Nursing Home Reimbursement: Implications for Cost Containment, Access, and Quality

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ONCERN OVER SPIRALING COSTS IN THE NURSING home industry has increasingly preoccupied Medicaid policy makers in recent years. And, indeed, there has been ample cause for concern. Over the past 25 years, nursing home expenditures have grown faster than any other component of health care costs, rising from a total of \$480 million in 1960 to \$28.8 billion by 1983—an increase of almost 20 percent per year. At the same time, the public share of these expenditures—largely borne by the Medicaid program—has risen steeply (from 28 to 55 percent).

Cost inflation certainly has been cause for concern; but the preoccupation of policy makers with it has tended to overshadow many other problems—those having to do with access to and quality of care—that now threaten to undermine the essential public purposes of the Medicaid program. Originally intended to provide an assurance of mainstream medical care to the nation's poor, the Medicaid program has never really lived up to the promise. With regard to the provision of nursing home care in particular, the gap between promise and reality seems to be widening. A good share of the responsibility for this development appears traceable to efforts at cost control.

Within the past decade, the states—who have primary responsibility for administering the program, and who shoulder anywhere from 23 to 50 percent of the costs, depending on their per capita income—

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have embarked on some ambitious cost-containment programs. While methods have varied widely from state to state, the programs have generally encompassed certificate-of-need regulation of bed growth and investment, various forms of utilization review to limit inappropriate use, and/or, most recently, reimbursement policy to control the per diem cost. Of these various methods, the latter appears to offer the most potential for substantial cost savings, since increases in costs per day (in contrast to increases in utilization) account for more than twothirds of nursing home expenditure growth.

On the whole, the states appear to have been quite successful in exploiting this potential. By 1981, most states had adopted policies constraining reimbursement, and, since 1981, Medicaid nursing home spending has increased by just 7.7 percent—a very low rate of growth by historical standards. But at the same time, reimbursement and other cost-control policies have undoubtedly contributed to a dramatic slowing in the growth of nursing home beds. The number of such beds grew only by about 2 percent per year between 1981 and 1984, a rate of growth that would meet less than half the projected demand by the end of the century.

Also, Medicaid patients do not appear to fare well in the competition for the increasingly limited supply of beds. The Medicaid nursing home population has actually declined slightly since 1981, and Medicaid spending as a share of all nursing home spending has also declined, falling from 46 percent in 1982 to 44 percent in 1984. During the same period, private expenditures increased from 46 percent to 49 percent of the total. The shift toward a greater share of private spending is consistent with the preference of nursing homes for (more profitable) private patients, and it bodes ill for Medicaid patients in the future. With the probable increase in demand for nursing home care resulting from both the aging of our society and the more rapid hospital discharge of Medicare patients (because of Medicare's shift to a prospective payment system), Medicaid recipients are likely to face shrinking access to care and diminishing quality of care.

These concerns lead us to argue that Medicaid policy makers cannot now regard cost containment as the preeminent objective of reimbursement policy. Rather, they must acknowledge that they face some painful tradeoffs among competing concerns for ensuring quality of care, maximum access to care, and efficient use of resources. How these tradeoffs work is the subject of this article. In particular, the article seeks to analyze how nursing homes respond to different state reimbursement systems. Similar issues have been well researched in the hospital sector and such studies have contributed significantly to the development of state rate-setting programs and a prospective payment system for Medicare. No comparable body of knowledge exists for the nursing home sector, however, and this article is one effort to fill the void.

The study focuses on the following questions:

- 1. Which types of reimbursement systems are most effective in controlling costs?
- 2. How are reimbursement methods related to the quality of care as measured by resource-allocation decisions within the nursing home?
- 3. What are the effects of reimbursement methods and levels on access to care by Medicaid patients?
- 4. What are the effects of patient-related rates on access of heavycare patients to nursing homes and on the intensity of care provided to them?
- 5. What are the effects of alternative capital reimbursement strategies on nursing home profitability, financing methods, and incentives to maintain the quality of physical capital in the nursing home industry?

To address these questions, we examined a rich but relatively untapped source of data on the nursing home industry—the cost reports nursing homes submit to the states. We analyzed cost report data from over 3,300 skilled nursing and intermediate care facilities in eight states for each of three years—1978, 1979, and 1980 (Holahan 1985b). The states (California, Connecticut, Georgia, Illinois, Massachusetts, Minnesota, New York, and West Virginia) were selected because (1) they contain a large segment of the nation's nursing home industry, and (2) they illustrate a range of different approaches to reimbursement systems, efficiency incentives, inflation adjustments, and capital cost reimbursements. At certain points, additional findings are brought in from a separate ten-state study of cost report data from 1,500 skilled nursing facilities during the same time period (Holahan 1985a). Five of the states in this separate ten-state study—California, Connecticut, Illinois, Massachusetts, and New York—were also included in the eight-state study that is the primary basis for this analysis. Five additional states—Alabama, Florida, Maryland, Michigan, and Pennsylvania—were included only in the ten-state study. The sections that follow briefly characterize the policy choices made by these states, summarize our findings regarding the effects of the choices, and outline recommendations for better reimbursement systems.

Nursing Home Reimbursement: The Dimensions of Choice

As was already suggested, nursing home reimbursement policies in our study vary greatly from state to state. They differ most fundamentally in whether they base Medicaid payment on a facility's own costs (computed either retrospectively or prospectively) or on a set of flat rates. Under facility-specific retrospective systems, homes receive an interim rate based on their own costs for some base year, adjusted for expected inflation. If actual costs exceed the interim rate, homes will receive the difference, usually up to some ceiling; if costs are less than the interim rate, homes must refund this difference to the state. Used by the Medicare program since 1965, this system was the original model for Medicaid reimbursement, but concern over ever-escalating costs has prompted most states to experiment with alternatives.

The most popular such alternative has been some form of prospective payment system, under which the rates set by the state in advance are the rates paid, regardless of actual costs incurred by the facility. Typically, states base prospective rates on the previous year's costs, inflated forward up to some ceiling. Under prospective systems, all homes face strong incentives for cost control. Homes above the target rate (or ceiling) face losses of up to 100 percent of the difference, depending on the system. Homes that keep costs below prospective rates can earn substantial profits, again up to 100 percent of the difference. Under flat-rate arrangements—potentially the most cost constraining of all reimbursement methods—facilities are paid a set rate regardless of their own cost experience. The state may negotiate flat rates individually, base them on the cost experience of all homes, or set different rates for various classes of homes, e.g., all homes in urban areas. Once the rate is set, homes likely to be above the ceiling will either have to reduce costs or suffer losses on Medicaid patients, while homes below the ceilings will earn profits on the difference between the rate and their costs.

Within these broad classifications there is a wide range of more specific policy choices, including: whether maximum rates or ceilings should be affected by size, ownership, area, or other variables; whether total costs or individual cost centers should have ceiling limitations; whether the percentile ceilings on allowable costs should be high or low; what kind of inflation allowances should be used in projecting rates; whether efficiency bonuses should be employed; whether rates should vary with patient impairment; and how property costs should be reimbursed. The sections that follow lay out these policy choices in greater detail.

Grouping of Facilities

To penalize inefficiency or to avoid buying overly expensive care, states generally categorize facilities into homogeneous groupings most commonly by level of care, size, and geographic area—then set different ceilings on reimbursable costs for each group. The rationale for this procedure is that homes with different characteristics provide different kinds of services or face different input prices; in either case, they will have different cost structures. The effect of grouping is to recognize as reimbursable certain expenditures in the higher-cost groups that otherwise would not have been so recognized and to exclude certain expenditures of the lower-cost homes that would have otherwise been recognized as reimbursable.

Percentile Ceilings

Once states have established a grouping system, they must set ceilings for reimbursable costs. In practice, these ceilings range from the 50th percentile to none at all, homes being solely limited by their own past cost experience. Clearly, the lower the percentile ceiling, the less the variation in reimbursable costs among homes. Lower ceilings also increase the risk that the state policy will adversely affect the quality of care, the willingness of homes to serve Medicaid patients, or both. To reduce these risks, some states have applied different percentile ceilings to different cost centers: higher ones for costs clearly related to patient care, such as nursing and social services, and lower ones for other costs, such as laundry, housekeeping, and administration.

Inflation Adjustments

States use inflation adjustments to project costs from the base year to a future period. For example, a state may use costs from calendar 1981 to project costs for fiscal 1983, developing an inflation factor to cover a period of 18 months. Many states use general indices such as the consumer price index (CPI) or apply the implicit gross national product (GNP) deflator to all costs. Others use composite indices with different factors for different cost centers, thus more closely reflecting the actual inflationary pressures at work in the nursing home industry. How accurately inflation factors correspond to the prices nursing homes actually face has important implications for rate setting in both prospective and retrospective systems. If the index exaggerates the increase in prices of goods and services relevant to nursing homes, the state will reimburse homes at above-market rates. If the index underestimates inflationary pressures, reimbursement will not cover costs, a situation likely to affect adversely both quality of care and access to services.

Efficiency Incentives

States have attempted to incorporate efficiency incentives into retrospective, prospective, and flat-rate systems. Efficiency incentives are most obvious in flat-rate systems, since each facility is permitted to keep all of the difference between the rate and its cost. Facility-specific retrospective systems, in contrast, offer unfortunate incentives for homes to maximize costs (up to the ceilings) in order to obtain maximum reimbursement rates. Some retrospective systems attempt to address this problem by setting efficiency incentives at some percentage of the difference between the facility's actual costs and the ceiling. These incentives are intended to encourage homes to stay below the ceiling by providing them a kind of bonus for doing so.

In prospective systems, efficiency incentives are somewhat more complex: facilities may gain by retaining all the differences between the rate and their costs, or lose if their costs exceed the reimbursement rate. While this arrangement seems to offer incentives for efficiency, it may offer even stronger temptations to increase this year's costs in order to increase the reimbursement rate in subsequent years. States can limit this kind of "gaming" to a certain extent by giving current rates more importance than current costs in establishing future rates. As will be discussed later, the choice of rates versus costs as a base for prospective systems can have a large impact on cost containment.

Patient-related Rates

States typically group nursing homes by level of care, as skilled or intermediate facilities, establishing different rates or ceilings for each. However, such groupings are quite crude in their ability to capture the differences in costs of caring for patients with different levels of impairment. If all patients bring in the same per diem reimbursement, it is to the advantage of the facility to admit those Medicaid patients who are less impaired and to avoid admitting those needing "heavy care." This "creaming" phenomenon has generated interest in reimbursement arrangements that more closely tie rates or ceilings to the degree of impairment of individual patients. Four states-Illinois, Maryland, Ohio, and West Virginia-currently employ patient-related payment systems; Illinois and Maryland increase rates for patient impairment regardless of care provided, while West Virginia and Ohio increase the nursing cost ceiling but only reimburse for incurred costs. As explained later, the two approaches have very different implications for access and quality of care.

Property Costs

Historically, states have reimbursed nursing homes standard property costs, including depreciation, interest, and a return on equity. Many problems resulted from this traditional system, including frequent sales, periodic refinancing, little or no owner equity, and high construction costs. Some states have responded to these problems with restrictions on sales, borrowing, construction costs, and other financial dealing—regulations so strict as to discourage adequate maintenance of existing physical capital and to reduce severely incentives for new investments. The variety of problems with past arrangements have sparked interest in "fair rental" systems that pay a return on the appraised value of the facility's assets, which is permitted to increase with market conditions.

The Consequences of Choice

States, then, have many options in designing Medicaid reimbursement systems for nursing homes. Each of these options has differential effects on incentives for containing costs, providing quality care, and maintaining access to care by Medicaid patients, particularly those with "heavy care" needs. To carefully examine the consequences of choosing from among these options, we employ a variety of methods, ranging from tabular analysis to the use of multivariate statistical techniques to control for outside influences.

We begin by classifying the eight states mentioned earlier into three groups according to the relative stringency of their reimbursement systems. At the most stringent end of the spectrum are Illinois and California, which both use flat rates set at the median for a base year projected to the rate year. These states employ relatively rigid methods for the inflation allowance—the consumer price index or past experience, whichever was less generous. Georgia also falls into the stringent category because of its strong efficiency bonuses. Set at a high percentage—75 percent of the difference between the statewide 75th percentile of costs for specific cost centers and a facility's own costs for those centers—the bonuses approximate the strong cost incentives of a flat-rate arrangement.

In contrast to these stringent cost-containment states, Minnesota, Connecticut, and Massachusetts appear to offer very weak incentives for cost containment. Each had a relatively high ceiling (no ceiling at all in Connecticut), and a lenient approach to adjusting for inflation. The two remaining states—New York and West Virginia—fall somewhere in between these two extremes. Although both had low ceilings and limits on administrative salaries, they also had potentially weak constraints on inflationary pressures. New York permitted labor contracts to be passed through, and West Virginia used historical cost increases in its own homes to adjust for inflation in the future. Both also differed from other study states in a couple of other important respects. New York permitted homes to appeal their rates, essentially setting up a system of negotiation. In addition, since the state historically has had very expensive nursing homes, such cost-control incentives as were in place in the 1978 to 1980 period operated on top of a base already very high by national standards. West Virginia's costcontainment history over the period in question may have been skewed by the introduction in 1977 of a patient-related reimbursement system that might have generated cost-increasing pressures on its own by encouraging the admission of more impaired patients. New York and West Virginia were categorized as states with moderate cost-containment incentives.

The relative stringency of provisions for property cost controls also differs among states. In general, our expectations were that the rate approaches in California and Illinois should have encouraged the most efficiency and lowest rates of increase in costs. The large efficiency incentives in Georgia should also have encouraged control of capital spending. The weakest incentives seem to have been in the states with cost reimbursement and weak controls (West Virginia and Minnesota). The remaining states had controls or incentives that would seem to place them in a middle group.

In table 1 the reimbursement systems of these eight states are summarized. The table reflects whether the state has a prospective, retrospective, or flat-rate system, and provides a brief assessment of the a priori cost-containment effects of other features. The table focuses on the likely cost-containment effects, and does not address other objectives which are often important targets of reimbursement policy. It also simplifies complex variables: percentile ceilings are categorized as low, high, or none; inflation allowances are judged stringent, moderate, or generous; use of efficiency bonuses is indicated by a simple yes or no; and property-cost controls are classified as weak, moderate, or strong. Clearly, many of these assessments reflect subjective judgments, and are subject to some error. Even so, these brief characteristics may supply a useful introduction to the discussion of costcontainment effects that follow.

Effectiveness of Reimbursement Systems in Controlling Costs

Our analysis found very strong evidence that the cost-containment incentives in state reimbursement systems appear to have a very real

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^a Although nominally prospective, New York's system, in fact, was largely retrospective, since retroactive adjustments were frequently made. Ceilings were used in 1978–1979, but were eliminated in 1979–1980.

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impact on cost increases; the states with what we have termed "strong" incentives—California, Georgia, and Illinois—had average real-growth rates in operating costs of less than half of those of the "weak" states (see figure 1). Thus, between 1978 and 1980, California and Georgia reported increases in real total per diem operating costs of no more than 2.33 percent, and Illinois actually reported a decline in real per diem costs of .68 percent. In contrast, during the same period, real per diem costs rose between 4.87 percent and 5.05 percent in the weak cost-containment states of Connecticut, Massachusetts, and Minnesota.

These cost-containment effects were even stronger in those highparticipation Medicaid facilities where at least 76 percent of the patients were Medicaid recipients. In these high-participation Medicaid homes, real per diem costs rose just 2.12 percent in California, 1.67 percent in Georgia, and fell .68 percent in Illinois. In contrast, among highparticipation Medicaid homes in the weak cost-containment states, real per diem costs rose by 5.62 percent in Massachusetts, 5.06 percent in Connecticut, and 4.61 percent in Minnesota. Cost-containment effects were even more in evidence when we examined high-participation Medicaid homes with high costs in the base year (1978). These facilities should feel cost-containment pressures more intensely than others. Differences between weak- and strong-incentive states in real cost increases become even greater.

Two other points merit mention. First, all reimbursement systems, whether flat-rate, prospective, or retrospective, have some method of establishing ceilings on rates. Findings from our muiltivariate analyses indicate that the homes most likely to be above these ceilings have lower rates of increase in costs than other homes, regardless of the type of reimbursement system. The type of system does seem to affect cost increases for homes below the ceilings, however. Those in states with strong cost-containment incentives had low rates of increase and vice versa. The second point is that prospective and flat-rate systems generally reduce cost growth more than retrospective arrangements. At the same time, however, efficiency incentives, inflation projection methods, and the level of ceilings on rates appear to be very important to cost growth, regardless of the general reimbursement method.

Findings from our ten-state skilled nursing facilities study cast additional light on the relative cost-containment effectiveness of specific reimbursement system features. As previously mentioned, this ten-



FIG. 1. Annual percentage change for nursing homes in cost per patient day, 1978 and 1980 (constant dollars)

^a High participation Medicaid homes defined as those with at least 76 percent of their patients covered by Medicaid.

^b Predominantly Medicaid homes defined as those with at least 50 percent of their patients covered by Medicaid.

state study included the states Alabama, Florida, Maryland, Michigan, and Pennsylvania, as well as some of the states in the eight-state study that serve as the primary basis of this analysis. Data from the ten-state study indicate that, although the two flat-rate states (Illinois and California) had the lowest 1980 costs, the average annual rate of increase in Illinois for below-ceiling homes was three percentage points below the average increase in California. These differences may be the result of different state approaches to inflation adjustment. In California, the rate of increase in rates depended on either the change that occurred in costs historically or the California CPI, whichever was the lower of the two. The adjustment was applied to all costs for California nursing homes, including capital. Illinois used data on historical changes in costs relative to the underlying inflation rate to adjust its rates for inflation; capital costs were not inflated. The effect in Illinois was that a rate of increase lower than the actual rate of inflation was achieved.

The ten-state study also found substantial differences in both the levels and rates of increase among the states with prospective reimbursement systems. In this group, the states with lowest 1980 average costs, as well as the lowest rates of increase in costs, were Florida and Alabama-states with prospective reimbursement systems containing low percentile ceilings and moderate inflation adjustments. Other prospective systems were less effective in controlling costs. Connecticut and New York-which appear to have been liberal in recognizing wage-growth in nursing homes, and which had eliminated percentile ceilings by 1980-had both higher 1980 levels of costs and higher rates of increase between 1978 and 1980 than any other state in the ten-state study except Massachusetts. Although New York had a prospective system, the state also made retroactive adjustments in a large number of cases to homes affected by ceilings. Connecticut did have some efficiency-incentive features in place, but these apparently had little or no effect. Michigan, the remaining prospective system in the ten-state study, had 1980 per diem costs and rates of increase in the middle of those of the other four states.

The cost-containment results for the retrospective reimbursement systems in the ten-state study were also mixed. Massachusetts, which started from high cost levels in 1980, registered a relatively high rate of increase between 1978 and 1980. Massachusetts had very liberal ceiling rates, and few other controls or incentives to minimize operating costs. Maryland, in contrast, started from relatively low median costs in 1980, and reported a relatively moderate rate of growth. Maryland's retrospective reimbursement system contained lower ceilings than those in Massachusetts, and featured a strong efficiency allowance that made it possible for a home to retain up to \$1.40 per patient day. These features may have contributed to the relatively low rate of increase in Maryland. Finally, Pennsylvania reported comparatively high rates of increase, particularly for its high-cost homes. Pennsylvania's administrative ceilings and low percentile ceilings apparently did not offset the lack of efficiency incentives.

In summary, the relative cost-containment effectiveness of various state systems does not depend solely on the prospective, retrospective, or flat-rate nature of the system. While flat-rate systems inherently contain strong incentives, the method for establishing and adjusting the rate can make important differences in cost controls. Some prospective systems have produced low rates of increase. Inflation adjustments and percentile ceilings apparently can make a difference here. Efficiency incentives and base adjustments are probably also important, but these were not sufficiently prominent in the states studied to draw conclusions. Finally, although some retrospective systems have had an extremely deleterious effect on cost containment, other states have shown that the undesirable inherent incentives can be offset, apparently by efficiency incentives or low percentile ceilings.

Effect on Quality of Care

As we have already noted, aggressive cost-containment policies raise concerns about the possible negative effects on the quality of nursing home care. To test the extent to which these effects are in fact occurring, our analysis examined how nursing homes change their resource-allocation patterns in response to cost-containment pressures. Outcome measures would, of course, provide a better indicator of care quality, but we could not provide these measures for the present analysis. What we could do is compare changes in patient-related and nonpatient-related costs in homes strongly subject to rate-setting pressures with homes less subject to such pressures. (Patient-related costs were considered to include routine nursing, social, leisure, and dietary services; nonpatient-related costs were considered to include administration, laundry, housekeeping, operations, and maintenance.) In particular, we compared the expenditure patterns of predominantly private homes (where fewer than half the patients were Medicaid recipients) with predominantly Medicaid homes (where at least half the patients were Medicaid recipients). In all but two states (Massachusetts and West Virginia), rates of increase for patient-related costs in predominantly private homes turned out to be significantly greater than the increases in nonpatient-related costs. This finding suggests that in most states predominantly private facilities—in which private-market incentives dominate—generally attempted to attract and retain private patients by increasing, in real terms, services which are directly related to the welfare of patients.

Among predominantly Medicaid homes in the weak-incentive states (Connecticut, Massachusetts, and Minnesota), patient-related costs also grew faster than nonpatient-related costs for high-cost homes. Predominantly Medicaid homes in states with weak cost-containment incentives thus seemed to behave much like private homes, with resulting substantial increases in patient-related services. In contrast, in the moderate- and strong-incentive states, patient-related costs generally were constrained more than were nonpatient-related costs, particularly among the high-cost homes.

Figure 2 shows these patterns of change for patient-related versus nonpatient-related costs among both predominantly private homes and predominantly Medicaid homes with high base-year costs. As this figure indicates, increases for both types of expenditures were sharply constrained among predominantly Medicaid homes with high baseyear costs in states with strong or moderate cost-containment systems. Patient-related expenditures, however, rose even more slowly than nonpatient-related expenditures among these homes. Apparently, then, nursing homes that face strong incentives to control Medicaid costs are more likely to respond by constraining outlays on nursing services, social and leisure services, and food than on administration, laundry, housekeeping, operations, and maintenance. The reasons for this are not clear, but the implications are: policy makers who wish to curb costs but preserve quality of care develop reimbursement systems that treat patient-related and nonpatient-related services differently.

Effect on Access to Care by Medicaid Patients

Economic theory, as well as common sense, would suggest that, as Medicaid rates are reduced relative to private charges, nursing homes





FIG. 2. Average annual increases in patient-related versus nonpatient-related costs in predominantly private and predominantly Medicaid nursing homes, 1978–1980 (constant dollars)

will increasingly prefer private patients and wish to avoid admitting Medicaid patients, thereby curbing access for Medicaid patients. One might, therefore, expect that state cost-control efforts would result in savings from reductions in Medicaid patient days as well as from containment of per diem rates.

To examine the impact of cost constraints on access, we examined the changes in proportion of Medicaid days among those facilities with the greatest incentives to control costs—homes with at least 50 percent Medicaid patients. These homes were grouped in two ways: (1) homes having above- or below-average costs in 1978, the first year of the study (termed high- or low-cost homes); and (2) homes that experienced either above- or below-average growth between 1978 and 1980 (termed high- or low-growth homes). These groups reflect two alternative ways of measuring cost-containment pressures. Highcost homes were more likely to find themselves above ceilings and, therefore, to face relatively stronger pressures to cut back. Low-growth homes, in fact, did control costs, as evidenced by their lower-thanaverage rates of increase.

We found that Medicaid patient days generally increased faster in the high-cost homes than the low-cost homes. Medicaid patient days increased faster in high-cost homes than in low-cost homes in each of the strong and moderate incentive states (with the exception of California, where Medicaid days decreased in both groups of homes). This suggests that facilities respond to cost-containment pressures in the short run by increasing occupancy rates, reducing per diem costs, and expanding Medicaid volume. Presumably, these homes would admit more private patients if they could; but, having exhausted the available supply of private patients, they cannot afford to suffer losses on the Medicaid patients they already have. The apparent short-term response, then, is to increase occupancy rates—which in itself indirectly lowers per diem costs—and perhaps to control costs directly by instituting changes in staffing, services, and similar measures.

Similar results were found when comparing the homes with highand low-growth rates. Facilities with lower cost growth reported greater increases in Medicaid days than the high-growth homes in all but one state (New York). This finding seems to support the contention that—at least in the short term—cost-containment measures do not cause reductions in access.

Multivariate analyses by Scanlon (1987) supported this conclusion. While there was a positive and statistically significant impact of rates on access, it appeared to be very small. Indeed, study estimates indicate that a 10 percent reduction in Medicaid rates would result in only a 0.4 percent reduction in the proportion of Medicaid days in the home. This small response probably results from the fact that nursing home costs are very responsive to rate changes under costbased reimbursement systems. Increases in rate ceilings result in cost increases, and, conversely, reductions in ceilings result in cost reductions. Increases in Medicaid rates may have some direct effect in increasing access, but this effect seems to be offset over time as facilities adjust their cost structure in response to reimbursement rate changes. That is, while the independent effect of rates is positive, increases in rates also cause increases in staffing, amenities, and thus costs as a whole. The effect of these increasing costs on Medicaid access, then, is firmly negative, and this longer-term effect offsets the initial positive effect on Medicaid access.

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If the Medicaid rate could be increased without increasing costs as a result, the effect of rate changes on access would be stronger. We estimated that a 10 percent increase in rates relative to costs could result in a 3.1 percent increase in the percentage of Medicaid days, a much larger increase in Medicaid access. However, since the findings show that nursing home costs are very responsive to Medicaid rates, it would be difficult to achieve an increase (or decrease) in the Medicaid rate relative to costs. These findings suggest that increases in Medicaid rates may be more successful in achieving access objectives where the incentives are very strong to contain costs, for example, where flat rates are in place.

In states without flat rates, however, changes in Medicaid rates probably do not have substantial net effects on Medicaid access. On the one hand, increases in rates are likely to result in facilities upgrading staff and amenities in an effort to attract private patients, which may to some extent limit access for Medicaid patients. Conversely, reductions in rates are likely to result in reductions in costs to avoid financial losses on Medicaid patients. Once costs are reduced, however, Medicaid patients become more attractive to the facility, thus increasing access.

It should be emphasized that the econometric results also show that Medicaid access declines as income of the elderly increases and with the proportion of the population over age 85. That is, Medicaid access is adversely affected by increases in private demand. Since nursing homes will undoubtedly continue to prefer private patients, and if the growth in private patient demand continues to exceed the growth in bed supply, Medicaid rates will have to increase just to maintain existing access.

Effects of Patient-related Rates on Access and Care Levels for Heavy-care Patients

If all Medicaid patients in a given home bring in the same per diem reimbursement, nursing homes will be relatively reluctant to admit the most severely impaired patients-those needing "heavy care." Some states have responded to this problem by adopting patientrelated reimbursement rates. The study analyzed the implications of two alternative ways of implementing patient-related reimbursement rates (Holahan 1984). The first method, used by Illinois (and also by Maryland), bases payment rates for the nursing component on the level and nature of patient impairments, independent of whether or not these resources are actually expended on behalf of the heavy-care patient. The second method, used by West Virginia (and also by Ohio), increases the ceilings on nursing costs as the level and nature of patient impairments increase, but only pays for costs that are actually incurred. Clearly, the incentives in the former system encourage access by providing a clear potential for profit, whereas the latter system merely protects the home against loss. Our data showed responses consistent with these incentives; patient impairment indices (such as the need for assistance with medications, dressing, eating, and bathing) in Illinois increased by 7.5 percent between 1978 and 1980, while similar impairment indices in West Virginia remained virtually unchanged.

We also analyzed the effects of the two systems on the actual provision of care to severely impaired patients. The different incentives built into the two types of systems again were clear: in Illinois and Maryland the incentives would operate to minimize costs; in West Virginia and Ohio the incentives would be to increase resources devoted to patient care. Again, results were consistent with incentives. As average Medicaid patient-care needs increased in Illinois, expenditures on nursing resources increased very slightly: a 1 percent increase in patient impairment scores resulted in a .6 percent increase in nursing costs. The reverse occurred in West Virginia: a 1 percent increase in patient impairment scores resulted in a 1.1 percent increase in nursing costs. Moreover, in West Virginia, outlays for nursing services were not significantly different in predominantly Medicaid homes than in predominantly private homes. In contrast, nursing costs per patient day in Illinois were significantly lower in the Medicaid homes than in predominantly private homes.

The Effects of Alternative Capital Reimbursement Strategies on Nursing Home Profitability, Efficiency of Financing, and Incentives to Maintain the Quality of Physical Capital

Although typically accounting for only about 15 percent of total costs, capital reimbursement historically has been perhaps the most controversial aspect of nursing home reimbursement under the Medicaid program. It is also one of the more complex. Because capital reimbursement methods directly affect facility profitability, they tend to receive a disproportionate share of the attention of those concerned with nursing home reimbursement issues. In the mid-1970s, for example, the traditional capital reimbursement methodology used in New York became the center of a scandal involving charges of excessive profits to nursing home owners at the taxpayers' expense. The allegations centered on a feature of the reimbursement formula that encouraged the frequent resale of facilities to increase profits (New York State Moreland Act Commission on Nursing Homes and Residential Facilities, 1976). More recently, in reflection of similar criticisms, the federal Deficit Reduction Act of 1984 (DEFRA) prohibited that feature of traditional reimbursement approaches that made sales such a ready source of profits.

To analyze the effects of alternative methods of capital reimbursement, we examined a wide range of systems, classifying them into three basic types:

- 1. The traditional cost-based approach;
- 2. The traditional cost-based approach with controls;
- 3. The flat rate approach.

A fourth—called the "fair rental" approach—has recently been introduced in at least two states, but we lacked data to evaluate its operation. As indicated in the concluding section, however, we do think it holds more potential for meeting the objectives cited below than any of the existing types. In the remainder of this section we evaluate the three common types of methods noted above according to three mainoften conflicting—public policy goals of the states with respect to capital reimbursement. Those goals are:

- 1. To provide enough financial incentive to attract the desired level of investment in nursing home beds, thus providing access;
- 2. To encourage the construction and maintenance of physical plants of acceptable quality;
- 3. To provide incentives to minimize costs to the state.

Although we focus on the incentives that exist in the Medicaid reimbursement methodologies themselves, we are aware that these incentives may be offset by various factors, including, in particular: profits gained on home operations as opposed to capital arrangements, profits from private pay patients, and certain tax advantages (such as accelerated depreciation and the application of capital gains instead of income tax rates to certain types of nursing home income) that can enhance the profitability of homes from an investment standpoint. Nonetheless, because these are factors which are independent of the type of Medicaid reimbursement approach used (e.g., private pay patients are always preferred to Medicaid patients because they pay charges determined by the home, rather than a rate set by the state), the incentives imbedded within the reimbursement methodologies should be of primary concern in the design of systems.

The Traditional Cost-based Approach

The guiding principle of traditional cost-based capital reimbursement is to pay owners at rates that reflect the full costs they incur in purchasing nursing home buildings and equipment. This is the payment policy used initially by most Medicaid programs and, until the passage of DEFRA, by the Medicare system as well. In our study, Minnesota and West Virginia (over the 1978 to 1980 time period) used systems of this type. Under the traditional approach, capital reimbursement is based on the sum of three separate rate components covering: expenses related to depreciation on the buildings and equipment, interest on loans secured to purchase the buildings and equipment, and a return on the owner's equity (i.e., investment) in the facility.

The traditional approach to Medicaid capital reimbursement offers

some significant advantages in terms of access and quality. Since owners are reimbursed for all costs, this approach encourages investment and thus access, and also encourages the construction and maintenance of high-quality physical plants. But it also offers some real disadvantages.

First, since the base cost of the home is equal to the owner's construction cost or purchase price, the only way the value of the home can increase for reimbursement purposes is through a resale at a higher price, which then establishes a higher base cost for computing depreciation. This encourages both the frequent resale of nursing homes—since an owner can only be compensated for an increase in the value of his home by selling it—and inflation in selling prices because buyers are assured that their higher costs will be reimbursed. Frequent sales, often called "trafficking," thus cause rapid increases in capital reimbursement rates, can generate large profits for owners which are financed by the government but are unrelated to the provision of care, and are felt by many observers of the nursing home industry to have an adverse effect on quality.

A second problem with the traditional capital reimbursement approach is that it offers few incentives for efficiency in investment and financing decisions. Because interest expenses are fully reimbursed, owners have no incentive to seek the lowest interest rates on their loans. In addition, because the return on equity is based on accounting rather than economic values, the return on equity falls over time as a facility's accumulated depreciation increases, thereby reducing the book value on which the owner's equity is based. This serves as a disincentive for owner equity.

Finally, because keeping up the value of a home for resale purposes is so important under this type of system, owners may be encouraged to incur excessive renovation and maintenance expenses. The incentive to incur such expenses is exacerbated by the fact that traditional systems will incorporate the full costs of these activities into the home's rate, with renovation an allowable capital expense and maintenance an allowable operating expense.

The Traditional Cost-based Approach with Controls

The second basic approach to Medicaid reimbursement, used by Massachusetts, New York, and Connecticut, is a modification of the traditional one, designed to eliminate the incentive for frequent sales. The basic idea is to set the base rate according to the original cost of the facility, rather than the most recent purchase price. Thus, the buyer's depreciation reimbursement cannot change as a result of a sale. In addition, systems of this type typically set direct limits on allowable interest expenses (e.g., not recognizing interest rates in excess of a specified amount) and on allowable construction and renovation costs (e.g., not recognizing depreciation in excess of a specified amount per bed).

The advantage of this approach is that it offers some cost-control advantages and eliminates incentives for "trafficking," while still basing rates mainly on individual facility costs. The primary disadvantage, however, is that over time it may discourage capital investment entirely by removing the ability to generate even reasonable profits on such investment. This approach also reduces the incentives of nursing home owners to maintain and renovate their facilities, since profitability is no longer tied to the purchase price of the home. As a result, facility quality may deteriorate over time as well.

The Flat Rate Approach

Under the flat-rate approach, a state sets the price it will pay for nursing home care independent of individual facility costs. (California, Illinois, and Georgia all used variations of this approach.) Typically, this involves setting a rate based on the average or some percentile of an array of costs (e.g., the median or 75th percentile) for different groups of facilities. Grouping generally takes into account factors such as geographic location, type of facility (e.g., skilled or intermediate), and bed size. The idea is to separate facilities into homogeneous groups and then determine a rate that approximates the cost of an "efficient" facility within each group. All facilities within a group are then paid at that rate, regardless of the costs actually incurred by each facility individually.

The objective of flat-rate systems is to encourage homes to hold down their capital expenditures by providing a combination of potentially large rewards and penalties for costs below or above, respectively, the state-determined efficient price. Thus, these systems create winners and losers, depending on the ability of individual nursing homes to contain their costs relative to the flat rate. The systems do not encourage resales, since the selling price of an individual facility would only affect its reimbursement rate insofar as it might affect the aggregate cost measure.

Although excellent from a cost-containment perspective, flat rates have some serious drawbacks. First, the stringent cost-containment features may discourage investment, and thus decrease patient access over time. Second, this approach creates disincentives for maintaining physical plants, since maintenance and renovation costs cannot affect reimbursement but will affect profit or loss. Finally, since homes with costs above the rate will not be fully reimbursed for their excess expenditures, their participation in the Medicaid program is discouraged. A tendency for higher-cost homes to drop out of Medicaid will reduce access and make the reimbursement rate increasingly constraining over time, thus exacerbating the already undesirable access and quality incentives of the system.

The Systems in Operation

Figure 3 records some empirical evidence on the effects on nursing home capital costs of the three capital-reimbursement approaches historically used in state Medicaid programs. The figure divides homes into those very dependent on Medicaid for their revenue (highparticipation Medicaid homes) and those predominantly dependent on the private market (predominantly private homes). Comparisons between the two indicate the impact of Medicaid reimbursement on homes in relation to what we would have expected in the absence of Medicaid.

The data show that homes do appear to respond to the incentives of the various approaches according to expectations. In the cost-based systems (Minnesota and West Virginia), the cost-increasing incentives pushed the rate of growth in capital costs in the high-participation Medicaid homes to more than quadruple the rate in the predominantly private homes. The cost-based systems with controls (Connecticut, Massachusetts, and New York), however, appear to have moderated successfully some of the cost-increasing incentives of the traditional cost-based approach. Rates of growth in capital costs in this set of states were much closer between the high Medicaid and predominantly private homes, and over a longer period of time one would expect capital costs in the high Medicaid homes to exhibit even more of the cost-constraining effects of this type of system.

The even more powerful cost-constraining effects of the flat-rate



FIG. 3. Average annual rate of growth in per diem capital costs, 1978–1980

^a Homes with more than 75% Medicaid patients.

^b Homes with less than 50% Medicaid patients.

approaches are evident in the rates of capital-cost growth in the flatrate systems (California, Georgia, and Illinois). In states using this approach, high Medicaid homes experienced lower growth than predominantly private homes, suggesting that Medicaid was even more constraining than the private market.

Thus, the empirical evidence supports our hypotheses about the effects of different capital-reimbursement approaches on the behavior of homes. Cost-based systems, although containing desirable incentives for access and quality, result in rapid increases in costs, which automatically translate into rapid increases in rates and state spending. Placing controls on a cost-based system does reduce cost increases, but over time will not encourage access and should discourage the maintenance of quality. Finally, flat-rate systems are very successful at containing costs, but at the same time can discourage patient access and discourage maintenance of the physical quality of homes.

Recommendations

Our analysis here suggests various ways in which state reimbursement systems could be redesigned to contain costs and at the same time minimize unwanted effects on access and quality of care. Since the recommendations provided here constitute a structural framework rather than a completely specified system, they preserve a wide latitude for state choice—which we think desirable, given the diversity of need among the states and the contribution that differing choices have made in the past to constructive innovation.

In brief, it is recommended (for reasons explained below) that state officials divide the reimbursement system into three main components:

- 1. Patient care-related operating costs. States should base reimbursement on the home's own cost for resources devoted to patient care. Efficiency incentives should be minimal or nonexistent in order to encourage homes to maintain or expand care-related resources. Payments should vary among patients according to care needs in order to promote access and appropriate services for heavycare patients.
- 2. Other (noncare-related) operating costs. States should impose strong efficiency incentives to encourage cost containment. This could be accomplished with either a flat rate paid to all comparable homes or, preferably, a facility-specified prospective rate with most savings returned to the facility.
- 3. Capital costs. States should base reimbursement for capital costs on a rental concept that recognizes that real estate typically appreciates over time. By increasing reimbursement in accord with that appreciation, this approach attempts to provide operators with an equitable return, and encourages long-term ownership and adequate maintenance of the physical structure. Tying reimbursement to a home's value should promote the most efficient financing arrangements.

Patient Care-related Operating Costs

Certain types of nursing home expenditures, such as nursing salaries and supplies, social and recreational expenses, and certain dietary expenditures, directly affect the quality of patient care. Reimbursement methods for these costs should be cost based, with limited efficiency incentives and ceilings that vary with patient impairment; and should provide for a portion of payment to vary with the level of patient needs, independent of the costs the home incurs.

Cost-based Reimbursement with Weak Efficiency Incentives. The argument for adopting cost-based reimbursement arrangements, either prospective or retrospective, with weak efficiency incentives is based on evidence as to the sensitivity of resources devoted to patient care to the stringency of state cost-control incentives. The states in the analysis generally made no distinction between patient- and nonpatient-related costs: efficiency incentives were applied rather uniformly across cost categories. In states with strong cost-containment incentives, the predominantly Medicaid homes generally restrained growth of their patient-care operating expenditures more than their nonpatient-care expenditures, while in states with weak cost-containment incentives, the reverse held. In two states with data on patient impairments, we also found that as patient needs (measured by average dependency levels) increased, nursing resources increased correspondingly under the weak-incentive system, but to a lesser degree under the strong-incentive system. Thus, since patient-care services seem highly vulnerable to strong cost-containment incentives that do not differentiate among cost centers, a policy should be designed to target the nonpatient-related services for the bulk of the cost savings, sheltering patient-care services as much as possible.

Paying a facility's costs, especially on a retrospective basis, has been widely criticized as promoting inefficiency and excessive cost growth. Indeed, concern for similar problems led Congress in 1983 to adopt the Medicare prospective payment system for hospitals. Nursing home care, however, presents significantly different—and less well understood—policy issues than does hospital reimbursement, e.g., weaker roles of physicians, greater influence of for-profit providers, and lesser importance of malpractice as a constraint on quality reductions. Given these differences, strong efficiency incentives on patient-related services in nursing homes looks like poor public policy.

Nursing Home Reimbursement

Using prospective rates—in effect imposing strong efficiency incentives—is appropriate when the state knows it is purchasing more or less the same product from all vendors; that is, when the state knows that similar types of patients are being cared for comparably and that the underlying costs of producing that care efficiently are similar. For nursing homes, however, too little is known about the variation in quality of care and how that variation may affect costs. This analysis has shown that patient characteristics; home characteristics such as ownership, size, and occupancy rates; input cost differences; and one measure of quality, nursing hours per day, explained little more than half the variation in costs. It seems very likely that some part of the unexplained variation is attributable to other, as yet illunderstood and perhaps difficult to quantify, dimensions of quality of care.

Reimbursing nursing homes at the same rate regardless of the quality of care they provide would be inequitable in the short term and likely lead to reductions in quality over the longer term. In comparison with a facility-specific cost-based system, a flat-rate system would, for the same level of program costs, have to reduce rates paid to high-cost homes to finance the higher rates of low-cost homes, thus undoubtedly penalizing some good-quality homes while providing a windfall to poor ones. Also, the incentives to cut costs in such a system would most probably reach beyond inefficiency and adversely affect the quality of care.

Given that patient care-related costs comprise 60 to 70 percent of all operating costs, it is possible that cost-based methods with little or no efficiency incentive for patient care-related costs could drive up costs to higher levels than some states could tolerate. Within such an arrangement, however, it is possible to retain some control over patient-related costs without sacrificing completely the state's interest in maintaining quality. Judicious use of ceilings (as discussed later) and the adoption of an efficiency incentive equal to some percentage, say 25 percent, of the difference between costs and the ceiling would result in some cost consciousness even in a retrospective system. Similar controls could be achieved in a facility-specific prospective system that establishes rates from a base year's costs adjusted for inflation. A case-mix index could be used to adjust rates for case-mix differences, and rates could be increased each year by an independent index reflecting input price inflation and perhaps other considerations. Any home exceeding its case-mix adjusted rate would be penalized, but other incentives could be provided to assure that homes do not cut costs excessively and thus impair quality. For example, if a home's costs in any year fell below some fixed percentage, say 95 percent, of the prospective rate, future rates would be projected on the basis of its costs instead of its rate. Under either approach, however, efficiency incentives should be imposed on patient care-related costs only after applying strong incentives to other operating costs and capital costs as well.

Patient-related Rates. Patient-related rates have been a response to the "creaming" phenomenon, whereby nursing homes make every effort to fill the beds they make available to Medicaid patients with lighter-care patients, in preference to heavy-care ones. Three methods of tying rates to patient care needs have been tried to improve access for heavy-care patients. One method establishes rates based on patientcare needs independent of the individual home's actual cost; homes receive more or less revenue depending on the patients they have, but their revenue does not depend on how much they spend for those patients. The second method uses patient needs to set ceilings on reimbursable costs; homes receive more revenue for heavy-care patients only if they actually incur higher costs. The third method attempts to combine the best elements of the first two by providing supplementary payments varying with patient need that would be added to the basic rates. Obviously, the first two approaches have very different incentives for access and quality, emphasizing one objective more than the other. The supplementary payment method seems to hold the most potential for achieving both goals.

The patient-related rate, independent of costs, has been used in both Illinois and Maryland, and has apparently improved access for heavy-care patients. Despite the state's relatively small supply of beds and low overall Medicaid rates there, Illinois officials report few problems in placing heavy-care patients in nursing homes. In Maryland, where a patient-related system was recently introduced in 1983, officials report a marked change in nursing home behavior: homes now seemingly seek rather than avoid heavy-care patients because they hold a greater profit potential. The implications of these systems for quality of care are less clear cut but also fairly predictable. As average Medicaid patient-impairment indices increased in Illinois, we observed very small increases in expenditures on nursing resources. By contrast, in West Virginia, where nursing costs are reimbursed retrospectively up to a ceiling based on case mix, nursing resources increased markedly with increases in patient impairment indices.

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Unfortunately, however, access for heavy-care patients may be aided little by a system like West Virginia's. In this state, only nursing homes where costs have been above the ceiling receive additional revenues for admitting a heavy-care patient. Under this system, an additional heavy-care patient will raise the home's ceiling and the percentage of costs that is reimbursed will be increased. In the end, the home's losses on Medicaid patients will be reduced. But homes with costs below the ceiling would be reimbursed for additional spending on any patient, heavy or light. Homes can lose by admitting heavy-care patients under such a system. Because Medicaid rates are based on average costs, homes benefit when Medicaid patients are below average in care requirements and private patients are above average in care requirements. Under such a system, Medicaid patients, in essence, subsidize the private patients. (The subsidy is reduced or eliminated, however, if the Medicaid patients require more resources.)

The combined method, providing supplementary payments based on residents' need, promotes both access and quality, but this system contains pitfalls of its own. Quality may be encouraged by making the base rate depend on actual patient-care costs up to a patient needrelated ceiling; and heavy-care patient access may be fostered by paying supplementary amounts on behalf of each patient, depending on the individual condition. The difficulty in implementing such a system occurs in defining which patient needs are to be singled out for special remuneration, by how much, and for how long, in order to ensure appropriate care. For example, if the supplementary payments are reduced as the patient improves, then nursing homes may be discouraged from exerting the maximum effort to rehabilitate or maintain functional abilities for each patient.

In the absence of better information, it seems preferable for states to err on the side of encouraging high quality, at least to the extent this is financially feasible. Allowing a home to keep a higher supplementary payment for a longer period means the home benefits more from rehabilitation efforts that reduce the care required by the patient. This method also allows the state to reduce the frequency of assessment, which is a major administrative concern, as discussed later. To reduce costs to some extent, the state might schedule a reassessment soon after admission to avoid paying excessively for patients who would improve dramatically after admission regardless of the level of care.

Finally, it might be noted that, in spite of the merits of patientrelated rates, many states have exhibited real reluctance to move in this direction because of concern over the administrative cost of such a system. Implementing patient-related rates or ceilings requires assessing all Medicaid patients at periodic intervals and assigning a score reflecting the degree of dependency or service need along a large number of measures. It further requires analysis of the time and skill required in the treatment of numerous patient conditions and the translation of these time and skill requirements into monetary units from which rates or ceilings can be established.

Unquestionably, the greatest administrative task is that of patient assessment. The burden, however, may be reduced somewhat by limiting the frequency of reviews. Three of the four states with patient-related systems aim in a sense for continuous reviews, wanting to know each day whether a patient changes status. A more viable system in terms of both rehabilitation incentives and administrative costs may be to limit reassessments to lengthy intervals, such as three months, while giving homes the right to reviews if patients become sicker. On the other hand, this system may also require states to forego savings that might have been derived from lower rates for patients who improve between reassessments. In summary, however, although patient assessment may be complex, it is not insurmountably so; there is pleas of room to experiment in the implementation of an assessment sy: Given the very real benefits to be gained from establishing p related systems, states would be wise to experiment in this direction.

Other Operating Costs

As indicated earlier, the evidence from this study suggests the should concentrate their cost-cutting efforts on nonpatien "other" operating costs (consisting of administration, laundr keeping, operations, maintenance, and utilities). Together, patient-care costs amount to 30 to 40 percent of total operate The most appropriate instrument would be either a flat facility-specific prospective rate with strong efficiency incentilatter may be preferred because it provides virtually the sam of efficiency incentive at lower overall cost to the state; unc flat-rate system, facilities with relatively low costs would be paid up to the level of the flat rate; under the facility-specific prospective system, however, facilities below the state's ceiling are paid at rates based on their own cost experience. Under the facility-specific prospective system, homes with costs above the ceiling would only receive payment up to the ceiling.

To structure a facility-specific prospective system, states must address the following questions:

- What criteria should be used in grouping homes for establishing ceilings?
- How high should ceilings be?
- How strong should efficiency incentives be?
- What method for making inflation adjustments should be employed?

Grouping Criteria. Of all the criteria currently employed to group homes for purposes of setting ceilings, geographic area appears from our analysis to be the most critical, since input costs, such as wages and land rents, frequently vary substantially from area to area. Failure to control for these differences will inadvertently penalize some homes in high-cost areas and reward some homes in low-cost areas. States may also wish to group by size of facility, if they have reason to believe their high-cost, small homes provide a particularly high quality of service. They may also wish to group by age, in order to cushion older facilities against unavoidably high maintenance and operating expenses. Since these choices are heavily dependent on the circumstances of the individual states, there seems to be no reason to recommend them across the board.

Percentile Ceilings. Because this analysis has shown percentile ceilings to be a major factor in controlling rates of increases in costs, and because nonpatient-care operating costs have been identified as the best potential source for savings, percentile ceilings should be set relatively low for these costs—say, at the 50th or 60th percentile of facility costs, with costs weighted by patient days. (Weighting by patient days assures that small homes' costs do not distort the percentile calculations.) The ceilings should probably be relaxed over time, however, since they become increasingly constraining with each successive year. That is, even if high-cost homes succeed in controlling cost growth, the same percentage of homes (or patient days) will continue to be found above the ceiling, unless percentiles are relaxed as cost containment improves. Even though it may be anticipated that having separate reimbursement for patient-related costs will provide substantial protection against deterioration in quality of service, states will have to face the quality/cost tradeoff in this area at some point.

Efficiency Incentives. As indicated by this analysis, facility-specific prospective systems provide natural efficiency incentives for all homes, in that each home's profit or loss is determined by how much its actual costs fall below or above its rate (or the ceiling). But if future rates are based on current costs, homes may perceive an incentive to make themselves eligible for future higher rates by overspending, even though it means taking a loss in a given year. Under such a system, current- and future-year incentives pull in different directions: efficient facilities are penalized with lower future rates and inefficient facilities are rewarded with higher ones. The obvious alternative-basing next year's rate on the current year's rate-corrects for this problem but tends to perpetuate the existing distribution of efficiency/inefficiency within the system. That is, a facility that earns a profit in the first year would find it relatively easy to continue to do so, while a facility that incurs losses in the first year may find it difficult ever to become profitable. Given the considerable uncertainty surrounding the whole notion of efficiency in the nursing home area, and given the undesirability of further constricting the supply of nursing home placements now and in the future, such severity in reward and punishment seems unwarranted. Rather, states should base the future-year rate for each facility on current-year actual costs plus 75 percent of the differencenegative or positive-between its cost and its rate. This system would approach the strong incentives of a "rate-to-rate" approach, while reducing somewhat the severity of that approach.

Inflation Allowances. As mentioned earlier, facility-specific prospective systems must employ some method of developing future-year rates from the costs incurred in a current or past year. In some cases, the year for which the rate is applied is a fiscal year beginning six months after the end of the cost year, so that as much as eighteen months can separate the midpoints of the years in which costs are incurred and the year for which rates are set. Such a substantial increment of time magnifies the impact of any error in calculating the rate, and thus, inflation factors can have a substantial bearing on nursing home cost inflation. To more accurately predict future costs in the nursing home sector, states should use composite indices that apply different inflation factors to different cost elements. General price indices such as the consumer price index or the GNP deflator incorporate prices of goods and services never purchased by nursing homes. States should establish the price deflators used in a composite index independently of influence by the nursing home sector. However, weights attached to different components should be obtained from data on nursing home costs in the state. This approach assures that states with relatively cold or hot climates properly weight utilities, for example.

Capital Reimbursement

We outlined above the undesirable incentives contained in the three traditional capital reimbursement approaches. An alternative which has many attractive features, known as "fair rental," has been recently introduced in a few states, for example, Maryland and West Virginia. This approach is conceptually different from traditional systems in that the basic state role shifts from that of reimbursing nursing home owners for historical capital costs, to that of "renting" nursing home facilities on behalf of Medicaid patients at some approximation of their current value.

Under a fair rental system, reimbursement is based on the current appraised value of nursing home buildings and equipment, rather than on their original cost or accounting value. Thus, the value of the home for reimbursement purposes can increase over time independent of sales. The reimbursement amount under this type of system is calculated simply by multiplying a rate base times a rental rate. The rate base is the current value of the home, as determined through appraisal. The rental rate is set by the state, based on measures of reasonable interest rates and rates of return in the general economy.

No approach to capital reimbursement is without its weaknesses, but the fair rental approach seems to have the potential to offer the most reasonable set of incentives at comparable state costs. The fair rental approach permits the state to recognize the increasing value of capital assets without requiring owners to sell their facilities in order to be compensated for it. Thus, this approach does not discourage long-term ownership, which should have a positive impact on quality of care, while still providing a reasonable return on an owner's investment, which should have a positive impact on access. In addition, if rental rates are carefully set this type of system is no more expensive to the state than the more traditional approaches (Cohen and Holahan 1986).

Whether a fair rental arrangement is more expensive to the state depends on the rate of return it chooses to pay. Clearly, the state must pay a return equivalent to that on comparable investments elsewhere in the economy; otherwise capital will leave the industry, or not enter it. The return on the capital component of the reimbursement rate alone need not equal market rates of return, however. Most existing reimbursement systems have ample opportunities for efficiently managed firms to obtain profits from operating-cost components, and the return for the facility as a whole, not just the capital side, is what determines the attractiveness of the nursing home industry to investors.

Nursing home investments can substantially reduce the tax liabilities of owners, particularly in the early years of ownership when cash flow problems are the most severe (Baldwin and Bishop 1984). As the tax advantages decline, the return from the rental payment increases. The net result is that the state can set its rental rate at an apparently low level without adversely affecting the ability of the industry to attract capital.

The main potential drawback of the fair rental approach is that, in comparison with other arrangements, it can be somewhat more expensive to the state. This can, however, be controlled by state policies that incorporate recognition of operating profits and tax advantages into their decisions on target rates of return. Consequently, with a fair rental system a state should be able to achieve a more rational system, encouage higher capital stock quality, and discourage financial manipulation with little or no increase in capital costs.

Conclusion

In the preceding pages, we have outlined the design of a reimbursement system for nursing home care that we believe will better meet the objectives of state Medicaid programs than any of the existing systems analyzed in this study. By separating the costs of care into three components—patient care-related, noncare-related, and capital costs states can more readily identify and eliminate sources of unnecessary cost growth. And by minimizing the efficiency incentives applied to patient care-related costs while maximizing those applied to other costs, states can guard against deteriorations in quality of care. By tying reimbursement rates to some measure of patient impairment, states can promote access and appropriate levels of care for those patients with heavy-care needs. Finally, by basing reimbursement for capital costs on fair rental value, states can encourage long-term ownership, adequate maintenance of physical plants, and efficient financing arrangements.

Although we have gone into this particular recommendation for reimbursement policy at some length, the specifics of the recommendation should not obscure the primary conclusion of this article: namely, that concern for cost control should not lead to a disregard of access and quality objectives, and that careful attention to the design of reimbursement systems can contribute significantly to the furtherance of all three objectives.

References

- Baldwin, C.Y., and C.E. Bishop. 1984. Return to Nursing Home Investment: Issues for Public Policy. *Health Care Financing Review* 5(4):43-52.
- Cohen, J., and J. Holahan. 1986. An Evaluation of Current Approaches to Nursing Home Capital Reimbursement. *Inquiry* 23(1):23-29.
- Holahan, J. 1984. Nursing Home Care under Alternative Patientrelated Reimbursement Systems. Urban Institute Working Paper 3172-13, September 1984. Washington: Urban Institute.
 - ------. 1985a. State Rate Setting and the Effects on Nursing Home Costs. Journal of Health Politics, Policy and Law 9(4):647-67.

------. 1985b. Nursing Home Reimbursement: Implications for Cost Containment, Access, and Quality. Urban Institute Working Paper 3172-12, October 1985. Washington: Urban Institute.

- New York State Moreland Act Commission on Nursing Homes and Residential Facilities. 1976. Reimbursement of Nursing Home Property Costs: Pruning the Money Tree. New York.
- Scanlon, W. 1987. Reimbursement Incentives and Nursing Home Costs. Washington: Georgetown University Center for Health Policy Studies. (Forthcoming.)

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