found that building an adequate census (at least 120 participants) is more difficult—and a more important financial risk factor—than is care management. That is, the threat of a catastrophic medical event which results in high hospital utilization is not as serious a financial threat as is low revenue due to low enrollment. More slowly than anticipated, but steadily nevertheless, all sites have increased their enrollments. Team effectiveness cannot be tested until waiver operations begin when the team has control over all services and complete responsibility for care management. The teams of the sites now operating under waivers are clearly increasing their effectiveness, with trust among team members growing as they become accustomed to collaborative decision-making.

Other lessons from the first period of the PACE replication are that approximately $1.5 million is required for the pre-waiver start-up costs and that an organization needs about three years to develop the services and communication systems necessary to operate the model under waivers. These requirements seem modest when compared to the cost and time required to build a nursing home capable of serving 300.

Challenges Facing the PACE Model

Several of the challenges to assuring that the first 15 sites complete the demonstration successfully are issues that would be faced by any new approach to care: human resources, institutionalization of the program in the state and federal bureaucracy, and name recognition by consumers. Apart from these issues, On Lok has two main concerns: 1) addressing quality assurance issues, and 2) making the model accessible to the middle-income elderly.

All of the traditional quality assurance mechanisms are available to a PACE site, e.g., licensing, annual recertification reviews, and audits. However, none of the existing modes quite "fits" because each is facility based or tied to a particular service (e.g., home health care). On Lok received a grant early in 1991 from a consortium of foundations to establish a quality assurance approach that is tailored to the special concerns of PACE; this project will have been completed by March 1992.

As currently financed, a middle-income person who is not eligible for Medicaid must pay the Medicaid portion of the PACE capitation rate. In 1990, at On Lok, this amounted to $1,700 per month. Although this is far less than the cost of a nursing home bed in San Francisco, it is considered too high an out-of-pocket expense by most of the middle-income elderly population. In the short run, On Lok is exploring ways to substitute PACE for nursing home benefits in long-term care insurance policies and to integrate the PACE model into HMOs (8). Toward a long-term solution, On Lok and the other PACE sites are educating public policymakers about the problem.

Conclusion

Although the PACE model has not yet been fully tested, the early results of the replication suggest that the PACE sites are becoming more adept at case management through the multidisciplinary team and at marketing the program to the frail elderly. It appears that the PACE model is a viable service and financing alternative to the current long-term care maze.

Recent innovations like S/HMOs and TEFRA HMOs have brought a significant share of the health care of the elderly from a fee-for-service to a managed care environment. Currently, most of the older persons enrolled in these programs are relatively young, healthy, and not in need of long-term care. However, as the managed care market share grows, and as the enrollees of managed care programs age in place, pressure to include long-term care services as part of the package will increase. PACE offers a potential solution for managing the risk inherent in long-term care provision. Through partnerships between HMOs and PACE, private initiatives, rather than revolutionary changes in the public sector, could eventually reshape long-term care financing and service delivery. It is conceivable that one day HMOs throughout the country will offer true "cradle to grave" service, with PACE as part of their service package.

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