The impact of capitation on physician organizations' cost structures

An exploratory analysis

Myles P. Gartland
Rockhurst University, Kansas City, Missouri, USA, and
Cathryn A. Carroll
University of Missouri-Kansas City, Kansas City, Missouri, USA

Keywords *Patient care, Overhead costs, Financial benefits*

Abstract *This paper aims to evaluate the relationship between capitation payment methodology and the physician organization cost function. The paper provides evidence supporting a positive relationship between overhead rates and the level of capitation. Based on sample data, US medical practices whose net medical revenue consists of 11 percent or more capitation payments have significantly higher overhead costs per physician FTE.*

US physician organizations derive their revenue from a variety of sources. Commercial activity by physician organizations involves selling their services on a full or discounted fee for service (FFS) basis to buyers. Such payers may include state and federal agencies, private insurers, insured and uninsured individuals.

Many have criticized the use of FFS for physician reimbursement for several reasons. Most specifically, under FFS reimbursement, physicians are encouraged to provide only those services which are reimbursed, even if other services might be useful; physicians' reimbursement is higher for higher levels of services provided to patients which fosters the over-utilization of services (Feldstein, 1999). In light of these concerns, new methods of physician reimbursement were proposed by Medicare. This new method was known as the resource-based relative value system (RBRVS).

The RBRVS system is designed to provide more accurate payment systems for physicians based on the resources that are used in the diagnosis and treatment of patients. The RBRVS system derives its fees based on three physician organization cost components: provider (work), overhead (practice) and malpractice. This payment mechanism supplanted fee-for-service based on "reasonable and customary" charges in many areas. However, the RBRVS system like the "reasonable and customary" is still based on a fee-for-service methodology.

More recently, payers have adopted a capitated basis of payments to physician organizations. A capitated-based reimbursement system allows the insurer to pay the physician a fixed "per member per month" payment. Like FFS, capitation reimbursement systems became a target of economic debate. This debate has focused primarily on four areas:

(1) healthcare cost and utilization;

(2) output quality;

Journal of Health Organization and Management
Vol. 18 No. 5, 2004
pp. 349-360

1477-7266
DOI 10.1108/14777260410560802

(3) physician productivity; and

(4) physician practice costs.

Overall Feldstein (1999) suggests that capitation provides incentives for better coordination of care, increased physician productivity and lower health care costs.

Some studies have tried to link capitation to quality, but with mixed results. Miller and Luft (1997) suggest that organizations receiving capitation have little or no significant differences in quality or health outcomes. In contrast, Getzen (1997) notes that capitation may align incentives that are potentially harmful to the interests of patients (Getzen, 1997). According to Getzen, the primary difference between the FFS and capitation is the "locus of control". With FFS, control remains largely implicit and in the hands of the individual physician. Under capitation, the control resides with the payer.

When consideration is given to the relationship between capitation and resource utilization, the influence of capitation is less controversial. Trauner (1996) and Iversen and Luras (2000) evaluated the effect of capitation on the utilization of services. Almost exclusively, the studies have found that utilization of medical services decreases under capitation; mostly through a reduction in surgical procedures (Trauner, 1996).

Numerous studies have evaluated the effect of capitation on provider productivity. Most studies (Conrad *et al.*, 2002) show there is little correlation between capitation and provider productivity. Contrasting the work performed on physician behavior, Chu *et al.* (2002), used data envelopment analysis with capitation data to conclude that hospital efficiency increased with respect to the degree of capitation involvement.

With the exception of one study by Troidl (2001), little work has been done to examine the effect of capitation on physician organization cost structures. Using data from Community Health Centers (CHC), Troidl (2001) evaluated the impact of capitation on the internal cost structure of the physician practice. He observed that a doubling of capitation was associated with an increase in the CHC internal cost structure by 1.74 percent. However, a problem with using CHC to generalize the universe of physician organization is its structure (Troidl, 2001). CHCs are a very small subset of the physician practices in the USA. Second, their physicians are employees as opposed to owners or partners. Therefore their productivity incentives are different. Third, they have limited ability to influence their payment mechanism, as payments are government dictated (Troidl, 2001). It is important to note that Troidl's results were inconsistent with beliefs of early managed care advocates. They initially forecasted a reduction of administrative costs within the physicians' practice setting secondary to the adoption of capitated reimbursement methods and the influence of capitation on internal costs of physician operations remains controversial (Altman, 1987; Allen, 1987; Gardner and Maroney, 1995; Kolb and Horowitz, 1995).

This study will use an alternative data source which corrects for some of the limitations cited with Troidl's (2001) work, and investigates whether receiving capitation as a payment form, increases a practice's operating overhead. Second, if the above is correct, then what factors or inputs are creating this change? Through this effort, we hope to clarify the controversy noted above.

Data

The main source of data is a series of cross-sectional Medical Group Management Association (MGMA) cost 1993 to 1999 annual surveys. The cost surveys provide

annual data on the input factors of production for the physician organization. Most MGMA data is reported in per unit ratios such as per physician FTE. This helps normalize for different size groups, and also allows us the ability to perform analysis at the physician level instead of organization level. A description of the data elements provided by the MGMA cost surveys and used in this analysis is described in the Appendix.

In each survey year, MGMA publishes overhead percentage per physician FTE (cost) statistics for physician organizations based on certain practice characteristics. Overhead percentage per physician FTE costs are a good proxy for total cost as they represent the percent of a practice's total revenue spent on operating costs and labor[1], therefore controlling for differences in total revenue[2] (Conrad *et al.*, 2002). This is a more desirable factor than profit, since physician organizations tend to drive their profit to zero (by paying owner bonus) and thereby avoiding some taxes. Also, as overhead per physician FTE is based on a percentage rather than raw number, it is comparable for different sizes and specialties of practices. Therefore, overhead percentage per physician FTE is the most watched and benchmarked of practice financial statistics (Benedict, 1996). The primary MGMA data set used, groups practices into cohorts by percentage of their total net medical revenue (NMR) which is paid via capitation (as opposed to fee-for-service) and reports those cohort medians[3]. MGMA categorizes practices into one of four "capitation cohorts" (cohort) by their portion of total NMR obtained via capitation by:

- no NMR obtained via capitation;
- less then 10 percent of NMR obtained via capitation;
- 11-50 percent of NMR obtained via capitation; and
- greater than 50 percent of NMR obtained via capitation.

For example, a practice which had $250,000 of its $1,000,000 in NMR derived from capitation, would fall into the 11-50 percent capitation cohort. Sample sizes within each capitation cohort ranges from 12-126 practices. See Table I for details of each year. Statistics for the cohort of practices are suppressed if sample size is less than ten. A sample of the MGMA tabular format is shown in the Appendix (Figure A1). Figure 1 shows the trend of total overhead cost by capitation cohort from 1993 to 1997.

Model

This evaluation compares and contrasts a six-year trend (1993-1999) of three cohorts of physician organizations and compares this to a control cohort. As all medical practice costs continue to increase, the control cohort will be set as those physician organizations

Year	Control	Less than 10 percent	11-50 per cent	Greater than 50 percent
1993	119	66	105	31
1994	122	50	98	46
1995	105	73	87	43
1996	126	101	95	30
1997	113	114	89	34
1998	107	86	84	20
1999	73	55	49	12

Table I.
Number of practices in each capitation cohort

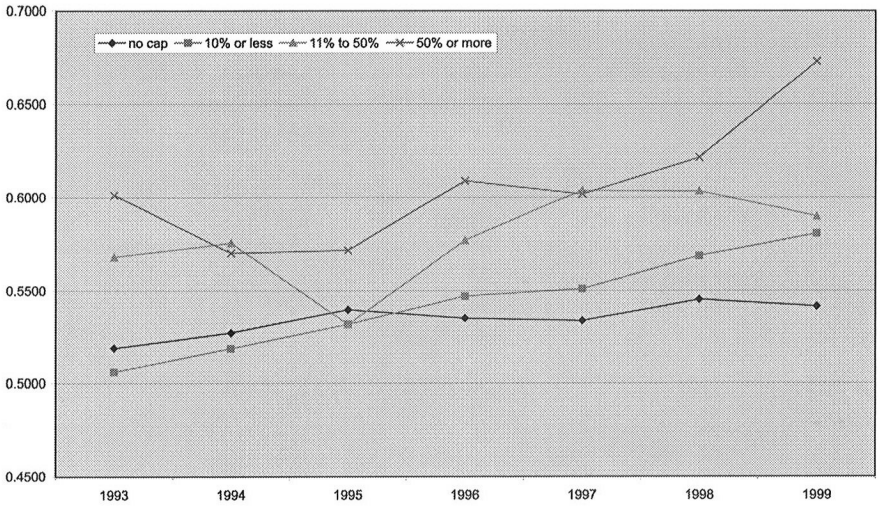

Figure 1.
Total overhead costs (as percent of NMR) 1993 to 1999 by capitation group

Source: MGMA Annual Cost Surveys

which have no capitation per physician FTE as a part of their total NMR. This allows us a somewhat natural experiment of how each cohort has changed over time. Although the typical physician organization size increases as capitation increases, it is controlled for by using a "this per physician FTE" overhead percentage. Using paired *t*-test and regression models in SPSS version 11.5, a series of tests will be employed to determine statistical significance of each cohort from the control and the impact of input factors to a dependent variable; total per physician FTE overhead costs[4].

Methods – total overhead costs

The first series of tests will determine if a significant difference exists between the control cohort and each of the capitation cohorts over the six-year sample period. Using a paired *t* test, each of the three capitation cohorts are compared to the control cohort. A paired *T* is used since it is the most robust parametric model for comparing if significant differences exist between two related items (in our case, a comparison of years).

H01. There is no statistical difference in total overhead costs per physician FTE (*TC*) between the control cohort and each of the capitation cohorts.

$$TC_c = TC_{<10}; TC_c = TC_{11-50}; TC_c = TC_{>50}$$

Where *TC* is the total overhead cost per physician FTE (as a percent of NMR) for each year's observation and subscript C is the control cohort, subscript <10 is the cohort of practices which derives less than 10 percent of its NMR from capitation and subscript 11-50 and >50 are the cohort of practices with 11-50 percent and greater than 50 percent of their total NMR derived from capitation respectively.

Results – total overhead costs

Based on the results in Table II, we fail to reject the null for comparing the control cohort to the cohort of practices whose NMR consists of 10 percent or less of capitation

($TC_{<10}$). However, we reject the null for the 11-50 percent cohort of practices and the greater than 50 percent cohort of practices ($TC_{11\text{-}50}$, $TC_{>50}$ respectively). This indicates that the 11-50 percent cohort of practices and the greater than 50 percent cohort of practices each have higher total costs relative to the control, that are statistically significant. This result is counter to the initially held belief that capitation would reduce a practice's overhead costs.

Therefore, the sample evidence supports the following:

$$TC_c = TC_{<10}; TC_c \neq TC_{11-50}; TC_c \neq TC_{>50}$$

Methods-support staff and operating sub-units

As we have established that the two higher levels of capitation cohorts ($TC_{11\text{-}50}$, $TC_{>50}$) have statistically higher costs, it is important to determine what is driving these increased total costs from the control cohort.

Total overhead costs per FTE can further be broken down into two sub-groups: support staff per physician FTE (*SS*) and general operating costs per FTE (OPS) as noted in equation (1).

$$\text{Total costs } (TC) = \text{Support staff costs } (SS) + \text{General operating costs } (OPS) \quad (1)$$

Support staff represents all employees and other labor, except the physician's salary and bonus. General operating costs considers all the non-labor costs related to running a practice such as rent, supplies, insurance, etc.

Again, we are concerned if these costs are significantly different from their respective control cohort. Therefore, are support staff costs for the 11-50 percent cohort of practices ($SS_{11\text{-}50}$) and for the greater than 50 percent cohort of practices ($SS_{>50}$) significantly different than the cohort of practices with no capitation (the control)? The same tests are run for the general operating costs ($OPS_{11\text{-}50}$, $OPS_{>50}$).

H02. The support staff cost component is not statistically different from its control cohort.

$$SS_c = SS_{11-50}; SS_c = SS_{>50}$$

H03. The general operating cost component is not statistically different from its control cohort

$$OPS_c = OPS_{11-50}; OPS_c = OPS_{>50}$$

Paired differences		Mean	St. Dev	St. Error	t	sig
Pair 1	*TC* less than 10 percent – *TC* control	0.0089	0.01946	0.00735	1.212	0.271
Pair 2	*TC* 11-50 percent – *TC* control	0.0440	0.02466	0.00932	4.720	0.003
Pair 3	*TC* greater than 50 percent – *TC* control	0.0724	0.03186	0.01204	6.014	0.001

Table II.
Paired *t*-test of total costs

Results – support staff and operating costs

Based on the results shown in Table III, all null hypotheses are rejected. Support staff costs for both cohorts of practices, as well as the general operating costs, are significantly higher (based on the sign of the t statistic) then their respective control cohorts. Therefore, both of the cost sub-units for each cohort of practices are significantly higher than the control at a 0.05 level.

Therefore; sample evidence supports the following:

$$SS_c \neq \mathrm{SS}_{11\text{–}50}\ OPS_c \neq OPS_{11\text{–}50}\ SS_c \neq \mathrm{SS}_{>50}\ OPS_c \neq OPS_{>50}$$

Methods – impact of changes in cost sub-units to total overhead costs

The next series of interest is the impact each of these two cost sub-categories have on the total overhead costs. Again, we are interested in controlling for cohort of practices with no capitation. Therefore, each observation is subtracted from each control cohort observation in equation 2. A regression of differences is run to show the impact of each cost subunit on total overhead cost. This is done for both the 11-50 percent cohort of practices and then again for the greater than 50 percent cohort of practices.

$$(TC_{11\text{ to }50} - TC_c) = \alpha + \beta(SS_{11\text{ to }50} - SS_c) + \Theta(OPS_{11\text{ to }50} - OPS_c) + e \qquad (2)$$

Where SS is support staff cost sub-units and OPS is operating costs sub-units. Both the signs and magnitudes of β and Θ are of interest.

H4. The paired differences in support staff costs and general operating costs have no effect on the paired difference in total costs for the 11-50 percent capitation cohort of practices.

Then for the greater than 50 percent capitation cohort of practices

$$(TC_{>50} - TC_c) = \alpha + \beta(SS_{>50} - SS_c) + \Theta(OPS_{>50} - OPS_c) + e \qquad (3)$$

H5. The paired differences in support staff costs and general operating costs have no effect on the paired difference in total costs for the 50 percent or greater capitation cohort of practices.

Table III.
Paired t-test of support staff and operating costs

Paired differences		Mean	St. Dev	St. Error	t	sig
Pair 1	SS 11-50 percent – SS control	0.0371	0.01154	0.00436	8.495	0.000
Pair 2	SS greater than 50 percent – SS control	0.0573	0.01853	0.00701	8.179	0.000
Pair 3	OPS 11-50 percent – OPS control	0.0204	0.00470	0.00178	11.457	0.000
Pair 4	OPS greater than 50 percent – OPS control	0.0309	0.01141	0.00431	7.170	0.000

Results – impact of changes in cost sub-units to total overhead costs

The R^2 of 0.772 and 0.854 in Tables IV-IX, although strong, are not surprising since the two independent variables are the only components of the dependent variable. Therefore one would expect very high explanatory power of the variables.

In the 11-50 percent cohort of practices, only support staff was statistically significant at 95 percent (Tables IV-VI). In addition, the positive *t*-score and coefficient indicates that this variable is statistically higher than the control cohort ($SS_c < SS_{11\text{-}50}$). Therefore, for each change in a percentage unit of support staff costs, total cost increases by 1.77, relative to the control. Although, the coefficient for general operating costs is also positive, it is not statistically significant. Therefore, in equation 2, the

Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	0.879[a]	0.772	0.658	0.01442

Notes: [a] Predictors: (Constant), Total support staff cost, Total general operating cost. These regressions are continued in Tables V and VI

Table IV. Regression of differences between 11-50 percent and control cohorts

Model		ANOVA Sum of squares	Mean square	F	Sig.
1	Regression	0.003	0.001	6.779	0.052[a]
	Residual	0.001	0.000		
	Total	0.004			

Notes: [a] Predictors: (Constant), Total support staff cost, Total general operating cost. Dependent variable: Total cost

Table V.

Model		Coefficients β	Std. Error	t	Sig.
1	(Constant)	−0.052	0.032	−1.630	0.178
	Total general operating cost	1.509	1.251	1.206	0.294
	Total support staff cost	1.773	0.510	3.476	0.025

Note: Dependent variable: Total cost

Table VI.

Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	0.924[a]	0.854	0.781	0.01491

Notes: [a] Predictors: (Constant), Total support staff cost, Total general operating cost. These regresssions continue in Tables VIII and IX

Table VII. Regression of differences between greater than 50 percent and control cohorts

labor input changes are driving the higher total overhead costs for cohort of practices with 11-50 percent of their NMR derived from capitation.

For the 50 percent or greater cohort of practices, both the general operating costs and support staff costs are statically significant at 95 percent (Tables VII-IX). Also, as both coefficients and *t*-scores are positive, they can be interpreted as statically higher than the control cohort ($SS_c < SS_{>50}$, $OPS_c < OPS_{>50}$). Therefore, practices in the 50 percent or greater cohort are spending money more for labor and operating inputs as a percentage of their net medical revenue, relative to the control.

Methods – input factors

One of the limitations of this preliminary study is the inability to perform a regression on all the individual inputs that make up each of the cost sub-units (operating and support staff). See the Appendix for a list of all the individual inputs. There are not enough degrees of freedom to operationalize this model. Therefore, the next best alternative is to run individual paired *t*-tests on each input factor to determine which are different from the control cohort. Of course this does not control for the other input factors. Of interest here is the statistical significance and sign. The sign will help determine if cohorts are adding or deleting inputs relative to the control cohort as capitation levels increase.

Results – input factors

As seen in Tables VII-IX, nine of the 14 support staff input factors are significant at 95 percent for the 11-50 percent cohort of practices. All of these are significantly higher than the control, meaning these labor inputs were increased as the capitation level increased, with two exceptions. Clinical laboratory was significantly less, meaning that lab staff was decreased as capitation increased. This makes some sense because many capitated HMOs contract out their lab services and do not reimburse the physician

			ANOVA		
Model		Sum of squares	Mean square	*F*	Sig.
1	Regression	0.005	0.003	11.68	0.021[a]
	Residual	0.001	0.000		
	Total	0.006			

Notes: [a] Predictors: (Constant), Total support staff cost, Total general operating cost
Dependent variable: Total cost

Table VIII.

			Coefficients		
Model		β	Std. Error	*t*	Sig.
1	(Constant)	0.053	0.020	2.591	0.061
	Total general operating cost	2.050	0.538	3.812	0.019
	Total support staff cost	1.164	0.339	3.429	0.027

Note: [a] Dependent variable: Total cost

Table IX.

cohorts to perform in-office lab tests. Other medical services were also statistically less than the control.

Tables VII-IX also list the paired *t*-tests for the 50 percent or greater cohort of practices' input factors, as both operating costs and staff were significant in this model. For support staff (labor), seven of the 14 were statistically different from the control cohort. All these were statistically higher, except two: business office, clinical laboratory staff, which were less than the control cohort. For the six positive differences: information services, general administrative, registered nurses and radiology/imaging staff and finally employee benefits (likely resulting from the higher paid staff) were input increases as compared to the control cohort. Clinical laboratory, as discussed above, was less than the control, as was business office. In business office, this likely provides evidence that fewer billing clerks were needed and costs could decrease (as originally forecast). However, the costs were more than made up for with the input increases of the other input factors. Finally, as a practice assumes additional capitation, there is a labor substitution occurring. More registered nurses, information services, and administrative staff are hired, but less business office (i.e. billing clerks) are used (see Table X).

	11-50 percent		50 percent or greater	
	t	Sig.	*t*	Sig.
Support staff				
General administrative	4.088	0.006	6.338	0.001
Business office	1.270	0.251	−2.768	0.033
Information services-staff	6.763	0.001	7.266	0.000
Housekeeping/maint/sec.	0.801	0.454	−3.418	0.014
Med secretaries/trans.	5.061	0.002	−2.154	0.075
Medical records	3.559	0.012	−0.591	0.576
Other admin support	3.368	0.015	−1.586	0.164
Medical receptionists	−2.230	0.067	3.194	0.019
Registered nurses	4.146	0.006	3.414	0.014
LPN, MAs and aides	2.319	0.060	1.449	0.198
Clinical laboratory-staff	16.525	0.000	−13.885	0.000
Radiology/imaging-staff	3.010	0.024	1.430	0.203
Other medical support svcs	−3.873	0.008	2.140	0.076
Empl support staff ben cost	6.422	0.001	5.728	0.001
General operating costs				
Admin supplies and serv.	4.945	0.003	0.870	0.418
Building and occupancy	2.615	0.040	2.517	0.045
Medical and surgical supply	−1.289	0.245	−0.520	0.621
Clinical laboratory	7.720	0.000	1.438	0.200
Other ancillary services	−1.769	0.127	−3.374	0.015
Other insurance premiums	−2.367	0.056	−2.580	0.042
Other operating cost	2.568	0.042	−0.389	0.711
Outside professional fees	2.238	0.067	4.498	0.004
Prof liability insurance	−1.367	0.221	−1.982	0.095
Promotion and marketing	0.077	0.941	−1.097	0.315
Radiology/imaging	2.638	0.039	0.307	0.769
Furniture/equipment	1.385	0.215	0.501	0.634
Information services	1.014	0.350	2.020	0.090

Table X.
Paired *t*-tests of input factors relative to control cohort

Limitations

The MGMA membership sample is not a random draw from the universe of medical practices. It tends to over represent larger medical groups (Conrad *et al.*, 2002). The data is homogenous, since the number of practices types represented in the survey (primary, surgical, specialty) is stable over time. However, it is the only known sample with its broad national representation which obtains such detailed cost statistics.

Another problem with MGMA sample data is it is published only in aggregated level tabular form. Therefore, individual observations are not readily available, but rather only cohort medians, sample size, and in some cases standard deviations. This cohort level data limits the type of statistical analysis that can be used. Further research should address the limitations of this study. However, as an exploratory study, it is adequate enough to provide new reliable information in this area.

Further discussion and conclusion

As capitation has been introduced as a physician reimbursement mechanism, the literature has consistently shown that neither quality nor productivity changes substantially. However, utilization of medical services do decrease. All of these are desired results of policy advocates who wish to reduce health care costs but not reduce quality. Capitation is also a favorite of insurers as they are able to generate stable cash outflows and budgets. Insurers have pushed for more physician organizations to be paid using a capitation methodology. That said, insurers need to be mindful of the financial situation of physician organizations. As many large IPA type physician organizations went bankrupt in the late 1990s, the insurers not only had to bail out the organizations financially, but also had to defend themselves in the court of popular opinion (Robinson, 2001). Therefore, insurers have to walk a fine line of not overpaying physicians, but at the same time avoid causing them financial distress. This study, as well as the Troidl study, gives preliminary results that physician organizations which receive at least 11 percent of their total net medical revenue via capitation do expend more and costlier resources than groups who have little or no capitation. We did find (as promised by early advocates) business office staff decreased. However that cost savings was offset by needing higher-paid staff such as general administrative staff, information technology staff, registered nurses (and subsequent higher employee benefits).Therefore, policy makers, insurers and physician organizations need to assure that future payment mechanisms and incentives will lead to increased quality and productivity at lower costs, but not at the expense of the physician organization.

Notes

1. Within labor, general nurses and nurse practitioners pose a problem. Some nurses such as nurse practitioners are counted as a support staff cost and other studies count them as all income generating provider. This study counts nurse practitioners in the provider category and general nurses as a input cost in support staff.
2. Although a common benchmark in health care, the additional operating costs and labor costs (overhead costs) should also be considered the cost to generate one dollar of income for the physician.
3. As noted in the "Limitations" section, using cohort medians limits the statistical tests available.

4. As described in the data section, total overhead cost percentage per physician FTE is computed by dividing operating and support staff by net medical revenue. This is done on a "by physician FTE" basis to normalize for groups of different sizes. Although the individual inputs are self-reported by each group, for consistency, MGMA calculates the overall operating and support staff costs, as well as the total overhead cost percentages. This allows us to have a ratio which can then be compared to different groups of different sizes.

References

Allen, S. (1988), "Surviving and thriving with capitation contracts", *Healthcare Financial Management*, Vol. 52 March, pp. 64-71.

Altman, S. (1987), "Cost cost go away, is capitation here to stay", *Healthcare Financial Management*, Vol. 51 March, pp. 23-35.

Benedict, G. (1996), *The Development and Management of Medical Groups*, American Medical Association, Chicago, IL.

Chu, H., Liu, S. and Romeis, J. (2002), "Does capitation contracting improve efficiency: evidence from California hospitals", working paper..

Conrad, D., Sales, A. and Liang, S.-Y. (2002), "The impact of financial incentives on physician productivity in medical groups", *Health Services Research*, Vol. 37 No. 4, pp. 885-906.

Feldstein, P. (1999), *Health Care Economics*, Delmar Publishers, New York, NY.

Gardner, J. and Maroney, R. (1995), "Positing for capitation by redesigning internal processes", *Healthcare Financial Management*, Vol. 49 No. 2, pp. 40-5.

Getzen, T. (1997), *Health Economics: Fundamentals and Flows*, John Wiley & Sons, Inc, New York, NY.

Iversen, T. and Luras, H. (2000), "The effect of capitation on GPs' referral decisions", *Health Economics*, No. 9, pp. 199-210.

Kolb, D. and Horowitz, J. (1995), "Managing transition to capitation", *Healthcare Financial Management*, Vol. 49 No. 2, pp. 64-72.

Miller, R. and Luft, H. (1997), "Does managed care lead to better or worse quality of care?", *Health Affairs*, September/October, pp. 7-25.

Robinson, J. (2001), "Physician organization in California: crisis and opportunity", *Health Affairs*, Vol. 20 No. 4, pp. 81-96.

Trauner, J. (1996), "Medical groups in California: managing care under capitation", *Health Affairs*, Vol. 15 No. 1, pp. 159-70.

Troidl, J. (2001), "Effects of capitated reimbursements on community health centers", Health Services and Policy Analysis Department, University of California, Berkeley, CA, p. 143.

(Appendix appears over page.)

Appendix

	No capitation	10% or less	11% to 50%	51% to 100%
TOTAL SUPPORT STAFF COST				
General administrative				
Business office				
Managed care administrative				
Information services				
Housekeeping/maint/security				
Medical receptionists				
Mad secretaries/transcribers				
Medical records				
Other admin support				
Registered Nurses				
LPN, MA's & Aides				
Clinical laboratory				
Radiology/imaging				
Other medical support svcs				
Empl support staff ben cost				
Contract/temp support staff				
TOTAL GENERAL OPERATING COST				
Information services				
Medical and surgical supply				
Building and occupancy				
Furniture/equipment				
Admin supplies and services				
Prof liability insurance				
Other insurance premiums				
Outside professional fees				
Promotion and marketing				
Clinical laboratory				
Radiology/imaging				
Other ancillary services				
Management fees paid out				
Other operating cost				
TOTAL COST				

Figure A1.
Format of MGMA cost survey by level of capitation