Time, Money and the Market for Drugs[1]

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I. Introduction

Americans spent about $275 billion a year on prescription drugs in 2006.[2] When over-the-counter remedies are added the total of legally purchased chemical entities climbs to nearly $300 billion. Although the expense is a small part of our nation's $2.1 trillion health care bill, the dollars involved are substantial, amounting to more than $2,600 per household per year.[3]

Given the enormity of it all, one would expect a robust, well-functioning market for drugs, especially those that are consumed by large numbers of people. In fact, what we find is a market with many anomalies. Consider that:

- Millions of Americans who did not even have arthritis took such arthritic pain relief medicines as Vioxx and Bextra (since removed from the market) and Celebrex (still on the market) when less risky, less expensive over-the-counter remedies would have been more appropriate.[4] The fact that these drugs require a doctor's prescription suggests that millions of patients were getting poor advice from their physicians.[5]
- While Americans over-consume some drugs, such as Ritalin and antibiotics (and in the later case degrade the effectiveness of the

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drugs for society as a whole), we under-consume other drugs. In fact, for such conditions as diabetics, hypertension, asthma, obesity and high cholesterol, our use of effective drug therapies appears to be a small fraction of what it should be (Kleinke, 2004).

- While there has been a rising chorus of complaints in recent years over the high cost of prescription drugs, the vast majority of patients overpay for their drugs—in part because they fail to employ shopping techniques they routinely use when they purchase other goods and services and in part because they do not even know about therapeutic or generic substitutes (Herrick, 2004a).
- Whereas lawyers and other professionals routinely communicate with their clients by phone and by email, it is very rare for physicians to communicate with patients that way—even for routine prescriptions (Liebhaber & Grossman, 2006).[6]
- Whereas the computer is ubiquitous in our society and studies show that electronic medical records systems have the capacity to improve quality and greatly reduce medical errors (including 200,000 adverse drug events), no more than one in five physicians or one in four hospitals have such systems (Hillestad, 2005).
- Despite the fact that many new drug therapies are less expensive and more effective than competing therapies, many health insurance plans (especially Medicaid and Medicare) do not cover them.
- Whereas lawyers routinely advertise in search of former Vioxx users who can serve as plaintiffs in lawsuits against drug manufacturers, doctors and doctor groups almost never advertise to attract patients with arthritis or, for that matter, any other chronic illness.

Interestingly, virtually all of these features of our health care system are the direct result of the way in which we pay for health care, especially the way we pay doctors. That is, we compensate physicians in ways that are different from the way we pay for other professional services and those differences create problems in the medical marketplace that do not arise in other markets. The principal payment methods, moreover, are not the natural result of free market forces. They are instead the product of distortions created by public policies. And in most cases, mistakes embedded in the public policies and in the payment mechanisms reflect a failure to understand the economics of time.

II. Time as a Rationing Device

Many Europeans believe that in America health is rationed by price, whereas in Europe it is generally made available for free. In fact, health care is almost as free at the point of consumption in America as it is in Europe.

On the average, every time Americans spend a dollar on physicians' services, only 10 cents is paid out-of-pocket; the remainder is paid by a third party (an employer, insurance company or government) (CMS, 2006). From a purely economic perspective, then, our incentive is to consume these services until their value to us is only 10 cents on the dollar. Moreover, millions of Americans do not even pay the 10 cents. Medicaid enrollees, Medicare enrollees who have medigap insurance, and people who get free care from community health centers and hospital emergency rooms pay nothing at the point of service. Most members of HMOs and PPOs make only a modest copayment for primary care services. Clearly we are not rationing health care on the basis of price.

But if not price rationing, how do we ration physicians' services? We ration the same way other developed countries ration care. We force people to pay for care with their time.

The services of physicians are a scarce resource and a valuable resource. So at a price of zero (or at a very low out-of-pocket price) the demand for these services far exceeds supply. Unable to bring supply and demand into balance with money prices, our system does that next best thing. We ration by waiting.

Like money, time is valuable. So the higher the time cost to patients, the lower will be the demand for physicians' services. If we think of market wages as a proxy for the opportunity cost of time (the next best use of time), then the cost of an hour of time is higher for a high-income patient than a low-income patient. Accordingly, in high-income areas shorter waiting times will be needed to ration the same amount of care than in low-income areas. The longest waiting times of all will tend to be in inner-city hospital emergency rooms, where the money price is usually zero and people have a very low opportunity cost of time.

Some may object that the real demand for physicians' services is not determined by time or money but by the amount of sickness in society. Yet this view is surely wrong.[7] Consider that 12 billion times a year Americans purchase over-the-counter (OTC) drugs and suppose that on their way to these acts of self-medication all of the purchasers stopped to get professional advice. To meet that demand, we would need 25

times the number of primary care physicians we currently have (Rottenberg, 1990, pp. 27-28)!

Now suppose that instead of physically going to a doctor's office, purchasers of OTC drugs could get professional advice by means of telephone or email. The same problem would arise. The demand for advice would far exceed the ability of physicians to supply it.

In general, patients cannot have the best of both worlds. If they communicate with doctors the way they communicate with lawyers, they will have to be charged money prices for the use of the doctor's time (the way they pay legal fees). Health care cannot be both easily accessible and free. It must be one or the other. Waiting is not an accidental by-product of modern health care delivery. It is an essential ingredient.

Forcing patients to pay for health care with their time is not the only form of non-price rationing. An alternative is to reduce demand through quality degradation. The classic example is the "Medicaid mill," where patients spend very little time with physicians and receive very little health care. Instead, the doctor-patient contact is a legal necessity in order for the patient to acquire a prescription or such devices as syringes and asthma inhalers—all of which can be resold on the street (Passley, Brodt, & Jones, 1993; Levy & Luo, 2005).

There is also evidence that physicians have responded to Medicare's attempts to ratchet down their fees by reducing nonprice amenities, spending less time with patients and scheduling more follow up visits (Herrick, 2002; Hawryluk, 2002). On the whole, however, it appears that most physicians prefer to reduce nonhealth amenities and lower the quality of care only very reluctantly.

We know that when price has been artificially constrained in other markets, quality can be observed to change in order to equate supply and demand. Before airline fares were deregulated, the Civil Aeronautics Board kept prices artificially high—thus creating excess supply. Unable to attract customers by lowering prices, the airlines responded with such quality improvements as more frequently scheduled flights, more seat space and other amenities (Dolan & Goodman, 1995). Rent control laws, by contrast, lead to excess demand. Unable to raise rents, landlords find that they can spend less on maintenance and allow other quality deterioration and still lease their housing units (Tucker, 1990).

Why don't we see more quality deterioration in medicine? It may be that professional ethics, professional pride or perhaps the threat of malpractice litigation prevents doctors from doing things that are clearly in

their financial self-interest. Unfortunately, these same motivations do not seem to work in the opposite direction, however. As we shall see, there are major quality improvements that are not being made because they are not in the physician's financial self-interest.

There is nothing normal or natural about rationing by waiting. The exterior offices of lawyers, accountants, architects and other professionals are called "reception areas," not "waiting rooms," and very little waiting actually goes on. The reason: waiting is a wasteful way to allocate resources. In markets for other goods and services, the consumer's cost is typically the producer/seller's income. But when people pay for goods with their time, their waiting cost is not someone else's income. It is a net social loss.

To try a back-of-the-envelope calculation, let us assume that a roundtrip doctor visit (door-step to door-step) takes about 1-1/2 hours. Assuming an hourly wage of $20 and five doctor visits per person per year, the annual cost of waiting for the country as a whole is close to $45 billion. That sum of money, judiciously spent, could insure every (long-term) uninsured person in America.

Rationing by waiting is not only socially wasteful, it is a poor way of delivering health care. Under such a system, there is no way to insure that those who need care the most get it first, or even get care at all (Goodman, Musgrave, & Herrick, 2004). Human resource experts estimate that one-quarter of physicians visits are for conditions that patients could easily treat themselves (Powell, 2003). Balanced against these "unnecessary" visits are all of the potential visitors who choose not to seek care. Undoubtedly, many of those are "necessary" but unrealized visits; and, hence, the patients go without professional treatment.

The fact that patients cannot consult with physicians by telephone or email leads to two bad consequences. First, the unnecessary visitors (say, patients who have a cold) expect at least a prescription in return for their investment of waiting time and all too often the drug will be an antibiotic. For physicians, these prescriptions may be thought of as a convenient way of maintaining a patient clientele (Soumerai & Lipton, 1995). Were telephone consultations possible, the physician would more likely recommend an OTC remedy, thus avoiding the cost of waiting for the patient and the cost of degrading the effectiveness of antibiotics for society as a whole.

The second bad consequence is that rationing by waiting imposes disproportionate costs on patients who need more frequent contact with physicians. Because the chronically ill need more interactions with their

doctors, they face above-average waiting costs. This may be one reason why so many are not getting the one thing they most need from primary physicians and the thing that is most likely to prevent more serious and costly health problems later on—a prescription. Kleinke (2004) estimates that:

- If the National Heart, Living and Blood Institute (NHLBI) guidelines were followed, the number of Americans receiving drug therapy for hypertension would more than double—rising from 20 million to 43 million.
- If NHLBI guidelines were followed for asthma patients, the number of asthma medications would increase from two-fold to ten-fold.
- If the guidelines were followed for the treatment of obesity, the number of Americans treated with drugs for obesity would be 12 times the current number.
- If the guidelines were followed for the treatment of high cholesterol levels, the number of Americans taking statin drugs (such as Lipitor) would be 10 to 15 times its current level (Kleinke, 2004, p. 37).

The ability to consult with doctors by telephone or email could be a boon to the chronically ill. Face-to-face meetings with physicians would be infrequent, especially if patients learned how to monitor their conditions and manage their own care. Remote consultations could be used to change a drug prescription or determine whether an office visit was needed.

So why don't we see physician entrepreneurs exploiting the opportunity to meet the unmet needs of the chronically ill? The reason: under current payment practices physicians would be financially worse off if they tried to do so.

III. The Failure to Use Time as a Reimbursement Device

In the United States, there is probably a conference being held on some aspect of health care every week. At the many conferences organized and attended by third-party payers, a recurring topic is: how can we get doctors to change what they are doing? The irony is that doctors in general do what third-party payers pay them to do. If we want to change doctor behavior, we must start by changing third-party payer behavior.

Lawyers are typically paid hourly fees and the fee is the same regardless of how the hour is spent. That is as it should be. Suppose it were

not so. Suppose a lawyer got paid $200 an hour for preparation and delivery of jury summations but only $10 an hour for jury selection. Clients would tend to get great summations of their cases, all presented to the wrong set of jurors.

If you are a client, you want your lawyer to allocate her time so that the last hour spent on any one aspect of your case contributes just as much to a legal victory as the last hour spent on any other aspect of your case. Only if your lawyer's time is allocated that way will you maximize the probability of success for a given input of time. To make sure that the attorney's incentives are to do just that, every hour of the attorney's time must be compensated at the same rate.

Unfortunately, this common sense principle is routinely ignored in medicine. It is ignored by the federal government in Medicare, by state governments in Medicaid and by almost all private payers as well. In general, fee-for-systems pay doctors different fees for different services. So, for example, a physician may get paid at one rate for a hour spent on task A, a lower rate for an hour spent on task B, and perhaps nothing at all for an hour spent on task C—even though C may be better for the patient than either A or B.

Why do doctors avoid telephone and email consultations? The short answer is: they do not get paid for these types of consultations (Herrick, 2007).[9] Medicare does not pay for these types of consultations, nor does Medicaid or most private insurance. In general, doctors only get paid to see patients in their offices. Doctors paid under capitation arrangement would seem to have different incentives. But, as discussed below, HMO doctors ration their time by waiting as well.

Why are most medical records still stored on paper? Why aren't they instead stored electronically, where they can be used to coordinate care, measure quality and reduce medical errors? Again, the short answer is: there is no financial incentive to do these things. For the most part, we collect, manage and distribute most medical information by means of "pen, paper, telephone, fax and Post-it note" because doctors cannot get compensated for making an investment in computer technology (Kleinke, 2005). Even those who argue that computerized systems are potentially profitable admit that all the benefits of quality improvement redound not to the doctor, but to patients and insurance companies (Miller, West, Brown, Sim, & Ganchoff, 2005).

Why do doctors so often prescribe brand name drugs and fail to tell patients about generic, therapeutic and over-the-counter substitutes? Why do they typically not know the price of the drugs they prescribe or

the costs of alternatives? The short answer is: they do not get paid to know these things.

Learning about drug prices is not a simple exercise. As explained below, there is a national market for drugs, and prices vary radically. Knowing the current best price, knowing where the patient can obtain that price, and knowing all the prices and availabilities of all the alternatives is demanding and time consuming. Moreover, for the doctor it is time that is not compensated.

A related question is: why do doctors not spend more time helping their patients find the most appropriate drug therapy? Before it was removed from the market, most of the patients taking Vioxx did not have arthritis and were taking an inappropriate pain remedy. Further, the best predictor of whether a patient was taking Vioxx was whether a third-party payer was paying the bill (Doshi, Brandt, & Stuart, 2004). As noted, we can infer that a lot of patients were getting a lot of bad advice. Unfortunately, the doctor's incentives are to practice medicine the way other doctors practice medicine and patients are unlikely to ask many questions if someone else is paying the bill.

What about entrepreneurship? Could a physician gain a competitive advantage by being better informed about drug therapies and their appropriateness and their prices? Probably. But the real question is not whether these additional patient-pleasing services would attract more patients; it is whether these activities would increase the physician's income. Time spent researching drugs is time not spent with patients. In the language of other professions, these are "non-billable hours." Further, time spent on these activities is time not spent on activities that are billable. All too often, the incentives are to avoid uses of time that are not compensated.

One consequence of rationing by waiting is that the time of the primary care physician is usually fully booked, unless she is starting a new practice or working in a rural area. This means that almost all the physician's hours are spent on billable activities. Further, there is very little incentive to compete for patients the way other professionals compete for clients. The reason: neither the loss of existing patients nor a gain of new patients would affect the doctor's income very much. Loss of existing patients for example, would tend to reduce the average waiting time for the remaining patients. But with shorter waiting times, those patients would be encouraged to make more visits. Conversely, a gain of new patients would tend to lengthen waiting times, causing some patients to reduce their number of visits. Because time, not money, is the

currency we use to pay for care, the physician doesn't benefit (very much) from patient pleasing improvements and is not harmed (very much) by an increase in patient irritations.

This insight may explain why doctors in some areas now refuse to take any new Medicare patients.[10] Assuming that retirees have a lower opportunity cost of time, odds are they are willing to out-wait the nonelderly patients. And since Medicare pays at a lower rate than private insurance, such crowding out actually lowers the physician's income. Medicaid typically pays even less than Medicare and since Medicaid patients also tend to have a lower-than-average opportunity cost of time, small wonder that many doctors refuse to see any new Medicaid patients.[11]

The special characteristics of a market in which services are rationed by time may help explain another phenomenon: Why does the atmosphere of a typical doctor's office more resemble a Department of Motor Vehicles than a typical private sector firm? In one recent survey, only 38 percent of people in telephone contact with their physicians office, (e.g. to make an appointment or renew a prescription) said they were treated courteously.[12] This is an amazing statistic. It is doubtful that a for-profit firm could survive in any other competitive market if more than half its customers were not treated courteously.

The treatment of the chronically ill is especially interesting in this context, since in almost all cases optimal treatment involves drug therapies. Numerous studies have shown that chronic patients can manage their own care, with lower costs and as good or better health outcomes than with traditional care. Diabetics, for example, can monitor their own glucose level, alter their medication when needed and reduce the number of trips they make to hospital emergency rooms (Benjamin, 2002).[13] Similarly, asthmatics can monitor their peak airflow, adjust their medications and also reduce the need for physician and emergency room services.[14]

The problem is: to take full advantage of these opportunities, patients need training; and they rarely get such training. An emergency room doctor can save herself and future doctors the necessity of a lot of future emergency room care if she takes the time to educate the mother of a diabetic or asthmatic child about how to monitor and manage the child's health care. But time spent on such education again, is not billable. And since activities that reduce emergency room visits eventually will probably lower overall future doctor incomes, there is no economic incentive to engage in them.

Further, if primary care physicians attempted to specialize in the treatment of the chronically ill they would likely attract a preponderance of "hard" cases. This would not be a problem if they were compensated by the amount of time they spend on each case. But since they typically are compensated based on procedures, rather than time, they lose money on hard cases (which take more time) and try to make up for the losses with the gains from the easy cases (which take less time). Thus, physicians who attract an above-average number of difficult-to-treat cases will experience a reduction in their hourly income.

Would physicians practice medicine differently if they were paid differently? There is ample evidence that the answer is: yes. Surprisingly, however, the predominant forms of compensation currently used throughout the developed world do not seem to matter very much.

Consider general practitioners working in four different settings: (1) a U.S. HMO, (2) Britain's National Health Service, (3) Canada's Medicare, and (4) U.S. private practice. Since the first two arrangements are capitated, physicians get no extra income for an additional visit. Since the last two are fee-for-service, physicians in these systems get extra income for additional visits. Despite these very different sets of incentives, HMO and fee-for-service doctors in the United States have very similar practice patterns—at least in terms of the time spent with patients.[15] And the practices of Canadian and British doctors are more similar to each other than to their capitated and fee-for-service counterparts in the United States. Relative to the U.S. average, British and Canadian patients see their doctors slightly more often, but there is less time spent with the doctor on each visit (Goodman, Musgrave, & Herrick, 2004). Note that relative to private practice physicians, HMO doctors may be less free to prescribe certain drugs and order expensive tests; and this is even more true for doctors in Britain and Canada.

In all four settings it appears that physicians act as though they are paid to engage in face-to-face contact with as many patients as demand their services. To equate supply with demand, in all four cases the primary form of rationing is rationing by waiting. However, because there is no money price in Britain or Canada, compared to modest copayments in the United States, the rationing problem is greater and physicians respond to that problem in part by reducing average time spent with patients. Note that what is missing in all four settings is any opportunity for doctors and patients to eliminate wasteful waiting time by changing the nature of the financial transaction.

To find radically different physician behavior, one must look at markets where third-party payers are not involved at all, such as the markets for cosmetic and lasik surgery. Unlike other forms of surgery, the typical cosmetic surgery patient can (a) find a package price in advance covering all services and facilities, (b) compare prices prior to the surgery and (c) pay a price that is lower in real terms than the price charged a decade ago for comparable procedures—despite the considerable technological innovations in the interim (Herrick, 2006).

Ironically, many physicians who perform cosmetic surgery also perform other types of surgery. The difference in behavior is apparently related to how they are paid. A cosmetic surgery transaction has all the characteristics of a normal market transaction in which the seller has a financial interest in how all aspects of the transition affect the buyer. In more typical doctor-patient interactions, doctors are not paid to be concerned about all aspects of care and therefore typically ignore the effects on the patient of the cost of time, the cost of drugs and other ancillary costs. Note, this holds for HMO doctors as well as fee-for-service doctors and what is true for U.S. doctors in general is also true of doctors who practice in the government-run health systems of other developed countries.

The idea that physicians mainly do what they get paid to do may strike some readers as a criticism. It is not meant to be so. Most people in most trades, professions and jobs do what they get paid to do. If they did not, the world would be a chaotic place in which to live.

IV. Time as a Valuable Patient Resource

As noted, patients must spend both time and money to access the health care system; and for most, the time cost is higher than the monetary cost at the time the care is received. Time is also important in another way. The principal way that Americans find out about options in the medical marketplace is by investing their time. The payoff is in terms of health and money. Patient-initiated research can lead to better health outcomes and less expensive care. But if there are no financial rewards, patients will have reduced incentives to make such investments. In economic terms, with weak incentives to acquire information, patients will be "rationally ignorant."[16]

In a fascinating study for the National Center for Policy Analysis, Devon Herrick showed that patients can reduce the cost of their pharmaceuticals—in some cases by as much as 90 percent—by employing

the same techniques they use when they shop for other goods and services (Herrick, 2004a). To take but one example, the *New York Times* compared the U.S. and Canadian prices of ten drugs in order to show how much cheaper drugs are in Canada. Yet Herrick showed that in eight of the ten cases, U.S. patients could beat the Canadian price by careful shopping ("NCPA: Drug Re-Importation," 2003). Here are a few examples of smart shopping:

- *Buying in Bulk:* Just as the unit price is lower when people buy larger quantities of cereal and laundry detergent, the same principle works for most drugs. That is, a three month supply is typically cheaper (per pill) than a one month supply.
- *Pill Splitting:* Because of the peculiar way drugs are typically priced, a 50 milligram pill often costs about the same as a 100 milligram pill. So purchasing the larger dose and cutting the pill in half has the potential to cut the overall pharmaceutical cost in half.[17]
- *Comparison Shopping:* Prices for the same prescription can vary radically among drugstores within a few blocks of each other, allowing savings as much as 80 percent or more.[18]
- *Shopping on the Internet:* Patients need not confine their search to local markets. There is a national market for drugs, and by using the Internet, patients can compare prices at AARP, all the major retail chains and other outlets as well.
- *Generic Substitution:* Patients need not be completely reliant on physicians and pharmacists to learn about opportunities for generic substitution. There are web sites to help them out.
- *Therapeutic Substitution:* There are also web sites that will inform patients about opportunities for therapeutic substitution.

How often do patients use smart shopping techniques to lower the cost of their drugs? More often than might be supposed. A study of Medicare patients found that patients without insurance coverage for drugs paid about the same price as patients with insurance (Rettenmaier & Wang, 2003). Apparently, people can be quite resourceful when the money they spend is their own.

Unfortunately for third-party payers, most of the time when people buy drugs they are spending someone else's money rather than their own. As noted, smart shopping for drugs is a time consuming effort. Accordingly, it is an effort unlikely to be made unless the patient expects to realize economic gain. How likely is a Medicaid patient to buy in bulk

or split pills in order to save money for Medicaid? How likely is a senior citizen to search for generic or therapeutic substitutes in order to save money for a medigap insurer? How likely is an employee to comparison shop on the Internet in order to save money for an employer?

Our system of third party payment not only leads to economic waste, it can have harmful health consequences as well. Take patients with arthritic pain. Vioxx and Bextra (before they were taken from the market) and Celebrex cost about $800 more over the course of a year than such over-the-counter remedies as ibuprofen (Herrick, 2004a, Table 3). Let us concede that for some patients the brand name drug is superior. Are the extra benefits of a brand drug worth $800 a year in addition to the risk of side effects?

Drugs affect different people differently. Moreover, different people have different attitudes toward risk. So it is virtually impossible for one person to make such a choice for another. When people are spending their own money, presumably they will reveal their preferences through their actions. But as noted, most of the patients who were taking Vioxx (and should not have been) were not spending their own money. Third-party payers were paying the bill. And most of those insurance plans probably did not cover the cost of ibuprofen.

Another example is the prescription drug Clarinex, used by allergy sufferers. Some scientists claim that the over-the-counter drug Claritin is chemically the same (Schieber, 2004). Yet a year's supply of the former costs about $1,144, compared to only $280 for the latter and less than $19 for an OTC generic equivalent.[19] As in the case of arthritic pain relief, many insurers will cover the cost of brand name drug but not the OTC alternatives—inducing patients to opt for the drug with the highest social cost.

Again it is logical to ask: why doesn't entrepreneurship solve this problem? The ideal solution in these examples is to avoid third-party payment altogether. Instead, deposit funds in a patient Health Savings Account (HSA) and allow patients to make their own (unbiased) choices.[20]

The problem is that (until recently) deposits to HSAs were subjected to income and payroll taxes, whereas third-party insurance premiums could be paid (by employers) tax free. As of 2004, nonelderly Americans have access to tax free HSA accounts, at least in principle, but the conditions to qualify are quite restrictive (Goodman, 2005). A second problem is that the law requires employers to make the same deposit to every employee's account—despite the fact that actual health care costs vary

radically from employee to employee. This means that employers cannot set up special accounts for arthritis suffers or for employees who suffer allergies (Goodman, 2005).

A third problem is that the law virtually forces employees to use their HSAs in a way that piggybacks onto the current payment system rather than fundamentally challenge it. That is, even if the patient saves money by buying an OTC drug rather than a prescription drug, the expenditure does not count towards satisfaction of the deductible unless the drug is covered by the plan. With conventional coverage, for example, the OTC drug would not be covered.

Similarly, using HSA money to pay for telephone or e-mail consultations may result in savings for the employee. But unless these services are covered by the health plan, the spending doesn't count toward satisfaction of the deductible. (These and other needed changes in the law governing HSAs are discussed below.)

There is also a third problem: the interest of the employee/patient and the employer/insurer are not always the same.

V. Time Horizons and Third-Party Payers

In a genuinely free market for health insurance, one would expect people to form long-term relationships with their insurers. This follows from the nature of the insurance contract. In the very act of joining an insurance pool, people necessarily cede to the managers of the pool the power to make a great many decisions (often not well specified in advance) about what will be covered and what will not. Whereas individuals on their own can choose between health care and other uses of money when the amounts of money involved are small, these decisions often must be delegated to insurers when the amounts involved are large.[21]

Ideally, insurance administrators will make the same kinds of tradeoffs individuals would have made on their own. But this is likely to happen only if the relationship is long term. In general, we want decision makers to consider all the costs and all the benefits in making coverage decisions. But many costs borne today will produce health benefits only in future years. So if the relationship is of short duration, the insurer will tend to overly discount future health benefits relative to current health costs (Kleinke, 2001).

In contrast to the ideal, virtually all insurance contracts today are of 12 month duration. With respect to drugs, this means that insurers like

drugs that produce quick (less than 12 months) economic payoffs and dislike drugs with long-term (more than 12 month) economic payoffs. Some of the chronic conditions mentioned above are good examples (Kleinke, 2004).

- By making a bigger effort to treat patients with hypertension with drug therapy, an insurer with a long term contract will avoid the much higher costs of treating strokes and cardiovascular disease.
- By more aggressive treatment of obesity, the insurer could avoid some of the consequential costs of cancer, diabetes, heart disease, depression and stroke.
- By making a greater effort to treat high cholesterol, the insurer could avoid some of the higher consequential costs of stroke and heart disease.

But since insurance contracts are not long-term, the insurer who engages in aggressive preventive measures today is likely to be lowering some *other* insurer's costs tomorrow, rather than its own. Interestingly, a well-known method for evaluating the value of drugs and other therapies is cost effectiveness analysis (CEA). This method takes into account all economic costs, all health benefits and all of the time periods in which they are realized (Tengs et al., 1995). Yet despite the prevalence of this measure in medical journal articles, virtually no third-party payers are basing coverage decisions on CEA today (Kleinke, 2001).

It might be supposed that since employers have long term relationships with their employees, the employer will take the long view with respect to health insurance. Unfortunately, there are other regulations that distort the employer's incentives. Although federal tax law encourages employers to provide health insurance (as an alternative to paying additional taxable wages), employee benefits law requires employers to accept all enrollees at community-rated premiums. Since this means that employers will lose money on employees (and their dependents) who have high health costs, employers have an economic interest in attracting employees who are healthy and avoiding employees who are sick. Although they cannot legally discriminate against employee applicants on the basis of their health conditions, employers can pursue their self-interest in a different way: they can sponsor health plans that attract healthy employees and repel sick employees by over-providing to the healthy and under-providing to the sick.[22]

There is a third distortion that affects employer behavior. Viewed in very narrow economic terms, employers can gain in two ways when

they spend money on employee health care: (a) they can avoid high future health care costs by treating a problem when it is less costly and (b) they can reduce days of missed work due to sickness. Yet there are many benefits that employees (and their dependents) get from health care that do not fall into these categories. Relief from allergies is one example. Sildenafil citrate (Viagra) is another. The treatment of mild obesity, sever acne, toenail fungus and overactive bladder are other examples. In each of these cases, the benefit is realized by the employee. There is small, if any, impact on work. Thus the employer has weak incentives to cover the costs. Many employers also fail to pay for and administer flu vaccines, believing (perhaps falsely) that the pay back (in terms of fewer missed days of work) is small (Kleinke, 2001).

It might be thought that government is a solution to the problem addressed here. For example, unlike a private insurer or an employer, the government's relation with Medicare enrollees is by definition long-term, lasting until the senior's death. Additionally, many people (including nursing home residents) have long-term relationships with Medicaid. It turns out, however, that government health insurance is not better with respect to these issues. If anything, it is far worse.

When Medicare and Medicaid were created in 1965, the benefit package in both programs basically aped the standard Blue Cross/Blue Shield benefits common at the time (Goodman & Musgrave, 1992, Chapter 5). Since Blue Cross did not cover drugs, Medicare did not cover them either. Drug coverage was left as an option under state-administered Medicaid programs. In the years since then, new and innovative drug discoveries not only have allowed medical breakthroughs in terms of curing diseases and saving lives, they have also in many cases substituted for more expensive, alternative therapies (Lichtenberg, 1996; Lichtenberg, 2001).

In fact, new drug therapies are generally thought to be a central factor in the long-term decline in hospital admissions and hospital lengths of stay in the United States ("Outlook 2001"). For that reason almost all private insurance today, including all Blue Cross plans, cover drugs. Yet while private insurance has changed in the intervening years, Medicare and Medicaid have not changed, with the exception of a highly unusual optional drug benefit that is offered under Medicare.

It is both ironic and unfortunate that basic Medicare insurance (Part A & Part B) will pay to amputate the leg of a diabetic, but will not pay for the drugs that would have made the amputation unnecessary in the first place. Similarly, Medicare will pay for the hospital care of a heart

attack or stroke victim, but will not pay for the drugs that would have prevented the heart attack or stroke to begin with.

In Medicaid, practice varies from state to state. But because drug coverage is an optional benefit, the temptation on the part of state governments is to limit access to drugs in order to control growing Medicaid costs. The states have succumbed to this temptation repeatedly, even though there is evidence that doing so ultimately raises, rather than lowers, total Medicaid costs. For example, one study found that a Medicaid program's restriction of reimbursement to three drugs led to an increase in emergency mental health visits, hospitalizations in community mental health centers and entry into nursing homes—at a cost well above the drug cost savings (Soumerai & Lipton, 1995).[23]

Why does government insurance underperform private insurance, even when the time horizon for the government is so much longer? One reason is that the time horizon that counts is not that of the government in the abstract but that of elected officials; and typically the relevant horizon for politicians does not extend longer than the next election. Another reason is that vested interests coalesce around Medicare and Medicaid spending and it is in their self interest to resist changes that would reduce their compensation (say, because of reduced hospital or nursing home stays) because of increased compensation for producers of drugs.

VI. The Challenge for Entrepreneurs

Whenever there is waste and inefficiency in a market, there is an opportunity for entrepreneurs to make profits by eliminating that waste and inefficiency. The health care market is no exception. What makes entrepreneurship difficult in health care is that in order to eliminate waste and inefficiency, the entrepreneurs must step outside of the normal payment mechanisms. This means that patients who take advantage of these services often must pay out-of-pocket for what theoretically should be covered by their insurer.

The entrepreneurial activities we have identified tend to have two characteristics: (a) they allow patients to economize on time and (b) they step outside the normal reimbursement channels, usually asking for payment at the time of service. Here are some examples:

- *MinuteClinics.* These are walk-in clinics located in selected Target and Club Food stores and some CVS Pharmacies, and Wal-Mart has signaled its interest in providing a similar service through its

stores nationwide. They are staffed by nurse practitioners. No appointments are necessary and most office visits take only 15 minutes. Most treatments cost around $59. In contrast to standard physician practice, medical records are stored electronically and prescriptions are also ordered that way (Freudenheim, 2006).

- *TelaDoc.* This service offers medical consultations by telephone. A doctor usually returns patients' calls within 30 to 40 minutes. If the call is returned later than 3 hours the consultation is free. Access is available around the clock. Registration for the service costs $18. Phone consultations are $35 each, with a monthly membership fee ranging from $4.25 to $7.[24]
- *Doctokr.* This is the Virginia medical practice of Dr. Alan Dappen. Although he offers in-office appointments, he encourages most patients to have either an e-mail consultation or a phone consultation. Dappen charges based on the amount of time required. A simple consultation generally costs less than $20.[25]
- *CashDoctor.com.* This is a loosely-structured network for doctors across the country that are "cash friendly." Practice styles and fee schedules are available online.[26]

An example of opportunities seized and opportunities missed is a software package called MyChart, produced by Epic Systems of Madison, Wisconsin, and made available to about 300,000 patients nationwide by such large health centers as the Cleveland Clinic, UT Southwestern and Harvard Vanguard Medical Associates. MyChart has the potential to allow doctors and patients to communicate online, but in practice its use is more limited. UT Southwestern patients, for example, can use the system to:

- Check results of lab tests.
- View summaries of previous doctor appointments, physicians' instructions and dates of future appointments.
- Review their allergies, immunizations and other medical records.
- Check their prescriptions history and order refills.
- Navigate to other sites with relevant medical information.

Neither patients nor third-party payers currently pay for this service, however. So why do health centers incur the cost to make it available? In part, the service may help them compete for patients. But in helping their patients the centers also help themselves. Note that the services provided to patients are services that otherwise are normally provided to patients over the phone by doctors and nurses, using up time on non-

billable hours. What patients cannot do, by contrast, is ask questions and get answers about their health condition as an alternative to a face-to-face physician meeting.

MyChart, economizes on time for doctors and their patients. But it does so in a way that substitutes for non-billable time without cutting into billable time. Patients gain in the process, but not nearly as much as they could gain if the system's full potential were realized.

Drug companies are also trying to exploit inefficiencies in the market with direct-to-consumer (DTC) advertising. Although the practice is controversial and some manufacturers have suspended their DTC programs, these activities reflect commonsense economic principles.

Why is it that manufacturers advertise some drugs directly to consumers and not others? Products that are advertised tend to have three characteristics: (a) the price of the drug is not regulated or artificially depressed by government policies, thereby allowing the manufacturer to profit from the DTC activity; (b) the drug is often not covered by insurance, thereby bypassing traditional payment systems; and (c) the advertising helps patients economize on time by conveying information that might not otherwise be obtainable except through costly search.

Examples of drugs that are not advertised are childhood vaccines and flu vaccines, despite the social value of these remedies. The reason: their price tends to be regulated or heavily influenced by the government.

Under the Vaccines for Children program, the government uses its purchasing power to negotiate discounts for vaccines and distributes them to physicians and various health agencies for free or at a reduced price, essentially creating a children's vaccine entitlement. As a result, more than half the supply of childhood vaccines is purchased by government at deep discounts. Many firms have left the market, given the low profit margins, and less than two percent of drug company revenue is derived from vaccines (Herrick, 2004b).

Like children's vaccines, more than half of flu vaccines are directly purchased by the government, or indirectly reimbursed by the government at discounted prices. In a market where government is the dominant buyer, exercising monopsonistic power, the price may be driven so low that the producer's profit is slim or nonexistent. The exposure to legal liability lowers profitability even more. Thus many manufacturers have dropped out of the vaccine market altogether (Herrick, 2004b).

By contrast, drugs that are advertised tend to be drugs that are not covered by insurance (such as Viagra) or drugs which employers and insurers have weak incentives to cover or encourage because there are

no perceived benefits for third-party payers or because of their long payoff periods (Kleinke, 2001).

A different type of entrepreneurship is occurring among third-party payers. Recognizing that physicians have weak incentives to improve quality and reduce the patient's non-physician costs, the paying entities are trying to directly change those incentives.

Take the choice between brand name drugs and generics for example. Doctors receive about one billion branded drug samples each year—more than three for every person in the country. These are handy to give to patients at the time of a consultation and they increase the chances of compliance. Also, once started on a branded drug, the tendency is to write a prescription for the same drug. To counteract that incentive, Aetna is placing an ATM-style dispenser of generic drugs in doctors offices, making it easy for the physicians to give away a 30 day supply of the medication (as opposed to only a week or so for the branded samples) (Hensley, 2005).

An even more radical idea is "pay for performance," which is the all the rage among cost control experts. Medicare, for example, has several pilot programs underway to pay additional compensation for specific behavior (Connolly, 2003). Many private insurers are doing the same (Rosenthal, Frank, & Epstein, 2005). These experiments may produce positive payoffs. They are, however, crude attempts to accomplish by artificial means what markets are supposed to do naturally. In what other market for a good or service do we find buyers telling sellers how to produce? Or paying the producer to produce one way rather than another? The fact that we do not see such arrangements in any other market suggests that there are reasons to be pessimistic about how well they will work in medicine.

Undoubtedly, we will see more examples of entrepreneurship in the future. But to take full advantage of the possibilities, we need changes in public policy.

VII. Needed Change in Public Policy

Why do third party payers use payment systems that cause health care to be delivered in an inefficient way? The short answer is that through the years government policies have encouraged the current payment systems. Of those policies, the most important is the tax law.

Since the end of World War II, employer payments for health insurance have been excluded from the taxable income of employees. This is

a valuable tax subsidy. An average-wage worker facing a 15 percent income tax also pays a 15.3 percent payroll (FICA) tax (employer and employee shares combined) and perhaps a 5 percent state income tax. Through the tax system, therefore, government is effectively "paying" more than a third of the cost of the insurance. For higher-income employees (the decision-makers on employee benefits), government effectively pays half the cost.

Yet while tax policy generously encourages third-party insurance, it harshly penalizes self-insurance through a savings account designated for potential health expenses. With recent exceptions discussed below, every dollar the employer deposits in such an account faces federal and state income taxes in addition to the payroll tax. In this way, tax policy encourages all of us to pay all medical bills through third-party payers.[27]

The result of these tax law incentives is a health insurance system in which insurers pay for many expenses that would be better paid by patients themselves. To try and control these expenses, third-parties impose a great many constraints, which are often crude attempts to reduce wasteful spending. Since insurers are not parties to the physician consultations, they try to enumerate procedures they will pay for and tend to limit those to the physician's office. Since insurers cannot directly observe the effects of drugs on patients, they try to limit drug expenses by such unwieldy devices as drug formularies.

In general, insurers will find it in their self-interest to limit payments for services they cannot monitor very well. Since they cannot measure very well the benefits of computerized patient records (especially that part of the benefit that accrues to their own insurers), they have weak incentives to pay for the cost. The same principal applies to reimbursement for physician-initiated efforts to help patients control their drug costs. Drug formularies are easier and (perhaps cheaper) to implement.

In order to have a workable, well-functioning market for drugs, we need to fundamentally change the way we pay for health care, including the way we pay doctors.

A step in the right direction is the creation of Health Savings Accounts (HSAs). Instead of an employer or insurer paying all the medical bills, about 12 million people are managing some of their own health care dollars through these accounts and Health Reimbursement Arrangements (HRAs).[28] Instead of relying solely on third-party insurance, people can now partly self-insure in this way.

How can patients spending their own money expect to pay the rock bottom prices for physician services and prescription drugs that large

insurers negotiate using their huge buying power leverage? Part of the answer is that HSAs are always combined with high deductible insurance and HSA holders usually pay the same discounted physician fee that the insurer pays. The same principle can, and should, apply to drugs. That is, in purchasing a prescription drug from an HSA, the patient should get her insurer's drug discount.

Another part of the answer is that patients can often do better than a third-party insurer. That is, by using minute clinics, call-a-doc services, and by buying drugs and arranging for tests over the Internet, many patients will find that they can pay less than their insurer would have paid under a traditional arrangement.

In an ideally constructed HSA insurance plan, patients will not spend a dollar on care unless they get a dollar's worth of value (Pauly & Goodman, 1995). Incentives under the new law are far from ideal, but they are better than under traditional insurance.[29]

Despite their many advantages, HSAs can be made even better. Two changes in particular are needed and both have the potential to fundamentally change health care for the chronically ill: (1) employers need to be able to make different contributions to the HSAs of different employees, depending on their health status and (2) there is a need for complete flexibility with respect to the setting of deductibles and copayments.

The chronically ill are responsible for an enormous amount of health care spending. In fact, almost half of all health care dollars are spent on patients with five chronic conditions (diabetes, heart disease, hypertension, asthma and mood disorders) (Druss et al., 2001). This is where HSAs have the greatest potential to reduce costs and improve the quality of care.

Healthy people tend to interact with the health care system episodically. Once in awhile they go to an emergency room or take a prescription drug. On these occasions, they gain knowledge that improves their skills as medical consumers. But it may be several years before they use that knowledge again, by which time it may be obsolete.

The chronically ill are different. Their treatments are usually repetitive, involving the same procedures and medicines, week after week, year after year. Consequently, cost-saving discoveries by these patients are not one-time events. Rather, they pay off indefinitely. Suppose a diabetic patient learns how to cut the costs of her drugs in half, by comparing prices, shopping online, bulk buying, pill splitting or switching to a generic brand. Such a discovery could be financially very rewarding to a patient who must pay these costs out-of-pocket.

As noted, numerous studies have found the chronically ill can reduce costs and improve quality by managing their own care. But health care management is difficult and time consuming. To encourage the effort, patients should reap both health rewards and financial rewards from making better decisions. Employers should be able to create specialized HSA accounts for patients with differing chronic conditions. They should be able to adjust the account's funding to fit specific circumstances. A typical Type II diabetic, for example, might receive one level of HSA deposit from an employer; a typical asthmatic patient another.

The problem is: The HSA law requires employers to deposit the same amount in each employee's HSA account, irrespective of medical condition. This is a strange requirement, given that employers who give employees choices of health plans are risk-rating their premium payments whether they are aware of it or not. If the sickest employees all choose Plan B and the healthiest choose Plan A, then the employer will invariably pay more premiums per employee to Plan B. Yet although employers risk-rate their premium payments, they are not allowed to risk-rate HSA deposits.

The second needed change relates to the deductible. Not all medical services are the same. Patients can exercise discretion for many of their health care needs, and it is *appropriate* for them to do so. Take arthritic pain relief. None of us can determine for another individual whether any particular tradeoff between cost and pain relief is worthwhile. So it is appropriate and desirable for people to make these decisions themselves, and reap the benefits and bear the costs of their decisions.

By contrast, a semiconscious patient on a gurney is not in a position to make choices about alternative treatments. Even if he could, discretion in this setting is typically *inappropriate.* Or consider the case of a diagnosed schizophrenic. He may choose to stop taking his prescribed medication; but it is in society's self-interest to make sure he is not encouraged to do so.

Unfortunately, the HSA law treats all these cases the same. It requires a high, across-the-board deductible and requires the patient to bear the costs of purchases below the deductible amount. A better approach would allow insurers to design plans so that different deductibles (and copayments) apply to different medical services. Where patient discretion is possible, and appropriate, the deductible should be high. Where patient discretion is more difficult, and in any event inappropriate, the deductible should be low or nonexistent.

An even more fundamental change would be to carve out whole categories of services for which the patient is responsible for payment. There would be no need for a deductible with respect to these services and HSA spending on them would not count toward a deductible. Under the current system, the distinction between covered and uncovered services frequently distorts patient incentives. As noted above, for example, e-mail and telephone consultations (as an alternative to face-to-face encounters) are typically not covered. Similarly, OTC purchases (as an alternative to brand drugs) are typically not covered. A better approach is to erase the distinction between covered and uncovered services—freeing the patient to discover the most efficient options.

Freed from the strictures of conventional health insurance, the market would then be free to offer products that reduce time as well as money costs in patient-pleasing ways.

Under the current system, HSA plans with deductibles and copayments are an extension of the current payment system and reinforce it rather than challenge it. Under the current HSA rules, if a patient pays for care with dollars, those dollars count toward a deductible and move the patient closer to the point when a third-party will pay all remaining financial costs. But if a patient pays for care with time, this does not count toward the deductible. Further, under most HSA plans, time-saving innovations are typically not covered expenses. In these ways, most HSA plans are tacked on to the existing payment system, rather than an alternative to it.

The current HSA law's primary problem is that decisions the market should make have been made by the tax-writing committees of the U.S. Congress instead. What is the appropriate deductible for which service? How much should be deposited in the HSAs of different employees? How can we use these accounts to meet the needs of the chronically ill? In finding answers, markets are smarter than any one of us because they benefit from the best thinking of everyone. Further, as medical science and technology advance, the best answer today may not be the best answer tomorrow.

South Africa's experience with HSAs (called Medical Savings Accounts) provides an interesting contrast.[30] These accounts emerged in the 1990s under Nelson Mandela's presidency and have now captured more than half the market for private health insurance there. Since the South African government never passed a law imposing an HSA design, their plans developed in a relatively free market. The South African "free-market HSAs" are different, and in some ways more

attractive, than what we have in the United States. For example, one of the most popular plans there offers first-dollar insurance coverage for most hospital procedures, on the theory that hospitalized patients have little opportunity to make choices, and discretion is not appropriate in that setting in any event. A high deductible applies to "discretionary" expenses, however, including most services delivered in doctors' offices.

South Africa's more flexible approach also allows more sensible drug coverage. While a high deductible applies to most drugs, a typical plan pays from the first dollar for drugs that treat diabetes, asthma and other chronic conditions. The reason is obvious: It would be counter-productive to encourage patients to skimp on drugs that prevent more expensive-to-treat conditions from developing.

Although most recent legislation has unwisely restricted the ability to use HSAs in South Africa, including restrictions on their use to meet the needs of chronic patients, the country's experience can be a useful guide to policymakers in the United States. Ideal reform in this country would allow unlimited contributions to HSAs and permit such accounts to wrap around any third-party insurance—paying for any expense the insurance plan does not pay. Barring that, we should at least allow flexible deductibles and risk-rated deposits to HSAs.

Notes

1. The author would like to thank Devon Herrick for help in the preparation of this manuscript and Gerald Musgrave for useful comments.
2. Estimate based on "IMS Health Reports U.S. Prescription Sales Jump 8.3 Percent in 2006, to $274.9 Billion," IMS Health, March 8, 2007.
   Health care expenditure is estimated to top $2.1 trillion in 2006. See Centers for Medicare and Medicaid Services, U. S. Department of Health and Human Services (2007).
3. According to the Consumer Healthcare Products Association, over-the-counter drug sales in 2006 was $15.4 billion, excluding Wal-Mart.
4. One study found that two-thirds of patients on Cox-2 inhibitors were not at risk for gastrointestinal conditions like ulcers or bleeding and most of them had not tried cheaper alternatives. See Cox, Motheral, Frisse, Behm, & Mager (2003). See also *Drug Cost Management Report (2003).*
5. Not all experts agree that Cox-2 Inhibitors are more risky than older nonsteroidal anti-inflammatory drugs (NSAIDS) such as ibuprofen and naproxen. For instance, John Calfee, a scholar with the American Enterprise Institute points out that between 10,000 and 20,000 people die annually of complications from taking older NSAIDS. See Calfee (2005).
6. There are exceptions. It is common for people to get test results by phone and to get refills on prescriptions by phone conservations with doctors and nurses. What is rare is an actual telephone consultation. Only about 24 percent of patients exchange

e-mail with their physicians for clinical issues. Center for Studying Health System Change (Liebhaber & Grossman, 2006).

7. That consumers are responsive to health care prices, and for some services very responsive is well established in health economics. For a useful review of the literature, see Morrisey (2005). Some credit the work of three economists—Mark Pauly, Martin Feldstein and Joseph Newhouse—for introducing the economic way of thinking into health care. See Pauly (1971), Newhouse (1993), Feldstein & Friedman (1977). For a comprehensive (but critical) review of this literature, see Melhado (1998).
8. Take the Resource-based Relative Value Scale (RBRVS), used to pay physicians by Medicare, Medicaid and many private insurers. This system pays a fee for a physician visit but does not compensate for pre- and post-encounter work, including coordination of care, research on drugs and drug prices, and supervising nurses and physicians assistants. Nor does it pay for telephone or email communication with patients. The RBRVS also tends to pay a fixed rate for a visit, ignoring differences in the complexity of cases and the time needed to treat them. See Johnson & Newton (2002).
9. Among health plans that do pay, some will not compensate doctors for e-mail exchanges unless the patient has first been examined in an office. Other insurers reimburse less for e-mail exchanges than for in-person visits. See Freudenheim (2005). An exception is, Blue Shield of California, which pays physicians the same for an e-mail consultation ($25) as it does for an office visit. See Koenig (2003). The American Medical Association has created a reimbursement code for online consultation patients, making it easier for physicians to get paid.
10. According to a Center for Studying Health System Change survey, about 27 percent of physicians limit the number of new Medicare patients they will accept—or do not accept Medicare patients at all. See "Physician Acceptance of New Medicare Patients Stabilizes in 2004-05," (2006).
11. According to a recent survey by the Center for Studying Health System Change, nearly 48 percent of physicians refuse to accept any new Medicaid patients (Cunningham and May, 2006).
12. By contrast, 59 percent of dental offices (when payment is more likely to be out-of-pocket) passes the courtesy text. See Boswell (2003).
13. Also see Norris, Engelgau, & Narayan (2001).
14. A Dutch study comparing self-management to usual care found that those monitoring their own asthma achieved a savings of about 7 percent the first year and a 28 percent savings the second year, compared to those in standard care with a primary physician. A recent study of asthma patients trained to perform in-home asthma telemonitoring found that the results of self-testing were consistent with established guidelines. Moreover, participation in telemonitoring did not require that patients have extensive computer knowledge. See Wang, Zhong, & Wheeler (2005), and Finkelstein & Cabrera (2000).
15. A 1998 editorial by the editor-in-chief of the *New England Journal of Medicine* argued that capitated payment systems would force doctors to reduce the time spent with each patient and, thus, lower the quality of care. See Kassirer (1998). The following year, this view was echoed in Kenneth Ludmerer (1999). However, two subsequent studies found that over the 1990s (the decade of managed care) the average time doctors spent with patients actually increased. See Mechanic, McAlpine, & Rosenthal (2001), and Luft (1999).

16. On the economics of rational ignorance, see Caplan (2001).
17. Note: not every pill can be split (e.g., time release capsules), but many can; pharmacists will often split pills for customers and patients can purchase pill splitting devices to do it for themselves
18. In a Missouri survey conducted for the Heartland Institute, prudent shopping saved consumers almost 10 percent on branded drugs and 81 percent on generics, on the average. Moreover, prices within a single city differed by 3 percent to 16 percent for brand-name medications and by 39 percent to 159 percent for generic medications. See Public Issue Management (2002).
19. Prices for Clarinex and Claritin are for packages of 30 doses from Walgreens.com. The price for the generic version of Claritin (Loratadine) is for Sam's Club. All prices surveyed fall 2006.
20. Health Savings Accounts (HSAs) sometimes called Medical Savings Accounts (MSAs) is an idea developed by the National Center for Policy Analysis. It got considerable attention as a result of Goodman & Musgrave (1992).
21. See Goodman (2004).
22. See the discussion on the economics of "managed competition" in Goodman, Musgrave, & Herrick (2004).
23. Another study of HMO enrollees found that the more restrictive a drug formulary, the greater the total health care costs for five major drug-intensive diseases—again swamping any savings on the cost of the drugs. See Horn et al., (1996).
24. Information taken from TelaDoc.com Web site. Also see "'Doctor on Call' Redefined," (2005).
25. Information taken from Doctokr.com Web site. Also see Norbut (2003).
26. Information taken from CashDoctor.com Web site.
27. The tax treatment of out-of-pocket expenses has varied over the years. Currently, tax payers can only deduct from their income, out-of-pocket medical expenses that exceed seven percent of their adjusted gross income. As a result, few Americans receive any tax subsidy for out-of-pocket payments. The only way most workers can pay out-of-pocket expenses tax free is by depositing money into a flexible spending account to pay incidental medical bills. However, since these accounts are use-it-or-lose-it, they encourage wasteful spending. Some economists have argued that reliance on third-party payment would be reduced if out-of-pocket spending were completely deductible. See Cogan, Hubbard, & Kessler (2004). However, the alternative to third-party-insurance is not out-of-pocket spending. The alternative to third-party insurance is self-insurance. In general, people who have third-party insurance have economic incentives to overconsume health care. If they can, in addition, deduct their out-of-pocket copayments and deductibles, the incentives to overconsume become even worse.
28. Estimate by William Boyles, Consumer Driven Market Report, 2007. For a brief discussion of how HSAs compare to HRAs and FSAs, see Cannon (2003).
29. Money withdrawn from an HSA before age 65 faces ordinary income taxes plus a 10 percent penalty. So a taxpayer in the 15 percent bracket losers 25¢ on every dollar withdrawn. This means a dollar of health care trades against 75¢ of other goods and services. That's far from perfect, but much better than trading against 10¢ under the traditional insurance.
30. See Matisonn (2002) and Matisonn (2000).

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