
Home Health Care Cost Effectiveness: An Overview of the Literature

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DEBATE OVER THE SAVINGS POTENTIAL of home health services has sparked a number of studies comparing the costs of home care relative to the costs of hospitalization and to care in skilled nursing and intermediate care facilities. These comparisons have led several authors to conclude that if greater emphasis were placed on providing health services to patients in their homes in lieu of institutions, significant cost savings would be realized from lowered admissions, earlier discharges, and reduced capital construction costs for inpatient facilities.

Others counter that such generalizations fail to account for a number of important qualifying details. They point out, for example, that home health care may be less costly than institutional care for patients with lower levels of impairment but that cost savings tend to disappear when more severely impaired persons are cared for at home. Moreover, increased availability of home health care may increase the total costs of health care by increasing overall utilization. These caveats open to question whether in-home care is in fact a potential means of cost savings for health care programs.

In this paper, I discuss briefly the concept of cost effectiveness and summarize representative studies in the literature on cost effectiveness of home health care as they relate to hospital admission, early hospital discharge, and extended care. The mosaic regarding the probable effect of home health services on the total costs of health care is pieced together in the conclusion.

On balance, the articles discussed suggest that the cost of increased use of home health services would not be offset by decreases in the use of inpatient services. The total cost of health care therefore would increase. The issue that faces policymakers, then, is the worth of this component of a comprehensive medical care system relative to other types of public services.

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Cost Effectiveness Analysis

The past two decades have witnessed frequent attempts at systematic program evaluation guided by the principles of cost benefit and cost effectiveness. In cost benefit analysis, the cost of a health expenditure is compared with estimates of the monetary value of the benefits that are realized as a result. Three categories of benefits and costs—direct, indirect, and intangible—are considered. Direct costs include resources used in caring for the patient, such as physician services and pharmaceuticals. The loss of earnings by the patient that result from his or her inability to work is an example of indirect cost. Pain and the inconvenience of illness are intangible costs (1).

Cost effectiveness analysis is a special, narrower application of cost benefit analysis. In cost effectiveness analyses the costs of alternative ways of achieving a specific set of results are compared. Interest focuses on the alternative that either (a) incurs the least cost for a given outcome or (b) for a given cost, renders the highest level of outcome(1).

The cost effectiveness of home care is traditionally measured in terms of the difference between the costs of home health services and the costs of alternative modes of care. In most studies of the cost effectiveness of home health care, the health outcomes of patients in alternative treatment settings are assumed to be the same; in other words, alternative treatment modes are presumed to result in the same outcome but at different costs. Home health care is cost effective, for example, when the patient's condition is stabilized and maintained at less cost than by alternative service modes.

The designs, study populations, services, and costs addressed by research on home health cost effectiveness vary widely. Most of the studies comparing home care with alternative treatment modes, for example, are based on data available from service programs rather than from painstakingly designed research projects. The costs typically addressed are those incurred by the organization which conducts or supports the research, principally third-party underwriters, including governmental programs such as Medicare and Medicaid. Rarely do these take into account the value of volunteer and

family services and of philanthropic and public subsidies or the overhead costs of the home, including food, rent, and utilities. (2).

Alternative Service Settings

The studies referenced here are presented in the order of the points at which patients may be cared for at home instead of institutions—that is, before hospital admission, following hospital discharge, and in lieu of treatment in a long-term care facility. The findings are discussed in terms of the cost of home care relative to its institutional alternative.

Although type of inpatient service admittedly is a crude indicator of the level of care required by the patient, it is one that can be identified in each of the studies cited, and it is indicative of the extent of patients' infirmity. Obviously, several other factors are causally related to patients' use of services, but if only one can be chosen, it is my judgment that extent of illness is the most important.

The preponderance of the evidence from the studies summarized suggests that from the standpoint of third-party underwriters, home care is indeed less expensive than extended hospitalization. The limited number of articles available for review dictates caution in drawing a similar conclusion regarding the effect of home care on unnecessary hospital admissions. From available information, it appears that the costs of home health services for patients requiring the same level of care are roughly equivalent to the costs of nursing home care.

Home Care Versus Hospital Admissions

At least two studies have been made on the effect of the availability of home health services on hospital admissions. The results of both studies suggest that home health care has a potential for averting the hospitalization of some patients. In one study, attending physicians at the St. Louis Labor Health Institute, a health maintenance organization offering extended care and home health services in its benefit package, estimated that the availability of home health care prevented the hospitalization each year of approximately 27 of its enrollees under age 65. The physicians estimated that the number of hospital days avoided averaged 3.5 days in each case, and the availability of home health services represented a saving to the HMO of approximately \$90 per patient (3). In the other study, Scutchfield and Freeborn (4) approached the question from the opposite perspective. They asked physicians practicing in a rural county in Kentucky to estimate the number of patient admissions that could have been prevented if home health services had been available.

The physicians reported that, for the first 3 months of 1970, 9 of the 318 admissions of adults could have been avoided. Following are additional details on these studies.

Study. Berger, E.: *Study and analysis of utilization and cost data concerning the provision of home health service and extended care service.* In *Home health agency concerns.* National League for Nursing, New York, 1971.

Description. Patients who were admitted to home care upon hospital discharge during the first 15 months of the program were identified. Attending physicians were then asked to estimate the number of hospital days saved, if any. The HMO paid other providers for hospital care and for home health care; savings reported were the difference between the amounts paid to these parties.

Findings. No data are provided on how many of the institute's 31,700 enrollees under age 75 were admitted to the hospital during the study. On an annualized basis, provision of medically related home health service prevented institutionalization of 27 enrollees. Hospital days avoided in these instances averaged 3.5, a saving to the provider of \$90 per patient. An additional 117 enrollees were discharged from the hospital an average of 7.1 days early; the saving to the provider was \$187 per patient.

Study. Scutchfield, F. D., and Freeborn, D. K.: *Estimation of need, utilization, and costs of personal care homes and home health services.* HSMHA Health Rep 86: 372-376, April 1971.

Description. From January to March 1970, a questionnaire was included with the charts of all patients admitted to a 40-bed rural hospital. The questionnaire asked what the utilization of home health services and personal care homes and any resultant impact on length of hospital stay would have been if these services had been available. Responses were obtained on all 318 discharges of non-obstetrical patients over age 14.

Findings. The physicians estimated that, if home health and personal care home services had been available, 22 of the 318 patients would have been discharged an average of 4 days earlier than their actual hospital stays; 44 patients would have been referred to the home health agency upon discharge, with no reduction in stay; and 9 patients could have avoided hospitalization. From the physicians' estimates, Scutchfield and Freeborn calculated that the potential annual savings from early hospital discharge would offset \$14,616 of the \$46,800 annual cost of home health services.

Early Hospital Discharge

LaVor and Callender (5) note the emphasis by third-party insurers, including Medicare and Blue Cross, on use of home health services to encourage early hospital discharges, an emphasis that may account for the disproportionate number of studies in the literature with this focus. The basis for comparison in most such studies is the post-hospital intensive care model. The results of these studies generally indicate that home health services reduce the cost per case to the underwriter.

For example, in the late 1960s Stone and associates (6) identified the universe of adult patients in a Milwaukee hospital who were suited for home care; uncomplicated maternity cases were excluded. Two-thirds

of the patients were assigned to an experimental group whose composition matched a control group in terms of age, sex, diagnosis, prognosis, and care needed at time of assignment. The 175 patients in the experimental group continued to receive inpatient care. The control group remained in the hospital approximately 16 days on an average, compared to an average of 53 days of home care for the experimental group. It was estimated that home care represented cost savings averaging \$307 per case.

Gerson and Hughes (7), who had earlier studied the level of care required by patients in various diagnostic categories, adopted a research design similar to Stone's in evaluating the effect of home health services on hospital utilization and costs. The universe of patients consisted of persons whose admitting diagnoses predicted a low level of need for medical and nursing care well in advance of the usual discharge date; patients with complicating conditions were excluded from the study group. During 13 months, patients were assigned to home care and control groups randomly; 399 patients were assigned to the home care group and 184 to the control group.

Findings were reported in terms of diagnostic categories. Average length of stay was reduced for patients in 6 of 15 diagnostic groupings. For patients in certain surgical categories, it appeared that home care was provided in addition to the usual spell of hospital care. Gerson and Hughes concluded that, although home health care did not result in substantial savings in hospital days, even a small reduction could increase hospital throughput (7):

For example, the length of stay for home care cholecystectomy patients was 20–30 percent shorter than for hospital patients. Thus, with efficient use of surgical and related facilities, the potential is there for a 20–30 percent increase in the number of patients receiving this procedure in a year without adding hospital beds. Alternatively, if demand remains constant, some beds can be eliminated, reflecting substantial savings.

The following are summaries of representative studies on the costs of home care compared to hospital admission and prolonged hospital care. In each study, the costs of home care were found to be less than those for patients who were admitted or who received continued inpatient services.

Study. *Rawlinson, H. Coordinated home care: An effective alternative in home health services in the United States.* In *A report to the Special Committee on Aging. U.S. Senate, Washington, D.C., April 1972, pp. 88–112.*

Description. Since 1961, Blue Cross of Philadelphia has paid for the home treatment of its subscribers. After discharge of the patient by the home health agency, the physician is asked to estimate how many days of hospitalization would have been necessary if the patient had not had home care.

Findings. Between 1961 and 1970, 3,940 persons (1.5 percent of hospital discharges) saved an average of 12.9 days of hospitalization and \$330 of provider costs by use of home health services. Of the 3,940 home health patients, 151 (2.6 percent) averted hospitalization through home care, and 3,789 received home care after their hospitalization.

Study. *Associated Hospital Service of New York: Home care following hospitalization in home health services in the United States.* In *A report to the Special Committee on Aging. U.S. Senate, Washington, D.C., April 1972, pp. 112–114.*

Description. AHS reimburses home health service when the attending physician and AHS staff agree that it will shorten hospital stay. The study addressed the effect of home health care on the length of hospital stay. AHS staff physicians recorded the reduction in hospital days for patients discharged early and given home care. Provider cost savings were computed by multiplying estimated hospital days saved by daily hospital charge and subtracting amount of reimbursement for home health care.

Findings. Cost savings were reported between 1970 and 1971 for 5,000 cases in which home health care resulted in early hospital discharge. The AHS staff estimated an average saving of 22.6 days of hospitalization, \$302 in hospital charges and \$428 in subscriber expenses for each patient whose home care expenses were reimbursed.

Study. *Home Care Association of Rochester: A critical review of four home care cost-benefit analyses. Tenth annual report, May 1971, and twelfth annual report, May 1973. (Cost estimates were corrected by Charles Brooks.) Case Western Reserve University, Cleveland, 1976.*

Description. In 1970 and 1972, the cases of about 300 patients referred to HCAR were selected. Attending physicians were asked whether further hospitalization would have been required for these patients in the absence of home care and, if so, for how long. Cost savings for the universe of HCAR patients were estimated from this sample.

Findings. In 1970, the physicians reported that home health care resulted in early discharge in 83 percent of the cases. In 1972, the figure was 30 percent. In both years, the average of the estimated reductions in hospitalization was 21 days. Estimated cost saving for early discharge patients was \$1,177 in 1971. Overall, a saving of at least \$56 was achieved for each home care patient.

Study. *Denver Visiting Nurse Association: Cited by Edward Lindsey in: New perspectives in health care for older Americans. (Recommendations and policy directions of the Subcommittee on Health and Long Term Care.) Select Committee on Aging, House of Representatives, Washington, D.C., January 1976, pp. 21–22.*

Description. During 1971, 1,388 hospital patients were discharged to the Denver VNA for home health services. The referring physicians were asked to designate on the referral form which patients were discharged early and how many days of hospitalization were saved by their early discharge. When home treatment was completed, provider cost savings were computed as the difference between reduction in hospital charges and actual home care charges.

Findings. Attending physicians reported that 620 (44.7 percent) of the cases represented early hospital discharges. Cost savings averaging 15.6 days of hospital care, or \$1,172, were estimated. If one assumes that on the average, referrals not designated as early discharge use the same amount of home care as early discharge patients, the estimated average provider cost saving is \$356 per hospital discharge to home care.

Study. *Merlin, D.: Home care project for indigent allows*

dignified care, cuts costs. Hospitals 49: 77-78, Oct. 16, 1975.

Description. Fourteen patients in permanent need of oxygen were successfully transferred from hospital to home care between 1972 and 1974.

Findings. Savings amounted to \$30,000 per year per patient.

Study. *Strawcyski, H. (McGill University and Children's Hospital, Montreal, Canada): Cited by Edward Lindsay in: Reported savings in hospital care through home care. State Communities Aid Association, New York, 1975.*

Description. Between 1970 and 1972, 40 hemophiliac children were assigned randomly to 2 groups of equal size. Children in the control group received care for bleeding episodes only in the hospital, while those in the experimental group received care both at home and in the hospital. Data are reported for length of hospital stay and charges by the hospital and the home health agency for treating these patients.

Findings. During the 2 years, patients in the experimental group spent an average of 45 fewer days in the hospital than patients in the control group. Charges for the care of patients in the control group averaged \$2,238 more than those for patients receiving both hospital and home care.

Study. *Stone, J., et al.: The effectiveness of home care for general hospital patients. JAMA 205: 95-98, July 15, 1968.*

Description. Hospital patients were assigned to 2 groups: the 175-patient treatment group was eligible for home care, but the 85-patient control group was not. Control and treatment group patients were matched in age, sex, diagnosis, prognosis, and care needed at the time of assignment. Attending physicians were regularly asked to indicate if their patients would be ready for home care placement.

Findings. On the average, patients in the control group were confined to the hospital for 15.9 days after their physicians stated that they were ready for immediate discharge to home care. Provider charges for those in the treatment group discharged to home care averaged \$307 per patient less than provider charges per patient in the control group.

Study. *Gerson, L., and Hughes, O. P.: A comparative study of the economics of home care. Int J Health Serv 6: 543-555 (1976).*

Description. Hospital patients were selected for study if they had no major secondary diagnoses that would extend the length of stay and had a primary diagnosis for which the profile of care needs fell and remained at a low level for both clinical monitoring and technical nursing well in advance of the usual discharge date. During the 13-month study, patients were randomly assigned on a 2:1 ratio to the home care and normal hospital stay groups; 399 patients were assigned to the home care group and 184 to the control group. Costs of food, laundry, and other items were paid by the program for both hospital and home care to avoid disincentives to home care participation. Data were collected on length of stay and on actual costs of care.

Findings. Findings are presented by diagnoses. Of 15 diagnostic groups, length of stay was reduced by home care in 6. For patients with five surgical diagnoses, costs of care for the total episode of illness were similar for those who were discharged early to home care and those who remained in the hospital for the normal length of time. Typical savings in provider costs achieved through early discharge seemed to be offset by costs to the patient for food, laundry, and other items.

Study. *Denver Visiting Nurse Service: Cited in: Home health care as an alternative to institutionalized care. Homemakers UpJohn, Kalamazoo, Mich., March 1976.*

Description. Between May and November 1973, the cases

of 447 patients discharged from 2 Denver hospitals to the Denver Visiting Nurse Service were reviewed. Referring physicians were asked if the referral represented an early discharge, and, if so, how many days of hospital care were prevented. At the end of home treatment, provider cost savings were computed as the differential between home care charges and hospital charge reductions for early discharge patients. No assessment was made of the net differential between post-hospital home care costs for all patients and hospital cost savings for early discharge patients.

Findings. Cost savings are reported as the difference between home care charges and the cost of hospital care that the patients would otherwise have received. Of the 447 patients referred, 52 represented early hospital discharges. The early discharge patients resulted in an estimated average saving of 7.9 days of hospital care and \$648 in charges.

Study. *Good Samaritan Hospital, Cincinnati: Letter from Cornelia H. Ashbury, Association of Home Care Agencies, to Margaret W. Lynch, Under Secretary, DHEW, October 5, 1976.*

Description. From January 1 to June 30, 1975, physicians referring Good Samaritan patients to home care were asked to indicate when referrals were early discharges and to estimate the number of days per referral. Provider cost savings were calculated for each early discharge patient upon home care discharge. The number of patients referred to home care who were not designated as early discharges was not reported.

Findings. During the 6 months, 35 of the hospital's home health referrals were identified as early hospital discharges. Estimated savings were 16.9 days of hospitalization and \$1,839 per home health referral.

Study. *Connecticut Blue Cross: Cited by Edward Lindsey in: Reported savings in hospital care through home care. State Communities Aid Association, New York, 1975.*

Description. Connecticut Blue Cross offered coverage for post-hospital home health services. From 1970 to 1972, hospital-based home health agencies participating in this study indicated which home health referrals were early discharges and estimated days of hospitalization saved. Cost savings were estimated on the basis of provider charges.

Findings. All 526 early discharge patients from 16 hospitals were included. On the average, the patients saved 21.9 days of hospitalization, and cost savings averaged \$2,175 per referral.

Study. *Michigan Blue Cross: Cited by Edward Lindsey in: New perspectives in health care for older Americans (Recommendations and Policy Directions of the Subcommittee on Health and Long Term Care). Select Committee on Aging, House of Representatives, Washington, D.C., January 1976.*

Description. Each year from 1960 to 1967, Michigan Blue Cross assessed the savings in hospital bed days and provider charges resulting from a program of reimbursement for post-hospital home care. When making referrals that would be covered, attending physicians were instructed to estimate the number of hospital days avoided. Cost savings were reported as the difference between hospital charges and the cost of home health care.

Findings. The reference cited gave only 1967 data. In that year, among 1,157 hospital discharges to home care, the average saving in hospitalization was 14.7 days, and the provider cost reduction was \$562 per patient. Estimates of hospital days saved declined sharply over the 8 yearly assessments. Lindsey concluded that 4 years of experience with home care are required for physicians to learn to

accurately assess what savings in hospital days are generated.

Study. *Hurtado, A., et al. (Group Health Association, Portland): The utilization and cost of home care and extended care facility services in a comprehensive, prepaid group practice plan. Med Care 10: 8-16 (1972).*

Description. This hospital-based group practice added skilled nursing facility and home health services to its benefit package in 1966. After the first 15 months, the utilization and costs of services for some 900 patients of all ages were compared with the utilization and costs before extended care benefits were added.

Findings. Because home health and skilled nursing facility benefits were added simultaneously, the authors reported difficulty in separating the different effects of these treatment modes on service costs and utilization. In the authors' opinion, almost all savings of hospital care were attributable to the nursing facility benefit. Estimated savings of \$635,000 or 8,745 days of inpatient care from home care and extended care facility services combined were reported.

Study. *White, J. W.: Cited by Edward Lindsey in: New perspectives in health care for older Americans (Recommendations and Policy Directions of the Subcommittee on Health and Long Term Care). Select Committee on Aging, House of Representatives, Washington, D.C., January 1976.*

Description. In 1970, an experimental and a control group of 100 patients each were identified upon admission to St. Luke's Hospital in Denver. Members of the experimental group were considered eligible for home care following hospitalization, while members of the control group with the same diagnoses as the experimental group were not.

Findings. The control group had an average of 25 days of hospital care compared to 11 days for the experimental group. The experimental group used an average of 36.4 days of home care services. Cost savings for the care of patients in the experimental group averaged \$850 below that for patients in the control group.

Extended Care

Implicit in studies comparing costs of home health and nursing home care is the assumption that—with sufficient nursing, homemaker, and related home health services—patients can receive the same level of care in either setting. Rather than addressing the effects of unnecessary admission and extended stay on the costs of services, then, these studies are generally more concerned with the financial feasibility of alternative service sites.

Summaries of studies representative of comparisons between the costs of home health care and extended care facilities follow. The results of most such studies suggest that the costs of extended care services, whether provided in the institution or in the patient's home, are roughly equivalent. Greenberg (8), for instance, reported the costs of home care compared to those of skilled nursing facilities and intermediate care facilities. Of 300 cases considered on the basis of patients' functional ability and whether they lived with someone, it was estimated that 54 could be transferred to home care. Although the sample size was too small to perform

rigorous statistical analysis, Greenberg concluded that home care would be a less costly alternative than care in a skilled nursing facility for 27 patients. He interpreted the data as indicating that only for patients with the greatest need for service was home care as expensive or more expensive than nursing home care; the 27 patients could be cared for at home with home health and support services for \$6,258 annually, a saving of \$263 over the cost of nursing home care per patient.

In contrast, Burton and associates (9) concluded that for approximately 87 percent of the nursing home patients whom they evaluated, the suitable alternatives were not feasible economically; they would cost approximately four times as much as nursing home care. For the other 13 percent, alternatives outside the nursing home were deemed possible, but there would be no great reduction in costs.

Study. *Greenberg, J.: The costs of in-home services. In A planning study of services to non-institutionalized older persons in Minnesota. University of Minnesota, School of Public Affairs, Minneapolis, 1974.*

Description. The costs of maintaining nursing home patients at home and in nursing homes were assessed. Total costs, including rent and food, of nursing home and homemaker care were calculated for patients who did and did not live alone and related to the level of the patients' functional ability.

Findings. Of 54 patients who could be transferred home, 27 could have been maintained at home at lower costs with homemaker and home health services. The annual home care cost per patient was estimated as \$6,258, a saving of \$263 over the nursing home cost.

Study. *Good Samaritan Hospital, Cincinnati: Letter from Cornelia H. Ashbury, Association of Home Care Agencies, to Margaret W. Lynch, Under Secretary, DHEW, October 5, 1976.*

Description. The study was based on 29 patients who were referred to home care from 6 area hospitals and 2 social service agencies between January 1 and June 30, 1976. Physicians designated the care alternative that would have been selected if home care were not available. The number of nursing home days was estimated as the period over which the patient received home care. Nursing home costs were based on Medicaid costs to the county welfare department, while home care costs were assumed to equal home health agency costs.

Findings. Estimated savings averaged 8.9 days and \$1,495 per patient—a total of 2,591 days and \$43,347 for the 29 cases studied.

Study. *Brickner, P., et al.: Home maintenance of the home-bound aged. A pilot study. Gerontologist 16: 25-29, spring 1976, pt. 1.*

Description. The Chelsea Village Residential Care Program in New York City provided physician, nursing, and social worker services to home-bound adults, and it arranged for the provision of other types of services—including homemaker, physical therapy, and meals on wheels. The attending physicians identified patients who would have been admitted to long-term care institutions for calendar years 1973 and 1974 if these in-home services had not been provided.

Findings. The cost of physician, nursing, and social worker services for 222 patients totaled \$85,000 per year; this amount excluded the cost of services provided by other agencies. The physicians estimated that 85 of these patients would have been institutionalized in the absence of home care services. Of the patients served during the first year, an estimated 70 persons would have otherwise spent a total of 420 months in nursing homes which, at \$800 a month, would have cost a total of \$336,000.

Study. Bell, W.: *Community care for the elderly: An alternative to institutionalization.* *Gerontologist* 12: 349-354, autumn 1973, pt. 1.

Description. The cases of all elderly Medicaid beneficiaries admitted to the 8 nursing homes in Hillsborough County, Fla., in September 1970 were reviewed by their physicians and the nursing home nurses and social workers. In each case, the reviewers stated whether nursing home admissions could have been delayed if the following community care services were available: home health care, house-keeping and shopping, home-delivered meals, transportation to essential services, and counseling and crisis intervention services. The numbers and types of community services that patients would have used were estimated, and the costs of these services were compared to the costs of nursing home care.

Findings. Estimates of the nursing home admissions that could have been delayed or prevented varied by discipline, ranging from the social workers' estimate of 16 percent to a high of 30 percent estimated by the nurses; the physicians estimated 18 percent. The annual cost of community care ranged between \$1,125 and \$1,200 per person, compared to \$2,916 for nursing home care. The report does not state how many people were surveyed.

Total Health Care Costs

A few observers have speculated on the effect on the total cost of health care that greater availability of home health services and changes in existing medical benefit packages would have. Their basic concern is that increasing the availability of home health services—either by increasing the number of agencies or by redefining patient eligibility—would increase overall use of home health services; if these increases were not accompanied by reductions in the use of other modes of care, the total cost of health care would be increased.

To illustrate, the Kaiser Health Plan, a health maintenance organization in Portland, Ore., added extended care and home health care to its benefits package in 1966. Since both benefits were added simultaneously, their individual effect on the total costs of care could not be determined, but Hurtado (10) stated that the reduced use of inpatient hospital services that had taken place by 1968 could be attributed almost exclusively to the availability of the extended care facility, not home health services. Furthermore, the cost savings that were attributed to reduced hospitalization were not fully offset by the costs of providing the additional benefits. In other words, total expenditures by the program increased after extended care and home health care were added to the program's benefit package.

The Actuary of the Social Security Administration, which at one time administered the Medicare program, has predicted that the costs of home care underwritten by Social Security will increase substantially in coming years as home health services become more available. Medicare home health benefits, which are intended for patients requiring skilled care on an intermittent basis, represented less than 1 percent of the total Medicare expenditures in 1973. Thus, LaVor and Callender concluded that the fiscal impact of such an increase would be small relative to total Medicare costs (5).

Some patients use home health services in addition to, rather than in lieu of, institutional care. Scutchfield and Freeborn, for example, reported that a number of patients would receive home health care if it were available as an additional service after they had been institutionalized for the usual length of time. The physicians who participated in that study estimated that, if home health services were available, they would have referred 11 percent of their patients for such services following hospital discharge without reducing the length of hospital stay (4). Reports of studies that include the cost of such cases show lower estimates of the cost savings resulting from home health care (3,4,7).

Katz and associates (11) and Bakst and Marra (12) likewise report increased use by home care patients of hospital and physician services for ailments that would not otherwise have been detected and treated. Although the use of home health medical services by patients who would not otherwise receive them may be palliative, the effect of the use of such services, nonetheless, is to increase total health care expenditures (13).

The expansion of eligibility would make home health services available to patients who currently receive none; community service agencies would provide care in the home in place of no services or to augment services performed by friends and relatives. The provision of home health services to patients not receiving them from any source may prevent or postpone the need for institutional care in some cases. Baltay (14), however, predicts that if home health services were not limited to those who had been first institutionalized, the demand for services by noninstitutionalized disabled persons would result in a net increase in expenditures. Baltay concluded that despite evidence of possible savings from deinstitutionalizing some nursing home residents, the number of noninstitutionalized disabled who are bedridden or need personal care assistance is so great that patients removed from nursing homes would be quickly replaced.

In a similar vein, Pollak (2) estimated that the general availability of homemaker services would reduce

the nursing home population between 20 and 30 percent, but the number of people living at home who also need homemaker service is 9 times as great, more than offsetting any potential cost saving.

LaVor and Callender (5) concluded that the immediate effect of expanded eligibility would be an increase in total health care expenditures. They predict that it would take 3 to 5 years before the effect of the greater availability of home health services on the use of hospitals and nursing homes would be appreciable:

Home health care will not permit us to empty our institutions; those already in that system will likely remain there. Nor will it render these places obsolete; a need for this care setting will continue to exist. We can attempt to prevent entry into institutions where possible and encourage hospitals and physicians to shorten hospital stays by prescribing home health services. Only after these efforts take effect will home care begin to offset the costs and use of institutional care.

Conclusion

The cost effectiveness of home health care is traditionally measured in terms of the difference between the costs of home health services and the costs of alternative modes of patient care. The findings of studies representative of the home health cost effectiveness literature are presented in terms of the points at which patients may be cared for at home instead of being institutionalized. The preponderance of evidence from the studies reviewed suggests that from the standpoint of third-party underwriters, home health care is indeed less expensive than extended hospitalization. The limited number of articles available for review dictates caution in drawing a similar conclusion regarding the effect of home care on unnecessary hospital admissions. Available information indicates that the costs of home health services for patients requiring the same level of care are roughly equivalent to the costs of nursing home care.

It has been speculated that increasing the availability of home health services may increase overall use of home health services; if these increases are not accompanied by reductions in the use of other service modes, the total cost of health care will increase. Although greater availability and use of home health services may not reduce the total cost of health care, it may encourage improved use of institutional services.

AUTHOR'S NOTE

Between 1976 and 1979, the Office of Planning, Evaluation, and Legislation of the Health Services Administration conducted and supported research into aspects of home health care relevant to the Agency's responsibility for promoting the development and expansion of home health service capacity. The product of that research is reported in a four-volume set entitled "Applied Research in Home Health Service". The overview of the literature on home health cost effectiveness

presented in this article was prepared in connection with the work reported in Volume II: Cost Per Episode. The subtitles of the remaining volumes are: Volume I: Grant Program Evaluation; Volume III: Community Level Utilization Analysis; and Volume IV: Project Summary and Public Policy Implications. Copies of these volumes may be purchased from the National Technical Information Service, 5285 Port Royal Rd., Springfield, Va. 22161.

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