

## *Lessons from Variations in State Medicaid Expenditures*

**I**n the past year, more than half of all state governments have been forced to cut spending or raise taxes in order to balance their budgets. Because Medicaid is absorbing a large and growing share of general expenditures in every single state, policymakers are under intense pressure to bring the cost of this budget-breaking program under control. Legislators everywhere are considering tightening eligibility requirements, reducing services, or experimenting with various reimbursement and delivery systems.

In hopes of finding some clues concerning Medicaid cost containment, this article starts by examining the experiences of the 15 states with the most comprehensive Medicaid programs. Intriguingly, these 15 states make some of the lowest (as well as the highest) per-recipient Medicaid payments in the nation. Moreover, several of the states with below-average Medicaid costs per recipient have above-average personal health care expenditures. How have they managed their Medicaid expenses?

To narrow the search for answers, this article examines state data on per-recipient Medicaid spending by type of service. This approach suggests a focus on the nursing homes, both because these facilities loom large in Medicaid budgets and because per-recipient payments to the nursing homes are much more variable across states than are payments for any other Medicaid service.

Further investigation—via regression analysis—indicates that a primary explanation for cross-state differences in per-recipient Medicaid expenses is the Medicaid reimbursement rate for the nursing homes, an obvious but little discussed variable. States that pay well-below-average reimbursement rates have relatively low Medicaid payments per recipient, and vice versa. Except for states' relative emphasis on managed care,<sup>1</sup> most regulatory choices seem to have little impact on per-recipient costs.

The article then explores why nursing home reimbursement rates

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differ widely across states. Personal health care costs show no such variation. Although nursing home reimbursement rates appear to reflect nursing home costs, particularly nursing home worker pay, the article argues that the regulated nursing home "market" is highly localized and peculiarly susceptible to cost shifting efforts. As a result, nursing home "costs" can become detached from the real cost of providing this care. The article suggests that the industry's "costs" may come to reflect the states'

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Medicaid reimbursement rates in an interactive cycle.

For this reason, the article recommends that regulators examine their nursing home reimbursement policies from the ground up. Where nursing home reimbursement rates are well above average, policymakers may want to ask whether their area's real resource costs or quality differences justify the elevated rates. By contrast, where the average nursing home reimbursement is below the national average, policymakers may want to take a hard look at the quality of care provided in their state.

Finally, the article draws some lessons for the rest of the U.S. health care system. One issue that threads through the entire paper is the measurement problem caused by the comparatively low, as well as variable, levels of the Medicaid reimbursement rates. Because these rates are generally just a fraction of those paid by other health care consumers, providers have an incentive to avoid Medicaid patients or to shift the cost of their care to other payors. Since the mix of avoidance and subsidization varies, policymakers face considerable difficulty in measuring the total cost, quality, or efficiency of individual Medicaid programs. In other words, because the Medicaid dollar buys different amounts of care in each state, it has lost its usefulness as a unit of measure. If current trends towards negotiated discounts for packages of privately insured health care continue, the U.S. medical dollar may face the same fate.

### *Reasons for Selecting States*

Although the statistical analysis in this article usually reflects the experiences of all states for which data are available, the tables often focus on Medicaid payments per recipient in the 15 states that offered the most comprehensive programs in 1987.<sup>2</sup> (For a brief description of the basic Medicaid program and the states' options, see the Box on page 45.) Focusing on reasonably comprehensive Medicaid programs seems appropriate because the practices of the least generous states may not be applicable elsewhere. Surprisingly perhaps, this selection includes states with both the highest and some of the lowest per-recipient costs in the country.

Table 1 lists the states selected, the number of services they offered in 1987, and their Public Citizen Health Research Group (PCHRG) rank. Because aged and disabled beneficiaries are usually a great deal more expensive than AFDC children, and because each state's client mix reflects its demographics as well as its eligibility criteria, the table compares per-recipient costs across states after "standardizing" the recipient pool.<sup>3</sup> More precisely, "Medicaid Payments per Standardized Recipient" was calculated assuming that each state had the national average recipient mix but paid state costs for each type of client.

As a measure of the breadth of each state's Medicaid program, Table 1 also shows Medicaid recipients as a share of the poverty population. In addition, the table provides data on the state's total Medicaid expenditures per capita. California, Michigan, and Washington provide examples of states with reasonably comprehensive programs and above-average coverage of their poverty populations but below-average Medicaid expenditures per recipient and per capita.

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<sup>1</sup> Managed care is a cost-control concept currently embraced with great enthusiasm in many quarters. This approach generally involves paying a health care provider, usually a health maintenance organization or a physician, to act as a gatekeeper channeling consumers to appropriate care. Increased use of managed care is expected to slow soaring medical costs by reducing unnecessary care. And indeed, evidence presented in this article suggests that managed care delivery systems do in fact make some contribution to controlling Medicaid costs.

<sup>2</sup> The states chosen offered at least 25 services and a medically needy program in 1987 or had a program ranked in the top 10 by the Public Citizen Health Research Group (PCHRG) in that year.

<sup>3</sup> Expenditures per recipient for particular types of services, such as inpatient hospital services, are not standardized for recipient mix, because the data were not readily available. Moreover, even within the major categories of Medicaid recipient, such as aged or AFDC child, the standardization is only partial because no effort has been made to account for differences in diagnoses.

### *The Medicaid Program in Brief*

Medicaid is a jointly funded federal/state program that provides health care to specific categories of low-income people. It became law in 1965 as part of the Social Security Act. The federal share varies inversely with state per capita income and in 1989 ranged from 50 to 80 percent. Within federal guidelines, each state administers its own program and has considerable discretion in determining eligibility criteria, the amount and scope of the services provided, and the rates and methods of reimbursement. Accordingly, Medicaid coverage of the indigent population and expenditures per recipient vary considerably from state to state.

The original federal guidelines required states to provide Medicaid coverage to low-income children and their mothers (recipients of Aid to Families with Dependent Children, AFDC) and to poor aged, blind, and disabled individuals (now generally recipients of Supplemental Security Income, SSI). These groups are known as "categorically needy." Gradually, federal requirements have extended Medicaid coverage to related groups. Most recently, for example, the new federal budget package requires a gradual extension of Medicaid coverage to all children under 19 in families with incomes below the federal poverty level. In addition, the states may choose to provide Medicaid coverage, with federal support, to others who are part of the same "categorically needy" groups but who have somewhat higher incomes.

The states also have the option of providing Medicaid coverage to "medically needy" people. Under this option, individuals who fit into Medicaid-eligible categories but are poor only because of high health care expenses may "spend down" to meet Medicaid income and asset criteria. They "spend down" by incurring medical or remedial care expenses that reduce their remaining income and liquid assets to a level below that allowed by their state's program.

As a result of these federal guidelines, childless adults (under age 65) who are not disabled are

not eligible for Medicaid no matter how low their income or how high their medical expenses. In addition, because states can and do set their eligibility requirements below the federal poverty level, many poor families do not qualify for Medicaid. In 1989, Medicaid coverage of the categorically needy (generally AFDC and SSI recipients) amounted to just over half of the poverty-level population. Including people impoverished by medical expenses and covered by current medically needy programs (in the numerator but not in the denominator) brings the share to 65 percent.

By default, not design, Medicaid has developed a split personality. It provides—as intended—acute/preventive care to specific categories of the vulnerable poor. It has also become the nation's primary long-term care program for people who fit the Medicaid categories, some of whom become impoverished by paying privately for long-term (generally nursing home) care. Although not its original focus, long-term care has grown as a share of Medicaid expenditures and in 1989 accounted for over 40 percent of Medicaid payments—made on behalf of less than 7 percent of the recipients. While most long-term care recipients are elderly, the mentally retarded represent another important and very expensive group. In 1989 residents of institutions for the mentally retarded accounted for less than 1 percent of all Medicaid recipients but for 12 percent of Medicaid payments.

Medicaid became the nation's primary long-term care program because Medicare, the nationwide health insurance program for the aged and certain disabled, provides very limited coverage for long-term care. Legislators have feared that including long-term care coverage within Medicare would overburden the already strained resources of the Medicare program. Accordingly, while Medicare paid 2 percent of nursing home care in 1989, Medicaid paid 45 percent.

Table 1  
*Medicaid Payments per Actual and per Standardized Recipient and Personal Health Care Expenditures per Capita in Relation to the U.S. Average, in States with Relatively Comprehensive Programs,<sup>a</sup> FY 1989*

Jurisdiction	Number of Services, 1987	PCHRG <sup>b</sup> Rank	Medicaid Payments per Standardized Recipient Relative to U.S. Average	Personal Health Care Expenditures Per Capita Relative to U.S. Average	Medicaid Recipients <sup>c</sup> as a Share of the Poverty Population (%)	Medicaid Expenditures per Capita (\$)
United States			1.00	1.00	65.4	221.69
I. Connecticut	24	5	1.30	1.11	98.0	317.02
Massachusetts	31	4	1.19	1.25	112.4	404.71
Minnesota	30	1	1.60	1.02	65.1	253.88
Montana	27	23	1.05	.85	46.5	192.05
New Hampshire	28	37/38	1.34	.82	59.3	165.35
New Jersey	28 <sup>d</sup>	7	1.29	.92	72.7	248.21
New York	25	3	1.48	1.16	82.8	567.75
North Dakota	25	31	1.45	1.10	46.8	270.09
II. California	26	6	.68	1.19	87.7	189.18
Illinois	26	18	.77	1.08	59.9	180.42
Maine	27	12/13	.92	.90	107.9	303.98
Michigan	28	10	.66	1.06	84.0	210.74
Oregon	26 <sup>d</sup>	9	.56	.95	61.2	144.95
Washington	26 <sup>d</sup>	8	.84	.95	78.6	202.13
Wisconsin	27 <sup>d</sup>	2	.77	1.01	70.2	229.99

Note: Group I includes states where relative Medicaid payments per standardized recipient are above average. Group II includes states with below-average relative Medicaid payments per standardized recipient.

<sup>a</sup>States offering at least 25 services and a medically needy program or offering a program ranked in the top 10 by the Public Citizen Health Research Group in 1987.

<sup>b</sup>Public Citizen Health Research Group. With a rank of 1, Minnesota was judged to have the best (or, actually, least unsatisfactory) Medicaid program.

<sup>c</sup>Categorically and medically needy recipients.

<sup>d</sup>Some services offered to categorically needy group only.

Source: Health Care Financing Administration, State Medicaid Data Disk FY 89; Congressional Research Service, *Medicaid Source Book*, November 1988, pp. 98-99; Erdman and Wolfe (1987); Lewin/ICF estimates in Families USA Foundation (1990); and U.S. Bureau of the Census.

Finally, Table 1 also includes ratios showing these states' relative personal health care expenditures per capita—on the assumption that Medicaid programs would naturally reflect a state's medical costs. However, the data presented raise doubts about this assumption.

Table 1 divides the 15 states into two groups, according to whether their per-recipient Medicaid expenses are above or below the national average. Group I has the states with above-average Medicaid payments per recipient, while Group II has those with below-average payments. As the table shows, four of the seven states with below-average Medicaid costs (California, Illinois, Michigan, and Wisconsin) have above-average per capita personal health care

expenditures. How do these states keep their Medicaid spending per recipient relatively low when they seemingly face above-average health care costs? The rest of this article will explore this question.

### *Comparing Medicaid and Personal Health Care Expenditures*

However, before continuing it is important to recognize that Medicaid payments per recipient of medical services and personal health care expenditures per person—who may or may not receive health care in a given year—are not directly comparable. Table 2 presents some admittedly rough compari-

Table 2

*Ratio of Medicaid Payments per Recipient to Estimated Package of Health Care Bought by the Average U.S. Health Care Consumer, by Type of Service, FY1989*

U.S. Average = 1.00

<u>All Health Care</u>	
Medicaid Payments, plus Medicare, <sup>a</sup> per Categorically and Medically Needy Recipient ÷ Personal Health Care Expenditures per Health Care Consumer <sup>b</sup>	1.08
Medicaid Payments, plus Medicare, <sup>a</sup> per Categorically Needy Recipient <sup>c</sup> ÷ Personal Health Care Expenditures per Health Care Consumer <sup>b</sup>	.85
Medicaid Payments per Categorically Needy AFDC Recipient <sup>c</sup> ÷ Personal Health Care Expenditures per Health Care Consumer <sup>b</sup>	.27
<u>Inpatient General Hospital Services</u>	
Medicaid Payments, plus Medicare, <sup>a</sup> per Categorically and Medically Needy Recipient ÷ Hospital Expenses per Inpatient Stay <sup>d</sup>	1.33
Medicaid Payments per Categorically and Medically Needy AFDC Recipient ÷ Hospital Expenses per Inpatient Stay <sup>d</sup>	.59
<u>Physician Services</u>	
Medicaid Payments, plus Medicare, <sup>a</sup> per Categorically and Medically Needy Recipient ÷ Expenditures on Physicians' Services <sup>e</sup> per Health Care Consumer <sup>b</sup>	.68
Medicaid Payments per Categorically and Medically Needy AFDC Recipient ÷ Expenditures on Physicians' Services <sup>e</sup> per Health Care Consumer <sup>b</sup>	.27
<u>Nursing Facility Services</u>	
Medicaid Reimbursement Rate (Monthly) for SNFs + ICFs, 1986 ÷ Medicare Average Monthly Charge, 1985	.64

<sup>a</sup>Medicaid payments were added to average Medicare reimbursements per elderly and per disabled person served. Reimbursement data for 1987, from the *1990 Green Book* (U.S. Congress 1990), were used to estimate average Medicare reimbursements for aged and for disabled persons for all Medicare covered services, for hospital services and for physician services for FY1989.

<sup>b</sup>Personal health care consumer: a person having contact with a physician during a one-year period. According to *Health United States 1989* (U.S. Department of Health and Human Services 1989), 24 percent of the U.S. population did not have any contact with a physician during 1988.

<sup>c</sup>Receiving cash payments.

<sup>d</sup>1989 hospital expenses (adjusted) for inpatient care per inpatient stay, by permission of the American Hospital Association.

<sup>e</sup>Estimated, assuming that physicians' services absorbed 24 percent of personal health care expenditures, as was the case in 1987.

Source: Lewin/ICF in Families USA Foundation (1990); *Health United States 1989*, Tables 110, 111, 112, 108; American Hospital Association, by permission; Health Care Financing Administration Data Disk; and *1990 Green Book* (U.S. Congress, House of Representatives, 1990).

sons<sup>4</sup> between the average package of health care services purchased for selected types of Medicaid recipients and the average packages purchased by comparable U.S. health care consumers.<sup>5</sup>

With most ratios well below 1.00, the table suggests either that the Medicaid packages are substandard or that part of the cost of caring for Medicaid clients is being shifted to the private sector. Indeed, only when elderly and disabled Medicaid recipients are assumed to receive the Medicare to which they are entitled *in addition* to Medicaid are any of the ratios above 1.00.<sup>6</sup> However, even assuming that all elderly and disabled Medicaid recipients receive health care equal to the average Medicare reimbursement in addition to the Medicaid payments made on their behalf, the total health care package bought for each categorically needy Medicaid client equals just 85 percent of the package used by the average U.S. health care consumer. Moreover, the package provided to an AFDC adult or child (other than those impoverished by huge medical expenses) equals less than one-third of the average U.S. health care package.

The impression that the average Medicaid package may be substandard is reinforced by Figure 1, which shows that individuals aged 65 and over represent a slightly larger fraction and the disabled represent a considerably larger fraction of the Medicaid population than of the general population. Both

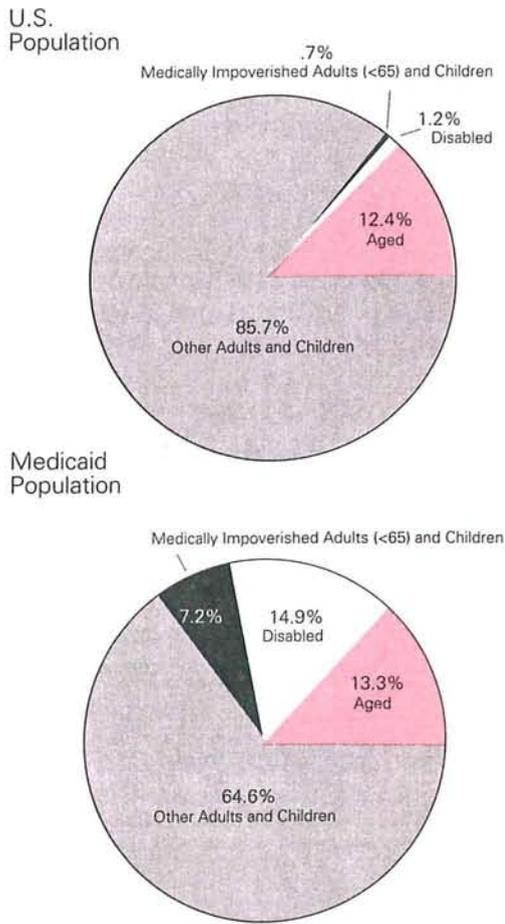
<sup>4</sup> Unfortunately, the information needed to make a careful comparison is not readily available. The problem stems from likely differences in case mix. It is possible that the health problems of the Medicaid population differ from those of the general population and require more or less costly care. For example, a study based on 1982 Medicaid data for inpatient *hospital* services in three states found that pregnancy accounted for a much larger share of expenditures than it did for the general population; however, Medicare expenditures for elderly and disabled Medicaid beneficiaries were not included in the calculations. Moreover, with the exception of pregnancy and mental disorders, the rank order of expenditures by diagnosis for these three Medicaid programs and for the general population were quite similar (Pine, Howell and Buczeko, 1987). Another study, which examined New York State hospitals in 1978 (Martin, Frick and Schwartz, cited in the *Medicaid Source Book*, Congressional Research Service 1988, p. 465) concluded that Medicaid beneficiaries had a less expensive case mix but that within a given diagnosis-related-group Medicaid patients were more costly to the hospitals than were Blue Cross patients.

<sup>5</sup> Defined as a person having contact with a physician in a given year. According to *Health United States: 1989* (U.S. Department of Health and Human Services 1989), 24 percent of the U.S. population did not have contact with a physician in 1988.

<sup>6</sup> The federal government now requires state Medicaid programs to pay the Medicare premiums, deductibles, and co-payments to permit all elderly and disabled Medicaid recipients with incomes at or below the federal poverty level to receive Medicare; however, not all states have complied with this mandate.

Figure 1

*Composition of U.S. and Medicaid Populations, Fiscal Year 1989*



Source: U.S. Health Care Financing Administration; 1990 Green Book; U.S. Bureau of the Census.

of these groups have above-average medical expenses. Similarly, nonelderly adults and children impoverished by huge medical expenses are 10 times more important in the Medicaid pool than in the population at large. Other adults and children represent only two-thirds of the Medicaid population compared to 86 percent of the U.S. population. Even within this group, moreover, poor people are known to have more serious health problems than the more affluent.

Why should the Medicaid package appear substandard? Because the Medicaid reimbursement rates

are generally a fraction of those paid for other health care consumers, as column 4 of Table 7 (page 54) illustrates in the case of physicians' services. Medicaid fees average less than three-quarters of those paid by Medicare for the same physicians' services. Charges for privately insured care would generally be even higher than those paid by Medicare. Accordingly, providers have an incentive to avoid Medicaid patients or to shift the cost of their care to other payors. The consequences of these incentives will be discussed below.

*Cost Differences by Service*

To help focus the search for the reasons for the big differences in state Medicaid costs, Table 3 presents comparative data on Medicaid payments per recipient by type of service for the 15 states in Groups I and II. The state data are expressed relative to the U.S. average (with the U.S. equal to 1.00); the major services listed (those with over \$3 billion in U.S. Medicaid payments in 1989) accounted for 78 percent of total expenditures in that year.

As the medians for Groups I and II suggest, the distinction between the states with low and high per-recipient costs seems to center on the payments to the nursing homes. Including facilities for the mentally retarded, these institutions absorbed 40.7 percent of all Medicaid payments, the largest share of any service category. The low-cost states appear to be low cost largely because their payments per recipient to the skilled nursing facilities (SNFs) and intermediate care facilities (ICFs) are well below average, whereas the high-cost states tend to have well above-average expenditures for nursing home care. By contrast, four of the seven low-cost states have above-average payments to the hospitals for inpatient services, while three have average or above-average payments for physicians' services.

The next-to-bottom row of the table shows the variance in relative personal health care expenditures per capita and Medicaid payments per recipient. The Medicaid payments per recipient show much greater variability than do the personal health care expenditures that presumably underlie them. And the variation in Medicaid payments to the nursing facilities is the greatest of any of the categories shown.<sup>7</sup>

Table 4 shows data on state Medicaid payments per recipient by recipient category, relative to the U.S. average. In the low-cost states, payments per aged or disabled client tend to be the most below

Table 3

*Payments for Personal Health Care per Capita and for Medicaid Services per Recipient, Relative to U.S. Average, by Type of Service, Selected States, FY1989*

U.S. = 1.00

	Personal Health Care	All Medicaid	Hospital Inpatient	SNF	ICF/MR	ICF/Other	Physicians' Services	Prescription Drugs
I. Connecticut	1.11	1.30	1.05	.59	2.08	1.42	1.01	1.24
Massachusetts	1.25	1.19	1.43	1.52	1.55	1.72	1.37	1.22
Minnesota	1.02	1.60	1.05	1.13	.81	.91	1.25	1.07
Montana	.85	1.05	.87	.34	.97	1.00	1.34	.97
New Hampshire	.82	1.34	.89	2.89	1.42	1.53	.67	1.50
New Jersey	.92	1.29	1.91	.96	1.40	1.65	.58	1.20
New York	1.16	1.48	1.71	2.22	1.81	1.64	.66	1.13
North Dakota	1.10	1.45	.91	.82	1.17	.78	1.07	1.18
Median	1.06	1.30	1.05	1.04	1.41	1.48	1.04	1.19
II. California	1.19	.68	1.20	.86	.90	.35	1.04	.80
Illinois	1.08	.77	1.06	.72	.63	.79	.79	.86
Maine	.90	.92	.85	.66	.49	1.36	.86	1.22
Michigan	1.06	.66	1.07	.41	1.16	.90	1.04	.90
Oregon	.95	.56	.54	.40	1.41	.79	1.00	1.00
Washington	.95	.84	1.11	.90	1.18	.86	.99	.87
Wisconsin	1.01	.77	.84	.76	.52	.75	.77	1.39
Median	1.01	.77	1.06	.72	.90	.79	.99	.87
Variance								
All States exc. Alaska	.02	.08	.11	.23	.13	.10	.09	.06
Share of All Medicaid Payments (%)		100.00	24.55	12.22	12.20	16.28	6.25	6.77

SNF = Skilled nursing facilities.

ICF/MR = Intermediate care facilities for the mentally retarded.

ICF/Other = Intermediate care facilities other than those for the mentally retarded.

Source: Health Care Financing Administration, State Medicaid Data Disk FY89; Lewin/ICF estimates in Families USA Foundation (1990).

average. The cross-state variation in payments per client is also greatest for the aged and disabled. These figures undoubtedly reflect those shown in Table 3, because aged and disabled beneficiaries use the most nursing home care.

Together Tables 3 and 4 suggest that much of the explanation for the huge cross-state variations in per-recipient Medicaid costs may be found in the nursing homes. Accordingly, the next section will explore why long-term care costs vary, while the following section will look at physicians' services.

### *Why Long-Term Care Costs per Recipient Vary*

How have states like California and Michigan succeeded in keeping their per-recipient expenditures for SNF or ICF services to 40 percent or less of the national average? This section will present the

results of regression analysis used to highlight the factors responsible for cross-state differences in Medicaid payments for nursing home services. Table 5 shows some variables generally thought to affect nursing home costs for the 15 states in Groups I and II. Many of these variables will be used in the regression analysis that follows.

Various types of reimbursement systems have been credited with restraining nursing home costs.

<sup>7</sup> Unfortunately, state data on reimbursement rates for the intermediate care facilities for the mentally retarded (ICFs/MR) are not readily available; thus, the rest of this article will focus on the other long-term care facilities. Because many of the ICFs/MR are state-owned, while most other long-term care facilities are not, the two categories are quite distinct. Accordingly, conclusions based on the SNFs or the ICFs other than those for the mentally retarded (ICFs/other) should not be assumed to apply to facilities for the retarded.

Table 4

*Payments for Personal Health Care per Capita and for Medicaid Services per Recipient, Relative to U.S. Average, by Type of Medicaid Recipient, Selected States, FY1989*

U.S. = 1.00

	Personal Health Care	Categorically Needy with Cash Payments:				Medically Needy:			
		Aged	Disabled	AFDC Child	AFDC Adult	Aged	Disabled	AFDC Child	AFDC Adult
I. Connecticut	1.11	1.09	1.31	1.06	1.12	1.24	1.48	1.20	1.19
Massachusetts	1.25	1.30	1.54	1.31	1.34	1.45	1.69	.81	1.38
Minnesota	1.02	1.93	2.79	1.10	.92	.82	.51	1.22	1.26
Montana	.85	1.25	1.07	1.11	1.06	.75	.95	.89	1.38
New Hampshire	.82	.86	2.31	.82	.66	1.03	.81	.47	.71
New Jersey <sup>a</sup>	.92	1.48	1.51	1.27	1.62	.15	.20	.38	2.56
New York	1.16	2.83	1.75	1.48	1.48	1.68	1.55	1.72	1.55
North Dakota	1.10	1.78	2.33	1.31	1.24	.79	1.57	1.01	1.35
Median	1.06	1.39	1.66	1.19	1.18	.92	1.22	.91	1.36
II. California	1.19	.48	.79	.78	.91	.66	.94	1.03	1.16
Illinois	1.08	1.08	1.22	.93	.82	.60	.89	.74	.85
Maine	.90	.55	.94	1.02	1.09	.38	.51	1.02	1.53
Michigan	1.06	.63	.93	.82	.89	.58	.62	.53	.79
Oregon <sup>a</sup>	.95	1.35	.74	.81	.83	.13	.19	.57	1.05
Washington <sup>a</sup>	.95	.87	1.37	1.05	1.03	.17	.28	.56	1.16
Wisconsin <sup>a</sup>	1.01	.81	1.00	.94	.77	.23	.27	.45	1.14
Median	1.01	.81	.94	.94	.91	.38	.51	.57	1.14
Variance	.01	.35	.35	.04	.07	.21	.26	.13	.18

<sup>a</sup>Some services offered to categorically needy group only.

Source: Health Care Financing Administration, State Medicaid Data Disk FY89 and Families USA Foundation (1990).

Column 1 of Table 5 provides a brief description of the reimbursement systems<sup>8</sup> in effect in 1987. As the table indicates, prospective systems predominate. Although considerable variation in nursing home payments per recipient exists among the states with prospective systems, the experiences of states with cost-based systems (Maine for the ICFs, New Hampshire for the SNFs, and Michigan for the ICFs/MR) suggest that this reactive approach is indeed less successful in restraining costs. For this reason, cost-based systems are being abandoned by most states. The table also suggests that the use of ceilings may curb nursing home expenditures.

Columns 2 and 3 of Table 5 show Medicaid per diem reimbursement rates for 1989. These rates are averages of the daily reimbursements (per Medicaid recipient) set by state authorities for each nursing facility that accepts Medicaid recipients.<sup>9</sup> The cross-state variation in these reimbursement rates is considerable.<sup>10</sup> Nevertheless, as the table indicates, the states in Group I tend to pay above-average rates

while those in Group II pay below-average rates. In the regressions that follow, the reimbursement rate (a weighted average of the SNF and ICF rates) is expected to have a positive relationship with Medicaid

<sup>8</sup> In prospective systems, reimbursement rates are set in advance, and providers bear some—partial or complete, depending on the state—risk of cost overruns.

<sup>9</sup> The Medicaid per-diem payment for nursing home care is generally less than the reimbursement rate, because Medicaid recipients pay as much of that rate as they can from Social Security and other current income. Medicaid pays the balance. In addition, the variance for the payments is less than that for the reimbursement rates. This difference may reflect the fact that states with relatively high per diem rates tend to be those with above-average personal income; thus, Medicaid clients in high per diem states may be able to pay for an above-average share of their own care.

<sup>10</sup> Part of this remarkable variation in the reimbursement rates may simply reflect differences in how the states calculated the reported averages; part may reflect differences in services, such as occupational therapy, covered in the per diem. However, according to one study, differences in coverage accounted for less than 10 percent of the variation in per diem rates in 1984 and 1985 (Harrington and Swan 1984). These and other factors affecting the per diem rates will be further addressed below.

Table 5  
*Variables Affecting Medicaid Nursing Home Payments per Recipient, Selected States, FY1989*

	Reimbursement Method, 1987	Medicaid Reimbursement Rates per Diem		Days of Care per Recipient	Share (%) of All Medicaid Aged and Disabled in:		Community Care Expenditures per Person Aged 75 and over, 1986
		SNF	ICF		SNFs	ICFs/other	
I. Connecticut	P; case mix; ceilings	\$ 83.86	\$64.18	165.7	11.93	38.48	\$118
Massachusetts	P, budgeted	90.94	58.76	221.3	11.13	12.50	926
Minnesota	P; case mix; ceilings	68.31	50.90	246.4	32.54	17.71	185
Montana	P		(50.86)	248.8	1.22	31.54	102
New Hampshire	C, SNFs; P, ICFs	126.20	69.00	317.4	.48	41.06	115
New Jersey	P	73.70	67.31	237.6	3.74	22.11	325
New York	P; case mix; ceilings	112.93	72.08	258.7	13.16	3.51	781
North Dakota	P	53.62	40.99	280.9	21.54	19.22	123
II. California	P; ceilings	60.26	44.22	200.0	11.58	.84	357
Illinois	P; case mix	49.69	39.73	300.4	5.85	24.14	232
Maine	P; SNFs; C, ICFs	83.07	58.33	278.5	1.55	21.87	278
Michigan	P		(50.78)	200.6	5.94	13.97	184
Oregon	Ceilings	83.41	55.71	210.9	3.22	24.10	207
Washington	P; ceilings	n.a.	n.a.	n.a.	22.59	.96	289
Wisconsin	P; ceilings	57.27	46.24	n.a.	25.19	12.49	154
U.S. Average	n.a.	62.32 (54.02)	46.29	238.9	8.51	13.39	n.a.

( ) = Combined rates P = Prospective C = Cost-based  
n.a. = not available.

Source: National Governors' Association (1989); Health Care Financing Administration, State Medicaid Data Disk FY89; and Intergovernmental Health Policy Project (1988, vol. II).

payments per recipient of nursing home services; the higher the rate, the higher the payment.

Column 4 presents average days of care per recipient of nursing home services. The high-cost states tend to provide more days of care than those in the low-cost group. Most states have kept the supply of nursing home beds tight enough to ensure waiting-lists, and some may choose to give priority to convalescent, and thus relatively short-term, patients in order to save hospital costs. Like the reimbursement rates, the average length of stay is also expected to have a positive link to *annual* per-recipient payments to the nursing homes.<sup>11</sup>

Columns 5 and 6 show the percentage of all aged and disabled Medicaid recipients who are in SNFs and ICFs other than those for the mentally retarded. Because SNF reimbursement rates are higher than ICF/other rates, channeling beneficiaries to the ICFs should reduce per-recipient costs. Michigan, for instance, prides itself in making sure that no one who does not really need skilled care is permitted to receive it.<sup>12</sup> Accordingly, the share of institutionalized recipients living in SNFs might well be expected

to have a positive relationship with Medicaid payments to the nursing homes. On the other hand, because some SNF care is eligible for Medicare coverage, while ICF care is not, a greater proportion of SNF patients might actually reduce Medicaid payments per recipient.

Finally, column 7 contains data on expenditures for community care programs for the elderly for 1986, the most recent year for which these data are available.<sup>13</sup> As Appendix Table A-1 shows, the cost of institutional care greatly exceeds the cost of community care per person aged 75 and above in every state.

<sup>11</sup> Even though long-term residents generally require less-intensive, less-expensive care than convalescent patients on a per diem basis.

<sup>12</sup> This distinction between SNFs and ICFs is being phased out, by federal mandate.

<sup>13</sup> States use monies from several sources (particularly Title XX social services block grants, funds from the Older Americans Act, and state-only financing) in addition to Medicaid to provide these community-based long-term care programs. In column 7 these expenditures are shown in relation to the population aged 75 and over because recipient data for long-term care programs other than Medicaid are not readily available.

Table 6

*Determinants of Medicaid Payments per Recipient of Nursing Home Services, All States,<sup>a</sup> FY1989*Dependent Variable = Annual Medicaid Payments per Recipient of Nursing Home<sup>b</sup> Services

Independent Variables:	Equation 1	Equation 2	Equation 3	Equation 4
Constant	-5,172.51** (-2.58)	2,475.02** (2.13)	1,282.76 (1.34)	-4,499.56** (-2.58)
Nursing Home Reimbursement Rate per Diem <sup>c</sup>	217.20*** (8.23)	134.00*** (5.29)	150.63*** (11.88)	228.01*** (8.65)
Average Days of Care per Recipient, per year	2.77 (1.40)			3.23* (1.71)
Share of Nursing Home <sup>b</sup> Recipients in SNFs		41.27 (.03)	181.85 (.12)	-1,029.28 (-.80)
Expenditures on Community Care per Person Aged 75 and Over, 1986		1.57 (.74)		
Dummy: Medically Needy Program for the Aged			849.14 (1.20)	-896.53 (-1.41)
Per Capita Personal Income, 1989	.14 (1.04)			.14 (1.10)
Dummy: Prospective Payment System	504.40 (.77)			
Dummy: Cost Ceilings	287.55 (.46)			
R <sup>2</sup> (adjusted)	.82	.77	.78	.83

Numbers in parentheses are t-statistics.

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

\*\*\*Statistically significant at the 1 percent level.

<sup>a</sup>All states except AK, HI, ID, KS, MD, MS, OK, TX, WA, WI, WV and WY, because data for the reimbursement rates or for personal income were missing.<sup>b</sup>SNFs and ICF/other.<sup>c</sup>Weighted average of SNF and ICF/other rates.

Source: See Table 5; U.S. Bureau of the Census.

Accordingly, states sometimes provide community care programs in hope of reducing the time that individuals will be institutionalized at state expense. If these states are correct, the regression analysis should reveal a negative relationship between expenditures on community care and Medicaid payments to the nursing homes. If community care does not substitute for institutional care, as much research concludes (Weissert 1991), expenditures on community care should not have a significant impact on per-recipient nursing home costs.<sup>14</sup>

Two additional variables used in the equations were per capita personal income and a dummy for the existence of a medically needy program for the aged. Because higher per capita income is thought to be associated with more generous Medicaid pro-

grams, the relationship between the income variable and payments to the nursing homes is expected to be positive. Similarly, because medically needy programs allow individuals with ongoing long-term care expenses to "spend down" to Medicaid eligibility, such programs should increase the number of chronic nursing home residents dependent on Medicaid. Accordingly, these programs should increase the average days of care and, thus, payments per recipient of nursing home services.<sup>15</sup>

The regression results shown in Table 6 indicate a strong and statistically significant positive relationship between Medicaid per-recipient payments to the nursing facilities and the Medicaid reimbursement rates, as expected. No other variable had a significant association with payments per recipient (at the 5

### *Determinants of Expenditures for All Long-Term Care per Person Aged 75 and Over*

Because community care programs are often funded from a variety of sources and serve individuals who are not eligible for Medicaid, a separate regression analyzes the determinants of the cost per person aged 75 and over of all long-term care for the aged. The results are presented in the table below.

Once again, the Medicaid nursing home reimbursement rate has a strong, positive association with per-person expenditures on total long-term care. Moreover, while community care expenditures have an insignificant link with Medicaid expenses for nursing home care, the regression coefficient for the cost of community care and total long-term care per person aged 75 and over is greater than 1 and highly significant. This result suggests that community care does not substitute for institutional care. Rather it is an additional service currently provided most widely by states where Medicaid programs are relatively comprehensive in other respects as well.

The regression analysis also indicates that a medically needy program for the aged has a positive but statistically insignificant association with nursing home expenditures per person aged 75 and over. However, it is not clear that the existence of a medically needy program for the aged should greatly increase the share of a state's elderly population eligible for Medicaid coverage of nursing home care. The impact on eligibility is blunted, because federal law permits states to establish a special and fairly generous income level (300 percent of the basic SSI payment level for an individual) to be used only in determining Medicaid eligibility for individuals living in nurs-

ing homes. Although this federal provision makes no allowance for spending down, all of the states that have no medically needy program use this special option to provide Medicaid coverage to nursing home residents. Moreover, the states with a medically needy option also tend to offer Medicaid programs that are relatively comprehensive in other respects as well; thus, the coefficient on the dummy for a medically needy program for the aged may include the impact of these other forms of relative generosity.

### *Determinants of Expenditures on All Long-Term Care Per Person Aged 75 and Above*

All States<sup>a</sup>, FY1986

Dependent Variable = Cost of All Long-Term Care per Person Aged 75 and Above, dollars per year

Independent Variables:	
Constant	284.47* (1.71)
Community Care Expenditures per Person 75 and Above, dollars per year	1.37** (5.28)
Medicaid Nursing Home Reimbursement Rate, dollars per diem <sup>b</sup>	10.70** (3.05)
Dummy: Medically Needy Program for Aged	114.55 (1.01)
R <sup>2</sup> (adjusted)	.77

\*Statistically significant at the 10 percent level; t-statistics are in parentheses.

\*\*Statistically significant at the 1 percent level; t-statistics are in parentheses.

<sup>a</sup>Except AZ, HI, KS, MD, MS, WA and WV.

<sup>b</sup>Weighted average of SNF and ICF/other reimbursement rates.

Source: Intergovernmental Health Policy Project, National Governors' Association (1989); Health Care Financing Administration, State Medicaid Data Disk; U.S. Bureau of the Census.

<sup>14</sup> Unless a community care program permits less disabled recipients to remain in the community so that the average recipient of nursing home services becomes more disabled, and, thus, costly. In that case, the relationship between expenditures on community care and Medicaid payments per recipient of nursing home services might be positive. However, as Weissert (1991) points out, "the most sobering lesson . . . is that home care tends to serve patients who would not have gone to a nursing home whether or not they had received home care."

<sup>15</sup> Because expenditures on community care and the existence of a medically needy program would affect per-recipient payments

to the nursing homes primarily by increasing the clients' average length of stay, these variables should probably not enter the regression equation with days of care per recipient. If the average length of stay is held constant, the relationship between the existence of a medically needy program and per-recipient nursing home costs becomes negative. (See equation 4 on Table 6.) This result may reflect the fact that medically needy programs allow some middle-income people to spend down to Medicaid eligibility. Thus, the average medically needy nursing home resident may be able to pay for a greater share of her care out of her own current income than the average categorically needy recipient can.

Table 7

*Variables Affecting Medicaid Costs per Recipient for Physicians' Services, FY1989*

	Medicaid Payment per Recipient of Physicians' Services State ÷ U.S.	Index of Medicaid Fees for Physicians' Services <sup>a</sup> State ÷ U.S.	Medicaid Reimbursement Rates for Office Visit, Known Patient	Index of Medicaid Fees Relative to Medicare Allowed Charges	Share of Medicaid Recipients in Capitated <sup>b</sup> Plans (%)
I. Connecticut	1.01	1.01	\$19.50	.64	<sup>c</sup>
Massachusetts	1.37	1.30	41.00	.89	6.5
Minnesota	1.25	1.19	20.00	1.02	7.5
Montana	1.34	.98	18.84	.81	<sup>c</sup>
New Hampshire	.67	.69	20.00	.61	2:1
New Jersey	.58	.50	14.00	.34	.8
New York	.66	.53	11.00	.28	2.4
North Dakota	1.07	1.01	16.70	.83	
Median	1.04	1.01	19.17	.72	1.6
II. California	1.04	1.05	18.40	.62	10.7
Illinois	.79	.82	12.65	.56	11.4
Maine	.86	.67	21.25	.59	<sup>c</sup>
Michigan	1.04	.85	16.60	.64	11.5
Oregon	1.00	1.01	18.81	.75	24.8
Washington	.99	.86	22.62	.66	4.3
Wisconsin	.77	1.02	16.88	.81	28.0
Median	.86	.86	18.40	.64	11.4
U.S. Average	1.00	1.00	<sup>c</sup>	.74	<sup>c</sup>

<sup>a</sup>Index based on an average of Medicaid fees for a representative basket of physicians' services.

<sup>b</sup>Managed Care

<sup>c</sup>Not reported.

Source: Health Care Financing Administration, State Medicaid Data Disk FY1989; Physician Payment Review Commission (1991); and HCFA (1990).

percent probability level). In other words, among the variables commonly thought to affect per-recipient Medicaid payments for nursing home services, only the reimbursement rates appear to be important.<sup>16</sup>

### *Why Per-Recipient Costs for Physicians' Services Vary*

The following section uses a similar regression analysis to find significant determinants of cross-state differences in Medicaid payments per recipient of physicians' services. Physicians' services represent the other major category of Medicaid expenditures for which reimbursement rates are readily available. And while the difference between the low-cost and high-cost states is most pronounced for the nursing facility payments, on average per-recipient physician expenditures are also slightly lower for Group II than for Group I states. Table 7 presents some of the variables thought to affect Medicaid spending on physicians' care for the states in Groups I and II.

Again, some of these variables will enter the regression equation.

The first column in Table 7 contains an index of Medicaid reimbursement rates for representative physicians' services, relative to the U.S. average (US = 1.00). For illustrative purposes, the table also includes the reimbursement rates for one representative service, an office visit with an established patient. Most states pay physicians on a fee-for-service basis for their care of Medicaid patients. Although, as column 4 shows, these Medicaid fees are generally set well below those paid by Medicare (which are, in turn, usually somewhat below those paid by private patients) the Medicaid rates still cover a very wide range. Although physicians in low-rate states might try to increase their payments from Medicaid by performing extra services, reimbursement rates and physician payments should generally have a positive association.<sup>17</sup>

The last column in Table 7 shows the share of Medicaid recipients enrolled in capitated or managed

Table 8  
*Relationship between Medicaid Payments per Recipient of Physicians' Services and Medicaid Reimbursement Rates,*  
 All States,<sup>a</sup> FY1989

Dependent Variable: Medicaid Payments per Recipient for Physicians' Services	
Independent Variables:	
Constant	145.57** (2.87)
Reimbursement Rate, Index for All Services	266.69** (12.22)
Aged and Disabled as a Share of Total Recipients	-506.05** (-3.84)
Medically Needy as a Share of Total Recipients	-52.19 (-.66)
Share of Recipients in a Managed Care Program <sup>b</sup>	-2.52* (-2.14)
R <sup>2</sup> adjusted	.79

Numbers in parentheses are t-statistics.

\*Statistically significant at the 5 percent level.

\*\*Statistically significant at the 1 percent level.

<sup>a</sup>Except AZ and WY.

<sup>b</sup>Capitated plans in Indiana and Texas were not treated as "managed care."

Source: Health Care Financing Administration, State Medicaid Data Disk FY89; National Governors' Association (1989); U.S. Physician Payment Review Commission (1991).

care plans. (Managed care providers generally receive a per-capita or per-patient fee for their efforts; thus, "capitated" plan.) Proponents of managed care would argue that significant enrollment in managed care plans should be associated with lower per-recipient physician payments. And, indeed, as Table 7 shows, Group II states have a considerably larger fraction of their Medicaid populations enrolled in capitated plans than do Group I states.

Two additional variables not shown in the table but used in the regression equation are the shares of all Medicaid recipients accounted for by 1) aged and disabled and 2) medically needy clients. Because both categories have above-average medical expenses, these variables might be expected to have a positive link with per-recipient payments for physicians' services. However, because elderly and disabled clients should have Medicare coverage for physicians' services, the relationship might be negative.

Table 8 provides the results of the regression analysis of the determinants of Medicaid per-recipient payments for physicians' services. As was the

case with payments to the nursing homes, the Medicaid reimbursement rate has a strongly significant positive relationship with physicians' payments. The share of all recipients enrolled in a capitated program had a significant negative effect on per-recipient payments to physicians in 1990.<sup>18</sup> The negative relationship between the share of the aged and the disabled in the Medicaid population and per-recipient payments for physicians' services undoubtedly reflects the impact of Medicare coverage.

### *Putting It All Together: Why Total Costs per Recipient Vary*

Table 9 provides the results of a summary analysis of the determinants of total Medicaid payments per recipient, standardized for recipient mix. The table indicates that the nursing home reimbursement rate is significantly and positively related to total Medicaid payments per standardized recipient, as it was to Medicaid payments per recipient of nursing home services. However, the reimbursement rate for a representative physicians' service, an office visit with a known patient, has no significant relationship with total payments.<sup>19</sup> The share of the Medicaid population in a managed care program has a significant negative relationship with total payments per recipient, while the existence of a medically needy program has a significant positive association.

<sup>16</sup> Ultimately, of course, policymakers and taxpayers are interested in cross-state differences in the cost of all long-term care, whether it is provided in the community or in a nursing home. Because community care involves non-Medicaid funding and serves people who may not be eligible for Medicaid, analyzing these costs requires a separate regression. The results of such an analysis are discussed in the Box on page 53.

<sup>17</sup> Alternatively, some observers argue that in states where the package of services covered by Medicaid is relatively generous, the reimbursement rates tend to be below average, in a "zero-sum" situation.

<sup>18</sup> Federal regulation requires that capitation rates for managed care programs not exceed the "fee-for-service equivalent." Accordingly, within a given state, costs per recipient of managed care would be expected, almost by definition, to be less than costs per recipient of fee-for-service care. Nevertheless, extensive use of managed care would not necessarily be associated with lower per-recipient costs across states. It should be emphasized, moreover, that the lower per-recipient vendor payments seemingly associated with managed care could be offset by the extra administrative costs of overseeing the quality of care provided by prepaid contractors. Federal law requires such oversight because of concerns that managed care systems provide incentives for substandard care.

<sup>19</sup> A likely explanation for this finding is that where physicians' reimbursement rates are low, and access is, thus, a problem, Medicaid patients turn to alternate sources of care, such as hospital outpatient clinics or emergency wards.

Table 9  
*Relationship between Total Medicaid Payments per Standardized Recipient and Medicaid Reimbursement Rates*

All States,<sup>a</sup> FY1989

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Dependent Variable: Medicaid Payments per Standardized Recipient, dollars

Independent Variables:

Constant	931.46** (2.73)
Nursing Home Reimbursement Rate, dollars	19.37** (5.90)
Reimbursement Rate for Physician Visit, Dollars	-3.56 (-.23)
Share of Recipients in a Managed Care Program <sup>b</sup>	-28.16* (-2.27)
Medically Needy Program	419.55* (2.33)

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R<sup>2</sup> adjusted .53

Numbers in parentheses are t-statistics.  
 \*Statistically significant at the 5 percent level.  
 \*\*Statistically significant at the 1 percent level.  
<sup>a</sup>Except AZ, HI, KS, MD, MS, WA, WV, WY.  
<sup>b</sup>The capitated plans in Indiana and Texas were not treated as "managed care."  
 Source: Health Care Financing Administration, State Medicaid Data Disk FY89; National Governors' Association (1989); Physician Payment Review Commission (1991).

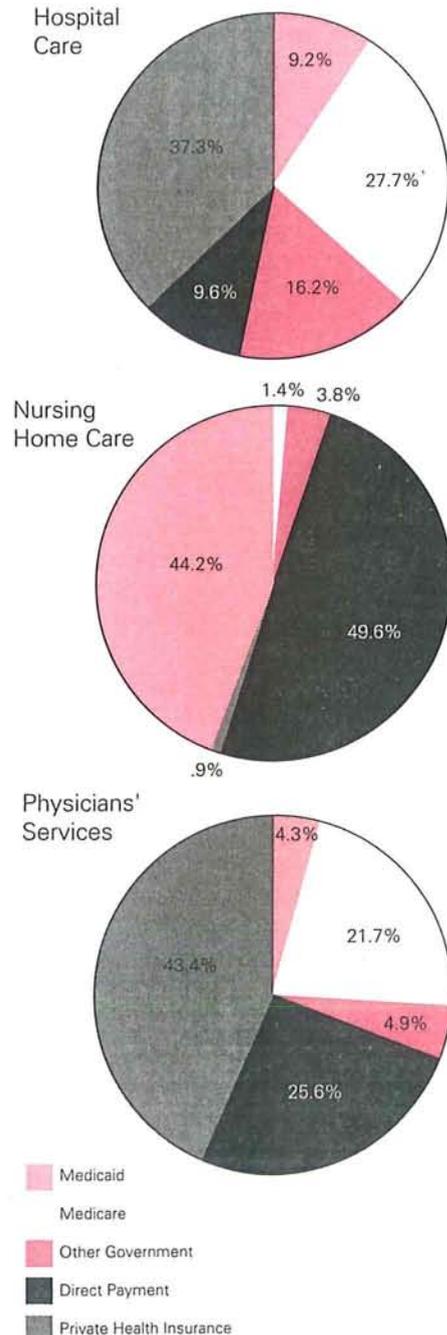
### Why Reimbursement Rates Vary

The foregoing analysis suggests that the *level* of Medicaid reimbursement rates is a critical element in per-recipient costs of various services. Moreover, the wide differences in these reimbursement rates (particularly those for the nursing homes) appear to be important in explaining variations in total Medicaid expenditures per recipient across states.

What then explains the big differences in reimbursement rates? This section will explain why Medicaid reimbursement rates might vary across the country, and why the rates for some services might vary more than others. It will then highlight which variables seem important in explaining variations in nursing home reimbursement rates.

The variability of Medicaid reimbursement rates seems to reflect the interplay of several forces: in particular, whether or not the major payors have a national view of health care costs; the importance of Medicaid to the providers; and the ease with which providers can shift costs. Payors like Medicare and

Figure 2  
*Sources of Payment for Hospital and Nursing Home Care and Physicians' Services, 1987*



Source: U.S. Health Care Financing Administration; 1990 Green Book; U.S. Bureau of the Census.

the major insurance companies have a national view. When they pay for a significant share of particular health care services, Medicaid reimbursement rates tend to be anchored to national developments and thus show less variation across states. Moreover, the state-focused Medicaid programs are generally in a stronger negotiating position versus the nursing home industry and the physicians than they are versus the hospitals. First, the physicians have relatively little incentive to resist low Medicaid rates. Because Medicaid provides only 4 percent of their revenues, as Figure 2 shows, they can either avoid Medicaid recipients entirely or they can shift the cost of any uncompensated care relatively easily to private patients, who provide one-quarter of their income, or, somewhat less easily, to the insurance companies, which pay for another 40 percent of their services.

Although the nursing homes are highly dependent on Medicaid, and thus have an incentive to resist low reimbursement rates, they may also find it relatively easy to shift costs to the individuals who pay for almost half of nursing home care directly. Indeed, Birnbaum, Lee, Bishop, and Jensen (1981) found evidence that nursing homes do shift part of the cost of caring for Medicaid beneficiaries to the private sector, and that state efforts to restrain Medicaid payments widen the gap between private and public rates.<sup>20</sup> Strengthening the nursing homes' position versus private-pay consumers are the facts that applicants generally face a waiting list, strongly prefer a nearby location, and know that if their savings are eventually absorbed by nursing home payments, Medicaid will provide for their continued care.

By contrast, the hospitals see Medicaid revenues as moderately important but find it somewhat less easy to shift the cost of uncompensated care to the private sector. Private patients pay for less than 10 percent of hospital care, and the insurance companies, which pay for another 37 percent of this care, are becoming increasingly reluctant to absorb these costs. Accordingly, the hospitals have considerable incentive to negotiate for relatively complete Medicaid coverage of their expenses for Medicaid patients.

As Figure 3 depicting this "model" suggests, Medicaid payments for hospital services and prescription drugs (the major drug companies serve a national market and loom large relative to individual state Medicaid programs) should show less variation and be closer to the level paid by the general population than payments for nursing home services and physician care. Payments for physicians' services are likely to be driven to relatively low levels in most

states and to show somewhat less variation, because major payors (the insurance companies and Medicare) have a national view, and the physicians have relatively little reason to resist low Medicaid reimbursement rates. By contrast, payments for nursing home care may show a great deal of variation, because of the absence of payors with a national view, the importance of Medicaid to the nursing homes,

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*Nursing homes may find it relatively easy to shift costs not reimbursed by Medicaid.*

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and the relative ease with which the nursing homes can shift costs to the private sector.

The foregoing suggests why Medicaid reimbursement rates for nursing home services and, to a lesser extent, physicians' services might vary considerably across states. The section now turns to regression analysis to explore the determinants of these nursing home rates. The variables included in the analysis reflect work done by Birnbaum, Lee, Bishop and Jensen (1981) on the determinants of nursing home average operating costs across more than 1,000 individual facilities and by Harrington and Swan (1984) on the determinants of Medicaid per diem rates across states.

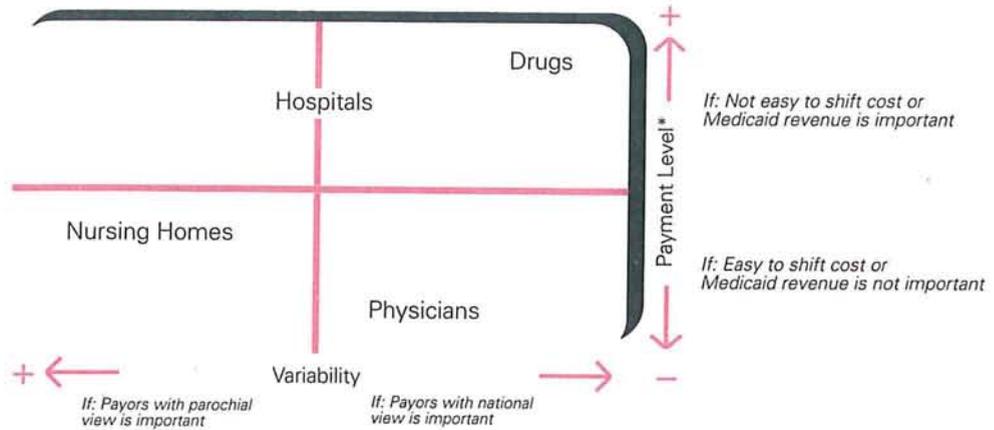
Birnbaum and his colleagues examined a large number of variables related to scale, the patient mix (in terms of diagnoses, degree of impairment, etc.), service intensity and quality, admissions per day, input prices, and regulatory variables, such as the use of prospective vs. retrospective reimbursement systems or the use of limits on various cost centers. Many of these data came from special surveys of

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<sup>20</sup> Because most states do not collect data on average nursing home charges to residents paying privately, it is not possible to calculate the extent of current cost shifts. One anecdote may help to illustrate the phenomenon, however. A pleasant New Jersey nursing home that accepts Medicaid recipients charges its private residents \$80,000 per year. An even nicer NJ nursing home that does not accept Medicaid charges \$52,000. The explanation for the difference? The more expensive facility is asking its private residents to subsidize those on Medicaid. In addition, information provided by the Boston Business Journal *Book of Lists 1990* for 19 of the 25 largest nursing homes in Massachusetts suggests that the weighted-average Medicaid nursing home reimbursement rate (for SNFs and ICFs/other) may be less than 60 percent of the average private rate in that state.

Figure 3

*"Model" of Forces Influencing the Level and Variability of Medicaid Reimbursement Rates across States*



\* Relative to U.S. personal health care expenditures on similar services, which is represented by the top – not the middle – of the box.

individual nursing facilities conducted in the early to mid 1970s. Similar data are not always available at the state level for the late 1980s.

On the whole, these authors found little evidence of significant economies of scale. Most indicators of patient mix also failed to prove significant.<sup>21</sup> By contrast, Birnbaum and his colleagues found that the provision of certain services (particularly occupational and physical therapy), the case flow (admissions per day), and input prices (retail<sup>22</sup> and LPN wages) all had statistically important, positive links to nursing home costs. In addition, several regulatory variables, particularly the use of cost-based reimbursement systems and the distinction between SNFs and ICFs, had a significant negative impact on nursing home costs.<sup>23</sup> Finally, regional location proved to be one of the most important explanatory variables according to the beta coefficients. For example, homes in the Northeast cost about \$3.60 more per patient day than homes in the West. The authors attribute the importance of the regional dummies to similarities in regulatory style in neighboring states.

Like Birnbaum and his colleagues, Harrington and Swan (1984) found that prospective reimbursement systems had a significant impact on reimbursement rates, but unlike Birnbaum's group, they found

that prospective systems appeared to be associated with lower per diems. In addition, since most states' per diem rates include many of the same ancillary services, these authors concentrated their investigation on the services less widely provided. Among those examined, only occupational and physical therapy appeared to add significantly to the per diem rate. Finally, in the case of cost-center limits, only the imposition of general limits or limits on administrative costs had a significant impact with the expected negative sign.<sup>24</sup>

<sup>21</sup> Fortunately, perhaps, since such indicators are not generally available for this study. On the other hand, while differences in patient mix should theoretically have an impact on cost differences between individual facilities, these differences seem less likely to be important on an aggregate basis across states.

<sup>22</sup> Retail wages represented the local cost of living.

<sup>23</sup> The negative relationship between cost-based reimbursement systems and average operating costs was not expected. The authors attribute this negative association to the possibility that states with historically high nursing home costs first turned to prospective systems in hopes of curbing inflation of nursing home prices. Alternatively, regulators may have had to offer relatively high per diem rates in order to persuade nursing home operators to accept the imposition of a prospective system, which places them at risk of bearing the cost of any overruns.

<sup>24</sup> Nursing cost-center limits appeared to have a significant but positive effect on reimbursement rates.

Table 10  
*Determinants of Medicaid Reimbursement Rates for Nursing Home Services, All States,<sup>a</sup>*  
 FY 1989

Dependent Variable: Medicaid Per Diem Reimbursement Rates for Nursing Homes, weighted by SNF and ICF-other recipients, dollars.

Independent Variables:	Equation 1	Equation 2	Equation 3	Equation 4
Constant	-29.30 (-1.25)	-4.41 (-.39)	29.49 (1.65)	14.04 (1.16)
Average Annual Pay for Retail Workers	.01** (3.96)		-.01* (-2.34)	-.00 <sup>b</sup> (-2.01)
Average Annual Pay for Nursing Home Workers		.01** (7.87)	.01** (6.32)	.01** (6.24)
Prospective Reimbursement System (Dummy)	-3.88 (-.84)	-1.28 (-.40)	-.09 (-.03)	-.61 (-.20)
Per Diem Includes Occupational Therapy (Dummy)	1.28 (.29)	1.70 (.57)	-.40 (-.14)	
Per Diem Includes Prescription Drugs (Dummy)	10.25* (1.97)	7.87* (2.16)	7.93* (2.34)	8.19* (2.46)
Cost-Center, Administration (Dummy)	2.88 (.56)	3.62 (1.01)	4.04 (1.21)	3.54 (1.06)
Cost-Center, Nursing (Dummy)	2.80 (.54)	-1.82 (-.49)	-3.48 (-.99)	-3.75 (-1.07)
Share of SNF Recipients in Total SNF + ICF Recipients	10.25 (1.10)	4.49 (.68)	3.86 (.63)	4.58 (.75)
Average Days of Care per Recipient, per Year	-.01 (-.48)	-.00 (-.08)	-.00 (-.27)	-.01 (-.64)
Employees per Bed	10.57 (.77)	-5.97 (-1.61)	-14.48 (-1.48)	
R <sup>2</sup> adjusted	.44	.73	.77	.77
F test	4.29	12.13	13.21	16.12

Numbers in parentheses are t-statistics.

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 1 percent level.

<sup>a</sup>Except AK, AZ, HI, ID, KS, MD, MS, OK, TX, WA, WV, WI, WY.

<sup>b</sup>To four decimal places, the coefficient is -.0035.

Source: Health Care Financing Administration, State Medicaid Data Disk FY89; National Governors' Association (1989); U.S. Bureau of Labor Statistics.

Whenever possible, the analysis summarized in Table 10 includes the variables that the research just described found to be important in explaining nursing home operating costs or per diem reimbursement rates. As the table shows, the regulatory variables—the use of prospective reimbursement systems and cost-center limits—do not appear to have a significant impact on the per diem rates. By contrast, coverage of prescription drugs tends to increase the per diem rate to a statistically significant extent; coverage of occupational therapy does not. As for the intensity of care variables, neither the ratio of SNF recipients (requir-

ing more intensive care) to all nursing home residents nor the number of nursing home workers per nursing home bed has a statistically significant link to the per diem rates. A longer average length of stay tends to be associated with lower nursing home costs and, thus, lower per diem rates, but again the relationship is not significant.<sup>25</sup>

<sup>25</sup> Either because rehabilitative (short-term) care is more expensive than custodial (long-term) care or because additional admissions require additional administrative costs (Birnbaum and others, 1981).

Since wages account for over half of nursing home operating expenses, the input price variables are represented by the average annual pay for nursing home workers or for retail employees. Although nursing home worker pay is more directly relevant, this "independent" variable may actually reflect the per diem rates; thus, average annual pay for retail workers may better represent local labor costs, uncontaminated by developments in the nursing home sector. According to the regression results, both of these variables are positively associated with the per diem rates when they enter the equation individually. When they enter together, the relationship between the average annual pay in the retail sector and the reimbursement rate becomes negative. The implications of this change will be discussed below.

#### *Do Nursing Home Reimbursement Rates Affect Nursing Home Wages?*

The (adjusted) R-squares of 0.77 in equations 3 and 4 on Table 10 indicate that differences in regulatory and input costs can "explain" much of the difference in nursing home reimbursement rates across states. In other words, regulators looking at the reimbursement rates could not say that they are unrelated to apparent costs.

The problem is that the simple regression analysis used here does not indicate the direction of causality. Because nursing homes operate in highly localized and less than freely competitive markets, it is possible that nominal costs may have risen to justify whatever reimbursement rates regulators have allowed. For example, in states permitting above-average per diems, nursing homes may have been willing to pay relatively generous wages, thereby increasing nominal costs and at least partially justifying above-average reimbursement rates. Regulators may take this wage inflation into account in setting next year's rates. Thus, rates that are high for various historical or political reasons may tend to become self-perpetuating. If, at some point, regulators attempt to clamp down on escalating Medicaid spending for nursing home services by limiting rate increases, nursing home operators may shift costs to private patients by raising the gap between public and private charges. (Birnbau and colleagues have found statistical evidence of this reaction.)

As mentioned previously, private applicants may not resist bearing costs shifted from the Medicaid program for several reasons. They generally turn to nursing homes only as a last resort—when they are

desperate. Then they face long waiting lists because state regulators often limit the supply of beds in order to control Medicaid spending. Moreover, these nursing home residents or their families tend to have a strong preference for a particular geographic location. Thus, they agree to pay high nursing home charges, without looking very far afield for lower cost alternatives. Finally, they know that, should worse come to worst and their savings be exhausted, Medicaid will generally step in. Average (public plus private) nursing home reimbursement per patient day is thus likely to be little affected by state efforts to control Medicaid rates; Medicaid just pays less and private patients more. And the spiral of increased reimbursements permitting increased costs justifying higher reimbursements continues unabated.

Appendix Table A-2 presents evidence in support of the hypothesis that nursing home reimbursement rates may affect nursing home wages. As the table indicates, average annual pay for workers in all industries (even without any adjustment for differences in industry mix), in retail trade, and in all health care services combined varies only moderately across the states. In each of these cases the variance of state to U.S. average annual pay is 0.02 or less. However, the variance of the average annual pay for nursing home workers is twice as great (0.04).<sup>26</sup>

At the national level, average annual pay for nursing home workers approaches average annual

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*It is possible that nominal nursing home costs may have risen to justify whatever reimbursement rates regulators have allowed.*

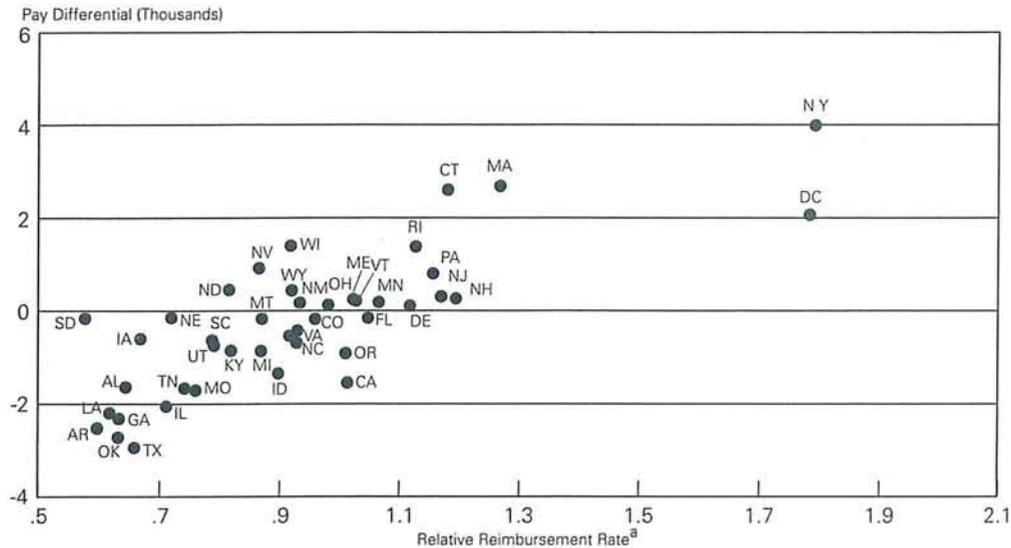
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pay for workers in retail trade; they are, respectively, 54 and 55 percent of the average for all industries. In both cases, unskilled workers predominate, and part-time schedules are common. Accordingly, the retail sector in each state provides an example of a work

<sup>26</sup> Of course, the variance for the relative reimbursement rates is even greater, but because the degree of cross-subsidization undoubtedly varies across states as well, the average reimbursement for public and private nursing home residents together may vary less than the per diems.

Figure 4

*State/U.S. Daily Nursing Home Reimbursement Rate<sup>a</sup> versus Differential between Nursing Home Worker and Retail Worker Average Annual Pay, 1989*



<sup>a</sup> Weighted average of SNF and ICF/other rates.  
Source: U.S. Bureau of Labor Statistics 1989 ES202 tape; National Governors Association.

force whose skill mix is generally similar to that of nursing home workers, but whose wages are set under more competitive, local conditions. However, in states where the Medicaid reimbursement rates are relatively generous, the average pay for nursing home workers tends to be well above that in retail trade; where the per diem is relatively low, nursing home wages fall below those found in retailing. Indeed, as Figure 4 illustrates, the higher the relative reimbursement rate the greater is the differential between nursing home worker pay and retail worker pay.<sup>27</sup>

An alternative explanation for this pattern may be that above-average nursing home reimbursement rates may permit desirable differences in quality of care or reflect differences in the regulatory environment. For example, above-average per diems may reflect or permit a relatively high share of RNs or LPNs in the nursing home work force. As Edward Moscovitch pointed out in his study on mental retardation programs, for instance, Massachusetts law requires that all medications be given by a nurse; in other states, like Michigan and Minnesota, nurses are allowed to train other direct care staff to administer

medications—with considerable cost savings (Moscovitch 1991).

*Implications*

If reimbursement rates are critically important in determining Medicaid costs per recipient, should states with above-average rates make a strenuous effort to reduce them? In the case of hospital care and physicians' services the presumptive answer is no. Because the reimbursement rates are already just a fraction of those paid by other health care consumers, providers have an incentive to avoid Medicaid patients or to shift the cost of their care to other payors.

Under these circumstances, policymakers and voters will have trouble measuring the full cost, quality, and efficiency of individual state programs.

<sup>27</sup> Excluding Alaska, the correlation between the differential and the per diem is 0.80. In other words, when regulated reimbursement rates are relatively high, nursing home wages tend to rise above those for comparable workers in sectors where prices are set competitively. Where the regulated rates are relatively low, nursing home wages tend to fall below those for comparable workers in competitive sectors.

Does a low-cost state have an especially efficient delivery system? Or does it provide particularly low quality care? Or does it provide standard care but shift an above-average share of the cost to the private sector? Similarly, a high-cost state may not be inefficient. It may simply provide close-to-standard care while making the cost of that care explicit. Observers cannot readily tell the difference, because the Medicaid dollar buys different amounts of care in each state. In other words, the Medicaid dollar has lost its utility as standard of measure.

In the case of the nursing homes, however, the possibility that some states' reimbursement rates may be too high remains. Because Medicaid pays for almost one-half of all nursing facility care and sets the reimbursement rates for an even larger share of the residents, determining whether the level of reimbursement is appropriate is especially difficult. Since most states do not collect data on the average charge to individuals who are paying for nursing home care privately, the degree of cross-subsidization (or the difference in access/quality) is even less susceptible to measurement for nursing home care than it is for the other services.

What is clear, however, is that the cross-state variation in reimbursement rates cannot be justifiable. If \$60 a day is a reasonable reimbursement rate in California, then \$112 a day in New York is excessive. If \$112 a day is truly justifiable in New York, then \$60 a day in California is unlikely to be adequate—at least not without substantial cost shifts. As shown by the variances for personal health care expenditures per capita and for average annual pay for all health care workers, the cost of medical care does not vary that much across states.

Accordingly, where average public *plus* private<sup>28</sup> reimbursement per patient day is well above the national standard,<sup>29</sup> regulators may want to ask whether the real resource cost of providing this care justifies these rates. Do workers with comparable skills in sectors where competitive conditions prevail earn as much as nursing home workers? If not, relatively generous per diems may have allowed nursing home wages to become inflated.

Where relatively generous per diems have led to nursing home cost inflation, policymakers may want to limit annual increases in these rates to a below-average pace until real reimbursement<sup>30</sup> falls to the national level. To keep nursing home operators from responding by shifting additional public costs to the private sector, states may also need to require uniform rates; that is, all patients with similar disabilities

pay the same rate to a given institution, whether they are supported by Medicaid or are paying out of pocket.

By contrast, in states where average public plus private nursing home reimbursement, adjusted for differences in resource costs, is below the national standard, policymakers may need to take a hard look at the quality of nursing home care in their state. In California, where the reimbursement rates are below average but personal health care expenditures per capita, annual average pay, and annual average pay for all health care workers are all above average, the press has been full of complaints about the quality of nursing home care.<sup>31</sup> In such states, regulated reimbursement rates may need to rise somewhat faster than the cost of living for a few years.

For the high-cost states, this prescription may seem harsh, especially since nursing home workers earn well below average annual pay for very trying work in every state.<sup>32</sup> However, with state governments facing severe budgetary pressures, letting any inflated nursing home reimbursement rates adjust to national average levels seems less drastic and less illusory<sup>33</sup> than eliminating certain services or groups of beneficiaries from Medicaid coverage altogether, as is currently occurring in some states.

<sup>28</sup> Regulators need to examine the average of private and Medicaid rates in order to measure the effect of cost shifts. For example, a state with above-average Medicaid reimbursement rates may seem less outstanding once private sector subsidies of public sector costs are added to the other states' per diems.

<sup>29</sup> "The national standard" has no normative value and may or may not be "appropriate." Indeed, national average Medicaid reimbursement rates for hospital and physicians services are clearly inadequate, compared with those paid for other consumers of health care. Because the situation is less clear for the nursing homes, this article uses differences between state and national average figures as first-step, directional signals for these institutions.

<sup>30</sup> Reimbursement adjusted for differences in real resource costs.

<sup>31</sup> Anecdotal evidence suggests that truly shocking conditions exist in some other low per-diem states. According to an October 25, 1991 segment of the television program "20/20," for instance, the quality of care in some Texas nursing homes is abysmal. Investigators found evidence of shockingly poor hygiene, nutrition, sanitation and medical care: roaches in beds; filthy, wet sheets; hunger; deep bed sores; and patients restrained or over-sedated. Over-sedation and restraint of patients have been issues in California as well.

<sup>32</sup> Average annual pay for nursing home workers ranges between 40 percent (in Oklahoma and Texas) and 70 percent (in Alaska) of each state's average annual pay for all industries. Thus, regulators finding that nursing home pay is above that for similar workers in other sectors would surely want to determine at what professional level the inflation is occurring. Is it a general phenomenon? Or is it centered on the nursing staff? Or on the administration? Because 1) hospitals and nursing homes compete for direct care staff, and 2) average pay is less variable across states for hospital workers than for nursing home workers, some of the extra variability in nursing home pay may occur at the administrative level. Or, it may just reflect a different use of skilled workers.

## Conclusions

This article set out to examine why some reasonably comprehensive, reasonably well-respected Medicaid programs operate with considerably lower per-recipient costs than other similar programs. The hope was that these states had found a particularly promising reimbursement or delivery system that could control costs. And, indeed, evidence presented in this article suggests that the current interest in managed care may be well placed, and that state efforts to enroll a greater share of Medicaid recipients in managed care systems may be steps in the right direction.<sup>34</sup>

Limited evidence also suggests that community care, essential as it may be for other reasons, is not a low-cost substitute for institutional care. Moreover, this cross-state analysis indicates that various regulatory devices, such as the use of prospective reimbursement systems or cost-center limits, have not had a significant effect on controlling costs; however, a time-series analysis of changes in expenditures since these measures were adopted might lead to different conclusions concerning their effectiveness.

The study's primary conclusion is that the level of the Medicaid reimbursement rates is a crucial determinant of per-recipient Medicaid expenditures. Indeed, the level of the reimbursement rates varies much more across states than do personal health care expenditures per capita or wages for all health care workers, two indicators of the relative cost of medical care in each state. Frequently, thus, Medicaid reimbursement rates do not reflect the real cost of the resources absorbed in providing health care to Medicaid recipients, and the gap differs from region to region.

Despite their variability, Medicaid reimbursement rates are usually just a fraction of those paid by other consumers of health care. Accordingly, providers have an incentive to avoid Medicaid beneficiaries or to shift the cost of their care to other payors. Although meaningful comparisons are hard to make, this article has presented data which, taken together,

suggest that the package of care purchased for Medicaid recipients is substandard at the national level. However, the degree to which low Medicaid reimbursement rates lead to reduced access/quality or to cross-subsidies undoubtedly differs from state to state.

Among the major services examined, nursing home per-recipient payments and per diems turn out to be the most variable across states. This extra variability may reflect the absence of a payor with a national view and the relative ease with which providers can shift public costs to private payors when they have an incentive to do so. Because nursing home payments loom large in Medicaid budgets and because nursing home reimbursement rates are especially variable, these reimbursement rates appear to be the crucial determinant of cross-state differences in Medicaid payments per recipient.

An effort to "explain" the cross-state differences in nursing home rates suggests that they do in fact reflect apparent costs, especially the average annual pay of nursing home workers. However, the direction of causality is not clear. It seems likely that in some areas relatively generous nursing home reimbursement policies have let nursing home wages float higher than those for comparably skilled workers in other sectors. Alternatively, variations in nursing home pay may reflect quality or regulatory differences that may or may not be appropriate. In either case, it may be time for state regulators to reexamine their nursing home reimbursement policies from the bottom up, instead of accepting historical "costs" as given.

Where nominal nursing home costs do appear to be inflated, policymakers may want to slow increases in nursing home reimbursement rates until the gap between real and nominal costs disappears. To limit cost shifts, regulators would also need to require that all equally disabled residents pay a given provider the same rate, regardless of the source of their support. Efforts to save taxpayer money by letting inflated nursing home costs adjust downward seem preferable to eliminating some services or groups of beneficiaries from Medicaid coverage altogether, as is currently occurring in some states.

By contrast, when average reimbursement rates are low relative to the real cost of resources absorbed, policymakers may want to take a hard look at the quality of long-term care in their state. Indeed, frustrated legislators and voters, noting that some other states seem to have much lower per-recipient Medicaid costs, would do well to remember that these differences often reflect artificial economies—the un-

<sup>33</sup> Less illusory, because the cost of services and individuals denied Medicaid coverage tends to reemerge elsewhere in the state budget, generally in programs not supported by federal matching funds (Little 1991).

<sup>34</sup> As long as states ensure that the quality of managed care available to Medicaid recipients is as good as or better than current fee-for-service care. Providing a choice of managed care programs and requiring that managed care programs serving Medicaid recipients serve non-Medicaid patients as well are two ways to encourage standard quality.

realistically low reimbursement rates that deprive some people of care or force providers to shift the cost of uncompensated care to other payors.

The difficulty of distinguishing and measuring access/quality and the degree of cross-subsidization has plagued this study from the beginning. Obviously, a Medicaid dollar buys very different amounts of care in different states. Accordingly, it has lost its utility as a unit of measure. Without such a standard, it becomes increasingly difficult to analyze differences in the quantity or quality of medical care purchased for Medicaid beneficiaries in different states or purchased for the Medicaid population and the general population in the same state. It also becomes hard to measure differences in the efficiency with which care is delivered.

Under these conditions, an important rationale for permitting the states to exercise a great deal of discretion within their Medicaid programs disappears. If the outcomes of 50 state experiments cannot be measured, why have 50 experiments? If the utility of these experiments no longer offsets the substantial inequities that result from differences in states' fiscal strength and policy choices, it may be time to ask the federal government to set the standards—and, thus, to pay—for the entire Medicaid program.

As a corollary, the recent trend towards individually negotiated discounts for packages of privately insured medical care poses the danger that the U.S. health care dollar may lose its usefulness as a standard of value, just as the Medicaid dollar already has. If, for example, a large corporation is able to negotiate more favorable rates than a mid-sized corporation, does the difference represent true economies in serving the larger group, or are the employees of the smaller company being asked to subsidize those of the larger firm? Measuring health care quality and efficiency is difficult enough already.

The pervasive theme emerging from this study of cross-state variations in Medicaid costs is that all health care in the United States—whether it is paid for by the public or the private sector, whether the patient is an employee of a big company or a small company, or not an employee at all—should be reimbursed according to the resources absorbed in providing this care. A growing demand for equal access and a growing need for efficiency require policymakers to steer the health care system in this direction.

Appendix Table A-1

*Expenditures per Person Aged 75 and Over on Community Care, Institutional Care, and Total Long-Term Care for the Elderly, FY1986*

	Community	Institutional	Total
Alabama	\$ 193	\$ 692	\$ 885
Alaska	2,019	2,659	4,678
Arizona	N.A.	N.A.	521
Arkansas	149	934	1,082
California	357	693	1,051
Colorado	203	774	976
Connecticut	118	1,578	1,696
Delaware	660	1,108	1,768
District of Columbia	327	1,812	2,139
Florida	83	419	502
Georgia	109	912	1,021
Hawaii	226	1,560	1,786
Idaho	56	691	747
Illinois	232	636	868
Indiana	76	1,341	1,417
Iowa	70	483	552
Kansas	50	602	652
Kentucky	159	868	1,027
Louisiana	44	206	250
Maine	278	1,400	1,678
Maryland	118	1,055	1,173
Massachusetts	926	1,256	2,182
Michigan	184	804	989
Minnesota	185	1,926	2,111
Mississippi	116	700	816
Missouri	183	757	941
Montana	102	935	1,037
Nebraska	22	581	604
Nevada	92	749	841
New Hampshire	115	1,295	1,410
New Jersey	325	946	1,271
New Mexico	186	650	836
New York	781	2,498	3,279
North Carolina	144	719	863
North Dakota	123	1,115	1,239
Ohio	48	1,226	1,274
Oklahoma	221	623	844
Oregon	207	510	717
Pennsylvania	308	871	1,179
Rhode Island	101	1,657	1,757
South Carolina	125	813	938
South Dakota	80	878	958
Tennessee	51	762	813
Texas	206	656	861
Utah	68	542	610
Vermont	55	988	1,043
Virginia	198	824	1,022
Washington	289	801	1,089
West Virginia	22	711	732
Wisconsin	154	1,233	1,387
Wyoming	41	958	999

Source: Intergovernmental Health Policy Project (1988) and U.S. Bureau of the Census.

Appendix Table A-2

*Ratio of State to U.S. Average Annual Pay for Selected Industries, 1989 (U.S. = 1.00)*

State	All Private Industry	Retail Trade	All Health Services	Nursing Home Workers	Medicaid Nursing Home Reimbursement Rate
Alabama	.86	.89	.95	.79	.65
Alaska	1.27	1.31	1.04	1.70	3.58
Arizona	.91	1.00	1.09	1.00	
Arkansas	.77	.87	.86	.69	.60
California	1.10	1.17	1.18	1.08	1.02
Colorado	.97	.97	.97	.97	.94
Connecticut	1.23	1.24	1.14	1.50	1.19
Delaware	1.04	.96	1.02	1.00	1.12
D.C.	1.33	1.16	1.27	1.37	1.79
Florida	.88	1.01	1.10	1.03	1.05
Georgia	.94	.97	1.05	.82	.64
Hawaii	.93	1.09	1.18	1.26	
Idaho	.81	.88	.87	.80	.90
Illinois	1.09	1.03	.97	.90	.72
Indiana	.94	.86	.90	.90	.94
Iowa	.81	.79	.77	.77	.67
Kansas	.87	.87	.84	.82	
Kentucky	.84	.82	.87	.78	.83
Louisiana	.90	.87	.90	.72	.62
Maine	.84	.93	.85	.99	1.03
Maryland	1.01	1.12	1.05	1.13	
Massachusetts	1.12	1.12	1.06	1.39	1.27
Michigan	1.11	.95	.98	.91	.88
Minnesota	.98	.92	.94	.97	1.07
Mississippi	.75	.83	.86	.75	
Missouri	.93	.91	.90	.80	.77
Montana	.74	.83	.79	.85	.88
Nebraska	.77	.79	.80	.81	.73
Nevada	.93	1.12	1.34	1.23	.87
New Hampshire	.97	1.03	.95	1.09	1.20
New Jersey	1.19	1.23	1.10	1.29	1.18
New Mexico	.80	.87	.89	.89	.97
New York	1.22	1.14	1.06	1.51	1.80
North Carolina	.86	.92	.98	.89	.93
North Dakota	.74	.76	.84	.83	.82
Ohio	.98	.89	.96	.94	.99
Oklahoma	.87	.89	.86	.69	.64
Oregon	.89	.96	.95	.92	1.02
Pennsylvania	.99	.95	1.01	1.05	1.16
Rhode Island	.91	1.01	.95	1.16	1.13
South Carolina	.82	.87	.97	.85	.79
South Dakota	.68	.76	.75	.77	.58
Tennessee	.87	.92	1.01	.81	.75
Texas	.98	.99	.93	.78	.67
Utah	.85	.85	.87	.82	.80
Vermont	.86	.95	.81	1.01	1.03
Virginia	.95	.99	1.00	.98	.92
Washington	.94	1.00	.81	1.02	
West Virginia	.90	.83	.88	.79	
Wisconsin	.89	.82	.86	.96	.92
Wyoming	.84	.81	.83	.88	.93
Variance <sup>a</sup>	.02	.01	.02	.04	.07
Standard deviation <sup>a</sup>	.13	.12	.13	.20	.26

<sup>a</sup>Excluding Alaska.

Source: U.S. Bureau of Labor Statistics and Health Care Financing Administration, State Medicaid Data Disk FY89.

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