

State Medicaid reimbursement for nursing homes, 1978-86

by James H. Swan, Charlene Harrington,
and Leslie A. Grant

State Medicaid reimbursement methods and rates are reported for the period 1978-86 for skilled nursing and intermediate care facilities. A cross-sectional time series regression analysis of Medicaid reimbursement rates on methods showed that States using prospective

class reimbursement had significantly lower rates for the period 1982-86. States using prospective facility-specific reimbursement methods had lower rates than retrospective methods in 1983-84.

Introduction

Nursing home expenditures are of increasing concern because of growth in costs to the public sector, particularly to State government through the Medicaid program. National nursing home expenditures were \$35.2 billion in 1985, and they continue to increase faster than the consumer price index (Waldo, Levit, and Lazenby, 1986). In 1985, State and Federal governments paid for 47 percent of total nursing home expenditures, and Medicaid paid for approximately 42 percent of these nursing home expenditures. Although the share paid by Medicaid has declined in recent years, Medicaid nursing home expenditures continue to increase, and are therefore of great concern to State policymakers.

Medicaid nursing home expenditures are directly affected by State Medicaid nursing home reimbursement policies. Reimbursement-rate policies include a set amount that a State will pay for each day of nursing home care provided by a facility, thereby determining the amount of Medicaid expenditures for a given level of utilization. Rate levels have been found to be the strongest predictors of Medicaid nursing home expenditures per recipient and to be strongly related to overall State Medicaid nursing home expenditures per State aged population (Harrington and Swan, 1987). Medicaid rates may also affect the supply of nursing home beds (Scanlon, 1980a and 1980b; Feder and Scanlon, 1980). For example, Medicaid reimbursement rate increases may encourage entry into the nursing home industry and expansion of existing bed supplies. Finally, high rates and rate increases may influence utilization by improving Medicaid patients' access to beds. Reimbursement rates and rate increases are thus important to State policymakers who wish to constrain growth in expenditures and to improve access to nursing home care for Medicaid patients.

Policies defining the reimbursement method are especially critical because they ultimately set the rate. In recent years, States have developed a vast array of Medicaid reimbursement policies, in response to growing fiscal pressures to constrain expanding costs,

the desire to cover all reasonable costs to providers, and the need for adequate access by Medicaid recipients.

State Medicaid nursing home reimbursement policy is a complex topic. A multiplicity of variables and policy choices needs to be examined. Reimbursement policies for nursing homes participating in Medicaid are governed by broad Federal guidelines that provide many discretionary options to the States for setting rates. In contrast, Medicare policies have been developed at a national level, although the implementation of the policies by fiscal intermediaries across the country is not always uniform (Schieber et al., 1986).

Findings of a telephone survey that was conducted by the Institute for Health and Aging are discussed in this article. All State Medicaid programs were surveyed about their nursing home reimbursement policies and their per diem rates. Issues and difficulties involved in the collection and interpretation of such data are described. Finally, an analysis of the relationship of per diem rates to reimbursement policies is presented. Although rates should be related to various State characteristics, particularly the cost of labor, it is beyond the scope of this article to consider variables other than policy measures derived from the telephone survey.

The focus is on skilled nursing and intermediate care, levels of nursing home care provided extensively to the aged. Intermediate care for the mentally retarded (ICF-MR) is not considered because ICF-MR services are used predominantly by a different population—i.e., the developmentally disabled and the mentally retarded.

Medicaid reimbursement policies

A variety of reimbursement policies have been employed by State Medicaid programs. For purposes of this discussion, they were separated into reimbursement methods, rate-setting methods, and average per diem rates.

Reimbursement methods

Reimbursement method refers to the way in which a State Medicaid program pays for care delivered in a nursing home. Nursing homes were traditionally reimbursed by Medicaid retrospectively, on the basis of actual costs determined after services were

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Reprint requests: James H. Swan, Ph.D., Institute for Health and Aging, University of California, San Francisco, California 94143.

rendered. In 1980, States were given considerable discretion in setting rates under Federal guidelines, as long as the method was reasonable and cost related (U.S. Public Law 96-499). In the absence of cost limits, retrospective systems encourage providers to spend funds on those activities that are fully reimbursed (Grimaldi, 1982), because full funding gives providers incentives to continue to undertake such activities. However, some retrospective systems, as well as other methods, do include limits on allowable costs, or place ceilings on specific cost centers, thus limiting the incentives to freely undertake many activities.

By contrast, prospective systems set rates before care is delivered and prior to reimbursement. Rates are generally set at the beginning of either the State's or the facility's fiscal year. Prospective systems are designed to contain costs by limiting what will be paid in advance, thereby giving incentives to providers to keep their costs within the limits of what is paid (Swan and Harrington, 1985). Prospective class or flat-rate systems pay a single rate to all skilled nursing facilities (SNF's) and/or intermediate care facilities (ICF's), or they offer a single rate to all facilities within a single category. Under a prospective facility-specific system, rates differ across facilities, based on cost formulas or historic costs that are adjusted for inflation. Previous research has shown that prospective nursing home reimbursement systems may allow for greater cost constraint than retrospective systems do and may, in consequence, also lower Medicaid expenditures per recipient (Harrington and Swan, 1984). Those prospective facility-specific systems that build on historic rates may, however, allow some facilities to maintain costly or inefficient practices that were reflected in the initial rates.

Most complex are "combination" systems that incorporate aspects of both retrospective and prospective methods. As defined here, such systems set prospective rates, but they either allow those rates to be adjusted upward during the fiscal year (or a 6-month period in some States) or allow payment to be adjusted upward after an interim rate has been established.

Reimbursement rates

Under Medicaid, States determine the amounts that they pay nursing homes for each day of care, and States have much discretion in the ways that they set Medicaid reimbursement rates. A number of issues related to the methods States employ to set rates are discussed in this section, particularly the inclusion of ancillaries in rates, limits on operating cost centers, capital valuation methods, efficiency incentives, and use of case-mix methodology.

States determine which ancillary services to include in the per diem rates. Ancillary services may include physical and occupational therapy, nonprescription or prescription drugs, medical supplies, and durable medical equipment. Some States include other ancillaries in their rate. Exclusion of an ancillary

service does not necessarily mean that the State does not reimburse for that service. Rather, it may be that the State pays for the service separately from the per diem rate. Thus, lack of ancillaries in the rates may explain why per diem rates in some States are lower than in others. A rate may appear deceptively low if ancillaries are reimbursed separately.

Some States also place restrictions on the maximum level for selected cost centers that will be reimbursed for selected items under Medicaid. These restrictions are sometimes applied to fixed, as opposed to variable, costs. Variable costs are determined to a greater extent by the facility itself and include the following:

- Wages and salaries.
- Payroll taxes and benefits.
- Food and other dietary items.
- Laundry and linen.
- Supplies and equipment.
- Utilities.
- Facility and equipment maintenance.
- Administrative costs.

Fixed costs are determined to a lesser extent by management practices. They may include equipment rental, insurance, taxes and licenses, interest and finance charges, depreciation, rent, amortization, and other costs. To limit costs, other States set ceilings on variable costs, because facilities can have greater control over variable than fixed expenditures (e.g., dietary costs or nursing wages). A State may also set a ceiling on individual rates for each facility or for different classes of facilities (e.g., grouped by size). Some States set a ceiling on total facility costs rather than limits on cost centers, allowing for increases in some cost centers within a general cost ceiling.

Capital costs present States with further rate-setting options. Property costs may be a small proportion of total facility costs; but depreciation, leases, and interest expenses can have important effects on overall reimbursement rates. In a study of 66 nursing homes, property and other nonoperating costs accounted for about 13 percent of total facility costs, but with substantial variation among the sample facilities (Birnbaum et al., 1981).

According to Spitz (n.d.), assets can be valued under the following criteria:

- Original or historic costs that are adjusted for subsequent renovations.
- Replacement costs (i.e., of rebuilding the facility).
- Market value (i.e., price of the facility on the private market, including rental value).
- Imputed value (i.e., a State-established price, independent of cost experience).

Historic costs tend to minimize reimbursement, and market values allow for greater assets and higher reimbursement (Spitz, n.d.; Grimaldi, 1982). Some States attempt to control the impact of the current market value on reimbursement by recognizing it (Spitz, n.d.). By setting the value on a one-time basis or by imputing the cost, fluctuations in current market values would not influence reimbursement.

States have also used incentives and disincentives to modify nursing home industry behavior. One of the more popular approaches is to encourage greater efficiency in facility operations by penalizing for low occupancy and/or rewarding for high occupancy (American Health Care Association, 1978). Birnbaum and associates (1981) found, contrary to expectations, that States with occupancy penalties tended to have significantly higher per diem costs—resulting perhaps from a tendency by high-cost States to adopt a penalty system. Bishop (1980) argued against use of penalties because they may further constrain Medicaid rates, thereby impeding Medicaid patients' access to nursing home beds.

Some States have attempted to link reimbursement to case mix (i.e., patient care needs related to age and disability), which is thought to have major influences on nursing care needs, staffing requirements, and costs. (A discussion of case mix can be found in McCaffree et al., 1979; Shaughnessy and Kurowski, 1980; Willemain, 1980.) Higher care needs should increase costs and are therefore reimbursed at higher rates by some States (Walsh, 1979; Shaughnessy and Kurowski, 1980; Spitz, 1981a; Intergovernmental Health Policy Project and National Governors' Association, 1982). Implementation of case-mix systems is often based on arguments that it is fairer to facilities to tie rates more directly to the costs of care of different patient types. Such approaches have been suggested as means to increase access by Medicaid patients, on the assumption that facilities would be more willing to accept Medicaid patients with heavy care requirements if they were paid more for those patients. On the other hand, this approach has potentially negative consequences insofar as incentives are created for facilities to increase patient dependency and level of care to maximize reimbursement. Assessments of individual patients and quality assurance programs could reduce potential negative effects but add to the administrative costs.

In addition to those already described, State reimbursement policies vary on a number of other dimensions. Spitz found that States may have Medicaid rate policies on interest payments, such as the following:

- Size of the principal borrowed.
- Interest rate agreed on.
- Length of the repayment period.
- Credit-worthiness of the borrower.
- Loan security.
- Type of lending institution.
- Whether the facility has loan guarantees.
- Where there are public bond measures.

Leases and rentals constitute another type of cost that States may attempt to control (Intergovernmental Health Policy Project and National Governors' Association, 1982). The cost of meeting State and Federal licensing and certification requirements also influences reimbursement rates (Kurowski and Shaughnessy, 1983; Birnbaum et al., 1981).

State Medicaid programs are mandated to set reimbursement policies in accordance with the actual cost of providing care by making periodic adjustments for inflation. Inflation adjustments can be based on the Consumer Price Index (CPI); the Market Basket Index, involving only health related costs; the gross national product (GNP) deflator; or the Nursing Home Price Index developed by the Health Care Financing Administration (Spitz, 1981b; Spitz and Atkinson, 1982). Reimbursement rates are sometimes based on sets of characteristics, such as size, location, ownership, hospital affiliation, and patient-mix occupancy rates (Bishop, 1980; Schlenker and Shaughnessy, 1981; Birnbaum et al., 1981; AHCA, 1978; IHPP and NGA, 1982). Although many of these characteristics are important policy variables, we made no attempt to examine all of them.

Methodology

Data on State Medicaid nursing home reimbursement policies were not easy to collect. Collection of data was hampered by differences in the administrative structure of State Medicaid programs, divergence in terminology, and the variation in policies. States are not mandated to meet specific Federal reporting criteria, so there has been limited data available, and available data were not uniformly reported.

In the past, data on the 50 States have been collected by a number of agencies. The Intergovernmental Health Policy Program and the National Governors' Association (1982) have for several years compiled annual reports about change in State Medicaid policies. Reimbursement data were collected by the La Jolla Management Corporation (1982) for the Health Care Financing Administration (HCFA). HCFA (1985) has compiled data on Medicaid reimbursement methods and policies for several years through 1984.

Data collected by the Institute for Health and Aging (IHA) (1983; 1986) in two nationwide surveys of State Medicaid reimbursement methods and rates are discussed here. During the 1983 survey, in which data were collected for 1978 to 1983, State Medicaid agency officials were asked to classify their reimbursement method and provide rates. Data for 1984 to 1986 and supplementary data for the 1978-83 period were gathered by IHA in early 1986. These data were also collected from State Medicaid rate-setting officials by telephone using a standard questionnaire instrument consistent with the previous telephone survey.

The data collected by IHA in 1983 and 1986 generally corresponded with what had been reported by HCFA and other sources. Discrepancies did occur for some States, however, between results from the two data sets, as well as between results from the 1983 and 1986 IHA surveys. These discrepancies may have occurred when data were reported by different

agencies or officials within the same agency at different points in time. Some Medicaid programs changed in the way they described and classified their system over time. Because of this variation and the difficulty in classifying combination systems, a special callback telephone survey of all 50 States was conducted in 1986 after the initial surveys. It entailed asking respondents to describe their State's system, probing about adjustments and settlements, asking about the methods used for cost centers or facility types, and developing a typology of systems based on these criteria. States reporting prospective rates were asked whether adjustments are made during the course of the year. The data reported in this study were considered the best available data that could be derived using this methodology.

Medicaid reimbursement rates were difficult to collect because State programs vary considerably in how the rate data were reported. Some States computed rates as weighted averages. This often meant that the rates were averaged for each day of care during a fiscal year, but it also referred to the average of rates across types of facilities, with weighting only for the number of beds (not days of care in these beds) reimbursed at each level. Other States reported an average of rates weighted for the number of facilities (not beds) reimbursed at each rate. Other States reported an unweighted average of rates for different bed types. One State used a median rate. Still other States reported a maximum rate (or ceiling) for each type of facility and did not report the actual reimbursement levels within the ceiling. The amount reported also depended on when rate data were requested—e.g., some States only reported a rate ceiling during the course of a year but calculated weighted average at year's end. Poor State data information systems hampered some States' ability to report rates in different ways and to report data comparable to other States.

Given this divergence, it was difficult to summarize data on State Medicaid per diem reimbursement rates. Nevertheless, an effort was made to summarize these data in order to compare rates across State systems. Accordingly, a single value was derived for per diem reimbursement for each level of care for each State. Depending on the data available, weighted averages were computed, based preferably on days of care or, failing that, on numbers of beds or on numbers of facilities. In some cases, unweighted averages were calculated or medians or limits accepted as the best available data.

Findings

Reimbursement methods

As noted earlier, State Medicaid reimbursement methods were classified into four major categories: retrospective, prospective facility specific, prospective class, and combination. Reimbursement methods used by Medicaid-certified skilled nursing facilities (SNF's)

and intermediate care facilities (ICF's) for the period 1978-86 are shown by State in Tables 1 and 2. There was great variation in these methods and an even greater diversity within a given category, as evidenced in the many footnotes that delineate these distinctions in greater detail. The four categories did not capture the richness of the differences in State reimbursement methodologies; and classification of these methods, especially distinguishing between the prospective facility-specific and combination systems, was a complex process.

Within the prospective facility-specific category, there were wide variations in methods across States. Some facility-specific systems used previous cost audits that were adjusted for inflation or allowable costs for various cost centers. Some prospective facility-specific systems required facilities to repay the State if actual costs were below projected costs (i.e., downward adjustments in rates) and if the prospective rate represented a ceiling above which payment could not rise. Where interim rates were set until downward cost adjustments were made, the method was classified as prospective. For example, in Idaho and North Carolina, the prospective rate was a ceiling, and facilities had to repay a portion as a settlement to the State when costs fell below the projected rate. Such approaches may constrain costs if States are diligent in monitoring costs and collecting settlements; however, they may also create disincentives to reduce costs below what is allowed in the rates.

State systems were classified as prospective if they had only minor rate components that were set retrospectively. For example, in Minnesota before 1986, adjustments could be made for major property costs, but the rest of the rate was set prospectively. States in which an upward adjustment can be made only following special (and seldom-used) appeals processes were also classified here as prospective. On the other hand, where appeals were routinely made (e.g., in Wisconsin with a reported 20 percent of facilities filing appeals annually), the system was categorized as a combination system.

As noted, combination systems were defined as those that set interim rates prospectively and then allowed for upward adjustments in the rates. In some States with a combination system (Maryland, Nevada, North Dakota, and Ohio), prospective rates were set as interim rates, but the rates could be adjusted upward if the actual incurred costs were higher than the interim rate. In some States, adjustments were made at prescribed times during the year—e.g., interim rates in North Dakota were set at the beginning of the facility's fiscal year, and all adjustments made in March.

In other States with combination systems, adjustments occurred automatically as cost audits became available. In Kentucky, if audits were not available at the time of rate setting, a circumstance that applied to about one-half of the State's facilities, adjustments to SNF rates were allowed when the audits became available. In some States, an adjustment was requested when cost exceeded what

Table 1

Reimbursement methods used by Medicaid-certified skilled nursing facilities, by State: 1978-86

State	1978	1979	1980	1981	1982	1983	1984	1985	1986
	Method								
Alabama ¹	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Alaska	RET	RET	RET	RET	RET	RET	²⁴ COM	²⁴ COM	²⁴ COM
Arizona
Arkansas	PFS	PFS	PFS	PFS	PCL	PCL	PCL	PCL	PCL
California	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Colorado ²	COM	COM	COM	COM	COM	COM	COM	COM	COM
Connecticut ³	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Delaware	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
District of Columbia	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Florida	¹³ RET	¹³ RET	¹³ RET	¹³ RET	¹³ RET	²⁰ PFS	PFS	PFS	PFS
Georgia	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Hawaii	RET	RET	RET	RET	RET	RET	RET	²⁶ PFS	²⁶ PFS
Idaho	RET	RET	RET	RET	²¹ PFS	²¹ PFS	²¹ PFS	²¹ PFS	²¹ PFS
Illinois ⁴	PFS	PFS	PFS	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS
Indiana ⁵	COM	COM	COM	COM	COM	COM	COM	COM	COM
Iowa	RET	RET	RET	RET	RET	RET	RET	RET	²⁷ PFS
Kansas	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Kentucky	RET	¹⁵ COM	¹⁵ COM	¹⁵ COM	¹⁵ COM	¹⁵ COM	¹⁵ COM	¹⁵ COM	¹⁵ COM
Louisiana	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Maine	RET	RET	RET	RET	¹⁶ COM	¹⁸ COM	¹⁸ COM	¹⁸ COM	¹⁸ COM
Maryland	RET	RET	RET	RET	RET	²² COM	²² COM	²² COM	²² COM
Massachusetts ⁶	RET	RET	RET	RET	RET	RET	RET	RET	RET
Michigan	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Minnesota ⁷	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	²⁸ PFS
Mississippi	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Missouri	RET	RET	RET	RET	PFS	PFS	PFS	PFS	PFS
Montana	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Nebraska	RET	RET	RET	RET	PFS	PFS	PFS	PFS	PFS
Nevada ⁸	COM	COM	COM	COM	COM	COM	COM	COM	COM
New Hampshire	RET	RET	RET	RET	RET	RET	RET	RET	RET
New Jersey	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
New Mexico	RET	RET	RET	RET	RET	RET	RET	PFS	PFS
New York	PFS	PFS	PFS	PFS	¹⁹ PFS	¹⁹ PFS	¹⁹ PFS	¹⁹ PFS	²⁹ PFS
North Carolina	¹⁴ COM	¹⁴ COM	¹⁸ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS
North Dakota ⁹	COM	COM	COM	COM	COM	COM	COM	COM	COM
Ohio	PFS	COM	COM	COM	COM	COM	²⁵ COM	²⁵ COM	²⁵ COM
Oklahoma	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Oregon	RET	RET	RET	RET	RET	RET	RET	RET	RET
Pennsylvania	RET	RET	RET	RET	RET	RET	RET	RET	RET
Rhode Island	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
South Carolina	RET	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
South Dakota	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Tennessee	RET	RET	RET	RET	RET	RET	RET	RET	RET
Texas	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Utah	PFS	PFS	PFS	PCL	PCL	PCL	PCL	PCL	PCL
Vermont	RET	RET	RET	RET	RET	²³ PFS	²³ PFS	²³ PFS	²³ PFS
Virginia	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Washington ¹⁰	COM	COM	COM	COM	COM	COM	COM	COM	COM
West Virginia ¹¹	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Wisconsin ¹²	COM	COM	COM	COM	COM	COM	COM	COM	COM
Wyoming	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS

¹ Prospective facility-specific. There is an adjustment for ancillary cost component only if actual costs deviate by more than 2 percent, but this adjustment applies only to the following year's rate.

² Two cost reports with one audit per year. Interim rates may be changed up or down based on audit. Has a case-mix system for rate setting.

³ Prospective facility-specific, but new facilities have interim rates until cost reports are available; at which time, adjustments may be made upward or downward. Settlements can also be made after field audits, and this happens frequently.

⁴ Has had a case-mix system since 1978. In 1984, changed from the former point system to a system of averages based on surveys of patients.

⁵ Prospective facility-specific, but facilities can request rate reviews if they have not yet reached their cap (currently 4-percent increase).

⁶ Retrospective facility-specific, but with interim rates and a final settlement during each calendar year.

⁷ System basically prospective facility-specific although adjustments are possible for major property costs.

⁸ Prospective for administration and housekeeping. Retrospective, with prospective interim working rates for four cost centers. Employee benefits retrospective with no cap. Health care retrospective with staffing cap. Food and return on equity retrospective with dollar caps.

⁹ Using the facility's fiscal year, an interim prospective facility-specific rate is established, which is adjusted in March of each year. Rate limits were imposed effective October 1, 1985, on patient care, administration, maintenance, and dietary cost centers.

¹⁰ Prospective facility-specific, but with appeals and adjustments throughout the year. Patient-debility point system used to adjust rates over level of inflation, but it was not considered by Washington as case mix because it was not used for full-rate determination. Will soon be studying RUG system.

¹¹ Has a case-mix system.

¹² Prospective facility-specific, but with a retrospective appeals process. About 20 percent of the facilities appeal the rate each year. Uses case mix.

Footnotes continued on next page.

Table 1—Continued

Reimbursement methods used by Medicaid-certified skilled nursing facilities, by State: 1978-86

- ¹³ Retrospective, but with strict ceiling on rates.
- ¹⁴ Prospective, but incentive could be added to rates.
- ¹⁵ Prospective facility-specific, but when cost audit is not available at time rate is set, rate can be adjusted when cost audit is available. About 50 percent of nursing homes have such interim rates.
- ¹⁶ Prospective facility-specific, but payback provision if costs below those used to compute rates.
- ¹⁷ Prospective facility-specific, but with adjustments in the capital rate for increases in bed capacity greater than 10 percent. The nursing component of the reimbursement rate is set every 6 months.
- ¹⁸ New system adopted July 1, 1982. Prospective facility-specific for operating costs. Costs not under the control of facilities (e.g., property taxes) reimbursed retrospectively.
- ¹⁹ Prospective facility-specific, but with group ceilings on direct and indirect costs.
- ²⁰ Prospective system adopted April 1, 1983.
- ²¹ Prospective cap, with retrospective settlement. Since mid-1985, property costs are reimbursed on rental rate.
- ²² New system adopted mid-1983. Prospective, case-mix system for nursing component of rate. Other cost centers (administration, patient care, and capital costs) reimbursed using prospective interim rate with subsequent adjustments.
- ²³ Prospective facility-specific, except in the case of a change in service following approval of certificate of need for significant capital improvements or in the case of natural disaster.
- ²⁴ Prospective facility-specific, but with rate adjustments at any time in year upon showing higher costs.
- ²⁵ Interim prospective rate, with retrospective adjustment following audit. Before 1984, cost of ownership was paid prospectively; since 1984, all of rate is on retrospective adjustment.
- ²⁶ Prospective facility-specific, but with provisions for rate reconsideration if there is a change in the services provided or if extraordinary expenditures are incurred.
- ²⁷ Prospective facility-specific system instituted January 1986, using Medicare principles to set costs for 1984 and indexing forward using national health consumers price index.
- ²⁸ Case-mix rate-setting adopted for 1986.
- ²⁹ Starting in 1986, case-mix rate setting, using resource utilization groups.

NOTES: PFS is prospective facility specific. RET is retrospective facility specific. PCL is prospective class. COM is combination. * indicates no Medicaid institutional program in State.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

Table 2

Reimbursement methods used by Medicaid-certified intermediate care facilities, by State: 1978-86

State	1978	1979	1980	1981	1982	1983	1984	1985	1986
	Method								
Alabama	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Alaska	RET	RET	RET	RET	RET	RET	²³ COM	²³ COM	²³ COM
Arizona	*	*	*	*	*	*	*	*	*
Arkansas	PFS	PFS	PFS	PFS	PCL	PCL	PCL	PCL	PCL
California	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Colorado ¹	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Connecticut	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Delaware	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
District of Columbia	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Florida	¹³ RET	¹³ RET	¹³ RET	¹³ RET	¹³ RET	²⁰ RET	PFS	PFS	PFS
Georgia	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Hawaii	RET	RET	RET	RET	RET	RET	RET	²⁵ PFS	²⁵ PFS
Idaho	RET	RET	RET	RET	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS	¹⁷ PFS
Illinois ²	PFS	PFS	PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS	¹⁶ PFS
Indiana ³	COM	COM	COM	COM	COM	COM	COM	COM	COM
Iowa ⁴	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Kansas	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Kentucky	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Louisiana	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Maine	RET	RET	RET	RET	¹⁸ COM	¹⁸ COM	¹⁸ COM	¹⁸ COM	¹⁸ COM
Maryland	RET	RET	RET	RET	RET	²¹ COM	²¹ COM	²¹ COM	²¹ COM
Massachusetts ⁵	RET	RET	RET	RET	RET	RET	RET	RET	RET
Michigan	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Minnesota ⁶	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Mississippi	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Missouri	RET	RET	RET	RET	RET	PFS	PFS	PFS	PFS
Montana	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Nebraska	RET	RET	RET	RET	PFS	PFS	PFS	PFS	PFS
Nevada ⁷	COM	COM	COM	COM	COM	COM	COM	COM	COM
New Hampshire ⁸	COM	COM	COM	COM	COM	COM	COM	COM	COM
New Jersey	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
New Mexico	RET	RET	RET	RET	RET	RET	RET	PFS	PFS
New York	PFS	PFS	PFS	PFS	¹⁹ PFS	¹⁹ PFS	¹⁹ PFS	¹⁹ PFS	²⁶ PFS
North Carolina	¹⁴ COM	¹⁴ COM	¹⁵ PFS	¹⁵ PFS	¹⁵ PFS	¹⁵ PFS	¹⁵ PFS	¹⁵ PFS	¹⁵ PFS
North Dakota ⁹	COM	COM	COM	COM	COM	COM	COM	COM	COM

See footnotes at end of table.

Table 2—Continued

Reimbursement methods used by Medicaid-certified intermediate care facilities, by State: 1978-86

State	1978	1979	1980	1981	1982	1983	1984	1985	1986
	Method								
Ohio	PFS	COM	COM	COM	COM	COM	²⁴ COM	²⁴ COM	²⁴ COM
Oklahoma	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Oregon	RET	RET	RET	RET	RET	RET	RET	RET	RET
Pennsylvania	RET	RET	RET	RET	RET	RET	RET	RET	RET
Rhode Island	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
South Carolina	RET	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
South Dakota	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Tennessee	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Texas	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL	PCL
Utah	PFS	PFS	PFS	PCL	PCL	PCL	PCL	PCL	PCL
Vermont	RET	RET	RET	RET	RET	²² PFS	²² PFS	²² PFS	²² PFS
Virginia	COM	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Washington ¹⁰	PFS	COM	COM	COM	COM	COM	COM	COM	COM
West Virginia ¹¹	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS
Wisconsin ¹²	COM	COM	COM	COM	COM	COM	COM	COM	COM
Wyoming	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS	PFS

¹ Has a case-mix system for setting rates.
² Has had a case-mix system since 1978. In 1984, changed from the former point system to a system of averages based on surveys of patients.
³ Prospective facility-specific, but facilities can request rate reviews if they have not yet reached their cap (currently 4-percent increase).
⁴ Rates adjusted two times per year. Incentive factor and inflation factor enter into both adjustments.
⁵ Retrospective facility-specific, but interim rates are set, with a final settlement during each calendar year.
⁶ System basically prospective facility specific, although adjustments were possible for major property costs. Case-mix rate setting instituted in 1986.
⁷ Prospective for administration and housekeeping. Retrospective with prospective interim working rates for four cost centers. Employee benefits retrospective with no cap. Health care retrospective with staffing cap. Food and return on equity retrospective with dollar caps.
⁸ Prospective facility-specific, with adjustments based on audits.
⁹ Using the facility's fiscal year, an interim prospective facility-specific rate is established, which is adjusted in March of each year. Rate limits were imposed effective October 1, 1985, on patient care, administration, maintenance, and dietary cost centers.
¹⁰ Prospective facility-specific, but with appeals and adjustments throughout the year. Patient-debility point system used to adjust rates over level of inflation, but not considered by Washington as case mix because not used for full rate determination. Will soon be studying RUG system.
¹¹ Has case-mix rate setting.
¹² Prospective facility-specific, but with a retrospective appeals process. About 20 percent of the facilities appeal the rate each year. Uses case mix.
¹³ Retrospective, but with strict ceiling to rates.
¹⁴ Prospective, but incentive could be added to rates.
¹⁵ Prospective facility-specific, but payback provision if costs below those used to compute rates.
¹⁶ Prospective facility-specific, but with adjustments in the capital rate for increases in bed capacity greater than 10 percent. The nursing component of the reimbursement rate is set every 6 months.
¹⁷ Prospective cap, with retrospective settlement. Since mid-1985, property costs are reimbursed on rental rate.
¹⁸ New system adopted July 1, 1982. Prospective facility-specific for operating costs. Costs not under the control of facilities (e.g., property taxes) reimbursed retrospectively.
¹⁹ Prospective facility-specific, but with group ceilings on direct and indirect costs.
²⁰ Prospective system adopted April 1, 1983.
²¹ New system adopted mid-year 1983. Prospective, case-mix system for nursing component of rate. Other cost centers (administration, patient care, and capital costs) reimbursed using prospective interim rate with subsequent adjustments.
²² Prospective facility-specific, except in the case of a change in service following approval of certificate of need for significant capital improvements, or in the case of natural disaster.
²³ Prospective facility-specific, but with rate adjustments at any time in year on showing higher costs.
²⁴ Interim prospective rate, with retrospective adjustment following audit. Before 1984, cost of ownership was paid prospectively; since 1984, all of rate is on retrospective adjustment.
²⁵ Prospective facility-specific, but with provisions for rate reconsideration if there is a change in the services provided or if extraordinary expenditures are incurred.
²⁶ Case-mix, using resource utilization groups.

NOTES: PFS is prospective facility specific. RET is retrospective facility specific. PCL prospective class. COM is combination. * indicates no Medicaid institutional program in State.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983 and of States' Medicaid Reimbursement Policy, 1986.

was projected or budgeted. In Alaska and Washington, this procedure was implemented at any time during the year. In Indiana, a request for an upward adjustment could be made at any time, as long as the maximum was not exceeded.

Some States with a combination system set interim rates only for major components of the rates (e.g., nursing costs in Maryland or operating costs in Maine), remaining costs being reimbursed prospectively. North Dakota put limits on some cost centers but not on others. Nevada reimbursed prospectively for administration and housekeeping services and set a retrospective rate with a prospective

interim rate for four other cost centers. Three of these four cost components (i.e., food, health care and staff, and return on equity) had a maximum limit, and employee benefits had no maximum.

A comparison of Tables 1 and 2 shows that most States used the same reimbursement system for both SNF's and ICF's. They differed, however, in four States (Iowa, Kentucky, New Hampshire, and Tennessee). Iowa and Tennessee had retrospective methods for SNF's and used prospective facility-specific methods for ICF's. New Hampshire had a retrospective system for SNF's and a combination system for ICF's. Kentucky had a combination system

for SNF's and a prospective facility-specific method for ICF's. It was not clear why those States used different methods for SNF and ICF reimbursements. These differences persisted in each State for at least 8 of the 9 years during the period 1978-86; and the ICF methods were unchanged during this period for all four States. Thus, these differences in methods were not the result of short-term lags in the implementation for one type of facility of methods already employed for the other. In all four States, most nursing home beds were ICF rather than SNF beds (Swan and Harrington, 1985).

Changes in State methods

In Table 3, the number of States with a given type of reimbursement system is presented for the years 1978-86. There has been considerable change in recent years, with a clear trend away from retrospective systems. There were 18 States with a retrospective system for SNF's in 1978 and only 5 in 1986. Most of this change occurred after 1981 (when 16 States still had retrospective systems). During this period, the number of States with prospective class systems increased from four to six. The shift primarily involved increases in the numbers of States with prospective facility-specific systems and combination systems (increasing from 21 to 28 and from 7 to 11, respectively). The trend away from retrospective reimbursement was even more pronounced for ICF's. The decline was from 14 in 1978 to 3 in 1986. Overall, between 1978 and 1986, 18 States changed their reimbursement system for SNF's and 15 changed theirs for ICF's.

These figures suggested that State governments may have felt the need to adopt cost-constraining methods. Although the adoption of strict cost ceilings might allow cost constraint within retrospective systems, the more direct approach of adopting prospective reimbursement systems, or at least systems with interim prospective rates (combination systems), has been widely favored. State officials apparently believe that prospective systems more effectively reduce costs,

and they may believe these systems are easier to administer. Interviews of State Medicaid officials from an earlier study showed the major emphasis these officials placed on controlling Medicaid costs and the emphasis they placed on shifting to prospective reimbursements as means for accomplishing reductions in rates (Harrington et al., 1986).

Case-mix methods

Regardless of the overall method that States use to classify rates (e.g., retrospective or prospective or combination), States may also take patient case mix into account. IHA asked State agencies about the use of case-mix reimbursement, which refers to whether or not the diagnosis, acuity, or other patient characteristics are used in determining facility rates. Illinois, West Virginia, and Ohio have had case-mix reimbursement systems for several years that have been described in various studies (Walsh, 1979; Shaughnessy and Kurowski, 1980; Spitz, 1981a). Massachusetts makes case-mix adjustments for heavy care patients. In 1983, Maryland established a prospective reimbursement system that is based on actual facility case mix. In 1984, IHA found that eight States reported some type of case-mix reimbursement system including the States mentioned earlier, as well as Connecticut, Wisconsin, and Washington. In 1986, New York and Minnesota changed to case mix systems. New York adopted the resource utilization group (RUG) (Fries and Cooney, 1985). Minnesota developed a modified system of its own (IHA, 1986).

The New York RUG was a patient classification system that grouped patients into categories based on a statistical analysis of characteristics including activities of daily living and incontinence (Fries and Cooney, 1985). Based on studies of resource utilization for those different patient classifications, New York established reimbursement levels of payment for direct-care services.

Classification of case-mix systems was sometimes

Table 3
Number of States, by type of facility and reimbursement system: 1978-86

Type of facility and reimbursement system	1978	1979	1980	1981	1982	1983	1984	1985	1986
Skilled nursing facility									
Total	50	50	50	50	50	50	50	50	50
Prospective facility-specific	21	21	22	21	23	25	25	27	28
Retrospective	18	16	16	16	12	9	8	6	5
Prospective class	4	4	4	5	6	6	6	6	6
Combination	7	9	8	8	9	20	11	11	11
Intermediate care facility									
Total	50	50	50	50	50	50	50	50	50
Prospective facility-specific	25	25	26	25	27	29	29	31	31
Retrospective	14	13	13	13	9	6	5	3	3
Prospective class	4	4	4	5	6	6	6	6	6
Combination	7	8	7	7	8	9	10	10	10

SOURCE: Institute for Health and Aging; Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

difficult. Texas did consider patient characteristics when determining the facility's class, but only paid a class rate and did not set an individual facility rate based on patient characteristics. Therefore, Texas was not classified as having a case-mix system, but the State plans to develop a case-mix system in the future. On the other hand, the State of Washington accounts for patient characteristics when they adjust their rates for inflation. Surprisingly, respondents in that State did not view their method as a case-mix system, because patient characteristics do not affect the full rate determination. In fact, Washington was contemplating going to a RUG-type case-mix system. Nonetheless, this method meets the criteria used in this study to define a case-mix reimbursement system because patient characteristics are used to set the rates for individual facilities.

Other rate-setting components

Data on some selected components of rate-setting methods for selected years were also collected during the 1986 survey. These included ancillary rates, cost center limits, efficiency incentives, and case-mix adjustments.

The States were surveyed regarding which ancillary services were included in their rates in 1984 (Table 4). Almost all States included nonprescription drugs, medical supplies, and durable medical equipment. The coverage varied considerably for rehabilitation therapy, 27 States included physical therapy in SNF and ICF rates and 25 States included occupational therapy in SNF rates and 24 included it in ICF rates. Only four States included prescription drugs in their rates. Exclusion of ancillaries may explain part of the variation in rates. One State's rate may be lower than another's, but costs may be no lower if the first State does not include an ancillary in its basic rate but reimburses for the ancillary service separately.

According to a study by the American Health Care Association (1978), 16 States reported setting 1978 cost ceilings at a percentage of median costs, and 24 reported setting them at a percentile of actual costs. During the 1986 IHA survey (Table 5), it was found that 35 States out of 48 reported overall cost ceilings on their SNF reimbursement rates, and 36 States had ceilings on ICF rates. As noted previously, the actual method for establishing ceilings on cost centers varied by State. Of those, 17 States applied a limit on reimbursement for total SNF costs; 23 had limits on one or more cost centers; 4 used both types of ceilings; and 6 had neither. The figures for ICF's were similar. Twenty States limited reimbursement of total ICF expenditures; 21 placed ceilings on cost centers; 4 used both types; and 5 had neither.

In examining State capital valuation methods, it was found during a study in 1978 that 45 States used the cost to the current owner as the basis for depreciation; and 4 used the original cost of the seller, which is usually lower than the former (American Health Care Association, 1978). By 1984, IHA (1986) found 33 States out of 48 used historic costs, 8 used

imputed, 3 used replacement, and 5 used other methods. States were increasingly moving away from historic cost methods and adopting valuation methods that allow for greater cost constraint.

Information was also collected by IHA (1986) about the use of efficiency incentives. These were used for SNF facilities by 32 States in 1984, 34 in 1985, and 35 in 1986, and for ICF facilities by 34 States in 1984 and 36 in 1985 and 1986. These data show a gradual trend toward such methods. The methods vary considerably across States. Many States used a ceiling for either total costs or for selected cost centers such as nursing and patient care and allowed the facilities to keep the difference if they operated below the ceiling or below a percentile of the costs. Other States only allowed the facility to keep a portion of the savings when their costs were below a specified level. The incentives generally ranged from \$.50 to \$2.00 per patient day. Massachusetts paid an incentive for facilities with high scores on the State licensing and certification reviews (for quality).

Trends in State Medicaid reimbursement rates

Per diem SNF and ICF reimbursement rates for each State for the years 1978 through 1986 are shown in Tables 6 and 7. Data for 1984 were not available for three States from the 1986 IHA survey. Only two States were able to provide complete data for all 9 years. Available data from HCFA were compared with the data from the two IHA surveys and used to fill any gaps. The HCFA data were not always consistent with the two IHA data sets. Data from the two IHA surveys were used whenever possible. Missing values were imputed assuming a constant percentage change between the earlier and latter time points (imputed values are shown in parentheses).

These data differed by State in terms of how the State compiled and reported its rate data. Respondents in each State were asked to give a weighted average of their per diem rate. These figures may be weighted by the number of days of care at each given rate, by number of beds to which that rate applied, or even by the number of facilities reimbursed at that rate. For example, the data for Massachusetts were class rates that were weighted by the number of facilities to which each rate applies. Two States had uniform (flat) rates for each level of care (i.e., SNF and ICF), so the reported values were paid to all facilities at that level. The rate was equivalent to a weighted average, but was more accurate. Many States could not compute weighted values. Unweighted averages were simple means of each rate level in the State, not adjusted for days of care or even number of facilities or beds reimbursed at the rate. Other States could give only the maximum rates (i.e., ceilings). Where more than one ceiling applied, the highest was shown. One State (Connecticut) compiled only the median rate. If and when weighted averages or otherwise more accurate

Table 4
States, by type of facility and ancillary services included in their Medicaid reimbursement rates:
1984

State	Ancillaries in skilled nursing facility						Ancillaries in intermediate care facility					
	PT	OT	NLD	RX	SUP	DME	PT	OT	NLD	RX	SUP	DME
Alabama			X		X	X			X		X	X
Alaska	X	X	X	X	X	X	X	X	X	X	X	X
Arizona	*	*	*	*	*	*	*	*	*	*	*	*
Arkansas	X	X	X		X	X	X	X	X		X	X
California			X		X	X			X		X	X
Colorado	X	X	X		X	X	X	X	X		X	X
Connecticut	X	X	X		X	X	X	X	X		X	X
Delaware			X		X				X		X	
District of Columbia	X		X	X	X	X	X		X	X	X	X
Florida	X	X	X		X	X	X	X	X		X	X
Georgia	X	X	X		X	X	X	X	X		X	X
Hawaii					X	X					X	X
Idaho	X	X	X	X	X	X	X	X	X	X	X	X
Illinois			X		X	X			X		X	X
Indiana			X		X				X		X	
Iowa			X		X	X			X		X	X
Kansas							X	X				
Kentucky			X	X					X	X		
Louisiana	X		X		X	X	X		X		X	X
Maine	X	X	X		X	X	X	X	X		X	X
Maryland	X	X	X		X	X	X	X	X		X	X
Massachusetts			X		X	X			X		X	X
Michigan			X		X	X			X		X	X
Minnesota			X		X	X			X		X	X
Mississippi	X		X		X	X	X		X		X	X
Missouri	X	X	X		X	X	X	X	X		X	X
Montana					X	X					X	X
Nebraska					X						X	
Nevada			X		X	X			X		X	X
New Hampshire	X	X	X		X	X	X					
New Jersey			X		X	X			X		X	X
New Mexico	X	X	X		X	X			X		X	X
New York	X	X	X	X	X	X	X	X	X	X	X	X
North Carolina	X	X	X		X	X	X	X	X		X	X
North Dakota	X	X	X		X	X	X	X	X		X	X
Ohio	X	X	X		X	X	X	X	X		X	X
Oklahoma			X		X	X			X		X	X
Oregon			X		X	X			X		X	X
Pennsylvania	X	X	X		X	X	X	X	X		X	X
Rhode Island	X	X	X		X		X	X	X		X	
South Carolina	X	X	X		X		X	X	X		X	
South Dakota	X	X	X		X	X	X	X	X		X	X
Tennessee	X	X	X		X	X	X	X	X		X	X
Texas			X		X	X			X		X	X
Utah			X		X	X			X		X	X
Vermont	X	X	X		X	X	X	X	X		X	X
Virginia	X	X	X		X	X	X	X	X		X	X
Washington			X		X	X			X		X	X
West Virginia	X	X	X		X	X	X	X	X		X	X
Wisconsin			X		X	X			X		X	X
Wyoming			X		X				X		X	

NOTES: PT is physical therapy. OT is occupational therapy. NLD is nonlegend drugs. RX is prescription drugs. SUP is medical supplies. DME is durable equipment. X denotes inclusion of ancillary in rates. * indicates no Medicaid institutional program in State.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of States' Medicaid Reimbursement Policy, 1986.

data (i.e., unweighted averages instead of ceilings, or actual data rather than imputed values) become available, these data will be updated. Meanwhile, the use of these differing estimates of rates introduces potentially significant error in the analysis of rates.

Analyses of rates

Medicaid reimbursement policies are of particular significance because of their implications for cost constraint. Previous tests of models of the direct and

Table 5
States reporting limits on operating costs, by type of facility and limit: 1984

State	Skilled nursing facility limits								Intermediate care facility limits							
	GN	AD	NR	PR	RB	CP	LB	OT	GN	AD	NR	PR	RB	CP	LB	OT
Alabama		X						X		X						X
Alaska																
Arizona	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Arkansas	X								X							
California	X								X							
Colorado		X						NA		X						NA
Connecticut	X		X		X				X		X		X			
Delaware	X								X							
District of Columbia																
Florida	X								X							
Georgia		X			X		X	X		X			X		X	X
Hawaii	X								X							
Idaho	X								X							
Illinois		X								X						
Indiana	X	X	X	X					X	X	X	X				
Iowa								X	X							
Kansas		X			X	X		NA		X			X	X		NA
Kentucky	X							X	X							X
Louisiana	X								X							
Maine	X								X							
Maryland		X	X			X		NA		X	X			X		NA
Massachusetts	X								X							
Michigan	X								X							
Minnesota	X								X							
Mississippi		X						X		X						X
Missouri	X								X							
Montana	X								X							
Nebraska		X								X						
Nevada		X	X		X	X	X			X	X		X	X	X	
New Hampshire									X							
New Jersey		X	X	X						X	X	X				
New Mexico	X					X			X					X		
New York		X	X							X	X					
North Carolina		X	X	X				X		X	X	X				X
North Dakota		X				X				X				X		
Ohio		X	X		X					X	X		X			
Oklahoma																
Oregon								X								X
Pennsylvania	X	X	X						X							
Rhode Island			X		X	X		X			X		X	X		X
South Carolina		X	X	X	X			X		X	X	X	X			X
South Dakota		X	X	X	X					X	X	X	X			
Tennessee	X								X							
Texas	X								X							
Utah	X								X							
Vermont																
Virginia	X								X							
Washington		X	X	X	X	X				X	X	X	X	X		
West Virginia		X	X		X					X	X	X	X			
Wisconsin		X	X		X			X		X	X		X			X
Wyoming	X								X							

NOTES: GN is general rate ceiling or limit. AD is cost-center limit on administration. NR is cost-center limit on nursing. PR is cost-center limit on profits. RB is room and board items (e.g., dietary, laundry, housekeeping). CP is capital and/or property costs. LB is labor costs. OT is other cost-center limit. X indicates facility has limit. NA is data not available. * indicates no Medicaid institutional program in State.

SOURCE: Institute for Health and Aging; Unpublished Telephone Survey of States' Medicaid Reimbursement Policy, 1986.

Table 6

Per diem reimbursement rates for Medicaid-certified skilled nursing facilities, by State: 1978-86

State	1978	1979	1980	1981	1982	1983	1984	1985	1986
	Rate in dollars								
Alabama	22.85	26.95	29.33	30.79	33.38	37.61	41.55	44.29	43.11
Alaska	—	114.93	114.13	107.35	105.27	119.31	136.04	148.47	152.78
Arizona ¹	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Arkansas	—	20.97	23.35	25.53	27.39	28.62	29.31	30.78	32.16
California	—	30.81	31.65	36.35	37.36	38.09	38.12	41.52	46.33
Colorado	—	23.14	26.03	26.24	30.78	34.88	37.26	46.97	46.14
Connecticut	26.16	30.17	33.22	36.50	41.60	46.78	56.64	60.37	66.89
Delaware	30.40	35.68	36.96	41.59	44.49	39.58	39.58	41.61	47.39
District of Columbia	—	52.38	66.93	65.90	² (81.98)	² (102.00)	126.89	125.52	—
Florida	—	18.79	21.13	23.82	36.26	39.11	45.40	46.70	49.30
Georgia	—	23.38	25.93	28.63	34.32	34.32	37.37	40.77	40.72
Hawaii	—	55.05	62.11	71.56	79.45	98.07	83.86	84.31	93.77
Idaho	21.93	22.00	21.19	25.35	27.61	28.72	39.48	44.03	45.13
Illinois	22.14	24.93	27.40	28.61	30.24	30.76	30.24	32.78	41.70
Indiana	—	—	34.90	38.37	42.11	46.75	50.82	53.92	55.84
Iowa	28.75	29.75	33.56	44.62	59.51	73.55	76.59	85.06	87.44
Kansas	20.14	23.83	25.48	27.80	31.75	32.44	36.01	37.03	39.39
Kentucky	—	37.60	45.00	45.00	51.31	49.35	46.54	46.54	48.91
Louisiana	23.58	23.58	26.73	31.86	29.65	34.80	34.80	36.55	36.55
Maine	—	54.98	56.20	61.15	65.93	71.20	72.15	85.69	78.87
Maryland	26.21	29.30	31.52	36.14	39.53	44.41	47.59	49.01	51.72
Massachusetts	—	32.71	39.57	41.06	44.40	49.27	52.92	56.97	59.82
Michigan	—	29.20	31.50	35.56	36.72	38.98	43.60	—	—
Minnesota	29.50	32.07	38.25	44.81	47.36	51.32	53.76	56.23	54.23
Mississippi	—	—	28.59	31.43	34.09	36.22	38.98	38.73	39.49
Missouri	15.55	18.37	26.80	30.00	35.00	40.00	39.79	43.66	43.56
Montana	—	30.20	33.85	36.75	39.58	40.08	41.15	44.31	45.23
Nebraska	—	—	—	41.23	44.64	49.27	42.68	48.42	53.20
Nevada	—	30.15	37.72	40.25	48.26	51.70	52.54	54.18	61.81
New Hampshire	—	27.13	29.84	36.26	44.88	59.22	57.52	59.79	58.14
New Jersey	36.26	38.73	41.83	46.13	51.91	58.05	59.03	58.35	60.24
New Mexico	—	58.93	² (59.89)	60.86	73.41	71.41	71.36	74.71	75.13
New York	49.65	55.35	62.17	67.63	73.98	78.70	84.06	96.72	95.92
North Carolina	34.19	36.58	41.78	45.56	48.98	52.03	54.42	56.42	58.10
North Dakota	—	26.44	31.91	37.87	43.40	45.02	49.24	51.91	49.63
Ohio	—	—	—	35.39	38.22	39.39	44.83	47.22	51.16
Oklahoma	—	21.00	26.00	29.00	32.00	32.00	34.00	36.00	36.00
Oregon	24.82	28.61	34.23	39.79	45.15	50.12	60.41	67.29	77.63
Pennsylvania	25.50	25.50	32.47	33.15	42.26	39.89	46.13	47.83	56.52
Rhode Island	29.75	36.43	40.86	47.33	49.23	53.71	62.04	65.14	67.87
South Carolina	—	36.29	39.84	44.25	40.77	40.77	42.29	44.33	43.22
South Dakota	19.10	20.94	23.33	26.36	30.08	33.39	35.00	38.00	40.45
Tennessee	32.80	32.50	36.20	40.50	42.60	46.36	50.93	54.65	55.77
Texas	24.74	28.07	30.86	33.66	35.67	38.25	40.19	41.65	44.05
Utah	—	32.30	36.52	39.32	42.26	44.96	48.01	47.38	48.54
Vermont	28.86	31.49	34.84	39.25	44.07	46.73	54.99	57.02	51.18
Virginia	—	42.54	46.43	51.26	61.90	58.22	63.87	65.40	64.58
Washington	—	23.33	28.92	31.88	35.25	35.92	40.64	44.11	46.65
West Virginia	28.11	30.57	32.89	36.15	41.21	44.38	45.03	46.65	47.61
Wisconsin	31.85	35.00	38.00	42.00	42.52	44.22	48.70	50.09	50.81
Wyoming	23.13	26.30	29.90	33.71	38.12	40.85	42.18	43.70	48.73
U.S. average ³	27.33	33.56	36.76	40.67	44.41	47.77	52.09	55.49	56.03
Number of States	24	46	47	50	49	49	50	49	48

¹Rate data are not applicable because there is no institutional program in Arizona.

²Estimates of rates that are not available, nor are they very likely to become available. Estimated assuming a constant percentage increase between last earlier and next later available rates. Multivariate analysis will use other imputation techniques.

³Unweighted average for States for which actual rate data are available. For illustrative purposes only. Comparisons across years for which different State rates are missing may be misleading.

NOTE: Numbers in parentheses are *t* values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

Table 7

Per diem reimbursement rates for Medicaid-certified intermediate care facilities, by State: 1978-86

State	1978	1979	1980	1981	1982	1983	1984	1985	1986
	Rate in dollars								
Alabama	18.73	18.67	22.04	24.20	25.11	25.81	29.31	31.53	32.19
Alaska	—	78.59	86.37	99.51	97.78	113.59	132.04	145.77	152.18
Arizona ¹	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Arkansas	—	19.17	22.45	24.65	26.01	27.99	33.64	30.08	31.44
California	—	24.80	25.49	29.38	30.20	31.14	30.16	32.68	36.47
Colorado	—	23.62	25.66	28.24	30.78	34.09	37.26	46.97	46.14
Connecticut	16.47	20.25	22.26	23.96	29.15	31.68	37.58	44.88	51.23
Delaware	30.40	35.68	36.96	41.59	44.49	39.58	39.58	41.61	47.39
District of Columbia	—	38.09	50.55	50.87	² (62.34)	² (76.41)	93.64	92.74	—
Florida	—	14.69	16.66	18.48	19.93	39.82	43.20	45.30	47.90
Georgia	—	21.73	23.56	26.17	25.94	26.56	29.34	30.87	30.89
Hawaii	—	49.90	55.94	64.45	72.54	72.27	68.40	68.24	82.31
Idaho	16.75	23.67	20.82	23.67	30.36	28.74	34.83	42.96	44.03
Illinois	15.27	17.70	18.96	20.48	22.91	28.84	22.91	32.78	33.92
Indiana	—	—	26.64	29.62	32.65	36.52	39.10	42.32	44.23
Iowa	19.00	20.00	22.15	24.00	25.89	26.50	28.32	29.44	31.65
Kansas	14.45	17.42	19.99	22.16	24.30	25.99	40.90	45.42	31.69
Kentucky	24.00	27.00	27.00	31.17	33.67	33.17	32.70	32.70	34.22
Louisiana	21.40	21.40	24.43	26.62	25.57	26.81	26.81	28.14	28.14
Maine	—	30.13	33.50	37.05	37.76	40.17	46.65	48.04	49.94
Maryland	26.21	29.30	31.52	36.14	39.53	44.41	47.59	49.01	51.72
Massachusetts	—	23.32	28.22	29.15	33.24	36.59	37.56	40.04	42.04
Michigan	—	27.30	29.56	32.52	35.49	37.09	41.58	—	—
Minnesota	20.68	26.70	30.91	29.96	31.21	33.72	36.79	38.94	54.23
Mississippi	—	—	23.11	26.27	27.98	30.75	29.91	29.90	31.99
Missouri	15.20	17.10	20.39	23.00	25.00	28.00	36.87	38.74	40.97
Montana	—	30.20	33.85	36.75	39.58	40.08	41.15	44.31	45.23
Nebraska	—	—	—	24.59	26.08	27.55	28.33	32.16	33.76
Nevada	—	29.54	36.25	39.03	43.61	44.04	46.23	49.27	52.49
New Hampshire	21.00	24.48	29.28	33.09	35.80	37.41	38.66	41.11	51.22
New Jersey	30.49	31.94	34.44	37.69	41.86	46.22	50.11	49.86	51.30
New Mexico	—	27.66	² (29.83)	32.16	34.70	29.96	34.60	37.50	38.53
New York	31.68	34.29	38.80	42.74	47.05	49.21	52.19	55.98	61.88
North Carolina	25.43	27.21	29.22	31.81	34.14	36.23	37.89	40.29	42.18
North Dakota	—	20.03	23.56	27.62	30.46	31.30	34.32	37.25	35.55
Ohio	—	—	—	28.33	33.48	34.36	38.84	41.17	45.09
Oklahoma	17.00	20.00	22.50	28.00	28.00	28.00	30.50	30.50	30.50
Oregon	21.70	23.75	27.29	30.28	32.43	34.26	37.76	40.62	42.54
Pennsylvania	20.00	20.00	28.07	28.49	37.62	32.81	41.63	42.45	46.49
Rhode Island	22.33	27.26	30.61	35.00	38.95	42.25	48.43	50.85	52.98
South Carolina	—	27.16	30.04	33.28	31.65	31.65	32.52	34.05	33.01
South Dakota	16.98	19.15	21.43	23.91	26.88	29.66	31.50	33.35	35.94
Tennessee	22.40	22.90	25.30	27.40	28.60	30.61	32.28	33.00	34.01
Texas	19.07	21.10	22.77	24.48	25.64	28.48	28.09	29.20	30.74
Utah	—	26.94	28.77	34.06	34.53	36.69	37.53	38.63	41.73
Vermont	28.86	31.49	34.84	39.25	44.07	46.73	45.70	48.59	51.18
Virginia	—	30.88	35.10	38.19	42.66	43.77	46.07	47.18	46.59
Washington	—	23.33	28.92	31.68	35.25	35.92	40.64	44.11	46.65
West Virginia	21.17	24.95	27.70	29.75	34.87	37.12	37.67	40.32	41.64
Wisconsin	24.57	27.00	29.00	32.00	31.92	33.19	30.56	39.97	41.50
Wyoming	23.13	26.30	29.90	33.71	38.12	40.85	42.18	43.70	48.73
U.S. average ³	20.90	26.60	29.63	32.56	35.10	36.90	40.81	43.56	44.84
Number of States	27	46	47	50	49	49	50	49	48

¹Rate data are not applicable because there is no institutional program in Arizona.

²Estimates of rates that are not available, nor are they likely to become available. Estimated assuming a constant percentage increase between last earlier and next later available rates. Multivariate analysis will use other imputation techniques.

³Unweighted average for States for which actual rate data are available. For illustrative purposes only. Comparisons across years for which different State rates are missing may be misleading.

NOTE: Numbers in parentheses are *t*-values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

indirect effects of reimbursement rates on Medicaid program nursing home utilization and expenditures have been undertaken by the authors (Swan and Harrington, 1985; Harrington and Swan, 1987). The findings showed that rate levels were positively associated with expenditures per recipient and per State aged population, but these rate levels did not appear to be related to Medicaid recipients per aged population. Further refinement of these models is continuing on an ongoing basis; but it is beyond the scope of this article to attempt such a complex analysis.

An important consideration regarding reimbursement methods and rate-setting policies is their influence on per diem rates. An analysis of per diem rates as a function of other reimbursement policies is presented in this section. The results may increase the knowledge of what and how policies affect rates.

Rates by reimbursement methods

An analysis of Medicaid SNF and ICF reimbursement rates on methods for each year 1979 through 1986 is shown in Tables 8 and 9. (Data for 1978 were dropped because of missing rate data.) Only for the years between 1982 and 1986 were SNF differences significant, prospective class rates being significantly lower than retrospective rates for each of these years. Differences in rates between States with class systems and those with retrospective systems tended to become greater over time. Prospective facility-specific and combination systems also had significantly lower rates than retrospective systems in 1983 and 1984. The results are similar for ICF reimbursement, but combination systems do not show significant differences from retrospective systems for any year.

Table 8
Regression analysis of reimbursement rates for Medicaid-certified skilled nursing facilities, by reimbursement method: 1979-85

Reimbursement method	1979	1980	1981	1982	1983	1984	1985	1986
Intercept	² 31.24	² 35.36	² 40.20	² 47.81	² 59.50	² 61.19	² 61.93	² 61.58
Prospective facility-specific	0.23 (0.07)	-0.13 (-0.04)	-1.35 (-0.34)	-5.63 (-1.28)	² -15.23 (-2.73)	² -13.39 (-2.60)	-9.76 (-1.53)	-6.11 (-0.87)
Prospective class	-5.38 (-1.04)	-6.55 (-1.18)	-6.17 (-1.09)	³ -13.76 (-2.36)	² -23.38 (-3.29)	² -24.12 (-3.68)	² -22.95 (-2.87)	² -20.97 (-2.43)
Combination	-0.94 (-0.22)	-0.76 (-0.16)	-2.70 (-0.51)	-2.46 (-0.44)	³ -12.41 (-1.88)	³ -11.86 (-1.94)	-8.37 (-1.12)	-7.26 (-0.89)
Number of States ¹ = 42								
R ²	.034	.040	.032	.136	³ .238	² .267	³ .183	.155
Adjusted R ²	-.042	-.036	-.044	.068	.178	.209	.118	.088

¹Arizona has no institutional Medicaid program. Seven States (District of Columbia, Indiana, Michigan, Mississippi, Nebraska, New Mexico, and Ohio) were excluded because of missing rate data. Alaska is excluded based on its disproportionate influence, as judged by Cook's D.

²Significant at the .01 level, one-tailed test.

³Significant at the .05 level, one-tailed test.

NOTE: Numbers in parentheses are *t*-values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

Table 9
Regression analysis of reimbursement rates for Medicaid-certified intermediate care facilities, by reimbursement method: 1979-85

Reimbursement method	1979	1980	1981	1982	1983	1984	1985	1986
Intercept	² 26.34	² 29.72	² 33.00	² 41.81	² 43.98	² 46.34	² 41.04	² 43.69
Prospective facility-specific	-1.27 (-0.52)	-1.93 (-0.72)	-2.59 (-0.83)	² -8.91 (-2.54)	³ -8.87 (-2.01)	³ -8.42 (-2.02)	-0.76 (0.16)	0.36 (0.06)
Prospective class	-4.51 (-1.18)	-5.93 (-1.43)	-4.49 (-1.01)	² -13.48 (-3.00)	² -14.13 (-2.69)	² -15.47 (-3.10)	³ -9.50 (-1.78)	-10.52 (-1.50)
Combination	-1.30 (-0.41)	-0.95 (-0.26)	-0.84 (-0.20)	-6.72 (-1.56)	-6.42 (-1.29)	-6.10 (-1.29)	3.43 (0.67)	3.21 (0.48)
Number of States ¹ = 42								
R ²	.036	.053	.033	³ .209	.170	³ .215	³ .230	.163
Adjusted R ²	-.040	-.022	-.043	.146	.104	.153	.170	.097

¹Arizona has no institutional Medicaid program. Seven States (District of Columbia, Indiana, Michigan, Mississippi, Nebraska, New Mexico, and Ohio) are excluded because of missing rate data. Alaska is excluded based on its disproportionate influence, as judged by Cook's D.

²Significant at the .01 level, one-tailed test.

³Significant at the .05 level, one-tailed test.

NOTE: Numbers in parentheses are *t*-values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

These results suggest that class systems, and perhaps other nonretrospective systems, allowed for constraint of rate increases. The coefficients did not increase smoothly over this period. There were discontinuities between 1981 and 1982 (increases in differences) and between 1984 and 1985 (decreases in differences). The earlier discontinuity may have been explainable in terms of the Federal Medicaid regulatory and budgetary changes in the early 1980's that gave States greater flexibility in their reimbursement methods, and of budget reductions that encouraged States to reduce costs (Harrington et al., 1986). These changes allowed the implementation of a greater variety of reimbursement methodologies—which to a larger extent could not be captured by the categorization into four overall methods. The latter narrowing of differences in estimated effects of reimbursement systems also may have been related to the implementation in 1983 of Medicare DRG reimbursement to hospitals—e.g., the imposition of a uniform prospective reimbursement system affecting all States, with important implications for nursing homes as providers of post-hospital care.

Test for differences over time were undertaken using a time-series, cross-sectional analysis. Results, including the specification of discontinuities in the effects of reimbursement methods starting in 1982 and 1984, are shown in Table 10. Because of missing values, this analysis used a sample of only 42 States over the 8-year period 1979-86. Insofar as the nonretrospective methods constrain rate increases, coefficients for changes in effects (estimated by the period-by-method interactions) should be negative and show the greatest differences between retrospective and other methods. Negative coefficients were obtained for period-by-method interactions, significant for ICF prospective class and facility-specific methods and for all SNF nonretrospective methods. A model of constant change in the effects of reimbursement methods produced nearly identical results (not shown in any table); however, the fit was not as good as in the discontinuous model. These results suggested that all of the nonretrospective methods may tend to result in greater reduction in rates than retrospective methods do and that these differences became more pronounced after 1981 than before but attenuated somewhat after 1983. Thus, prospective and combination methods may allow for greater constraint of rates than retrospective methods do. These results were consistent with an earlier study that used a different set of measures of rates and methods (Harrington and Swan, 1984).

These interpretations, however, must be considered tentatively because each of the four reimbursement methods covered a multitude of differences in policy. The finding of significant differences between methods was impressive (i.e., differences between methods were found in spite of the variations within each method); but, on the other hand, the interpretations of these differences can be only tentative at best. For example, the changes in the

Table 10

Time-series/cross-sectional regression of reimbursement rates for Medicaid-certified skilled nursing facilities and intermediate care facilities, by reimbursement method, change over time periods, and interactions: 1979-86

Reimbursement method change over time period, and interaction	Skilled nursing facility	Intermediate care facility
Intercept	² 30.92	² 24.63
Change for post-1981 period	² 15.45 (5.01)	² 10.21 (4.12)
Change for post-1983 period	² 10.51 (3.33)	³ 5.09 (1.96)
Prospective facility-specific:		
Effect in 1979-81	² 5.87 (4.22)	² 4.49 (4.33)
Effect change post-1981	² -7.23 (-4.79)	² -4.11 (-3.26)
Effect change post-1983	³ -3.21 (-1.98)	1.02 (0.70)
Prospective class:		
Effect in 1979-81	3.98 (1.46)	² 5.88 (2.95)
Effect change, post-1981	² -9.40 (-4.55)	² -6.61 (-4.00)
Effect change, post-1983	² -6.72 (-3.27)	-2.32 (-1.33)
Combination:		
Effect in 1979-81	³ 4.56 (2.26)	³ 3.46 (2.33)
Effect change, post-1981	² -6.88 (-3.65)	³ -3.80 (-2.49)
Effect change, post-1983	³ -4.10 (-2.12)	2.07 (1.23)
Number of States ¹ = 336		
Mean-square error	16.35	8.89

¹42 States pooled for an 8-year period. Arizona has no institutional Medicaid program. Seven States (District of Columbia, Indiana, Michigan, Mississippi, Nebraska, New Mexico, and Ohio) are excluded because of missing rate data. Alaska is excluded from yearly regression analyses, hence this analysis, based on its disproportionate influence, as judged by Cook's D.

²Significant at the .01 level, one-tailed test.

³Significant at the .05 level, one-tailed test.

NOTE: Numbers in parentheses are t-values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of State Medicaid Agencies, 1983, and of States' Medicaid Reimbursement Policy, 1986.

differentials between methods may not be the result of outside factors but of the differential composition of what was meant by each given method. Further, this analysis did not control for the outside factors, including factors that differed by States within years (e.g., sociodemographic characteristics, supply of alternate services, other State discretionary policy, and so on), so that the estimated effects of reimbursement policies may be based on a misspecified model.

Rates by inclusion of ancillaries

The effects of ancillaries on rates had different implications from the effects of methods on rates. The exclusion of an ancillary should decrease the rate

but not necessarily mean that overall costs were reduced, because the ancillary may be paid for separately. The inclusion of ancillaries in the rates may, in fact, allow for greater cost constraint than a separate billing and payment system. The analysis of ancillaries may thus explain variation in rates but may not by itself explain how cost constraint might be effected. Such an analysis was warranted in that it may indicate variables that should be controlled for when considering the effects of other factors thought to explain interstate variation in reimbursement rates.

Data as to whether or not ancillaries were included in nursing home rates were only available for 1984 and 1985 from the IHA survey. Only four States included prescription drugs in their basic SNF rate, and three of them were States with relatively high rates, but the fourth (Idaho) had fairly low rates. It may or may not be that the inclusion of drugs accounted for the high rates. Because only four States included this ancillary in rates, the use of this variable in the analysis would lead to estimates with low power and would be confounded with the other special circumstances of ancillary services rates. Only one State (Kansas) did not include medical supplies in its rates, so this variable was also dropped from the analysis. Because the inclusion of physical therapy was highly associated with that of occupational therapy, the physical therapy variable was not included in the analysis to prevent multicollinearity. Finally, the District of Columbia had a disproportionate influence on the coefficients (judged by Cook's D in an analysis not shown), so it was dropped from the sample for the analysis. The inclusion of ancillaries should increase rates, so a one-tailed significance test of a positive effect was employed.

Only the occupational therapy variable significantly predicted reimbursement rates, where its coefficients were significant for both SNF's and ICF's in 1984 and for SNF's in 1985 (Table 11). The inclusion of occupational therapy in the basic rate resulted in higher rates. As noted earlier, however, basing cost-containment interpretations on this effect on rates would be illusory insofar as those States that do not include occupational therapy in rates simply pay separately for such therapy. It is therefore important in future analyses to control for this ancillary in order that cost-constraining effects not be attributed to factors that may be associated with the inclusion of this ancillary and with reimbursement rates.

Rates by cost-center limits

Eight cost-center limits were studied in relation to the 1984 and 1985 rates. Because such limits were imposed for cost constraint, their use should lead to lower rates. On the other hand, this relationship may be in the opposite direction if such limits are imposed where rates are already relatively high. The results of regressing the 1984 and 1985 rates on the eight cost-center limits are shown in Table 12. General limits and limits on administrative costs and on room and

Table 11

Regression analysis of reimbursement rates for Medicaid-certified skilled nursing facilities and intermediate care facilities, by selected ancillaries: 1984-85

Selected ancillary	Skilled nursing facility		Intermediate care facility	
	1984	1985	1984	1985
Intercept	² 45.79	² 48.33	² 38.43	² 41.27
Occupational therapy	³ 11.52 (2.08)	9.63 (1.57)	³ 10.50 (2.03)	³ 8.90 (1.68)
Nonlegend drugs	-5.59 (-0.62)	-4.68 (-0.46)	-4.82 (-0.60)	-5.13 (-0.61)
Durable medical equipment	7.10 (0.95)	6.32 (0.75)	3.03 (0.43)	2.47 (0.34)
Number of States ¹	46	48	46	48
R ²	.118	.071	.092	.063
Adjusted R ²	.055	.008	.028	-.001

¹ District of Columbia excluded because of disproportionate influence, as judged by Cook's D.

² Significant at the .01 level, one-tailed test.

³ Significant at the .05 level, one-tailed test.

NOTE: Numbers in parentheses are t-values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of States' Medicaid Reimbursement Policy, 1986.

board have significant negative effects on SNF rates, whereas limits on nursing costs limits have a positive effect. As expected, general limits and those on

Table 12

Regression analysis of reimbursement rates for Medicaid-certified skilled nursing facilities and intermediate care facilities, by cost-center limits: 1984-85

Cost-center limit	Skilled nursing facility		Intermediate care facility	
	1984	1985	1984	1985
Intercept	¹ 75.69	¹ 74.21	¹ 66.39	¹ 65.86
General limit	¹ -27.39 (-3.75)	¹ -23.53 (-3.29)	¹ -27.24 (-3.84)	¹ -25.39 (-3.24)
Administration	¹ -29.15 (-3.38)	¹ -26.91 (-3.25)	² -30.11 (-3.55)	² -26.74 (-2.97)
Nursing	² 27.30 (2.24)	² 29.02 (2.67)	15.73 (1.41)	16.35 (1.42)
Profits	-8.30 (-0.72)	-9.05 (-0.88)	4.44 (0.42)	0.34 (0.03)
Room and board	² -23.00 (-2.05)	² -25.16 (-2.49)	-14.67 (-1.39)	-12.65 (-1.18)
Capital	-3.83 (-0.40)	-2.07 (-0.22)	-5.86 (-0.66)	-4.51 (-0.49)
Labor	8.56 (0.69)	12.76 (1.06)	17.41 (1.17)	13.43 (0.88)
Other limits	-5.41 (-0.74)	-3.69 (-0.52)	-12.33 (-1.87)	-11.49 (-1.68)
Number of States	44	45	44	45
R ²	² .404	² .362	² .377	.291
Adjusted R ²	.268	.220	.234	.134

¹ Significant at the .01 level.

² Significant at the .05 level.

NOTE: Numbers in parentheses are t-values.

SOURCE: Institute for Health and Aging: Unpublished Telephone Survey of States' Medicaid Reimbursement Policy, 1986.

administrative costs have a significant negative effect on ICF rates. Most of the coefficients were negative, suggesting that cost-center limits did in fact facilitate cost constraint. The positive coefficient for limits on nursing cost may be due to an effort by States with already high rates to curtail further increases.

Although there was substantial multicollinearity among this group of independent variables, almost 75 percent of the total variance in the nursing limits in SNF's was explained by the seven other cost-center limits; and three additional independent variables had over 50 percent of their variance accounted for by the remaining variables. Further, because cost-center data were collected only for 1984, time-series analysis could not be employed, so it was not possible to determine whether some effects were because of intrastate variation that preexisted the implementation of the limits. Finally, it should be noted that all of the regression equations had thus far included only one type of independent variable, so they did not account for the effects of other policies (nor other factors) and were thus undoubtedly misspecified. Nonetheless, the findings supported the view that cost-center limits did control increases in reimbursement rates.

Discussion

States have considerable discretion in their Medicaid nursing home reimbursement policies. State policymakers use such policies to control Medicaid nursing home expenditures and to achieve the public policy objectives of improved access and quality. Because these Medicaid reimbursement policies are extremely complex, policymakers have used multiple means to reduce costs.

Results of the IHA survey showed considerable changes in State Medicaid methods of reimbursing nursing homes. Most important was a shift toward prospective reimbursement methods, but there was also widespread consideration of, and some tendency toward adoption of, case-mix methods. This strong movement toward adoption of prospective reimbursement methods reflected a major effort by State governments to control costs.

Analysis presented here suggests that prospective reimbursement did, in fact, allow for greater cost restraint. Medicaid nursing home prospective facility-specific, prospective class, and combination methods all showed progressively lower reimbursement rate levels over time (in the 1978-83 period), relative to retrospective reimbursement systems. These results were tentative only because other factors affecting rates (e.g., increases in input costs such as those of labor) were not controlled for and because of the variety of differences in reimbursement methods within each of the four categories of systems considered here. Imprecision in the categorization of methods should have weakened the estimates obtained here, however, so that the strong findings for each of the nonretrospective categories of methods suggested

that these methods did allow for constraint of rate increases.

The use of cost-center and general limits also showed some evidence of constraint on reimbursement rates. General limits and limits on administrative costs and on room and board had significant negative coefficients when predicting SNF rates, and the former two types of limits showed the same effects on ICF rates. Although the same caveats apply as for the analysis of payment methodology, strong estimates in the face of imprecision of definition suggested fairly strong effects.

In general, State reimbursement rates had steadily increased and showed great variability across States. This was accompanied by great variability in reimbursement policies across States and by an increasing shift toward prospective reimbursement methods and other reimbursement policies that were thought to enhance cost constraint. And, in fact, there was evidence that such cost-containment efforts may be showing some results.

Policy considerations

These findings about the apparent success of certain cost-containing policies should be placed in a wider policy context. As Federal funds to Medicaid have been constrained below the general rate of inflation since 1981, State officials have had incentives to seek methods to control costs. Constraining nursing home reimbursement rates is one method to reduce State expenditures. Although implementation of cost-containment policies appeared to be slowing the growth of overall nursing home expenditures, States must balance the need to control costs against the negative effects of such controls on reducing quality of and access to care. In this study, we could not examine the relationship of current Medicaid rates with adequate quality of care or access. Most States have reportedly not evaluated the specific effects of changes in their reimbursement methods or rates on either quality or access for Medicaid beneficiaries. Although such evaluations would be valuable, obtaining funding for such studies is problematic in the current retrained fiscal climate.

Most of the State reimbursement changes have been incremental rather than sweeping, however—e.g., the substitution of prospective for retrospective facility-specific reimbursement. All State Medicaid nursing home reimbursement systems were based on fee-for-service payments provided on a per diem basis, which gave providers incentives to increase the number of services offered and/or the number of days of care provided. For the most part, State Medicaid programs have not examined the feasibility of paying for nursing home care on a prepaid capitated basis. Testing innovative new approaches to State Medicaid nursing home reimbursement rates could be more valuable than the current State efforts to fine-tune the fee-for-service reimbursement system.

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