COST BASED REIMBURSEMENT FOR NURSING HOME CARE

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June 1987
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The author is a graduate fellow in the RAND Graduate School. This paper was prepared for a tutorial entitled "Nursing Home Reimbursement Policy," given by C. Richard Neu during the summer of 1986.
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INTRODUCTION

With the recent changes in demographics, and the increasing numbers of persons with chronic illnesses requiring long term care, the long term care system has recently been under scrutiny. Most closely studied has been nursing home care, which accounts for the greatest public expenditures for long term care. In addition to the high future public cost of care, there are large variations in utilization and expenditures among states. This large variation, which cannot be explained simply by demographic differences, indicates that reform may be necessary in some areas. Obviously, the fact that some states are paying more than double per day of care what other state Medicaid programs are paying for nursing home services indicates that there may be room to cut expenditures in some areas, while other areas may be underserved.

Nursing home care is very expensive. Many elderly persons who are poor or near poor cannot afford the cost of nursing home care, and must receive that care through the Medicaid program. Many persons who initially can pay for their care soon exhaust their resources, and become eligible for Medicaid payments for long term care services. Currently, Medicaid pays for more than 45% of nursing home expenditures in this country (Muse & Sawyer, 1982); however, not enough is known about the characteristics of Medicaid recipients in nursing homes. For example, it is not known what proportion of the Medicaid recipients entered the nursing home as private pay patients and spent down to become eligible; also, it is not known what proportion of private pay patients will spend down and how long after admission to the nursing home this will occur. This information is important for policy-making, so that eligibility requirements for Medicaid and preadmissions screening programs for nursing home care can be designed to minimize the strain on the already tight Medicaid budgets.

Since Medicaid rates are lower than private pay rates for nursing home care in every state, it is assumed that Medicaid patients constitute more than 45% of the nursing home patient; however, data on
the total number of Medicaid patients is not readily available. A recent study conducted with data from Minnesota indicates that 46% of the residents of nursing homes with stays of less than 6 months and 61% of the residents with stays of greater than 6 months are Medicaid patients (U.S. GAO, 1983). These figures are potentially an understatement of the proportion of nursing home patients served under the Medicaid program, because this survey included facilities that were not certified for Medicaid (possibly because they were providing domiciliary care). Also, it is doubtful that these statistics are representative of other states or the nation as a whole.

Medicaid is the state-federal program that provides health services to poor persons. The federal government pays for 50% to 70% of the costs of the Medicaid programs; states must make up the difference. The federal government has provided the states with some guidelines for their Medicaid programs, but in general, states have wide latitude in determining what type of reimbursement system they will have for nursing home services. The goals of Medicaid reimbursement across the states are generally the same. They are to ensure an efficient, high quality service, with low administrative costs, and at the same time ensure access for Medicaid patients. These goals may be in conflict. Each state must balance its desire to minimize costs with the necessity of keeping nursing homes an attractive investment to ensure an adequate bed supply.

The federal government sets some minimal guidelines for Medicaid reimbursement systems, most specifically that they are to be "reasonable and cost related" (Section 249 of 1972 Social Security Amendments). More recently, the federal government relaxed its requirements that the reimbursement system be cost related; PL 96-499, section 962 requires only that the reimbursement systems are such that the rates are "reasonable and adequate."

Given the loose guidelines from the Health Care Financing Administration (HCFA) for nursing home reimbursement under Medicaid, there are theoretically an infinite number of reimbursement systems that are possible. So, it is not surprising that each state has developed its own -- distinct -- reimbursement system.
In spite of the large number of different reimbursement systems, they can be categorized along a few variables. Payment can be either prospective or retrospective. Capital costs can be reimbursed on the basis of historic costs, or some imputed value. Medicaid rates may be determined for individual facilities, or groups of facilities. Individual facilities' rates may be determined on the basis of the facility's actual costs, or on the basis of characteristics that are thought to affect costs. Each system contains its own incentives for cost control, quality of care, and the access of public patients to nursing home care. It is important to note that other influences may have an impact upon the quality of and access to nursing home services in each state, in addition to the rate reimbursement system. Not only are there major differences in the values placed upon ensuring adequate social services to the poor and sick among states, there are regulatory influences as well. State licensure and certification standards vary widely, presumably influencing the quality of care. Certificate of need legislation and the historical market have an impact upon the number of nursing home beds in each state, which in turn affects the Medicaid patient's access to care.

VARIATIONS IN REIMBURSEMENT SYSTEMS

The variation in reimbursement systems can be described along a number of variables. For example, one could classify reimbursement systems by the rates they set (high, medium, and low rates) or by the number of beds in a state (for example, reimbursement systems that foster a large, medium, or scarce bed supply). In this review, however, I will focus on the basic structure of the reimbursement systems, and on the incentives provided by each.

Prospective Versus Retrospective Reimbursement

Prospective rates let the facilities know in advance what they will have to spend. Prospective rates have been associated with lower rates, but this has not been shown empirically to be causally related; one study noted that states that instituted a prospective reimbursement system had lower rates than states that did not change from a
retrospective reimbursement system (Harrington & Swan, 1984). In theory, however, prospective rates should be more successful in keeping costs down because the facilities will not have the incentive to spend more than they are allotted in the prospective rate. Retrospective rates tend to encourage inefficiency since the facility will be reimbursed for whatever it spends. Frequently, caps are placed on retrospective rates; the incentive in that case would be for the facility to spend close to the capped rate, but not to exceed it. Over time, one would expect the cap to be just slightly higher than the average rate. Thus, retrospective rates are often said to be cost increasing. However, retrospective rates have the advantage in that they do not discourage additional spending on quality-related improvements, since the facility will be reimbursed for whatever quality improvements are made.

**Institution Specific or Group Specific Reimbursement**

Institution specific rates have the advantage in that they reimburse the facility for whatever services are provided. The facility is thus reimbursed for any improvements that are made in the name of quality. However, since there is often no way to determine whether costs are due to a better quality product or to excess and wasteful services, institution specific rates also reimburse facilities who are providing more services than are necessary. There is also the incentive for facilities to increase their costs, because that increases their rate for the next year. Group specific rates are good in that they theoretically reimburse like facilities the same amount. However, there are limits in our ability to specify the case mix of individual facilities, and thus to determine whether or not the facilities are providing similar services to similar residents. Group specific rates also reduce the incentive for individual facilities to falsify records to make it appear that their costs are higher, and reduce the incentives for facilities to provide expensive nonnecessary services since the facility may not be reimbursed for its cost. Each individual facility cannot affect the rates if the number of facilities in each group is large enough.
Historic Costs Versus Imputed Rate

Historic costs have the advantage in that they are often easy to obtain; however, they may not be the most efficient or appropriate costs as patient case mix changes, or imput costs change. They also increase the tendency for facilities to alter their records to make it appear that their costs were higher, since that directly affects their next year's reimbursement. Imputed rates are difficult to determine. There is a circularity present, in that an increased rate increases the value of the facility, which in turn should increase the payment in future years. In addition, imputed rates may be arbitrary and subject to challenge by facility operators.

Competitive Versus Regulated Rate

The rates paid to nursing homes can be set by a regulatory agency, or they can be determined through market forces. For example, in California, the Medi-Cal program reimburses hospitals on a per diem rate that was set competitively; hospitals submitted a bid to the Medi-Cal program for what they would charge, and the Medi-Cal contract was awarded to the lowest bidder (with some exceptions to ensure geographic access and access to tertiary services). A similar program could be instituted with nursing home payments whereby nursing homes submit a bid to the state indicating what they would charge to provide care for Medicaid patients. Although there may be problems phasing in this type of a system, it clearly holds some advantages over the present system. Provisions will need to be made for Medicaid patients in facilities that do not bid, or whose bids are not accepted by the state. However, this type of a system would eliminate the necessity of calculating a minimum rate to be set for nursing home care, since the nursing homes themselves would indicate what the minimum acceptable rate would be.

Although each of the Medicaid programs have the same goals, i.e., to provide health and social services for indigent individuals, Medicaid programs vary widely among states. Even with regard to nursing home policy, there is great variation. This variation has been described elsewhere (U.S. GAO, 1983). The General Accounting Office studied the variation in Medicaid programs for nursing home reimbursement across
states, and found tremendous variation. The GAO report looked at a number of measures to assess state spending on nursing home services on a per capita basis (using number of persons over 65 as the denominator), and found that, even when additional federal and local spending is controlled for, and when regional adjustments are made for wage rates, a great amount of variance exists. This same study showed that the extent of the states' efforts to support Medicaid nursing home services is not related to the state's economic well-being as measured by tax capacity. It appears, therefore, that there are reasons other than demographics and wealth/ability to pay that influence Medicaid nursing home policies.

For example, there is wide variation in Medicaid nursing home payments. In 1980, rates for skilled beds varied from a low of $23.33 in South Dakota, to a high of $69.87 in Washington, D.C. Part of these extreme differences may reflect regional differences in actual costs, for example wage rates vary significantly by region. However, the proportion of state Medicaid budgets spent on nursing home care also varies widely by state. The national average is 34%, although individual states vary from 22% of the budget in California, to 61% of the budget in New Hampshire (almost a three-fold difference!).

The GAO study looked also at the supply of nursing home beds across states and found much variation in the number of beds per persons at risk. Although the study is somewhat flawed methodologically (analysis was not done on a state by state basis because of problems with the reliability of the data; analyses were done with groups of 10 states), the results are nonetheless interesting. The number of beds/1000 elderly (e.g., persons 65 and older) varied from 22 in Florida to 94 in Wisconsin. The large differences in beds remain even after controlling for the size of the old-old population (e.g., those 75 and older who are most at risk of nursing home use) and climate differences (U.S. GAO, 1983). In addition to the differences in the total number of beds, there is wide variation in the interpretation of skilled care and intermediate-level care beds. For example, states have extreme differences in the proportion of nursing home beds that are classified as skilled. In California, virtually all of the nursing home beds are classified as skilled, while in Massachusetts a large proportion is classified as intermediate level.
It is not enough to simply look at the results of Medicaid policies for nursing home care, and attribute a single reason to them. Each state has its own mix of values, financial wealth, population demographics, and regulations that affect the outcomes of nursing home policy. However, in view of the expressed goal to minimize Medicaid costs and provide high quality care, and the assumption that all reimbursement systems set rates or pay facilities on the basis of variables that are thought to affect nursing home costs, it is necessary to understand what the actual determinants of nursing home costs are. It is important to understand the variations among Medicaid reimbursement systems so that a better reimbursement system can be designed which minimizes costs while preserving incentives for quality.

Results of Cost Studies

This next section will review the results from a few of the cost studies found in the literature. A few points to note: most cost function analyses have been done using data from the 1970s. Given the many changes in the Medicaid programs and in reimbursement for nursing home care that have been made since these cost analyses were done, all of the results are not directly applicable. However, this deficiency reflects problems with data availability rather than deficiencies in the studies. Very little recent data (e.g., from the 1980s) is available. The data that is available is often not standardized across states, resulting in the inability of analysts to compare costs across states.

These studies were done using very different data sets, so the results obtained in one study may not be replicated in another study. Several studies used data from the 1977 National Nursing Home Survey, currently the only national data set containing cost data available; state-specific data was also used. The dependent variable used in the cost analyses also varies. Average operating costs were the dependent variable used most often; however, total costs were used as well. Each of the studies defined their independent variables differently. Variables with more and less specificity were used. However, all independent variables can be categorized into the following:
• **Facility Characteristics.** These variables relate to the type and location of the facility. For example, ownership and affiliation, size, location, and certification are all commonly used variables.

• **Service Intensity.** These variables relate to the types and intensity of services provided by the facility. For example, the number and type of therapy services and the staffing levels are frequently used as independent variables.

• **Patient Characteristics or Case Mix.** These variables are the least well specified. While the variables are theoretically supposed to indicate the degree to which patients in the facility require more intense care, there is no direct measure of that information at the present. Therefore, proxy variables have been used, some better than the others. For example, age, sex, diagnoses, and functional status have all been used as independent variables.

A brief description of the cost studies reviewed follows:

• **Bishop, 1980.** Most of the studies reviewed in this paper are taken from Bishop's excellent review of previous analyses of nursing home costs. In her study, she reviews a number of cost analyses, among them:
  - **Mennemeyer, 1979.** This study used 1975 and 1976 data from over 400 facilities in New York State. The dependent variable used was total cost.
  - **Walsh, 1979.** This study was conducted using data from 136 facilities in Illinois. The dependent variable was average operating cost.
  - **Jensen & Birnbaum, 1979.** This study used data from the 1973 National Nursing Home Survey; a sample of 1127 nursing homes was used in the analysis. The dependent variable was average operating cost.
• Lee & Birnbaum, 1979. Data from approximately 500 facilities in New York was used in this study; data was from 1974-76. The dependent variable was average operating cost.

• Bishop, 1979. This study used 1973-75 data from 417 facilities in Massachusetts. The dependent variable was average operating cost.

• Lee et al., 1979. This study was conducted using data from the 1973 National Nursing Home Survey, with a sample of 1127 facilities. The dependent variable was average operating cost.

• Bishop, 1980. This study used 1976 data from 417 facilities in Massachusetts. The dependent variable was average total cost.

• Ruchlin & Levy, 1972. In this study, the authors present a cost analysis for 128 nursing homes in Massachusetts, using data from 1965-69. Average per diem costs are used as the dependent variable.

• Holahan, Cohen, and Scanlon, 1983. In this study, the authors use data from the 1977 National Nursing Home Survey to analyze the effects of reimbursement policy (e.g., whether reimbursement was retrospective, prospective, or flat rate) on nursing home costs. The dependent variable is average cost per day.

• Meiners, 1982. This study used data from the 1973 National Nursing Home Survey; he reported a sample of 1147 facilities used in the analysis. Average total cost was used as the dependent variable.

• Schlenker & Shaughnessy, 1984. This study used 1978-80 data for 157 nursing homes in Colorado. The cost variables used in the cost analysis were Medicaid "adjusted" costs; these costs do not include Medicaid nonallowable and nonpatient care related expenses. Both total and nursing cost per patient day were used as the dependent variables.
Facility Characteristics

Structural facility characteristics have been used as an independent variable to predict costs. The facility size (e.g., number of beds) has been used, with indeterminate results. Of the studies reviewed in this paper, both negative and positive relationships have been found; the relationships were not often found to be significant. The magnitude of the relationship between bed size and costs, in those studies finding a significant relationship, was very small (Walsh, 1979; Lee et al., 1979; Meiners, 1982).

Occupancy rate should be theoretically related to costs, but has not exhibited a strong relationship empirically. While the relationship was generally negative indicating that a greater occupancy rate is associated with lower costs, it was very small and not always significant. Bishop (1980) found a negative relationship between occupancy rate and costs for occupancy rates in the 80-100% range. Two studies found a nonlinear relationship between occupancy rate and cost. Bishop (1979) found a negative relationship with costs at lower occupancy rates; with occupancy rates over 90% the relationship was positive. In a later study, Bishop (1980) found a negative relationship between occupancy rate and costs for occupancy rates in the 80-100% range. Lee & Birnbaum (1979) found a negative relationship with costs at occupancy rates below 90%; a nonsignificant relationship between occupancy rate and cost was found for occupancy rates above 90%.

The facility ownership type has shown consistently and significantly that not-for-profit facilities exhibit higher cost. Some have suggested that this is due to a different product (e.g., higher quality services or a difference in the patients served) but this difference remains even after attempts to control for quality and case mix. However, since the quality and case mix variables are not well defined, and often obtained through the use of proxies that have not been well established, there may in fact be differences in case mix and quality that we may not have been able to measure. In fact, some states pay not-for-profit facilities at a higher rate than for-profit facilities; this is justified by the thought that ownership type is a proxy for quality. This relationship is also likely to be due to the
different incentives facing for-profit and not-for-profit facilities. While for-profit facilities are profit maximizers, and thus would operate at the minimum of the average cost curve, not-for-profit facilities can be expected to maximize size, with the constraint that costs not exceed revenues. Thus, not-for-profit facilities would generally tend to be larger (they are) and operate at a different point on the average cost curve. Government ownership has also been positively and significantly related to costs (Jensen & Birnbaum, 1979; Lee & Birnbaum, 1979; Walsh, 1979; Meiners, 1982; Holahan, Cohen, and Scanlon, 1983); the magnitude of this relationship has been hypothesized to be negatively related to costs due to the economies of scale in management and in the purchase of goods that a chain might achieve. However, Meiners (1982) did not find this relationship to be statistically significant.

Hospital-based facilities have been shown to have higher costs by the three studies that looked at this relationship (Mennemeyer, 1979; Holahan, Cohen, and Scanlon, 1983; Schlenker & Shaughnessy, 1984). This may be due to the higher overhead costs faced by hospital-based facilities, or differences in quality or case mix. One study of the differences in case mix between hospital-based and free-standing facilities in Colorado showed that hospital-based facilities do in fact treat sicker patients (Shaughnessy et al., 1985).

Costs have consistently been shown to vary significantly with the location of the facility -- both among states and among regions within states. This is most likely due to differences in input prices. Differences among states may also be due to differences in licensing and certification requirements, as well as differences in the incentives posed by reimbursement systems. Two of the studies reviewed looked explicitly at the type of reimbursement system and its relationship with facility costs. Meiners (1982) found that prospective reimbursement systems were correlated with lower operating costs in the facility. Holahan, Cohen, and Scanlon, (1983) found flat rate reimbursement systems to be correlated with the lowest total costs. Retrospective systems were associated with the highest costs, and prospective systems were associated with lower costs than retrospective systems, but higher costs than flat rate systems. The same study found a different
relationship with operating costs; retrospective payment systems were found to have the highest costs.

Certified level of care has been shown to be consistently related to costs, most likely due to differences in staffing requirements, and differences in patient case mix. Medicare certification is associated with the highest costs, with skilled nursing facility (SNF) level costs next. These associations would not be expected to show up when data from a number of states is pooled, unless the differences in interpretation of skilled and intermediate level care among states is controlled for. In addition, states have different staffing requirements for each level of care.

Proportion of single rooms in a facility has also been shown to be associated with higher costs (Bishop, 1979, 1980; Lee & Birnbaum, 1979; and Lee et al., 1979, found a significant relationship while Jensen & Birnbaum, 1979; and Meiners, 1982, found a nonsignificant relationship). This may reflect differences in the level of other amenities provided to the patients, since a larger proportion of single rooms are often found in facilities with a larger proportion of private-pay patients.

**Service Intensity**

These variables have not been well specified. They have been measured both as the number and type of services that each patient actually receives, and the number and type of services that are available in the facility, regardless of whether the service is actually provided. Theoretically one would expect much interaction between the service intensity and patient characteristics. In most studies, no attempt has been made to determine the necessity or appropriateness of these services, only whether they were provided and with what frequency. Only one study looked at the quality of care provided in the facilities (Schlenker & Shaughnessy, 1984). The authors looked at quality as measured by the appropriateness of services provided for 27 long term care problems experienced by patients. Quality of care was found to be significantly related to costs, accounting for approximately 10% of the variation in costs.
Nursing hours per patient are associated with increased costs, as expected (Bishop, 1980; Lee et al., 1979). One study (Bishop, 1980) found that the magnitude of the coefficient of this variable was about equal to the nursing wage. In addition to nursing hours, a richer staffing mix (e.g., a higher ratio of licensed personnel) was also associated with higher costs (Meiners, 1982).

The number of different services and the frequency with which they are provided to patients have generally been shown to be significantly related to costs. The number of services offered in a facility has been related positively with costs (Jensen & Birnbaum, 1979; Lee & Birnbaum, 1979). The number of rehabilitation services offered has also been shown to be positively and significantly related to costs (Meiners, 1982). The frequency with which services are provided to patients has not exhibited a significant relationship in all studies. Two studies (Lee & Birnbaum, 1979; Lee et al., 1979) found the relationship to be significant; Jensen & Birnbaum (1979) found a nonsignificant relationship. It may be that the initial cost of hiring personnel or contracting for a service is high, and that the marginal cost of providing services to additional patients is lower. When specific variables (e.g., speech therapy) are examined for their relationship to costs, the results are inconsistent; this is most likely due to the high degree of collinearity among the variables.

**Patient Characteristics**

These are the least well defined of the variables used to explain nursing home costs. In part, this is due to the lack of patient-specific data. Most of the studies reviewed used data from the National Nursing Home Survey, which only included limited information on patient characteristics. Also, the relationship between patient status and service needs has not been well established. Professionals in the field have not yet reached consensus regarding the amount or even the type of services to be provided to specific patients. This is in part due to the lack of clinical studies which compare patient outcomes when patients are randomized to different treatments (Bishop, 1980). With the increased interest in the use of diagnostic related groups (DRGs),
and their adaptation to nursing home reimbursement, this is an area in which one would hope to see increased study.

Patient characteristics have been measured in a variety of ways. Patient age has been used as a proxy for health and functional status in a number of studies, with meager results. Bishop (1979, 1980) found patient age to be significantly and positively related to nursing home costs. Other studies have found a nonsignificant relationship (Mennemeyer, 1979; Lee & Birnbaum, 1979).

Patient turnover and average length of stay has also been used to characterize the patient mix in the facility. These variables have shown a consistently positive association with costs. Patient turnover may be a proxy for severity of illness; patients who are very sick and require heavy care may die quickly after admission. On the other hand, patient turnover may be a proxy for the amount of rehabilitation services patients are receiving. Patients who enter the nursing home for short term rehabilitation (e.g., after hip replacement or post stroke) are likely to be relatively heavy users of care.

Patient case mix variables have been characterized using both indices of patient status and disaggregated information. The most common index used is the Katz index of functional status, or ADLs. That is appropriate because many of the disabilities/functional limitations are highly correlated. In fact, the Katz scale is predicated on the finding that adults lose functional abilities in much the same order as children gain them. The results are generally positively and significantly related to costs. Some studies have indicated a nonlinear relationship between functional status and nursing home costs (Meiners, 1982; Walsh, 1979). The magnitude of the relationship between functional status and costs differs significantly among studies. Although much is known about the characteristics of older adults' functional deficits, not enough is known about how they relate to the amount or type of services needed, and how that in turn relates to costs. Again, this relates to the lack of knowledge of the outcomes to be expected from using different therapies to treat specific problems.

The disaggregated information used may be variables such as the proportion of patients who are nonambulatory or the proportion who are depressed (used as the independent variables in the cost function).
This is justified due to the high degree of multicollinearity among variables, and the possibility that important information may be lost in aggregation. These variables are generally positively correlated with costs.

Although the variables chosen to measure patient case mix have generally been found to be positively and significantly related to costs, the findings across studies have not been consistent. This is in part due to the difficulty in measuring case mix and the necessity of using proxy variables. In addition, few of the studies control for quality of care. Implicit in this statement is that few of the studies have any means by which to identify whether like patients are treated similarly across facilities. This is in part due to the lack of a standard for quality for nursing home care.

CONCLUSIONS

Much research has been done to specify the components of nursing home costs. Unfortunately, the answers are not readily forthcoming. The only variables that have been consistently shown to be significantly related to costs among a number of studies are the following: for-profit/not-for-profit status, rural/urban location, geographic location, hospital-based/free-standing facility, and certified level of care as skilled/intermediate. The geographic location variable may be due to differences in input costs; however, lessons from the acute care sector should lead one to caution that there may exist large geographic variations in the types of care provided, which may also have an impact upon costs independent of input price variations. The type of facility (hospital-based or free-standing) and certified level of care variables are most likely proxies for patient case mix; one could argue that they are not sensitive enough to true service intensity. The for-profit/not-for-profit variable is generally thought to be a proxy for both case mix and quality of care; this is supported in the work by Schlenker & Shaughnessy (1984).

Why have we not been able to better specify the components of nursing home costs? These studies all have methodological problems characterized by the lack of availability of some data, sample size problems, and the inability to quantify some aspects of the nursing home
environment. Information on the characteristics of patients in each facility was woefully inadequate in a number of the studies reviewed. For example, the National Nursing Home Survey sampled fewer than 10 patients in each facility to obtain patient-specific data. The type of information collected at the patient level was also inadequate; there was too much information on the presence or absence of functional ability, and no information on the extent of disability and the services required by patients. In fact, there is no explicit standard of care for persons in nursing homes. When asked about the appropriate type and amount of services for persons with specified functional disabilities, it is not known whether long term care providers would agree. The variance in the type and amount of services actually provided to patients with specific disabilities across facilities is also unknown. Finally, the quality of care in nursing homes is difficult to determine in general, much less in a large survey, and only one of the studies (Schlenker & Shaughnessy, 1984) controlled for quality directly. Thus, in most studies, some crucial pieces of information were not available to use in determining the cost components of nursing homes.

Cost analysis has thus far not given us the definitive answer regarding the determinants of nursing home costs. Not only do the variables that prove to be significant differ among studies, but the magnitude of effects of specific variables differs substantially among studies. In part, these differences can be accounted for by the differences in the choice of models of nursing home costs. However, differences in the quality of the data and in our ability to measure certain variables that may have an impact on nursing home costs also contribute.

In spite of the problems that exist in the studies of nursing home costs, there are some lessons to be learned. Since nursing home costs are not the only factor to be taken into account when assigning reimbursement rates, information on the impact of certain variables and their relation to the direction of costs can be used even though the magnitude of their effects is uncertain. For example, geographic location has been shown to be an important variable in explaining nursing home costs. If the state desires to influence the geographic distribution of facilities, then nursing home rates can reflect
geographic differences. Additionally, patient status characteristics almost certainly influence nursing home costs. Although it is uncertain what impact each of the patient status characteristics have on nursing home costs, it is clear that sicker and more functionally disabled patients cost the nursing homes more. If the state desires to increase access for sicker and more functionally disabled patients, it will need to provide incentives for nursing homes to admit these patients, including financial incentives that at least reflect the higher costs of caring for these patients.

Nursing home reimbursement systems and the rates paid for care are influenced by a number of variables. Factors of supply and demand for nursing home care, the growth rate of nursing home rates, and political pressures are most certainly involved (Harrington & Swan, 1984). Objectives for nursing home reimbursement policy have been described as

Covering the legitimate cost of care incurred by public patients and promoting the efficient operation of nursing homes. Improving access to care for public patients. Encouraging the provision of appropriate and high quality care.... Fostering the expansion (or restriction) of nursing home care as needed. Achieving the above goals in an administratively feasible manner in the context of state priorities and program budgets. (Tynan, Holub, and Schlenker, 1981)

In the present time of fiscal constraint, I would amend the above definition to "Improving access to care for public patients with heavy care needs."

Information derived from nursing home cost analysis will not provide direction for all of these policy concerns. Any expectation that nursing home cost analysis will provide the definitive answer on facility reimbursement rates is unrealistic. Results from cost analyses can provide insight into only one of these policy concerns, namely the components of costs. However, an understanding of the components of costs can enable policymakers to design a reimbursement system that addresses some of the other policy concerns.
Future Research

Future research needs to concentrate on specifying the appropriate type and amount of services for patients with different characteristics. Values for different outcomes need to be specified, and the plan of care to best achieve these outcomes needs to be determined. In the best case, this requires clinical trials. Once patient characteristics are linked to services, these services can be costed out. Then, and only then, will the relationship between patient characteristics and necessary services be able to be linked clearly and appropriately. This will then allow the setting of reimbursement rates that covers the actual costs of caring for subsets of patients, and allow the design of incentives to increase access for certain groups of patients.

It is important to do these clinical studies, not only from a cost standpoint, but from a quality of care standpoint as well. Unless nursing homes are viewed as merely warehouses for the elderly and infirm, clear goals, and a treatment plan to achieve those goals, must be specified. Until clear protocols are developed for the treatment and rehabilitation of patients, and realistic goals set for their outcomes, we cannot be sure that the care provided in nursing homes is anything but custodial. This is likely to be extremely costly. However, only after this information is obtained will policymakers be able to make informed choices about cost and quality trade-offs.

We Must Act Now

Although it will take years of research to provide the information required to develop a nursing home reimbursement system based on patient case mix, we cannot afford to wait until all the information is in to act. Intermediate steps are necessary. I propose that nursing home costs be divided up into capital costs and operating costs. Nursing homes operating costs should be paid on the basis of facility-specific, historic costs. It is apparent from studies of the characteristics of nursing home patients that they are becoming more functionally limited (U.S. GAO, 1983). With the implementation of the DRG reimbursement system for hospital care, anecdotal evidence exists about the increased nursing care requirements of patients being discharged to nursing homes.
If the assumption that sicker and more frail patients require more care, and cost more to care for, is true, then facility costs should be increasing. If reimbursement is based upon a rate which is set independent of the actual cost requirements of the nursing home, the results could be disastrous. Previous research has shown that cost-cutting mechanisms compromise the quality of patient care because patient-related outlays are the first to be cut by nursing homes (Holahan, 1985). Not only could care be inadequate for those persons already in nursing homes, we could see even more of the current problem of heavy-care individuals in hospitals because they cannot find nursing home placement. And if a significant number of nursing homes are forced to close down, placement for those persons who were in the facilities may not be readily available.

To prevent dramatic increases in the costs of nursing home care in the short run, I would suggest that a cap be placed on the per diem rate for each facility. This would create a system whereby all facilities are paid their costs up to a ceiling on a per case basis. I would propose that rates be set prospectively (as the actual costs from the previous year plus an adjustment for inflation), with a final adjustment at the end of the year, up to a ceiling, to more closely reflect the actual cost experience of the facility. In this way, the facilities will not be penalized if they take in patients who require more expensive care; on the other hand, the facilities will not benefit financially if their actual cost experience is significantly less than expected.

Cost based reimbursement does not generally have an incentive to reduce costs. In fact, it tends to be inherently inflationary, especially if the facility's profit margin is based upon a percentage of its costs. For this reason, I would suggest that the profit margin be based upon the number of patients, not a percentage of costs. An allowable profit margin could be set by the state Medicaid office, for example, which would set a dollar profit value per patient. To provide the incentive for facilities to admit difficult-to-place patients, the facility may be paid an additional amount (e.g., $25) every time it admits a patient so designated by the state. This increased payment to encourage nursing homes to admit heavy-care patients could be either an
additional rate at each admission, or an increased rate for a specified period of time. Such patients can be designated as difficult-to-place after they have been awaiting placement in a facility for a specified period of time. This policy would have a negative impact on the individual's ability to choose a facility of his choice; if a patient declines to enter a facility because he prefers to wait for a more desirable facility to become available, the state might not want to designate that individual as difficult to place. However, there is often little choice to individuals at present due to the high occupancy rates of facilities in general, and the long waiting lists for admission to many facilities. This type of a policy may have little actual impact on a patient's choice in practice. I would not recommend that the facilities be paid a higher profit margin for heavy-care patients after a short admission period, because of the incentive to keep such patients as heavycare, and not to rehabilitate them. The National Center for Health Services Research (NCHSR) demonstration program in San Diego, which paid facilities higher rates for the first two months after heavycare patients were admitted, did not detect any disincentives for rehabilitation in the long run (Holahan, 1985).

Adequate reimbursement levels are necessary to provide access to care, as well as to provide high quality of care, although they are not sufficient. To ensure that high quality of care is maintained, I would propose that more effective certification standards be set for the quality of care in facilities. These certification standards should include both structural (the adequacy of the physical plant, staffing levels, etc.) and process measures of care (e.g., which patients should receive physical therapy), as well as outcome measures of care (e.g., how many discharges to the emergency room?). The present certification standards focus largely on structural measures of quality.

In addition to more effective certification standards, adequate budgets at the state certification and licensing agencies need to be ensured. Regulations and standards mean little if they are not enforced. Facilities should not be forewarned of inspections, and means should be made to inspect problem facilities more frequently. In addition, the penalties for infringement of regulations need to be changed. We need to build into the system the flexibility to impose intermediate sanctions.
Although in the long run I believe we need to improve our ability to understand the determinates of nursing home costs in order to design an optimal reimbursement system, it is important that we act sooner rather than later. Many states have already implemented alternative reimbursement systems. However, others are simply limiting the rate of increase in nursing home rates in an effort to save funds. This does nothing to affect the inherent inefficiencies in the system, and may have negative impacts on access and quality of care. I do not believe that policymakers can afford to wait for the "perfect system," and let that be the excuse for being paralyzed and unable to take action to improve and streamline the current method of paying for nursing home costs. There is much information available with which to make educated decisions. We need to move forward, even if in incremental steps.
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