

Cost-Shifting from Private to Public Payers: The Scene Before Parity Legislation

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Abstract

Background: Analyses that have been conducted previously on the implications of parity have focused on the concern that mental health costs of private payers will substantially increase. A complete analysis of the cost implications of parity, however, also needs to consider whether the mental health costs of public payers may increase particularly if employers or private insurers attempt to extrude enrollees with severe mental illness. This study examines the extent of mental health cost shifting from private to public payers during two separate two-year periods prior to the implementation of parity legislation. The results of the analyses can serve as a necessary baseline against which the consequences of parity legislation on this direction of cost-shifting can be examined.

Methods: The study utilizes an all payer data set that contains information on the use of specialty mental health services (excluding private practitioners) by adults in an urban and a rural county in New York State. For each year of two time periods -1991/1992 and 1995/1996 - consumers were classified into payer groups based on whether their services were paid for by "Private Only", "Public Only", "Private/Public", "Self Pay" or "Other" payers. The proportion of individuals who moved from one payer group to another from one year to the following year of each time period and the average yearly costs under these payers were examined. Logistic regression models were used to identify the characteristics of persons most likely to remain with Private Only Payers in contrast to those likely to shift to Private/Public Only payers or to Public Only Payers.

Results: In both two-year time periods, the percent of persons who shifted in one year from Private Only to either Private/Public or Public Only payers was small. In contrast, a person in the Private/Public group has more than a 12 percent likelihood of shifting to a Public Only payer in the subsequent year. The average annual costs of the Private/Public group were higher than that of any other payer group. The average annual costs of persons who shifted into the Private/Public group from any other payer group or remained there from the previous year were even higher. The logistic regression analyses for both time periods showed that persons who shifted from Private Only to Private/Public or Public Only payers in contrast to those who remained with Private Only payers were more likely to have

subsidized incomes, be younger and have a mental health disability. In 1995, the likelihood of the shift was also increased for those who were nonwhite and/or had a substance abuse disability.

Implications: This study has found that individuals rarely shift directly from private payers to public payers. Rather, they first shift to having services reimbursed by both private and public payers, and during this period their average total service costs are extremely high. Persons who shift from private payers to having at least some of their services paid by public payers in subsequent years appear to be either young employees or young dependents who have severe mental illness or mental illness disabilities. Abusing substances and/or being nonwhite also increase the likelihood of a shift to public payers. Along with parity mandates, there has been an increase in managed care controls. The extent to which these controls will be used to accelerate the movement of these high cost persons from private to public payers needs close watch.

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Introduction

Federal parity legislation (passed in 1996) mandates that employers who purchase health insurance plans for large groups provide mental health benefits equal to those of physical health in terms of both annual and lifetime dollar limits. This, together with even more encompassing parity requirements promulgated by many States has produced considerable consternation among private payers. They fear that increases in mental health benefits in their plans might induce cost-shifting from public payers because employees and dependents might not utilize to the same degree as they had in the past, federal, State or other government funded or subsidized treatments.¹ In fact, even if costs were to rise under current federal parity mandates, most studies have predicted that increases in premiums will be very small, e.g., approximately one dollar per enrollee per year.² Other analyses have predicted a decrease in utilization of services paid for by private insurers under the surmise that plans will have an increased incentive to use managed care controls to contain and even to reduce costs.

This study concerns itself with cost shifting in the reverse direction: from private to public payers. Pre-parity cost-shifting from private to public payers has been attributed largely to the spend down of insurance benefits of employees who care for a family member with serious and long standing mental problems, although evidence for this occurrence, to date,

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Table 1. Cross-classification of users: year 1 payers by year 2 payers (including percent shift from year 1 payer to year 2 payer) & annual mean costs: 1991/1992*

Year 1	Year 2						Total Year 1
	No Yr 2 Services	Private Only	Public Only	Private/Public	Self	Missing/Other	
Private Only	1613 (58%) \$1718/ 0	1044 (38%) \$3594/ \$3277	10 (.4%) \$555/ \$653	36 (1.3%) \$5415/ \$11697	33 (1.2%) \$4041/ \$1625	29 (1%) \$4583/ \$3988	2765 \$2528
Public Only	2033 (35%) \$1742/ 0	16 (.3%) \$2818/ \$1626	3686 (63%) \$7018/ \$7146	52 (.9%) \$6184/ \$10360	45 (.8%) \$5068/ \$3162	50 (.8%) \$3836/ \$1588	5882 \$5134
Private/Public	165 (18%) \$3641/ 0	38 (4%) \$7866/ \$4931	117 (12%) \$11379/ \$10756	609 (65%) \$11488/ \$11659	5 (.5%) \$2085/ \$428	6 (.6%) \$6787/ \$2385	940 \$9871
Self	1061 (67%) \$1032/ 0	25 (1.6%) \$2699/ \$2487	66 (4%) \$2332/ \$4566	4 (.3%) \$7839/ \$12570	422 (27%) \$3266/ \$2924	12 (.8%) \$1440/ \$2042	1590 \$1725
Missing/Other	1137 (68%) \$901/ 0	17 (1%) \$2487/ \$2449	62 (4%) \$2686/ \$3346	2 (.1%) \$1272/ \$5922	14 (.8%) \$4900/ \$1120	432 (26%) \$3501/ \$3047	1664 \$1693
Total	6009	1140	3941	703	519	529	12841

* Four entries in cells are number of clients, % shift from row to column, annual mean year 1 costs, annual mean year 2 costs

has been only anecdotal.³ Post-parity, cost shifting from private to public payers may increase if managed care procedures are used to extrude more rapidly high cost service users from the rolls of private plans. But, as recently noted by the New York Times, “researchers still do not know what effect, if any, parity will have on the division of costs between private health plans and the public mental health system...”⁴

The current study was undertaken to estimate the magnitude of cost shifting from private to public payers before parity legislation was enacted. The results of our analyses quantify for the first time this reported phenomenon as well as provide a baseline against which the impact of parity legislation on private and public costs can be examined. A unique specialty mental health services administrative data set covering services reimbursed by private, public and self-pay sources made this analysis possible. (Most service utilization data sets cover only single type payer groups, e.g., Medicaid or private insurance companies.) Two two-year periods prior to the implementation of parity legislation were examined.

Methods

The study uses data on the utilization of specialty mental health services by the 18-65 year old populations of Monroe (population size 730,000) and Livingston (population size

63,000) Counties in New York State. The urban county of Monroe contains the city of Rochester (69th largest city in the US), and its industries employ a work force comprised largely of technical people and educators. Livingston County is rural. The median annual income in both counties in 1990 somewhat exceeded \$30,000.

The cohort of persons using services from October 1, 1990 through September 30, 1991 and the cohort of persons using services from January 1, 1995 through December 31, 1995 were tracked for two years. The two periods of service utilization are referred to in this paper as “1991/1992” and “1995/1996”. Two periods were studied rather than one to ensure that any of the patterns observed were independent of time-related artifacts or events external to the issue being studied. The specialty mental health services comprised those delivered by programs operated, funded or licensed by the New York State Office of Mental Health (NYSOMH) in the two adjacent Counties. The facilities delivering these services included the State psychiatric hospital in Rochester, six general hospitals with psychiatric units, three residential treatment facilities and 26 specialty mental health provider agencies. The outpatient services encompassed clinic, emergency, crisis, day and continuing treatment, rehabilitation, workshops, club houses, case management and transportation. Notably, the database does not contain information on visits to private

Table 2. Cross-classification of users: year 1 payers by year 2 payers (including percent shift from year 1 payer to year 2 payer) & annual mean costs: 1995/1996*

Year 1	Year 2						Total Year 1
	No Yr 2 Services	Private Only	Public Only	Private/Public	Self	Missing/Other	
Private Only	1918 (55%) \$1778/ 0	1273 (36%) \$2559/ \$1960	35 (1%) \$5471/ \$6837	76 (2.2%) \$9389/ \$12760	42 (1.2%) \$2598/ \$2230	155 (4.4%) \$1478/ \$793	3499 \$2261
Public Only	1719 (30%) \$1574/ 0	30 (.5%) \$1765/ \$1518	3597 (63%) \$5089/ \$5332	82 (1.4%) \$4503/ \$7023	65 (1.2%) \$4741/ \$3613	183 (3.2%) \$3303/ \$1877	5676 \$3937
Private/Public	182 (23%) \$3474/ 0	51 (6.6%) \$5601/ \$2286	98 (13%) \$9269/ \$10021	417 (54%) \$7190/ \$5953	7 (.9%) \$10820/ \$2391	23 (3.0%) \$2891/ \$725	778 \$6384
Self	809 (56%) \$1486/ 0	32 (2.2%) \$2644/ \$3322	110 (7.5%) \$5462/ \$8330	9 (.6%) \$4234/ \$8696	405 (28%) \$2853/ \$2280	93 (6.4%) \$1162/ \$699	1458 \$2187
Missing/Other	1256 (65%) \$800/ 0	44 (2.3%) \$948/ \$3142	168 (8.7%) \$2595/ \$3973	8 (.4%) \$113/ \$1458	32 (1.6%) \$1195/ \$2657	426 (22%) \$3992/ \$4172	1934 \$1666
Total	5884	1430	4008	592	551	880	13345

* Four entries in cells are number of clients, % shift from row to column, annual mean year 1 costs, annual mean year 2 costs

practitioners, the implication of which is discussed later in the paper.

Two administrative data sets were used. The first was obtained from an information system that at the time of data collection was operated for the Counties by the University of Rochester (Sylvia Reed, Lecture "The Rochester Capitation Experience", October 4, 1994). It is an all payer data set of specialty mental health services that were reimbursed by traditional fee-for-service or indemnity insurance, HMOs, public sources, self-pay or other payer sources. Information on consumer service encounters, consumer characteristics and the payer at the time a client entered a program was organized into a database comprised of individual records of a client's longitudinal service utilization. These data were merged with a second data set maintained by NYSOMH on the utilization of inpatient services in State psychiatric centers. The long-term residents of the Rochester State Psychiatric Center (those with annual costs that exceeded \$25,000) were excluded from each cohort. These persons were considered "not at risk" to have private insurance, eliminating them from the population of interest to this study.

The total cost of services provided to each consumer in each year was calculated. The cost of a particular service was taken as the average cost of that service across all the providers in the two Counties who delivered such services. Cost data on each service were obtained from mandated annual reports

submitted to NYSOMH by each agency for each of its programs (OMH Consolidated Fiscal Reports). In addition to direct program service costs, the provider information covers administrative and other agency costs that are stepped down to the program level revenue center. State hospital inpatient costs were estimated from a separate State schedule.

Payer status for each service received by a consumer was taken as the payer at the time the person entered a program or was admitted to inpatient care. A service user of more than one program therefore could have multiple payers. Program payer status was updated annually. For each study year, consumers were classified into payer categories based on the payer status for each service they received in the year. The categories were: "Private Insurance Only" for those consumers whose services were paid for by private and not public insurance sources; "Public Only" for those whose services were paid for by public and not private insurers; "Private/Public" for those whose services were paid for by both private and public insurers; "Self", comprising those who self paid and had no private nor public insurance for any service; and "Missing/Other" for the remaining group. For the 1991 and 1995 cohorts, the proportion of individuals who moved from one payer group to another from one year to the following year (each year denoted by Year 1, Year 2), and the average yearly costs under these payers were examined. These data are presented in **Table 1** and **Table 2**.

Table 3. Selected characteristics of user cohorts (percent having characteristic)*

	1991				1995			
	Private Only	Private/Public	Public Only	Remainder	Private Only	Private/Public	Public Only	Remainder
Total N	2765	940	5882	3254	3499	778	5676	3392
% Female	59	53	54	46	61	65	56	46
% Nonwhite	15	17	35	22	19	28	42	40
% Age 18-35	49	48	54	64	44	42	45	56
% Employed	67	19	8	45	56	14	8	32
% Mental Health Disability	61	85	74	66	68	83	76	51
% Substance Abuse Disability	18	25	29	30	12	26	28	17
% Psychoses Dx	12	46	32	10	10	31	31	15
% Mood/Anxiety Dx	65	38	41	53	75	59	54	60

* Because of the large sample size, all characteristics significantly differ among groups (Chi-Square at $p < .0001$ level)

Table 4. Characteristics of persons who shift from private to public: results of regression analyses on the likelihood of shifting

	1991/1992				1995/1996			
	Regression Sample		Total		Regression Sample		Total	
	N	(%)	N	(%)	N	(%)	N	(%)
Private to Private/Public or Public	34	(4)	46	(4)	94	(8)	111	(8)
Remain Private	890	(96)	1044	(96)	1074	(92)	1273	(92)
Total Private	924	(100)	1090	(100)	1168	(100)	1384	(100)

Variable	Full Model		Stepwise Regression		Full Model		Stepwise Regression	
	Odds Ratio	Significance (p<.05)	Odds Ratio	Order of Entry	Odds Ratio	Significance (p<.05)	Odds Ratio	Order of Entry
Male	0.384	*			0.841			
White	0.903				0.65		0.601	5
18-35	5.798	*	3.13	3	2.052	*		
36-45	2.584				1.689			
Income/other	7.242	*	7.204	1	5.11	*	4.979	1
Income/supported	6.446	*	7.55	2	2.167	*	2.289	4
MH Disability	3.262	*	3.578	4	2.716	*	2.655	3
SA Disability	1.751				1.978	*	2.098	2
Psychoses	2.222				1.602			
% Concordant	82.2		76.8		75.4		70.5	
% Discordant	16		15.7		22.5		20.1	
% Ties	2		7.6		2.1		9.5	

Table 3 summarizes the characteristics of persons in the Private Only, Private/Public, Public Only and remainder groups.

Logistic regression models were used to gain some understanding of the characteristics of the users in the private plans who shift to public payers. Since providers were required to report only a minimal level of data, the characteristics available for study were limited to: male/female; white/nonwhite; 18-35/36-45/46-65; employed/supported income/other income; mental health disability yes/no; substance abuse disability yes/no; and psychoses yes/no. Two sets of models were introduced. In the first, the likelihood of remaining with a private payer versus shifting to a public payer either in the Public Only or Private/Public group from Year 1 to Year 2 was examined. In the second, the likelihood of remaining in the Private/Public group versus shifting to the Public Only group from Year 1 to Year 2 was examined.

An “n” category variable entered into a model as n-1 binary variables, one for each category and each in contrast with a hold-out category. In each set of regressions, two logistic models were fit. The first was a “full model” that included all variables, and the second, a forward stepwise regression model that included only those variables that were found significant in the full model. Odds ratios are reported for each category of a variable. Because of the small probability of shifting, these are estimates of the relative risk of shifting, i.e., the probability of shifting given the specific category of the variable divided by the probability of shifting given the hold-out category.⁴ The results of the regressions for the one-year shift from Private Only to Private/Public or Public Only are summarized in **Table 4**, and the results for the shifts from Private/Public to Public Only in the text.

Results

In the write-up below, 1991 values are followed in parentheses by 1995 values unless otherwise specifically noted in the text. The user cohort is comprised of 12,841 (13,345) persons representing 1.6 per 100 (1.7 per 100) of the general adult population. Public Only payers comprise the largest payer group representing 46% (43%) of the user cohort, while Private Only payers account for 22% (26%) and Private/Public payers for another approximately 7% (6%) (See **Figure 1**).

From **Table 3**, it may be seen that a smaller percent of persons in the Private Only and Private/Public group compared to the Public Only group are nonwhite or have a substance abuse disability. While 67% (56%) in the Private Only group are employed, only 19% (14%) of those in the Private/Public group and 8% (8%) in the Public Only group have jobs. The Private/Public group and the Public Only group have higher percents of persons having a mental health disability or a psychosis diagnosis than do the other payer groups, while mood/anxiety disorders predominate in the Private Only group.

Annual mean total costs across all groups were \$4051, with a standard deviation (SD) of \$7738 (\$3120, SD \$7258).

Figure 1 displays these costs by payer group (along with the percent distribution of persons among payer groups). The Private/Public group incurred the highest annual mean costs [\$9871, SD \$12764 (\$6384, SD \$10579)] among the payer groups.

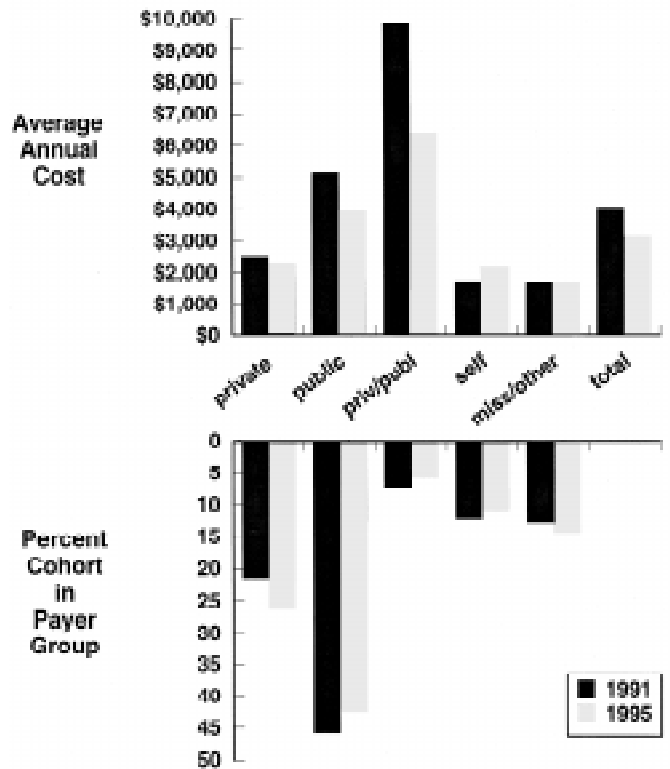


Figure 1. Average annual total costs and payer group distribution 1991-1995

Among the persons in the Year 1 Private Only group, in Year 2, 58% (55%) did not receive services and another 38% (36%) remained in this payer group. Only a small percent shifted directly to exclusively public payers and a slightly larger percent to co-sharing of service costs by only private and public payers [the shift for the two groups combined is : 1.7% (3.2%)].

In the 1991 cohort, only ten persons shifted directly to public payers, and this group had low average annual costs in each year (\$555 and \$653). In 1995, the analogous group was larger (35 persons) and had higher average annual costs in each year (\$5471 and \$6837). In the Private Only group, those who switched to the Private/Public group had the highest annual Year 1 costs [\$5415 (\$9389)] and subsequently had even higher annual Year 2 costs (approximately \$12,000 for both cohorts).

Persons in the Private/Public group are highly likely to remain in that payer group in the subsequent year [65% (54%)]. The percent who shift to Public Only payers in the subsequent year from the Private/Public is small [12% (13%)], but considerably greater than the percent shifting to Public Only from the Private Only group [.4% (1%)]. For the 1991 cohort, persons in the Private/Public group who remain there in the subsequent year or who shift to Public Only payers have among the highest costs for both years of any cross-classification group studied, (approximately \$11,000 per year). In 1995 these costs were somewhat lower, but they were still high in comparison to other groups (ranging from approximately \$6000 to \$10,000).

The logistic regression samples are smaller than the eligible samples because of missing independent variables. The percent missing data for any one variable was below 12%, and in most cases well below 5%. The eligible sample was reduced approximately 15% for each of the cohort years. For the 1991 sample, persons excluded from the analysis in comparison to those entering the regression model were significantly more likely to have psychoses and to be supported by other income than to be employed. For the 1995 sample, persons excluded from the analysis were significantly less likely to have either a mental health or substance abuse disability and more likely to be younger. For both 1991 and 1995, the regression samples had the same payer distribution as the eligible sample. The ability of the regression models to predict "shifters" as measured by concordant pairs was reasonably high for the shift from Private Only to Private/Public or Public Only (greater than 70% for all models) and smaller for the shift from Private/Public to Public Only (55% for full model, 1991/1992; 66% for full model, 1995/1996 and 51% for stepwise regression, 1995/1996).

For the 1991 cohort, both other income and supported income (in contrast to being employed) were associated with a statistically significant seven-fold increase in the likelihood of shifting to Public Only or Private/Public payers. In 1995, the odds ratios for these categories were also significantly greater than one but somewhat smaller than their 1991 values. In 1991, younger persons in contrast to older persons were statistically significantly more likely to shift, and this was also observed in the full model for 1995. Having a mental health disability significantly increased the likelihood of a shift more than three-fold in 1991 and almost three fold in 1995. In 1995, in the stepwise regression being nonwhite and having a substance abuse disability also significantly increased the likelihood of shifting.

For the 1991 cohort, there were no characteristics that significantly increased the likelihood of shifting to Public Only Payers over the likelihood of remaining with Private/Public Payers. For the 1995 cohort, younger persons and those with a substance abuse disability were more likely to shift to Public Only Payers.

Discussion

A consistent finding in the two time periods studied is that cost-shifting from private to public payers is most often preceded by a period of cost sharing by these payers. The one-year direct shift of persons from exclusively private to exclusively public payers is very small, as is also the direct shift to exclusively private/public payers. However, more than half of those in the Private/Public group remain in that payer group in the subsequent year. And, a person in this group is more than 12 times as likely to shift to a Public Only payer than is one in the Private Only group.

During the period in which costs are co-shared, the average annual client's costs are peak, indeed the highest among payer groups overall. The importance of this may be better understood in terms of total costs for all services delivered in the year. In Year 1, the Private/Public group (covering slightly

more than 5% of all persons in the cohort) accounted for 18% (12%) of total costs. Within this group, those who have shifted in from Private Only in the prior year have the highest costs of all.

A limitation of study that impedes an examination of the division of the Private/Public costs is that mid-year shifts in payer were not recorded. This, therefore, prevented estimation of the proportion of costs in a year that was covered by each particular payer in the Private/Public group.

The logistic regression analysis suggests that some of those who shift from Private Only to Public Only or to Private/Public payers may be dependents of the employed, since those who shift are significantly more likely to have subsidized incomes and to be younger. Having a mental health disability also increases the likelihood of a shift, and speaks to an increase in service use and hence in costs, as was noted above. These findings support the anecdotal accounts of employed family members that the limits of mental health benefits available to their younger dependents with mental health disabilities are soon exceeded. Also, some of the persons who shift may be young employees with problems that require an increase in the use of mental health services.

Fewer persons in 1995 than in 1991 who had services reimbursed by Private Only insurance abused substances. However, having a substance abuse disability made them more likely to shift to public payers. While the dependents of employees may be the ones most likely to abuse substances, it may also be the case that there are substance abusers among the employed who, because of their problems, lose employment and hence private insurance. In either case, greater use of mental health services may be required since poorer mental health outcomes for those with dual disorders has been well documented.⁶ The poor coverage for substance abuse services in many private insurance plans may also contribute to the shift of persons with dual disorders to public payer services not only for their substance abuse services, but also for their mental health services.

Data that have been published on health insurance⁷ document that in the time periods of this study, there were some gains by minorities in the receipt of job-based insurance. In parallel, our study data show gains between 1991 and 1995 by nonwhites in the use of job-based insurance to cover mental health services. The data, however, also show that in comparison to whites, nonwhites had an increased likelihood of shifting to public payers. This suggest that despite gains in job-based insurance nonwhites carried a greater risk than did whites of losing their insurance when job performance suffered due to mental health or substance abuse problems.

A methodological concern is whether the missing data, which caused a 15% reduction in the size of the eligible samples entering the logistic regressions, could have induced a bias into the results. We do not believe that this is likely since in no case did this cause a meaningful change in the distribution functions of the independent variables. There were some differences between those who entered the analysis and those who did not. However, for both the 1991 and 1995 cohorts, the missing data could not be attributed to any one specific reason, and we were not certain that they occurred at random.

We, therefore, chose not to use missing data techniques because the assumptions underlying such models could not be validated and would thereby have only introduced new uncertainty. Instead, the decision was made to apply the logistic models to the only slightly reduced sample, and to describe the characteristics of those excluded from the sample that significantly differed from those of the eligible sample.

On a final note, it is important to consider whether the missing information on services provided by private practitioners significantly impacts our analysis. We believe that it does not. It is not unreasonable to conjecture that those who use private practitioners are more likely to shift from private to self-pay (thus not impacting this analysis) than to public payers because they have less severe diagnoses and a preference to retain their private practitioner even after their private insurance runs out. This is only possible through self-pay. Further, Epidemiological Catchment Area (ECA) data⁸ allow a population-based estimate to be made of the use of private practitioners. In the ECA study, the ratio of specialty services use to human services professional use (i.e., private practitioners) is 1.96. Applying this ratio to the use of mental health professionals in the two Counties provides an estimate of about .8 per 100 (1.6 divided by 1.96), a relatively modest usage rate.

With the introduction of parity and managed care controls, the extent to which cost shifting and cost sharing by these payers will remain at these levels cannot easily be predicted. The patterns that have been observed, however, provide a useful

baseline against which changes that will inevitably occur under various versions of parity legislation can be meaningfully examined. The counties that were studied are representative of many other similar regions in the country, and hence the results can be generalized to such areas.

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