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The Economics of Health Care Quality

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Abstract

In markets with limited third-party payment, providers tend to compete based on price and quality (e.g., cosmetic surgery, Lasik surgery, international medical tourism). Electronic medical records and electronic prescribing are also common (e.g., walk-in clinics, telephone consulting, and concierge practice.)

In third-party payer markets with rationing by waiting, (e.g., most primary care), however, providers have little incentive to increase quality. If supply exceeds demand (e.g., much hospital care), provider competition in amenities is more likely.

Policy implications: encouraging price competition is likely to produce quality competition as well (e.g., value-based health insurance with reference pricing, Health Savings Accounts, etc.)

The Economics of Health Care Quality

Go to the web site of the Detroit Medical Center (DMC)¹ and one of the first things that is likely to catch your eye is an estimate of the waiting times at each of its four emergency rooms. If that is not convenient, you can text message to get regular updates.

You will also learn that DMC facilities rank among the "nation's best hospitals" by *U.S. News & World Report* and that they have won other awards. The DMC has some of the "best" heart doctors; it is "tops" in cancer care; and it ranks among the "nation's safest hospitals." Three of its hospitals, for example, meet Leapfrog standards (only one other Michigan hospital system does so, you will be told) and two have received Leapfrog's "top hospital" award (no other Michigan hospital, the site says, made the list). The DMC also boasts that it minimizes errors through a 100-percent computerized doctor medication order system and that it is the only entity in southeast Michigan that can make this claim.

Lest you doubt that the Detroit Medical Center is competing for patients based on quality, the site informs you that the DMC "is dedicated to staying ahead of the crowd when it comes to the

quality of our care." A link to the Leapfrog website allows patients to compare quality metrics at Detroit-area hospitals² and the language at the DMC site clearly implies you're risking your life if you patronize a competitor. "If you want a hospital with walking trails or a day spa, go someplace else," the site advises. "Just don't expect the latest in patient safety technology. Because 100-percent medication scanning is only at DMC."

Several questions naturally arise. Why aren't more U.S. hospitals competing for patients in the same way the DMC does? Why isn't the DMC competing even more aggressively? Some hospitals in India, Thailand and Singapore, for example, disclose their infection, mortality and readmission rates and compare them to such U.S. entities as the Cleveland Clinic and the Mayo Clinic.³ Clearly the DMC is competing on the time price of care. It even has a 72 hour guarantee on MRI scans (yes, they're available on Saturdays and Sundays). But why doesn't it also compete on the money price of care by posting fees patients can expect to pay?

We believe that some of the answers to these and other questions can be discovered by using some basic tools of economics.

Characteristics of Health Care

Think of health care as having three dimensions: a quantity dimension (e.g., the units of service third-party payers typically pay for, such as office visits, diagnostic tests, etc.), a quality dimension (e.g., such factors as lower infection, mortality, and readmission rates, etc.) and an amenities dimension. By increasing the quality of care and the amenities surrounding that care, providers will make their basic services more attractive to patients, provided they have an incentive to do so.

As in the market for other goods and services, people pay for care with both time and money. What makes health care unusual, is that for most patients, in most circumstances, the time price of care is higher (is a greater burden for the patient) than the money price of care - since third-party payers pay all or almost all of the provider's fee. For primary care, emergency room care, ancillary services and increasingly for many traditional hospital services, time is the principal "currency" patients use to purchase health care the United States, just as it is in other developed countries.

One of the reasons the market for health care is so perplexing is that the two currencies (time and money) and the

three supply-side variables (quantity, quality and amenities) interact in complicated ways.

Market Equilibrium

In a third-party payment system, the provider's fee, including the money price paid by the patient, tends to be set by an entity outside the doctor-patient relationship. For a given unit of service and a given total fee, that leaves a time price, quality and amenities. Of these three variables, however, only two are typically visible or inferable. The quality variable is normally hidden. As patients respond to what is visible and move back and forth among providers, there will be a tendency toward uniform wait times and uniform amenities. (Think of these as the market clearing time price and the market clearing level of amenities.) Or, if there is a trade-off between waiting and amenities, the rate of substitution will tend to be uniform.

There are no natural equilibrating forces bringing about uniform quality of care, however. As long as quality differences remain invisible, they can persist without affecting the patients' demand for care. This is consistent with the findings that the quality of care varies considerably from provider to provider and facility to facility,⁴ as well as the discovery that variations in the quality of care delivered are

unrelated to the kind of insurance people have or even whether they are insured at all.⁵ (Note, however, that most measures of quality are measures of inputs, not outputs; that at least one study finds there is little relationship between these inputs and such outputs as reduced mortality;⁶ and some have questioned whether even hospital mortality rates are reliable indicators of quality.⁷

Lack of quality competition is in part the result of certain characteristics of health care quality. What we call "core quality" is not a variable at all. It is the result of other decisions made by the providers. Since the vagaries of medical practice are many and since the decision calculus of doctors will often differ, this allows for considerable quality differences. Beyond this core level, quality improvement is a decision variable and improvements are costly. However, since it is difficult and costly for patients to secure quality data on their own, information about quality typically comes only from the providers. Moreover, a provider's incentives to communicate quality information to patients are asymmetrical. Since quality improvements do not increase the demand for care unless they are communicated, quality improvement and patient communication about quality can be expected to go hand-in-hand. Conversely,

the provider will almost never have a reason to tell patients about (cost-saving) quality degradation.

Market Structure

Uniform quality of care, therefore, can be expected only if there is competition based on quality and that will not happen unless communications about quality improvements are able to shift demand (and, therefore, revenue), sufficient to pay for those improvements. Whether this happens depends in part upon the structure of the market.

Health markets without third-party payers. In those health care markets where third-party payment is non-existent or relatively unimportant, providers almost always compete for patients based on price. Where there is price competition, transparency is almost never a problem. Not only are prices posted (e.g. walk-in clinics, surgi-centers, etc.), they are often package prices, covering all aspects of care (e.g. cosmetic surgery, Lasik surgery, etc.), and therefore easy for patients to understand.

Wherever there is price competition, there also tends to be quality competition. In the market for Lasik surgery, for example, patients can choose traditional Lasik or more advanced custom Wavefront Lasik. Prices range from less than \$1,000 to

more than \$3,000 per eye.⁸ As noted, in international medical tourism there are even market comparisons of outcome data with U.S. hospital systems.³ Even when providers do not explicitly advertise their quality standards, price competition tends to force product standardization (the "quantity" variable) and reduced variance is often synonymous with quality improvement.

Rx.com, for example, initiated the mail order pharmacy business, competing on price with local pharmacies by creating a national market for drugs. Industry sources maintain that mail-order pharmacies have many fewer dispensing errors than conventional pharmacies.⁹ Walk-in clinics, staffed by nurses following computerized protocols score better on quality metrics than traditional office-based, doctor care and have a much lower variance.¹⁰

In general, medical services for cash-paying patients have popped up in numerous market niches - where third-party payment has left needs unmet. It is surprising how often they offer the very quality enhancements that critics complain are missing in traditional medical care. Electronic medical records and electronic prescribing, for example, are standard fare for walk-in clinics, concierge doctors, telephone and e-mail consultation services, and in medical tourist facilities in other countries.¹¹ Twenty-four/seven primary care is also a feature of concierge

medicine and the various telephone and e-mail consultation services.

Competition in the provision of amenities is also common in the niche markets. Cancer Treatment Centers of America takes third-party payment, but its patients usually have to travel some distance to get to the CTCA facilities - at both inconvenience and expense. To attract them, CTCA goes to great lengths to ensure the comfort of its patients and facilitates the needs of accompanying family members - offering services similar to what medical tourist facilities offer in other countries (CTCA also posts its cancer survival rates).¹¹

In general, providers who compete on price are competing to lower the money price of care. Where this occurs, they tend to compete to lower the time price as well (hence the term "Minute Clinic"). Teladoc promotes its services by publishing the response times (a doctor's return call) for its clients. Most concierge doctors promise same-day or next day appointments. Some diagnostic testing services make the test results available to patients online within 24 to 48 hours.¹²

In general, these markets do not appear to be fundamentally different from non-health care markets. Competition tends to produce more uniformity of fees and waiting times than would otherwise be the case. Similarly, quality competition also tends

to produce either uniform quality or a uniform trade-off between money prices and quality.

Health markets with third-party payment and restricted supply. Now, imagine a health market where supply is restricted and where demand exceeds supply at a zero (or minimal) money price – both for the market as a whole and for individual providers. Under these conditions, which roughly describes most primary care practice, the provider's time will tend to be rationed by waiting. Improvement in the quality of care (if perceived or communicated) will potentially increase demand – maybe even attracting new patients. However, the increased demand will be initially reflected in increased waiting (higher time price), which in turn will cause some of the initial group of patients to see the doctor less often. On the other hand, a decrease in quality of care (again if perceived or communicated) will diminish demand and lead to shorter waits (a lower time price), thus inducing some of the remaining patients to see the doctor more often.

But since the doctor's time is already fully utilized, and since the fee is fixed, in neither circumstance will the physician's revenue be much affected. The same principle applies to amenities. In the face of rationing by waiting, amenity

improvements will not in general increase the provider's income, and amenity degradation will not in general decrease it.

So in comparing two practices – one which predominantly relies on price rationing to clear the market and one which relies on rationing by waiting, we would expect both amenities and quality of care to be higher in the former than in the latter.

Health markets with third-party payment and unrestricted supply. Unlike the market for physician care, in most places the hospital market is characterized by relative freedom of entry. How the hospital competes is likely to be influenced by the type of third-party payment it receives. With mainly Medicaid patients whose reimbursement rates barely cover the cost of care, the hospital's incentive is to keep its rooms fully booked and avoid excess capacity. Under these circumstances, there will be little incentive to improve the quality of care or the amenities surrounding that care. Rep. Bill Cassidy (R-La.), for example, has described his experiences at a Louisiana hospital that typically puts four patients to a ward and provides only the barest of amenities.¹³

On the other hand, hospitals with predominately privately insured patients may find that third-party reimbursement rates more than cover the cost of care. These facilities can afford

to have excess inventory (empty beds) - so that supply exceeds demand. Unable to compete for patients by lowering money prices and with time prices bumping up against a minimum constraint, providers have an incentive to compete by providing higher quality and more amenities. How will they respond?

Some of the literature on hospital economics suggests that quality improvement is quite expensive,¹⁴ and that dollar-for-dollar amenity improvements will increase hospital revenues by more than quality improvement.¹⁵ This is coupled with surveys that find patients more sensitive to amenity changes than to quality changes.¹⁶ (Of course, this latter finding may only reflect the fact that hospitals aren't really trying to communicate quality information.)

These observations suggest that in vying for additional patients hospitals have an incentive to invest more in amenity changes than in quality changes; and this appears to be what hospitals do.

Reverse Medical Tourism

In the international tourism market, quality is almost always a factor when people travel for their care. And when people travel for their care, cost often is also a factor - either because the patient is paying the entire bill out of

pocket or because the patient and a third-party insurer have an arrangement that allows both to profit from the travel. More generally, we have seen that price and quality competition tend to complement each other.

Is it possible to replicate this experience in the domestic hospital marketplace? Even without a major policy change, developments are under way. By one estimate 430,000 non-residents a year enter the United States for medical care.¹⁷ Some Canadian firms are even able to obtain package prices for Canadians seeking medical care at U.S. hospitals.¹⁸

Moreover, you do not have to be a foreigner to benefit from domestic medical tourism. Colorado-based HealthBridge International offers U.S. employer plans a specialty network with flat fees for surgeries paid in advance that are 15 percent to 50 percent less than a typical network. North American Surgery, Inc., has negotiated deep discounts with 22 surgery centers, hospitals and clinics across the United States as an alternative to foreign travel for low-cost surgeries. The "cash" price for a hip replacement in the network is \$16,000 to \$19,000, making it competitive with facilities in India and Singapore.¹⁹

One reason why so little is known about the domestic medical tourism market is that hospitals prefer that most of

their patients not know about it. The reason: they are often offering the traveling patient package prices and lower prices not available to local patients. That occurs because the hospital is only competing on price for the patients who travel. If traveling patients begin to make up a large percent of a hospital's caseload, however, medical tourism has the potential to change the hospital's entire business plan.

This may be part of the explanation for Detroit Medical Center's emphasis on quality competition. The DMC is apparently competing for traveling patients - both internationally and within the United States. It draws about 300 international patients a year. For robotic prostate cancer surgery, it has attracted 600 patients from 50 states and 22 countries.²⁰ Although DMC's website does not post prices, if you are an international patient, you are promised "cost estimates" and "package pricing." They also advertise the availability of rooms and suites for family members on campus, their willingness to book rooms for you at area hotels and free parking and other amenities.

Furthermore, it may be no accident that such facilities as the Cleveland Clinic and the Mayo Clinic also attract large numbers of patients who travel. High quality care and medical tourism seem to go hand in hand.

Conclusion

A major reason why health care quality varies is because of the third party payment system. Four critical aspects of health care delivery are interrelated: the underlying cost of care, wait times, amenities and quality. Those four aspects are rivals for managers' attention and organizational resources. In competitive markets, they will tend to be brought into an equilibrium reflecting their value to the consumer. In health care markets the lack of price competition at the patient level, leads to greater quality variation than would occur otherwise. This finding is consistent with the observed characteristics of markets with little out-of-pocket payment and has important policy implications.

In general, any move to promote price competition will probably promote quality competition indirectly. Insurance arrangements that encourage patients to travel to take advantage of low prices and higher quality are a positive step. At a minimum, public policies should not discourage such arrangements.

What many refer to as "reference pricing"²¹ and what we have elsewhere called "the casualty model of health insurance"²² are also a step in the right direction. Under this approach, the insurance plan agrees, say, to pay the full cost of a procedure

at a low-cost, high-quality facility. Patients are free to go elsewhere, but they must pay additional fees out of pocket. With patients paying the marginal cost of their care - even for expensive procedures - providers would have an incentive to compete on price.

In general, any vehicle that empowers patients and gives them control over marginal health care dollars will spur price competition. The Cash and Counseling pilot programs in Medicaid are an example.²³ Similar empowerment programs are underway in other countries.²⁴ We have proposed giving chronic patients a budget to manage for whole categories of care in the United States.²⁵ For smaller-dollar services, more extensive use of Health Savings Accounts, Health Reimbursement Arrangements and Flexible Spending Accounts would also stimulate price competition.

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