Linking Physician Compensation to Reimbursement in an Environment of Evolving Reimbursement Methodologies

Exploratory Paper

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Abstract

In an effort to identify a measure of provider activity that correlates significantly with reimbursement in an environment combining fee-for-service and capitated payments, statistical research was conducted to examine the relationship between total payments and the following measures of provider activity: number of unique patients seen, charges, volume (total CPT codes billed), and work relative value units (RVUs). It was found that number of unique patients seen and charges correlate significantly with reimbursement in this environment. Number of unique patients correlates highly with charges so can be used as a proxy for them. Volume (total CPT codes billed) and work RVUs did not correlate significantly with total payments. Based on these findings, a physician compensation plan incentivizing number of unique patients seen (in lieu of work RVUs) was proposed for primary, secondary, and tertiary care providers. The advantages of such a compensation plan, as well as the challenges, are discussed.

Key Words

Physician compensation, incentives, reimbursement, payments, fee for service, capitation, number of unique patients seen, panel size, charges, volume, work relative value units (RVUs)
Introduction

Medical practices face a continuing challenge in designing physician compensation plans to incentivize activities that relate to generating revenues. At a time when capitated payment has long been established as a significant portion of reimbursement, and there is an increasing emphasis on value-based reimbursement (“pay for performance”), physician compensation plans based on commonly used measures of clinical productivity, charges or work relative value units (RVUs), are becoming less relevant.

Consider the typical HMO reimbursement methodology. HMO reimbursement is typically in the form of fixed fees (“per member per month,” or PMPM), while a small portion of total contract reimbursement is held back for value-based incentives (“pay for performance”). This latter portion is becoming relatively larger in newer contracts, as an increasing emphasis is placed on pay for performance1. Clinical productivity as measured by charges or work RVUs has no correlation with either PMPM or pay for performance. PMPM is based on the number of members, and pay for performance is based on demonstrating efficient and medically appropriate treatment protocols, desired clinical outcomes, patient satisfaction, and/or cost savings to the payer. In fact, using charges or work RVUs in a capitated payer environment creates a perverse incentive. Providers are incentivized to maximize visits, procedures, and tests, in order to maximize these measures of clinical productivity. The result is increased cost of providing care while HMO revenues are unaffected. Thus, in a capitated payer environment, an incentive for providers to over utilize resources will squeeze profits or perhaps even lead to financial loss.

Of course, the portion of total revenue that comes from PMPM and pay for performance versus traditional or discounted fee for service varies from region to region and practice to practice. Rarely does a practice face at or near 100% reimbursement from PMPM and pay for performance. Likewise, rarely does a practice face at or near 100% reimbursement from traditional or discounted fee for service. The blend of reimbursement methodologies in use today creates conflicting incentives in order to maximize revenue, further complicating the challenge of designing a physician compensation plan that links to revenue generation.

The purpose of the statistical research described in this paper was to test the hypothesis that there is a measure of provider activity that correlates significantly with revenues in an environment where reimbursement includes both PMPM and pay for performance, and traditional or discounted fee for service. Such a metric would be appropriate as the basis for a physician compensation plan in today’s environment, and into the future. While it was argued earlier that this hypothesis would not be supported for charges and work RVUs, these metrics were considered, along with volume (total CPT codes billed) and the number of unique patients seen. (Total CPT codes billed is not limited to unique CPT codes billed but rather counts the billing of the same code as many times as it was billed.)

Before this research is described, the variety of physician compensation plans that have been used and are in use today will be discussed, followed by a discussion of the criteria for an effective physician compensation plan. This background is relevant to the discussion of compensation plan design arising out of the results of the statistical research.
The History and Evolution of Physician Compensation Plans

Individually Negotiated

Providers are paid whatever salary is agreed upon between themselves and the employer. A premium is placed on the negotiation skills of the individual provider. This is the most basic and classic version of how individual salaries are determined in any occupation in a free labor market. While today’s physician compensation plans, as described below, place the emphasis on job performance, or on a structure of guaranteed salaries applied to all providers, there is still an element of individual negotiation in today’s physician compensation. This is unavoidable, and perhaps acceptable, since a given compensation plan cannot reflect all factors that make a physician valuable to the practice.

“Eat What You Treat”

Revenue attributed to an individual provider’s charges is assigned to that provider, and the provider’s identifiable direct expenses along with an allocation of indirect expenses are assigned to that provider. (Indirect expenses should include an allowance to provide the practice with net income to pay off debts and upgrade assets). The provider is paid the net amount. Each provider is subject to the effects of that provider’s individual payer mix. Points of contention can include the identification of direct expenses and the portion of indirect expenses allocated.

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Productivity Based

Practice revenues and indirect expenses are netted together to determine the total amount available for physician compensation and direct expenses, or the compensation pool. (Indirect expenses should include an allowance to provide the practice with net income to pay off debts and upgrade assets.) This pool is then allocated to providers based on a measure or measures of clinical productivity. A provider’s identifiable direct expenses are then netted against the provider’s share of the compensation pool to determine total salary earned. The following illustration from the Medical Group Management Association’s Decision Pathways resource shows the calculation⁴. In this example, the physicians’ “draw” is termed “base salary,” and the additional pay related to productivity is termed a “bonus”:

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⁴ “Physician Compensation,” Decision Pathways (web site), Medical Group Management Association.
Historically, a measure commonly used was charges (billings). In recent years, since the development of various RVU systems, work RVUs have come to be combined with or to replace billings as the measure of clinical productivity. Work RVUs are seen as more objective than
billings, since billings for the same set of billing codes will vary with the individual practice’s fee schedule.

Guaranteed (Straight Salary)

Providers are paid guaranteed salaries based on a salary structure applicable to all providers. Salaries are set at a certain level within the salary structure depending upon specialty and subspecialty, the type and level of skills, the amount of work experience, the degree of administrative responsibility, and/or other work-related factors. There is no compensation incentive for productivity or to achieve value in the sense of quality and outcomes. At the same time, there is no incentive to over utilize practice resources. Mayo Clinic and the Cleveland Clinic have been cited as models of straight salary physician compensation that promotes teamwork and leads to reduced costs. As a practical matter, when providers are on 100% guarantee, practice leadership must develop and implement other methods to direct and motivate providers to produce and to achieve value-oriented objectives.

Multifaceted (Salary plus Incentive)

Multifaceted physician compensation plans have been developed to cope with conflicting incentives of PMPM and pay for performance reimbursement versus traditional or discounted fee for service. Also, multifaceted plans attempt to balance the security of guaranteed plans with the incentives inherent in productivity based plans. Multifaceted plans typically include a guaranteed

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portion plus an incentive based on clinical productivity\textsuperscript{8}. In the case of primary care, the number of unique patients seen, or panel size, can be an important factor in the incentive payment\textsuperscript{9}.

Multifaceted plans are adding value-based measures to the incentive payment in order to link to value-based reimbursement. As discussed above, these may include measures of quality, outcomes, patient satisfaction, and/or cost savings\textsuperscript{10}.

Multifaceted plans can be complex, with a large number of value-based and other nonproductivity related measures affecting the incentive payment. Weeks on call may carry a separate incentive, as well as supervision of nonphysician providers. Leadership or administrative roles may bring a premium. A number of diverse measures, such as timeliness of completing notes and attendance at meetings, can be included under the broad category of citizenship\textsuperscript{11}.

Criteria for an Effective Physician Compensation Plan

A discussion of the criteria for effective physician compensation plans follows, along with an evaluation of each of the types of plans described above\textsuperscript{12}.

\textsuperscript{9} “Risk adjustment needed when doctor pay is based on patient load,” \textit{American Medical News}, amednews.com (web site), August 2, 2012.
**Fairness and Equity**

Providers want to work under compensation plans that treat all providers equally with regard to job performance and personal characteristics. A provider achieving the same level of clinical productivity or scoring the same on other measures as another provider will expect to be paid the same. Providers will expect to be treated equally regardless of their gender, race, ethnic background, country of origin, age, or any other personal characteristic unrelated to job performance.

In terms of fairness and equity, individually negotiated plans are the least desirable type of plans. Rewarding only individual negotiation skills does not recognize job performance. Allowing the personal biases of the employer to factor into the salary decision does not promote equal treatment of all classes of people. All the other plans described above, except guaranteed plans, reflect fairness and equity in being based on job performance only. Providers may perceive unfairness and inequity in the details of how compensation plans are implemented, but the principles on which they are based are clear and appropriate. Guaranteed plans are considered fair and equitable because all providers are paid within the same salary structure, which is based on work-related factors.

**Transparency and Predictability**

Providers want a compensation plan that is understandable and verifiable. Also, they want to trust that there are no hidden criteria influencing pay decisions.

In this regard, individually negotiated salaries again represent the least desirable approach to physician compensation. Salary negotiations are a matter of private communication between the
provider and the employer’s agent. Other providers are not made aware of what factors or negotiation techniques may have been persuasive in achieving a higher salary.

With regard to “eat what you treat” plans, to the extent that 1) providers can audit the data on revenues and expenses, and 2) the method of allocating indirect expenses is clearly defined, such plans meet the transparency test.

Likewise, performance measures must be clearly defined, and performance data must be auditable, for productivity based plans and multifaceted plans to be perceived as transparent. Practice leadership should consider limiting the number of performance measures in a multifaceted plan so that the plan is not perceived as overly complex and not straightforward. If practice leadership feels that a high number of performance measures are relevant and should be used, the burden is on leadership to make sure providers understand each measure and how it impacts compensation.

For guaranteed salary plans to meet the transparency test, factors that influence a provider’s salary level within the pay structure must be clearly defined.

**Linkage to Organizational Goals**

The criteria discussed above relate to providers’ perception of a compensation plan and the degree to which they will find it acceptable. This criterion relates to the employer’s legitimate concern that a plan promote the interests of the practice as a whole, as well as meeting the needs and concerns of individual providers. A well-run practice will have clearly defined quantitative and qualitative goals based on a mission, vision, and strategy. To ensure the long-term viability of the practice, one or more of these goals must relate to profitability.
A practice must be careful not to obligate itself to pay out more in physician compensation than it will have available to pay out. With individually negotiated salaries, it is up to the employer’s agent to understand how much the practice can afford to add to its physician compensation budget, and hold to that amount. Under “eat what you treat” and productivity based plans (as described above), this limitation on physician compensation in relation to available funds is built in. (Under some productivity based plans, physician compensation is paid per work RVU, with the amount per work RVU calculated as benchmark salary divided by benchmark work RVUs. In this version, physician compensation is not tied to practice revenues and expenses, so there is a risk of obligating the practice to pay out more than is available to pay.) Under guaranteed and multifaceted plans, physician compensation expenses must be carefully budgeted. This requires that the guaranteed salary structure, including the guaranteed salary component of a multifaceted plan, must be adjusted so that total budgeted physician compensation is less than or equal to budgeted revenues less overhead expenses and budgeted profit/surplus. If guaranteed salaries are too great, there may be no funds to make incentive payments. In the worst case, guaranteed salaries alone may exceed the amount available to pay for physician compensation.

In general, to promote profitability as a primary goal of the practice, practice leadership needs to direct and induce providers to generate revenues and control expenses. If the practice feels a compensation plan with incentives is appropriate, the incentive(s) used should 1) correlate with revenue generation, and 2) not be linked to overutilization of practice resources. It has already been noted that charges and work RVUs incentivize overutilization of practice resources. The statistical research conducted for this study considered charges, work RVUs, volume (total CPT codes billed), and the number of unique patients seen in an attempt to identify a measure of
provider activity that correlates significantly with payments in an environment with both fee-for-service and capitated reimbursement. Since volume (total CPT codes billed) would also incentivize overutilization of practice resources, it was hoped that the number of unique patients seen would prove to correlate significantly with payments, since it was the only measure considered that does not incentivize overutilization.

**Statistical Analysis of Correlation between Reimbursement and Measurable Provider Activities**

Data were gathered on total payments, number of unique patients seen, charges, volume (total CPT codes billed), and work RVUs for ten consecutive fiscal years ending June 2015 of a department of internal medicine within an academic medical center (Table 1). This department has approximately 300 faculty and includes primary care and 12 secondary care subspecialties. Approximately 70% of revenue is on a discounted fee-for-service basis, and approximately 30% is capitated, with a small percentage of value-based (pay for performance) revenue.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total Payments</th>
<th># Unique Patients</th>
<th>Charges</th>
<th>Volume (CPT codes)</th>
<th>Work RVUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY15</td>
<td>111,595,420</td>
<td>138,367</td>
<td>299,293,294</td>
<td>1,901,306</td>
<td>915,093</td>
</tr>
<tr>
<td>FY14</td>
<td>105,030,076</td>
<td>132,443</td>
<td>288,934,607</td>
<td>1,879,713</td>
<td>888,239</td>
</tr>
<tr>
<td>FY13</td>
<td>93,498,591</td>
<td>128,549</td>
<td>264,511,291</td>
<td>1,901,853</td>
<td>861,688</td>
</tr>
<tr>
<td>FY12</td>
<td>91,579,072</td>
<td>126,153</td>
<td>248,357,277</td>
<td>1,676,865</td>
<td>834,677</td>
</tr>
<tr>
<td>FY11</td>
<td>89,433,167</td>
<td>121,350</td>
<td>231,379,801</td>
<td>1,565,321</td>
<td>795,071</td>
</tr>
<tr>
<td>FY10</td>
<td>90,005,596</td>
<td>122,068</td>
<td>233,866,721</td>
<td>1,575,604</td>
<td>823,895</td>
</tr>
<tr>
<td>FY09</td>
<td>89,248,237</td>
<td>119,434</td>
<td>219,185,267</td>
<td>1,512,806</td>
<td>795,411</td>
</tr>
<tr>
<td>FY08</td>
<td>85,848,917</td>
<td>120,331</td>
<td>215,611,555</td>
<td>1,661,081</td>
<td>790,559</td>
</tr>
<tr>
<td>FY07</td>
<td>84,380,036</td>
<td>120,943</td>
<td>211,017,041</td>
<td>1,722,497</td>
<td>749,361</td>
</tr>
<tr>
<td>FY06</td>
<td>79,233,211</td>
<td>117,104</td>
<td>196,342,220</td>
<td>1,601,197</td>
<td>662,074</td>
</tr>
</tbody>
</table>
Correlation analysis was performed, with the following results (Table 2):

<table>
<thead>
<tr>
<th></th>
<th>Total Payments</th>
<th># Unique Patients</th>
<th>Charges</th>
<th>Volume (CPT codes)</th>
<th>Work RVUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Payments</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># Unique Patients</td>
<td>0.96</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charges</td>
<td>0.97</td>
<td>0.98</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume (CPT codes)</td>
<td>0.71</td>
<td>0.85</td>
<td>0.80</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Work RVUs</td>
<td>0.91</td>
<td>0.88</td>
<td>0.93</td>
<td>0.65</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Charges had the highest correlation with total payments, at 0.97. Next was number of unique patients seen, at 0.96. These results were suggestive that the correlation between charges and total payments is statistically significant, as well as the correlation between number of unique patients seen and total payments. The highest correlation between any two variables was between charges and number of unique patients seen, at 0.98. This suggests that number of unique patients seen could be used as a proxy for charges.

Next, regression analysis was performed, treating total payments as the dependent variable and the other data items as independent variables. These were the results (Table 3):

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 3. Regression Statistics</td>
<td></td>
</tr>
<tr>
<td>Multiple R</td>
<td>0.999806917</td>
</tr>
<tr>
<td>R Square</td>
<td>0.999613871</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.83275414</td>
</tr>
<tr>
<td>Standard Error</td>
<td>2,344,966</td>
</tr>
<tr>
<td>Observations</td>
<td>10</td>
</tr>
</tbody>
</table>
Both charges and number of unique patients seen were statistically significant (p<.05).

The last step was to focus on the relationship between the number of unique patients seen and total payments. The following graph illustrates the results (Graph 1, Table 4):

Graph 1. Total Payments vs. Number of Unique Patients Seen
Table 4. RESIDUAL OUTPUT

<table>
<thead>
<tr>
<th>Observation</th>
<th>Predicted Total Payments</th>
<th>Residuals</th>
<th>% Residuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>102,318,011</td>
<td>9,277,409</td>
<td>9.07%</td>
</tr>
<tr>
<td>2</td>
<td>97,937,400</td>
<td>7,092,676</td>
<td>7.24%</td>
</tr>
<tr>
<td>3</td>
<td>95,057,911</td>
<td>(1,559,320)</td>
<td>-1.64%</td>
</tr>
<tr>
<td>4</td>
<td>93,286,145</td>
<td>(1,707,073)</td>
<td>-1.83%</td>
</tr>
<tr>
<td>5</td>
<td>89,734,478</td>
<td>(301,311)</td>
<td>-0.34%</td>
</tr>
<tr>
<td>6</td>
<td>90,265,417</td>
<td>(259,821)</td>
<td>-0.29%</td>
</tr>
<tr>
<td>7</td>
<td>88,317,657</td>
<td>930,580</td>
<td>1.05%</td>
</tr>
<tr>
<td>8</td>
<td>88,980,960</td>
<td>(3,132,043)</td>
<td>-3.52%</td>
</tr>
<tr>
<td>9</td>
<td>89,433,515</td>
<td>(5,053,479)</td>
<td>-5.65%</td>
</tr>
<tr>
<td>10</td>
<td>86,594,696</td>
<td>(7,361,485)</td>
<td>-8.50%</td>
</tr>
</tbody>
</table>

The close fit underscored the significance of number of unique patients seen in relation to revenue.

**Theoretical Correlation between Number of Unique Patients Seen and Payments**

Why would the number of unique patients seen show a close relationship with reimbursement?

Assuming that adding a new patient does not result in fewer services for existing patients, adding a new patient will bring in a certain amount of marginal revenue when reimbursement is on a fee-for-service basis. When a new patient is added whose payer has a capitated arrangement, the new
patient will bring in marginal revenue in the form of additional per member per month (PMPM) payments.

Will the number of unique patients seen continue to show a close relationship with reimbursement as a higher percentage of reimbursement is value-based (pay for performance)? Value-based reimbursement is applied as a percentage of overall reimbursement from a particular payer that is “held back” in anticipation of how well the practice meets goals for quality, outcomes, patient satisfaction, and/or cost savings to the payer. The amount of value-based reimbursement is a function of the amount of total reimbursement related to the contract of which it is a part. Since the number of unique patients seen logically correlates with total reimbursement, it will continue to be relevant as value-based reimbursement becomes a larger percentage.

**Physician Compensation Plan Design and Implementation Using Number of Unique Patients Seen**

As discussed above, the number of unique patients seen has been recognized as a relevant component of primary care physician compensation plans. Termed “panel size,” it is one generally accepted metric for how hard a primary care physician is working. The statistical analysis described above shows that the number of unique patients seen correlates significantly with revenue not only for primary care but also for secondary (specialty) care. Further, the secondary care subspecialties included in the research perform a combination of evaluation and management services (office visits and consults) and procedures. So by inference it can be argued that the number of unique patients seen will correlate with revenue for tertiary care as well, i.e., surgery.
In order to link physician compensation plans effectively with revenue generation when both fee-for-service and capitation methodologies are in place, the number of unique patients seen would be substituted for commonly used clinical productivity measures such as charges or work RVUs. In the statistical analysis above, it was noted that work RVUs did not correlate significantly with payments. Charges did correlate significantly with payments, but the number of unique patients seen correlated highly with charges, so could be used as a proxy for them.

Using the number of unique patients seen (in lieu of charges or work RVUs) would incentivize physicians to grow the practice, thereby enhancing revenues in general. Primary care providers would be incentivized to increase their panels. Secondary care providers would be incentivized to improve their access for referrals and their availability to provide consults. Tertiary providers would be incentivized to improve their access to those needing their services. All providers would be incentivized to provide services with greater time efficiency. To assure that the resulting increase in patient base and incentive for time efficiency would not be to the detriment of patient care, measures of quality, outcomes, and patient satisfaction should be used along with the number of unique patients seen, in a multifaceted plan. This would also reduce the incentive not to spend enough time or effort on new patients so that more new patients can be seen, or to skimp on follow-up care once new patients have been seen the first time.

When the use of the number of unique patients seen as a metric (in lieu of charges and work RVUs) is proposed, it would also be helpful to propose a guaranteed salary component as well, at least for the early phases of a new plan’s life. While it can be shown logically (and at least in this case demonstrated statistically) that when the number of unique patients seen grows, practice revenues grow, and charges and work RVUs should grow as well, secondary and tertiary care
providers will be uneasy with a metric previously used only for primary care, and all providers may be uncomfortable with a metric that has not been as thoroughly benchmarked as charges and work RVUs.

**Conclusion**

The research described above supports the existence of a close, statistically significant relationship between the number of unique patients seen and payments, in an environment combining both capitated and fee-for-service reimbursement. It was hypothesized that there is a measure of provider activity which correlates with payments in any payer environment. In this study, the number of unique patients seen turned out to be such a measure, along with charges. But, as mentioned, charges create the incentive for overutilization of practice resources, whereas the number of unique patients seen does not. Interestingly, in this study, work RVUs, which also incentivize overutilization, did not show a significant correlation with payments. Thus, of the four measures of provider activity considered, only number of unique patients seen met the criteria to link incentives to profitability: 1) correlation with payments, and 2) no link to overutilization of practice resources.

All things considered, however, substituting the number of unique patients seen for charges or work RVUs in physician compensation plans is an idea whose time has not yet come. As mentioned, this metric has been recognized to apply only to primary care. It has not been thoroughly benchmarked, especially in relation to secondary and tertiary care. Other statistical studies to encompass a much larger sample size and a much more diverse combination of medical
specialties will be needed to state with confidence the correlations (or lack thereof) between measures of provider activity and payments that were observed in the sample used for this study.

Finally, there is an underlying assumption to the use of the number of unique patients seen that can and will be challenged by providers. They will argue that for them to increase the number of unique patients seen, there has to be pent up demand, i.e., a pool of new patients waiting to be seen. They will argue that the number of unique patients seen is more a function of the practice’s marketing efforts than of how hard they are willing to work and how effectively they provide care. So practice leadership will need to demonstrate that if the effort is made to see new patients, there will be new patients to see.
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