

Paying Surgeons Less Can Cost More

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ees for physicians' services represent only a small component of total health care costs. Complementary costs (particularly hospital charges for surgical treatment) are a far more substantial portion of total costs, and may be 10 times larger than surgical fees. Because surgeons have considerable influence over the demand for surgery, and because the complementary costs do not cost the surgeon at all, marginally lowering surgeons' fees can, paradoxically, increase total health care costs, even if net payments to surgeons go down. This is because surgeons may respond to a decrease in their per-case reimbursements by performing more surgery to maintain their status-quo income. This phenomenon is known as physician income homeostasis.

A health care payer may benefit by paying surgeons more to perform tasks that do not have high associated costs, such as outpatient nonoperative care, research, or teaching. In this fashion, faced with declining surgical fees, the surgeon will maintain his or her income not by performing more expensive surgery, but rather by doing more nonoperative work.

Key words: Resource-based relative value unit (RBRVU); income homeostasis; health care cost control; physician reimbursements.

PHYSICIANS SET DEMAND FOR MEDICAL SERVICES

Physicians, as providers of medical care, play an unusually strong role in determining the quantity of demand for their work. In this respect, demand in the health care services industry is highly distinct from demand in most other service industries. This situation is made worse by the fact that consumers of medical services tend to be highly price insensitive. Patients' insensitivity to price is attributable largely to a lack of relevant expertise, but also to the cushioning effect of third-party payer systems.

Patients' decisions as consumers may also be strongly influenced by "visceral factors," because they are often weak or in pain at the time of decision-making.

COMPLEMENTARY COSTS CAN GROSSLY EXCEED DIRECT PHYSICIANS' FEES

Physicians have significant discretion and control not only over the demand for their services, but also demand for many complementary products. These include hospital beds, prescription medications, laboratory tests, and even the work of other practitioners serving as consultants. Just as patients may be insensitive to the cost of physicians' services because third parties pay the bill, physicians themselves may be inattentive to secondary costs for similar reasons. These costs are *externalities*—in other words, they are paid with other people's money. Still, such costs can be considerable, at times dwarfing the cost of the physician's direct effort.

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For example, each dollar that a surgeon earns performing a total hip replacement generates nearly \$10 of hospital charges alone.

PHYSICIANS MAY BE “INCOME TARGETERS”

Fortunately, most physicians are highly constrained by a sense of human and professional ethics that limits their willingness to excessively stimulate demand for their services. Nevertheless, clinical work is an inherently uncertain and ambiguous domain. This fact renders the task of finding a balance between doing too much medicine and doing too little a significant practical challenge. Within the boundaries of safe and acceptable practice, there is often considerable range for discretion and freedom of action. Accordingly, prodded by apt incentives, surgeons may increase the number of surgical cases they perform.

One such incentive to do more surgery can be small decreases in the amount surgeons are paid for each surgical case. Although microeconomic theory suggests that lower fees tend to lead to less effort (because one typically has increasing negative marginal utility for effort†), this may be offset by a highly sensitive diminishing marginal utility for wealth. Diminishing marginal utility for wealth means that the more dollars you have, the less each marginal dollar is worth to you, and *vice versa*. A wealthy person is typically less willing to strive to earn a given amount of money compared with someone with less wealth. Indeed, a starving person may be willing to work half a day for a sandwich. Thus a surgeon made ‘poorer’ by lower per-case payments may be willing to work additional hours, despite the lower unit fee.

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The balanced desires for both leisure and wealth combine to promote income homeostasis. According to this theory, doctors’ output is not governed by the marginal return on the last hour worked, but rather by an urge to create and maintain a given style of living. Below that level, doctors are very eager to work, because of the relatively high value they place on wealth at that point; above

it, they tend to value leisure more than money and would therefore tend to decline to work harder. This phenomenon is similar to status-quo bias effects observed in psychology and experimental economics. Accordingly, a physician faced with a marginal decline in income may perform additional services—increasing output despite a lower rate of pay—to keep income at the desired level.

NAÏVE COST CUTTING MEASURES CAN DRAMATICALLY INCREASE COSTS

So what happens when health care administrators myopically seek to marginally reduce fee reimbursements for physicians services? A simple microeconomic model would conclude that total health care costs should decrease. Such a model would suggest that this marginal cut in pay would drive down the physician output because of the lower rate of pay. Even a model that takes the next level of sophistication—one that recognizes the effect of income homeostasis—may still claim that costs have been reduced, citing greater efficiency; namely, that more physicians’ work will be done for the same total amount of spending.

But even this more sophisticated view is short-sighted. Specifically, it ignores the effect of complementary costs. The increased output of physician services stimulated from the lowered payments can result in substantial increases in such costs. Consider the example of hip replacement surgery. Let’s say Dr. Smith performs about 100 of these cases per year, collecting (at Medicare rates) approximately \$2,000 each, or \$200,000 in total. If the surgical fee were cut to \$1,000, Dr. Smith might try to double his workload to 200 cases (although in fact he may be able to increase his volume to only 150 operations‡). This, at first glance, seems like a financial windfall for the third-party payer. Even if volume were increased to 150 cases per year, total payments to Dr. Smith drop from \$200,000 to \$150,000. Moreover, the payer gets an additional 50 operations for free. However, this calculation ignores the increases in complementary spending. Such increases obliterate any ‘savings’ achieved from lower spending on professional fees. The additional 50 operations that Dr. Smith now performs—each with nearly \$20,000 in hospital costs—generates on the order of \$1,000,000 in new spending. This effect, on a national scale, is shown in Fig. 1.

SOLUTION: ENCOURAGE PHYSICIANS TO PERFORM LOW COST MULTIPLIER TASKS

The degree to which a given activity generates complementary costs can be stated by the *cost multiplier*: the

†“Increasing negative utility for effort” means that at a given rate of pay, for each hour you work, your desire to work an additional hour goes down: it is more aversive to work an extra hour if you are already working 90 hours a week than if you are working only 50 hours. Thus to urge a busy person to work more, you would typically have to increase their unit pay at the margin.

‡The surgeon, limited by medical, ethical, and logistical constraints, may not be able to find all of the patients needed to replace all of the lost income. As noted elsewhere,¹ spending is likely to go up even if only a scant fraction of the needed patients are found.

Total Spending Rises When Hip Replacement Fees are Cut

Baseline volume 100,000 cases, Surgical fee \$2,002 , Hospital charge \$18,199, Targeting Efficiency 50%

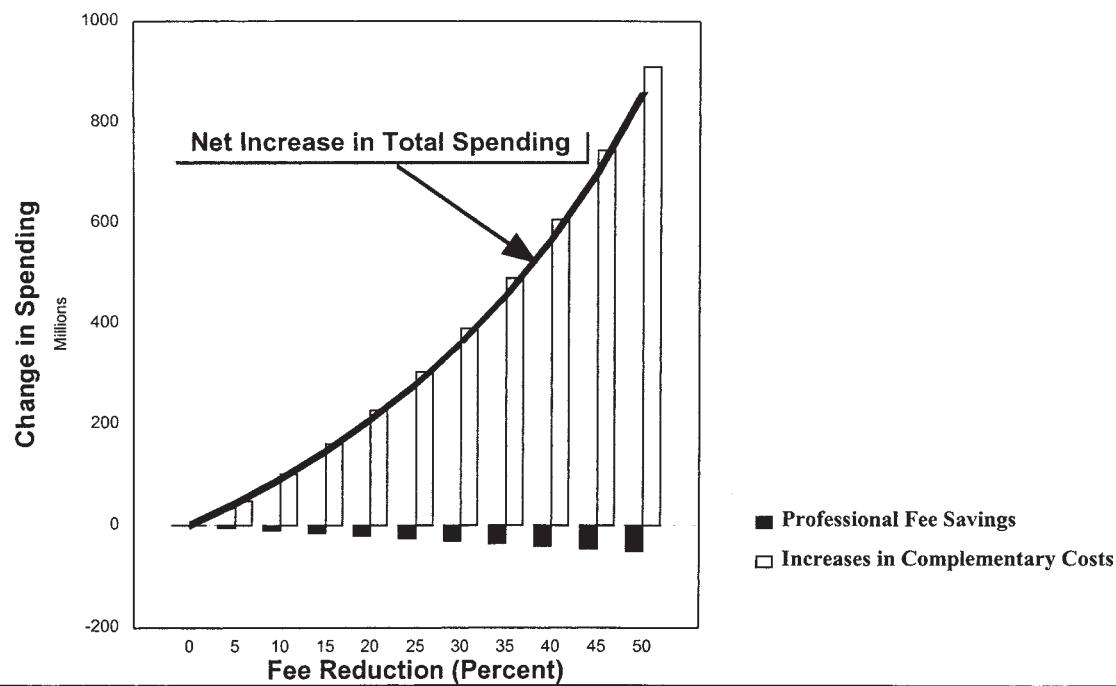


Figure 1. Costs go up as fees go down. In this figure, the change in total national spending for hip replacement surgery is shown as a function of the cut in professional fees. In this graph, it is assumed that surgeons will be able to increase their volume enough to replace only half of their lost income. Thus, a 10% cut in fees will lead to an increase of over 5,000 additional cases, which adds at least \$100,000,000 to the total spending for this procedure.

ratio of the hospital payment to the professional fee. Although not all costs are captured in the hospital expense, it provides a rough but useful estimate. Table 1 presents a small sample list of surgical procedures and their cost multipliers. As one can readily see, cost multipliers of sur-

gical procedures vary. These multipliers can vary between specialties and even between individual procedures within a given specialty. Nonoperative work typically has the lowest multiplier of all. Table 1 illustrates that the complementary cost effect is quite variable among various activities.

Table 1. Surgical Procedures Vary in Cost Multipliers.

Procedure	Physician Fee	Hospital Fee	Total Cost	Cost Multiplier
Total hip replacement	\$2,002	\$18,199	\$20,201	10.1
Open hysterectomy	\$1,073	\$9,429	\$10,502	9.8
Laparoscopic cholecystectomy	\$848	\$7,381	\$8,229	9.7
Total knee replacement	\$2,117	\$18,199	\$20,316	9.6
Laminectomy for decompression of lumbar nerve root	\$1,251	\$8,951	\$10,202	8.2
Transurethral resection of prostate	\$1,020	\$4,949	\$5,969	5.9
Cystourethroscopy	\$142	\$437	\$579	4.1
Endoscopy of upper gastrointestinal tract	\$199	\$325	\$524	2.6
Arthroscopy, knee, diagnostic	\$398	\$616	\$1,014	2.5
Colonoscopy, diagnostic	\$283	\$437	\$720	2.5
Carpal tunnel release	\$410	\$499	\$909	2.2

For each procedure listed in the first column, the Medicare physician payment is listed in the second and hospital payment in the third column. The right-most column lists the cost multiplier: the ratio of the total cost to the physician's fee. The larger the number, the greater the ancillary spending associated with the procedure. The multiplier for various procedures varies between specialty fields as well as within them. For many procedures, the hospital payment does not represent the total collection of ancillary charges, and thus the fourth column should be viewed as a conservative estimate. This was modified from Bernstein 1998¹ with permission.

Table 2. RBRV Units for Various Clinical Activities

Activity	CPT Code	RBRVUs
Follow-up inpatient consultation for an established patient, which requires a problem-focused interval history; a problem-focused examination; and straightforward medical decision-making	99263	0.42
Initial observation hospital care, per day, for the evaluation and management of a patient, which requires a detailed or comprehensive history; detailed or comprehensive examination; and straightforward medical decision-making	99218	1.28
Office outpatient visit for the evaluation and management of a new patient, which requires a detailed history; a detailed examination; and medical decision-making of moderate complexity	99204	2.00
Office consultation for a new or established patient, which requires a detailed history; a detailed examination; and medical decision-making of moderate complexity	99244	2.58
Open treatment of hip fracture with plate or screw type implant	27244	14.35
Total hip replacement	27130	18.68
Total knee replacement	27447	19.69
Vertebral corpectomy (vertebral body resection)	63306	30.01

RBRV Units for various clinical activities. As seen, the point value for the operative (high-multiplier) activity is substantially above that of "cognitive" tasks.

This gives policy makers the chance to maneuver—the fees for different activities can be subject to differing levels of change to render the least damage to the overall budget. So what should be cut?

According to the theory of income targeting, it is foolhardy—and expensive—to marginally cut the professional fee of high-multiplier tasks: the practitioner will simply respond by working more. Because the high-multiplier tasks have the gravest consequences regarding complementary costs, such a step will undoubtedly lead to increased overall spending.

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Perhaps, then, low-multiplier activity fees should be the ones subject to reduction? If the theory predicts that cutting a fee for a task leads to increasing output of that task, then such a cut will lead to an increase in relatively benign tasks. The increase in overall spending would be minimized. But that is not what income targeting predicts: all it says is that physicians will try to achieve income homeostasis—constancy of pay levels. If low-multiplier activities fees are cut, physicians will respond by increasing the output of *high-multiplier activities*, as well as increasing overall effort level.

Here we have a seemingly paradoxical situation: if high-multiplier activity fees are cut, high-multiplier activi-

ty will go up. Yet if low-multiplier activity fees are cut, high-multiplier activity will also go up! Actually, there is no paradox: physicians will try to achieve income homeostasis with minimal effort. When fees are cut, physicians will work more to offset the reduction in income. Because the *pay for high-multiplier activity tends to be higher than that of low-multiplier activity*, physicians will tend to replace the income lost from cuts in the low-multiplier activity by doing more lucrative high-multiplier activities.

CHANGING INCENTIVES CAN CHANGE BEHAVIOR

To create a system in which low-multiplier activity is encouraged, it is instructive to know why, if low-multiplier activities are also lower paying, do surgeons perform *any* of these activities at all? That is, to modulate incentives and generate new ones, it is important to understand the context in which the incentives operate.

We believe that there are a number of reasons why surgeons may engage in lower-paying, low-multiplier activity. First, surgeons may face professional, legal, and ethical constraints that require certain minimal levels of such activities. Such activities can therefore be viewed as a form of practice overhead. Additionally, they may find some low-multiplier tasks to be less fatiguing than high-multiplier tasks. These tasks may provide stimulating variety, and perhaps can be performed during "down-times" when performing additional (high-multiplier) surgeries would not be feasible. Finally, they may be rewarded over the long term for performing certain low-multiplier tasks, by

[§]We do note that some practitioners, cardiac surgeons for example, engage in little beyond high-multiplier activity. For them, the incentives to perform low-multiplier activity are outweighed by other considerations.

improving their reputation among patients or their standing at their hospitals. Such work might also be viewed as a form of good "organization citizenship behaviors" that could be pivotal in securing promotions, patient referrals, and other new professional opportunities.

Third-party payers may wish to encourage and stimulate these and other factors. Adopting new formulas for paying physicians may encourage behaviors that help check the rise in total expenditures. Indeed, changes have occurred already.

THE RBRVU SCALE FAVORS LOW-MULTIPLIER ACTIVITY—BUT NOT ENOUGH

The pay disparity between high- and low-multiplier activity has been noted by policy makers; in fact, such recognition affects new methods of physician compensation, such as the Resource-Based Relative Value Unit (RBRVU) scales. Such systems tend to reward "cognitive" (read: low-multiplier) activity at the expense of "interventional" (high-multiplier) activity. The problem with the RBRVU system, at least as currently configured, is that it does not go far enough. Increasing the pay for one type of activity and cutting the pay for another does not automatically cause wholesale substitution between the two. One must also ensure that the compensation for the favored activity actually exceeds the compensation of the less favored, or else there will be no such substitution. At current RBRVU levels, *which were established to reward low-multiplier activity*, the rewards for low-multiplier activity are still too paltry to effect changes in high-multiplier activity. Thus decreases in high-multiplier activity fees will stimulate more of that expensive work. This is seen in Table 2, which lists some RBRVUs for various medical tasks. We estimate that the hourly RBRVU scale still favors high-multiplier activity by at least a factor of two. Low-multiplier activity compensation must be increased to the point at which it becomes financially advantageous for the practitioner to perform such tasks at the expense of high-multiplier activity. The RBRVU scale does not reach that level.

We recognize that surgeons can make strong arguments why high-multiplier activity "deserves" to be paid at higher rates. These include the benefit to the patient; the demands of the work; and, perhaps, the hardship encountered to complete surgical training. All may be true. We note, merely, that if this pay differential is included in *marginal* compensation—as opposed to, say, a lump sum payment—in the face of declining fees, there will be strong incentives for surgeons to do more surgery, which in turn will drive complementary costs through the roof.

ALTERNATIVE APPROACHES

There are, of course, other approaches. One is to decrease surgical fees so drastically that the surgeon will

dramatically reduce output or perhaps refuse to perform *any* surgery at all. For example, if the fee for an operation that takes 5 hours to perform is reduced from \$5000 to \$50, one would have to have a very strong and sensitive marginal utility for wealth to be willing to expend 100 times as much effort per dollar under the new conditions. Such sensitivity would not be seen in practice. Alternatively, policy makers could simply (or not so simply) decide that increases in surgical volume will not be allowed. For example, if a surgeon performed 100 cases last year, then he or she would not be allowed to do any more surgeries this year. Most likely, such a rigid rationing scheme would be politically intolerable.

A third approach is to uncouple income levels and output levels. In such a system, doctors would be paid the same, regardless of how much work they did. This method is used by so called 'capitated' systems, which pay the doctor a given amount to care for a given number of patients—regardless of how much care is in fact given. Such a compensation system sets marginal compensation for surgery at zero (at least in the short term). Whereas this approach removes the incentives to do too much work (which thus limits total costs), it also provides incentives to do too little (perhaps harming the public health). This adverse effect can be balanced by reserving full payment to only those physicians who maintain suitably high levels of quality—presumably monitored by an appropriate peer review organization or by a professional medical auditing staff using well-defined and objective performance measures and standards.

In contemporary practice, capitation is used to compensate primary care practitioners. We contend that it may have greater applicability for high-multiplier practitioners, who need to be constrained the most. Without such structure, income homeostasis will drive surgeons to work more, and thus create demand for significant complementary goods and services. Paradoxically, the solution to the crisis of ever-increasing health care costs is to spend more—to pay doctors enough that they are not prodded to provide more and more care. A reimbursement system that sought to encourage substitution of high-multiplier activities would reduce effort spent on high-multiplier activities, thereby reducing output in these areas. It would achieve substantial cost savings by encouraging physicians to spend time and effort at other, low-multiplier tasks.

For example, a fee schedule might be more generous for low-multiplier operations, and less generous for

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high-multiplier operations. Further savings could be achieved by dramatically improving the compensation for non-patient-related services such as research and teaching. Indeed, such activities have a zero multiplier effect. And to the extent that this research and teaching effort is geared to efficient and less expensive care, it could have a negative multiplier effect in the long term.

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for complementary medical products and services. Enlightened self-interest may stimulate third-party payers to view physicians as allies in the battle against higher total spending. This perspective suggests capitation for surgical care, or higher surgeons' fees for nonoperative care. Furthermore, third party payers should realize that increased funding for non-patient-related services—like research and teaching—can save them money, even in the short term.

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CONCLUDING COMMENTS

Myopic attempts at cost cutting may result in a less efficient, more costly, and lower quality health care system. Professional fees represent less than 20% of all health care spending. Thus a cut in professional fees of, say, 10% could not reduce total costs by more than a meager 2% (by definition); yet it could be a force for dramatic increases in spending. All fee reductions must be examined in terms of total costs and in terms of the indirect effects on demand

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