

2007

The Truth about Moral Hazard and Adverse Selection.

Mark V. Pauly

University of Pennsylvania, The Wharton School

Follow this and additional works at: <http://surface.syr.edu/cpr>



Part of the [Health Policy Commons](#)

Recommended Citation

Pauly, Mark V., "The Truth about Moral Hazard and Adverse Selection." (2007). *Center for Policy Research*. Paper 7.
<http://surface.syr.edu/cpr/7>

This Working Paper is brought to you for free and open access by the Maxwell School of Citizenship and Public Affairs at SURFACE. It has been accepted for inclusion in Center for Policy Research by an authorized administrator of SURFACE. For more information, please contact surface@syr.edu.

The Truth about Moral Hazard
and Adverse Selection

Mark V. Pauly

No. 36/2007

Mark V. Pauly, PhD, is Bendheim Professor in the Department of Health Care Systems at the Wharton School of the University of Pennsylvania. He is Professor of Health Care Systems, Insurance and Risk Management, and Business and Public Policy at the Wharton School and Professor of Economics in the School of Arts and Sciences at the University of Pennsylvania. Dr. Pauly is a former commissioner on the Physician Payment Review Commission, a former member of the advisory committee to the Agency for Health Care Research and Quality, most recently a member of the Medicare Technical Advisory Panel, and an active member of the Institute of Medicine. He is a co-editor-in-chief of the *International Journal of Health Care Finance and Economics* and an associate editor of the *Journal of Risk and Uncertainty*.

The Herbert Lourie Memorial Lecture on Health Policy, sponsored by the Maxwell School of Citizenship and Public Affairs of Syracuse University and the Central New York Community Foundation, Inc., honors the memory of Herbert Lourie, MD, a distinguished Syracuse neurosurgeon, professor, and community leader for nearly 30 years. Generous contributions from his family, friends, colleagues, and former patients have endowed this series.

The Policy Brief series is a collection of essays on current public policy issues in aging, health, income security, metropolitan studies, and related research done by or on behalf of the Center for Policy Research (CPR) at the Maxwell School of Syracuse University.

Single copies of this publication may be obtained at no cost from the CPR website at <http://www-cpr.maxwell.syr.edu> or from the Center for Policy Research, 426 Eggers Hall, Syracuse, NY 13244-1020.

© 2007, Syracuse University. This publication may be distributed freely for educational and researcher uses as long as this copyright notice is attached. No commercial use of this material may be made without express written permission.

Policy Brief

The Truth about Moral Hazard and Adverse Selection

Mark V. Pauly

The Truth about Moral Hazard and Adverse Selection

This brief is actually going to have two levels. One level will go with the advertised title, and I'll tell you my current views on the truth about moral hazard and adverse selection. Adverse selection will serve as somewhat of a handmaid of moral hazard, as you will see. That's one level.

The other level, though, which continues to surprise me, is that these two topics—they're two buzzwords from insurance theory—have generated an enormous amount of policy interest and, yes, passion. Some people passionately believe some things about moral hazard that others passionately disbelieve. And so as part of this second level I will draw back a bit from the actual subject matter to ask a kind of positive public policy question: Why is it that some people can get so passionate about a subject that seems fairly esoteric?

Moral Hazard

The perfect kind of insurance, to an economist, does one and only one thing: it transfers money from the lucky to the unlucky. Since, before the fact, you might be either one, you could say that it transfers wealth from the lucky state to the unlucky state, without affecting anything else.

Moral hazard in insurance occurs when the expected loss from an adverse event increases as insurance coverage increases.

Lourie Lecture Policy Brief

When moral hazard is present, insurance does more than just transfer money from one state to another. When people have insurance, their behavior changes in such a way that their expected expense is higher.

Theoretically, if I have health insurance, I'm not going to bother to wear my sweater like my mother always told me or I'll catch my death of cold, because it's OK, the insurance will pay for my cold to be treated, and I'll be my usual devil-may-care self. That may be what's happening in health care. But a much more serious consequence, I think, of the presence of insurance compared to its absence, or of the presence of more generous insurance compared to less generous insurance, is that people with more generous insurance use more medical care, both in quantity and quality, compared to people with less generous insurance, even when they experience the same illness.

In a sense, the phenomenon that we're talking about, according to my father-in-law, who's a retired GP, is manifested by what some of his patients would say to him. They'd say "That's OK, doc, the insurance will pay for it." That's the sort of behavior that we'll be talking about.

The population that I want to focus on, one that is definitely subject to moral hazard and is also the hot potato in much of the policy debate, is the typical American, and the typical American is not covered by public insurance, not poor, and not sickly. There certainly are low-income people and people at high risk, but the great bulk of people with health insurance or who are contemplating having health insurance are not poor or high-risk. So the rhetorical question here is: Why all the fuss about health insurance? No one cares about other kinds of insurance, like the size of the deductible for auto collision coverage. But people do care about health insurance. That's the dilemma.

Mark V. Pauly

Cost Sharing

Although various aspects of moral hazard have run through the health insurance debate over the years, at the moment the debate du jour involving moral hazard has to do with the so-called health savings account, or consumer-directed health plan, or, because those terms are kind of emotive and judgmental, what is called “high-deductible health insurance.” The primary purpose for offering high-deductible health insurance is to reduce moral hazard. I’ll explain why in just a minute.

I have some friends who believe that cost-sharing is evil. It causes people to underuse medical care, which then ruins their health because they didn’t use the medical care they should. And it also causes them to expose themselves to financial ruin. Therefore, these friends oppose high-deductible health insurance.

There are other people I know who sound just as reasonable when you talk to them in polite company, who will think of the same sort of phenomenon and come at it from 180 degrees opposite. They say that cost sharing is virtuous. It causes people to be frugal and wise in their use of medical care, and wise as well in their financial planning. They must have all had fathers like mine; whenever I had a problem my dad would say “You should have thought of that beforehand.” High-deductible health insurance is for that population. These people also tend to favor tax breaks for high-deductible health plans, along the lines of tax breaks in current law for health savings accounts and along the lines of some proposals that are made by, among others, President George W. Bush, to extend tax breaks to the premium for high-deductible health plans, as well as to the health savings accounts.

Both groups of people agree, however, that whatever insurance people might choose on their own, the government should not accept that choice but rather should try to change it. The government should either do something to get people to choose insurance with lower levels of cost-sharing than they currently

Lourie Lecture Policy Brief

would choose, if you're in the first camp, or something to get them to choose higher levels of cost-sharing if you're in the second camp.

The simplest way to summarize my contrasting argument in a phrase is, I advocate aggressive neutrality. And so my view is that both views are wrong. For this population (non-poor, non-sickly) there is an optimal level of cost-sharing, which involves neither free care nor enormous deductibles. This is the level, as I'll explain a little more in detail in a moment, that would lead to an appropriate level of health and financial protection, balancing incentives to use care with incentives to provide financial protection.

The view that people should be encouraged to have plans with high deductibles and high out-of-pocket payments I find questionable, because that may lead to a level of out-of-pocket payment in excess of the amount that people ought to appropriately choose. I also find arguments for very low levels of cost sharing, which will increase spending, to be questionable.

My view is that the level of cost-sharing that this population of ordinary middle class people would choose, in the absence of either kind of government intervention—either a kind that encourages or discourages subsidies or taxes or regulation—is probably pretty close to the ideal level.

For lower-income people or people at high risk I come to quite a different conclusion. We want to provide more insurance to low-income and high-risk people than they might choose on their own, in order to actually create moral hazard to get them to use additional medical care. But for the bulk of the population, the general proposition that I want to argue is that incentives should be neutral, neither slanting the table toward high levels of cost-sharing nor low levels of cost-sharing, basically letting people choose, given their own tastes, about how they would make various tradeoffs.

The Problem of Imperfect Information

Why is health insurance so complicated? Anything in real life is complicated, once you get into it, but there is at least a theoretical idea of how to offer insurance that wouldn't have problems of either moral hazard or adverse selection. The problem is that the theoretical ideal isn't practical this side of heaven.

The theoretical ideal would be the following sort of insurance market:

- Imagine that consumers in general are knowledgeable about the marginal benefits from health care. They might spend all their time surfing on WebMD, and that's why they know it. Or somewhat more practically, they might have kindly and unstressed primary care physicians who are able to explain to them the benefits and costs and risks of various levels of health care consumption.
- And imagine as well that insurers know everything about you and, when you get sick, know how sick you are. So the insurer knows how bad your backache is, how frequent your urination is, how much it really itches, and therefore can determine and define a state of health.

The theoretically perfect insurance would take the following form: the insurance that I would get would say, Mark, if you have a really bad back, here's a check for \$20,000. If it's just creaking a bit here's a check for \$500, and if it's really just because you did too much work in the garden over the weekend, here's a check for \$2, enough to buy a small bottle of Excedrin. Coverage would take the form of indemnities. The person would decide beforehand how much medical care in each state of health represents the amount at which the benefit is greater than the cost. What's the quantity at which the marginal benefit just equals the cost? That's the amount of medical care I want to have, recognizing that if I consume more than that, I will have to pay for it in higher premiums. So I would prefer an insurance policy that gave me a check that would, in each illness state,

Lourie Lecture Policy Brief

purchase just the amount of medical care that is economically efficient for me to have, and—remember I'm fully informed—the amount up to the point where marginal benefit just equals marginal cost. In that case there wouldn't be any moral hazard, because, whether I have insurance or not, setting aside some small income effects, I would consume the same amount of care. I would not buy units of medical care beyond the amount of the check if I would have to pay for them 100% myself.

Adverse Selection

Adverse selection is the tendency for people with higher-risk (health expectations) to obtain insurance coverage to a greater extent than persons with lesser-risk (health expectations), because insurers are unable to tell who's high-risk and who's low-risk.

When private insurers try to offer policies charging premiums that will cover all their costs, the rate for those high-risk people may be inadequate. In particular, the people who are high-risk, known to themselves but unbeknownst to the insurer, show up and say "I want the most generous policy you've got." Whereas the people who are low-risk, especially if they wait a while to see how much the premium increases because all of those high-risk people got there before them, will say "If I want any insurance at all, I want it to be very minimal and very frugal, not because I don't like insurance and not because I'm not interested in protecting myself from risk, but rather because it's so much more expensive in premium relative to what I would expect to get back."

Its connection to moral hazard is this: the opponents of high cost-sharing are worried not only that high cost-sharing plans may cause people to underuse medical care, but also because the high cost-sharing plans may draw off from the risk pool the people who otherwise would have been low-risk and leave in the risk pool only the high-risk people. So although there are a lot of reasons to worry about adverse selection, the primary reason to

Mark V. Pauly

worry about it in this brief is because of its impact on the demand for high-deductible insurance or other types of limited coverage.

Perfect knowledge also solves the adverse selection problem. Imagine that insurers can also tell by looking at you what your risk level is. Imagine by looking at you or hooking you up to the appropriate piece of equipment insurers could tell what risk level you are. Then insurers could offer low premiums to the low-risks and high premiums to the high-risks. The proposition in economics is they would all be willing to buy insurance as long as the administrative cost was not too high. The alternative to paying somewhat more for insurance, if you're at somewhat high risk, is not paying nothing, it is having to face the same distribution as out-of-pocket expenses, which is a terrible thing to have happen. So you'd prefer insurance.

The sweeping generalization here is, if insurers were omniscient and people were knowledgeable, everybody would have just that kind of insurance that induces them to use care to the point where benefits are greater than costs. Out-of-pocket costs would be close to zero, because no one would spend much more than the indemnity amount. That would be the best of all possible worlds, at least as far as the economist is concerned, for the non-poor non-sickly.

For people who are low-income, or high-risk, just to elaborate a bit more on the subtext here, there is a kind of altruistic externality motivation, which is economist jargon for the good Samaritan, the feeling that when we see suffering by our fellow human beings we feel predisposed to do something to alleviate it, at least up to a point. That's why we want to have additional insurance coverage for low-income and high-risk people. But for those of us who are relatively well off and relatively healthy, my argument would be that there probably is not much altruistic concern about underuse of care. The average American may underuse some kinds of care and overuse others but, on average, he or she probably uses enough care.

The Optimal Level of Cost Sharing

What is the primary motivation to buy insurance? In economics it is to protect yourself from financial risk. Otherwise, if the bad thing happens and I get unlucky, there's a big hit to my checkbook. And when it comes to health care that hit can be big and is getting bigger every day. The fundamental reason to have health insurance, at least from the economic viewpoint, is to protect yourself from financial risk. Moral hazard means that the consequence of protecting yourself against financial risk is to stimulate the use of additional medical care, which by definition is medical care that is not worth what it costs, because if it was worth what it cost you would have bought it even if you didn't have insurance. That's the dilemma—that insurance, by disguising the price, makes expensive things look cheap.

The way to describe the optimal extent of cost-sharing in this kind of world is to think of the following choice calculus:

- Imagine you start with no insurance. For the first 1% of coverage, the benefit is great in terms of risk protection, because otherwise you might have a five-figure hospital bill, and at least you'll get 1% of it covered by insurance. In economic theory, that may predispose you to use a little bit more medical care if you're paying \$.99 on the dollar than if you're paying \$1.00 on the dollar, but the difference in value between that additional care and its cost is quite small. So you go for the first 1%.
- At the other end of the spectrum, you've got 99% coverage and you're thinking of adding the last 1%. That 1% coverage is hardly protecting your financial risk because you've got virtually complete coverage to begin with. On the other hand, if it induces you and your physician to agree on some additional, more intensive treatment, that unit of care will only be worth \$.01 on the dollar. That's what economists call a welfare cost.
- Optimal cost-sharing is finding a happy medium, the level of cost sharing between 1% and 99%, where the additional risk protection is just balanced against the additional stimulus to use

Mark V. Pauly

care whose benefit-to-cost ratio is less than one. That level of cost sharing would be optimum.

There are two comments I would make about this level of cost-sharing that I think may be relevant to the policy debate. One is to point out that in this particular story that I'm telling, the health care that you give up because of cost-sharing isn't useless. The reason it's not useless is because you're a well-informed consumer and you wouldn't have used useless care in any case. Instead, you're induced to give up care that is worth something to you, but not as valuable as the cost that you're going to save. Cost-sharing saves more money than it hurts health, but it does hurt health. What you seek is a happy balance, a happy medium.

There's also a tradeoff between risk protection and expected cost. The addition of beneficial but not cost-beneficial care under moral hazard for this population of high-income non-sickly people is not to be praised, and the loss of care is not to be decried. Having said all that, though, when I go home and talk to my family, I do feel a little uncomfortable saying "Yeah, it's actually a good thing for people to go without beneficial medical care, because it costs too much money." But the health sacrificed under cost-sharing in theory should be small relative to the cost reduction.

Empirical Research

There has been research, some very old and some quite new, to find out empirically what happens when people have more or less generous health insurance or, in one case, when they have health insurance compared to no health insurance.

The RAND Health Insurance Experiment

The mother lode of information on empirical estimates of moral hazard is a 15-year-long study that was begun in 1971 by the RAND Corporation with funding from the U.S. Department of Health, Education, and Welfare (now the Department of Health and Human Services). The Health Insurance Experiment (HIE)

Lourie Lecture Policy Brief

was a study to determine the impact of health insurance on health care spending and health outcomes using as close as social scientists could get to a randomized controlled trial. The HIE involved approximately 2,000 non-elderly families from six different areas of the United States, which were assigned to one of 14 fee-for-service insurance plans with various (a) coinsurance, or cost-sharing, rates and (b) maximum dollar expenditures (MDE), or cap on out-of-pocket expenditures, for medical care services (Newhouse and the Insurance Experiment Group 1993). There was free care at one extreme, because one purpose of the HIE was to estimate expenditures under full and free national health insurance, which everybody was sure was just around the corner. At the other extreme was an insurance policy with 95% cost-sharing up to about 10% of a family's income (catastrophic coverage). The sample was largely middle class. Families in that group got a nickel when they sent their bills to the insurance company, which was mostly to compensate them for bothering to submit their bills so that researchers could track their health care expenditures. There were also intermediate levels of cost-sharing, 50% and 25%. (There was also a fifteenth plan called the individual deductible which I'm not going to talk about.)

Plan	Likelihood of Any Use (%)	Outpatient Expenditures (1991 \$)	Face-to-Face Visits	One or More Admissions (%)	Total Expenditures (1991 \$)
Free	86.8	\$446	4.55	10.3	\$982
25%	78.7	341	3.33	8.4	831
50%	77.2	294	3.03	7.2	884
95%	67.7	266	2.73	7.9	679
Individual Deductible	72.3	\$308	3.02	9.6	\$797

Source: Newhouse et al. 1993, Table 3.2, p. 41.

Table 1 summarizes the impact of different amounts of cost-sharing on the use of medical care. In the last column, the people with 95% cost-sharing spent about \$700 per year on average, in 1991 dollars, or about \$1,200 in current dollars, while the people with free care spent about \$1,000 per year (about \$1,600 in current dollars). An increase of somewhere between 30% and

Mark V. Pauly

40% in medical care spending was associated with free insurance. As you can see, there was one exception at the 50% level, but basically there was a graduated effect. Cost-sharing clearly does cause people to be more frugal.

The HIE also put enormous effort into documenting the impact of these lower levels of use of medical care on health outcomes. They concluded that for the bulk of the population in the experiment—the 94% who were not low-income and high-risk—there was little or no measurable effect on health outcome for any of the cost-sharing plans compared to free care, except that people with free care kept their eyeglasses up-to-date and their oral health was a bit better. But that was about it.

However, for low-income people initially at high risk, especially at high risk for high blood pressure, there was definitely an adverse effect of cost-sharing on health outcomes. The economists who were part of the HIE would say that the adverse effect could have been prevented by targeted screening without making care free for everybody for everything. The opponents of high-deductible health plans will say, and it is true, that the HIE found that people who paid cost-sharing were more likely to forego effective medical care. But the basic message that I take away from the HIE is that for the relatively low-risk there does not appear to be a drastically adverse impact of reduced use of medical care, as a result of cost-sharing, on health outcomes.

ER Visits by Plan

One part of the HIE looked at the impact of cost-sharing versus free care on overall visits to emergency rooms, and ER visits by diagnosis. The diagnoses were categorized as *more urgent* and *less urgent* by a panel of emergency room department physicians.

The HIE found that ER use related to the more urgent diagnoses was 23% lower on any of the cost-sharing plans than on the free plan, and the number of ER visits continued to decline as the level of cost-sharing increased. However, ER use involving the less urgent diagnoses was 47% lower on the cost-sharing plans

Lourie Lecture Policy Brief

than the free plan, and most of the observed response occurred between free care and the 25% cost-sharing plan. This says that when people have to pay a lot out-of-pocket they are much less likely to make use of the emergency room for conditions which were labeled by the authors as less urgent, but still nearly as likely to make use of the emergency room for those more urgent conditions. That's the good news.

Table 2. Response to Plans, by Diagnosis^a

Diagnosis	Annual ER Visits per 10,000 Persons		Visits on Cost-Sharing Plans as a Proportion of Visits on Free Plan
	Cost-Sharing Plans (25%, 50%, 95%, Individual Deductible)	Free Plan	
More urgent diagnoses			
Fracture/dislocation	134	168	0.80
Miscellaneous serious trauma ^b	57	67	0.85
Asthma	30	83	0.36
Otitis media	40	78	0.51
Chest pain/acute heart disease	59	57	1.04
Cellulitis/abscess/wound infection	36	39	0.92
Surgical abdominal disease ^c	42	38	1.11
Head injury	36	33	1.09
Urinary tract infection	22	43	0.51
Acute eye injury/infection	34	34	1.01
Obstetrical	29	31	0.94
Allergic reaction	26	26	1.00
Acute alcohol/drug related	27	20	1.35
Burn, second degree/complicated	19	22	0.86
Visits with any of the above diagnoses	991	1280	0.77 ^d
Less urgent diagnoses			
Abrasion/contusion	228	403	0.54
Sprain	164	249	0.63
Upper respiratory infection	92	190	0.51
Influenza/viral syndrome	40	61	0.65
Gastroenteritis/diarrhea	36	67	0.62
Abdominal pain (no other diagnosis)	34	65	0.53
Back/neck pain	32	67	0.45

Mark V. Pauly

Arthritis/bursitis	30	63	0.45
Headache	8	59	0.11
Acute bronchitis	14	36	0.42
Burn, first degree	7	28	0.28
Visits involving only the above diagnoses	663	1185	0.53 ^d
Notes:			
a. Equal partial weights were used to count visits involving multiple diagnoses. For example, if a visit resulted in three diagnoses, each diagnosis was credited with one-third of a visit.			
b. Includes foreign bodies, ingestions, ligamentous ruptures, and internal, neurovascular, and crush injuries.			
c. Includes cholecystitis, gastrointestinal bleeding, appendicitis, intestinal obstruction, and peptic ulcer disease.			
d. $p < 0.01$ for the difference between cost-sharing plans and the free plan, and for the difference between visits involving more urgent diagnoses and visits involving only less urgent diagnoses.			
Source: Newhouse et al. 1993, table 5.3, pp. 155-156.			

Ambulatory Care (Office) Visits by Plan

The potentially bad news, though, is in Table 3. Physicians who were part of the HIE team grouped several health conditions into four categories by the effectiveness of the medical care with which they could be treated (in the 1970s): *highly effective, quite effective, less effective, and rarely effective or self-care effective*. This table reports the rate of use of medical care in normal office practice, by medical effectiveness and insurance plan.

Medical Care Effectiveness Category	Adults (N=3,543)			Children (N=1,830)		
	Free	Cost Sharing	Cost Sharing as % of Free	Free	Cost Sharing	Cost Sharing as % of Free
Highly Effective						
Acute	28.4	19.0	67 ^a	32.0	23.1	72 ^a
Acute/Chronic	16.8	13.3	79 ^a	19.4	16.1	83
Chronic	12.6	10.7	85	4.7	2.4	52 ^a
Quite Effective	23.2	17.6	76 ^a	22.4	17.6	79 ^a
Less Effective	25.0	18.6	74 ^a	12.9	9.7	76
Rarely Effective	10.5	7.4	70 ^a	5.1	3.4	67
Rarely Effective but Self-Care Effective	38.8	29.2	75 ^a	35.6	23.9	67 ^a
Notes:						
a. Effect of cost sharing significant at $p < 0.05$.						
Source: Newhouse et al. 1993, table 5.10, p. 166.						

Lourie Lecture Policy Brief

If we take just the rarely effective and self-care effective category, there's a 25% percent reduction in use for adults and 33% reduction in children between the free and cost-sharing plans. If you agree with the HIE physicians that the care is indeed rarely effective or that self-care would be effective, this reduction in use might not worry you much (see Newhouse et al. 1993, Table 5.7 for the conditions within each category). But the impact of cost-sharing on use was roughly the same proportion for care that was categorized as highly effective. So it is literally true that cost-sharing caused a reduction in the use of highly effective care.

Insurance vs. No Insurance (Pauly 2005)

Taking this analysis one step further, we looked at the effect of the presence or complete absence of insurance coverage on medical care spending and health outcomes for non-poor young women ages 21 to 40, using data from the 1996 Medical Expenditure Panel Survey. There are two sets of dependent variables. One measures the amount of care used, in terms of money spent on health care and visits to physicians' offices or hospital outpatient departments. The second measures health status or health outcomes, in terms of whether the person's self-reported health status was fair or poor, and the number of chronic conditions. We also used the person's response to a question of whether she went without care that was needed for health.

Estimate	Log Total Spending	Outpatient Visits	Going without Needed Care	Health Fair or Poor	Chronic Condition
OLS ^a	4.48 ^b	2.43 ^b	-0.75 ^b	0.05	0.21
IV ^c	10.4 ^b	3.52	-5.94 ^b	2.05	-0.76

Notes:
a. Single-equation or ordinary least-squares estimates.
b. Statistically significant at 0.05.
c. Instrumental-variables estimates.

Source: Pauly 2005.

Mark V. Pauly

This study, I must say, didn't turn out the way I had hoped, but maybe it turned out the way I expected. Table 4 shows that for both the use of medical care and total spending, the people with insurance had substantially more total spending and outpatient visits than the people without insurance. The people with insurance were also much less likely to report going without needed care. However, we couldn't find any connection, statistically speaking, between having or not having insurance and self-reported health status or the presence of chronic conditions.

Does Insurance-affected Care Matter?

If people with cost-sharing forego effective care, at least some of the time, why is there no appreciable measured impact on their health outcomes, in either the RAND study or my study?

Let me start with the least likely answer and work my way up. The explanation actually offered, somewhat tongue in cheek but perhaps not, by some of the medical researchers on the RAND project, was that unnecessary care may harm health: something like "Maybe that care that you were induced to use because it was free had adverse side effects which harmed your health enough to wipe out the beneficial effects that you got from the essential care that you were induced to use." It would be a sad story about American medicine, but it could be true.

A second possibility, which is even more esoteric, is that within the medical care effectiveness categorizations, assuming that they have legitimacy—and I think they do, at least they were vetted by a lot of physicians and public health specialists—care with high average effectiveness may also display a large range of low marginal benefits. Then, too, perhaps the clinical judgments are flawed.

Here are two possible explanations that I'm betting on most at the moment.

Lourie Lecture Policy Brief

- Imagine that consumers actually don't really have good information at all. They know that medical care is good, but they guess that the average benefit from a dollar spent on medical care is the same regardless of the kind of care. They would still choose to use less medical care with cost-sharing than without, because eventually they would prefer to save their income to pay for other consumption, as opposed to spending it on medical care. But that might explain why they reduce care proportionately across the board; they don't know what's high-benefit and what's low-benefit.
- The health measures are insensitive. In fact, studies that have been done of some of the greatest and most effective medical interventions—like using statins to reduce high cholesterol and beta blockers to reduce high blood pressure—can show statistically significant impacts on deaths from those particular diseases. But if we look at the overall health level of the people who got the statins or the beta blocker, do they live longer in general? The answer oftentimes is no. Sometimes this is because of competing risks; if you don't get your heart attack you may die on your motorcycle. And sometimes it may just be noise in the data.

My Current Views

On Moral Hazard and Cost Sharing

- Cost sharing does cause a reduction in the quantity and quality of care that would be mildly beneficial to middle-class people of average health. It saves enough to make this a desirable tradeoff.
- The current tax subsidy for health insurance premiums pushes this tradeoff in the direction of inefficiency (second best) by encouraging excess insurance coverage with excess moral hazard.

The best strategy that I see for government to take in helping people choose their health insurance is to be aggressively neutral,

Mark V. Pauly

to basically say to people: “Perhaps we want to encourage you and to give you a small tax break, for catastrophic coverage, because in the RAND experiment everybody had catastrophic coverage. But beyond catastrophic coverage we will not change your taxes or regulations to try to push you one way or another. It’s up to you, person, to decide how you want to make this tradeoff between risk protection and additional medical care use.” Personally, I’d probably go for the low cost-sharing plan, because my view is life’s too short to spend all your time worrying about economizing on medical care. But if somebody wanted to choose a high-deductible health plan, I’d be willing to let them do it.

The logical thing to do if you could get sufficient data would be to use cost-sharing to encourage people to use medical care that does in truth have high marginal benefit, and discourage care with low marginal benefit. You could design health insurance policies with what’s called benefits-based cost-sharing: lower cost-sharing for the highly effectively things that consumers seem to underuse, like the beta blockers, and raise cost-sharing for the things that consumers seem to overuse. And try to encourage people to move in the right direction.

No one has ever argued that moral hazard is a reason why someone should remain totally uninsured. We should have catastrophic coverage for all. Low-income people should not be subject to cost sharing in general. Beyond that, moral hazard is a phenomenon to be managed, and it should be managed well by competitive insurers offering a range of plans to consumers, in a neutral way.

On Adverse Selection

Adverse selection is caused by imperfect insurer information about risk. From an economic perspective, the efficient structure is perfect risk rating. But policy makers do not like risk rating: they seek “markets” in which everyone buys generous insurance, even though the premium is uniform, e.g., community rating. Most of us in our normal lives would like insurance that’s what

Lourie Lecture Policy Brief

you might call a reverse Lake Wobegone, where everybody pays less than average for their insurance. But we know that's not possible. Here in New York State I talk about community rating with some trepidation, but the basic message from economic theory is that the best strategy, the way to get as many people as possible to buy health insurance, is to have premiums tailored to people's risk level. Then, the low-risks would buy. Even the 23-year-old immortals would buy, if we got health insurance premiums for them down close to the level of their expected expense, although we might need to run a series of commercials, "This is your brain without health insurance," to persuade them. But the middle class high-risks would still buy insurance because it's better to have insurance than to be uninsured if you should get sick.

We do have some examples of adverse selection in health insurance, but the great bulk of them have occurred when the market was interfered with, and where adverse selection arose not from some decentralized competitive world but rather from tampering with what would otherwise be the operation of competitive markets.

Exhibit A for that kind of market tampering, Medigap coverage for prescription drugs, is out of date now, thank goodness. The calculations around that kind of insurance went something like this. The typical policy would cover prescription drugs up to a maximum payment of \$1,100 a year. The premium that Medigap insurers had to charge to break even was over \$900. So that tells you that almost everybody who bought that insurance used the whole \$1,100, which is not the average drug expense for a person over age 65. Clearly, people who were likely to use drugs could and did buy that insurance, because Medigap did not permit the insurer to charge a higher premium to people who were already using more expensive medicines than average. Medigap was trying to be nice to those high-risk people, but it ended up not being all that helpful because it was charging them almost as much as they were going to get in benefits. And the low-risk people dropped out entirely.

Mark V. Pauly

That's the rationale for a politically incorrect statement: that community rating is a foolish and inefficient way to subsidize lower income high-risks. I do believe there are reasons why we might want to subsidize them, but we should use general taxes to raise money for subsidies to high-risks and then make transfers to them.

There are some interesting ways to limit adverse selection. I'll just talk about three of them here.

1. The most obvious one would be risk rating based on good information. It turns out that other circumstances in which we have seen adverse selection have been in private sector settings where, for some reason, health economists usually study university health insurance plans, and when universities incorrectly set the premium differential between the high-generosity plan and the high-deductible plan, everybody left the generous plan and went to the high-deductible plan, or at least a lot of people did. Or in some cases the calculations were just anticipating that this would occur, and being very upset about the prospect.

A well-managed benefits department with good actuarial and statistical consultation can figure out how to set the premium differential for the low-cost high-deductible plan to make sure that it's not inefficiently attractive to high-risks. One way to keep high-deductible health plans from totally wiping out the risk pool in employment-based group insurance is to make sure that you set the reward for joining the high-deductible plan at a level appropriate to the risk level of the people who are choosing it, not the average risk difference. That will get choices to be made more efficiently (though not perfectly).

2. There is a provision in individual insurance called guaranteed renewability at class average premiums. If you buy individual insurance in most states, in effect your premium has two parts. One part of your premium will pay your expenses for next year. But because the insurer has promised if you renew they will sell

Lourie Lecture Policy Brief

you coverage at the same premium as they're charging everybody else, the insurer charges an extra premium to collect enough money from you to cover the difference between the premium if you become a high-risk and the lower premium that they would charge you in the future. This is a market solution to deal with what I think is the main reason why we are really worried about adverse selection: the fear that "What if I became a high-risk unexpectedly and not entirely by my own fault?" Risk averse people want to avoid risk reclassification. Guaranteed renewability can prevent that. If you have bought a policy with guaranteed renewability then there is no way for an insurer to come in and pick you off if you're a low risk, no way for adverse selection to occur. And if you're a high risk, there's no reason to try to buy a more generous policy because you've got the best possible policy you can have.

Is there evidence of large scale adverse selection in competitive health insurance markets? Cardon and Hendel (2001), using data on single employed individuals (18 to 65 years old) from the National Medical Expenditure Survey (NMES), said no. So I don't lie awake nights, worrying about adverse selection for the bulk of the population. I do worry about those low-income high-risk people.

Conclusions

- Given such imperfect information as we have, we should use cost-sharing carefully but bravely.
- Control of moral hazard for the average person is unlikely to be harmful if coverage is chosen based on neutral tax incentives.
- If tax incentives are distorted, and either encourage or discourage cost-sharing, it's likely to be harmful.
- Adverse selection can be tamed in most settings, though it probably cannot be totally prevented. Direct subsidies to

Mark V. Pauly

coverage for low-income high-risk people is better than premium regulation.

- And low-income high-risk people do need generous coverage, but the rest of us should only have it if we're willing to pay its true cost.

Proposals for the Political Debate

There is an inevitable temptation for policy makers to not only review insurance policies but to decide what kind of insurance policy they think makes sense, and then slant subsidies in favor of that policy. We need to tell the people in Congress, "You weren't elected to be a cheerleader or an insurance salesman. You were elected to offer efficient incentives to your constituents to choose what makes sense." I certainly don't want any Republican designing my health insurance, much less a Democrat. So the basic message here would be to try to be neutral. Here's my proposal for the political debate.

We should agree that neither better health nor cost-containment is unmitigatedly good. We need the right mix. I know this is economics talking, but I'm programmed to say it. And no one knows what that right mix is, in part because we don't know how insurance affects health.

I think we should agree on the distribution of total taxes first and then decide what the rich should pay, and how much help the poor and the non-poor should get.

We should take encouraging increased cost-sharing for lower-income people off the table. My biggest fear about high-deductible health plans and health savings accounts is that a few low-income people might be induced to choose them. I guess I'd rather have them have a high-deductible plan than no insurance at all, but that certainly wouldn't be my most preferred plan for a low-income person.

Lourie Lecture Policy Brief

Rather than have high-deductible health plans tax-subsidized, I would instead limit the tax incentive that's offered to high-income people to induce them to choose plans with low levels of cost-sharing, which would go along with the cap.

And finally, for the lower-income or high-risk people:

- We should subsidize generous coverage with a predetermined tax credit of an amount large enough to make choosing the right policy a reasonable choice.
- Regulate those qualified policies lightly, at least in the beginning, because we want to make sure people get some insurance, and as we know from the RAND experiment, even a relatively high cost-sharing plan can yield as high a level of health outcome as a more generous one.
- Consider denying tax breaks for high-deductible health plans to lower-income people so they aren't tempted.
- Make sure there's a much better alternative for low-income high-risk people, and be passionate about that.

It's important to focus passion, I guess, for cost-effective deployment of passion. For a health economist that would be the best of all possible worlds.

Bibliography

Cardon, James H., and Igal Hendel. 2001. "Asymmetric Information in Health Insurance: Evidence from the National Medical Expenditure Survey." *RAND Journal of Economics* 32 (3) (Autumn): 408-427.

Institute of Medicine. 2001. *Coverage Matters: Insurance and Health Care*. Washington, DC: National Academies Press.

Mark V. Pauly

- Institute of Medicine. 2004. *Insuring America's Health: Principles and Recommendations*. Washington, DC: National Academies Press.
- Levy, Helen, and David Meltzer. 2004. "What Do We Really Know about Whether Health Insurance Affects Health?" Chapter 4 In *Health Policy and the Uninsured*, edited by Catherine G. McLaughlin. Washington, DC: Urban Institute Press, 179-204.
- Newhouse, Joseph P., and The Insurance Experiment Group. 1993. *Free for All? Lessons from the Rand Health Insurance Experiment*. Cambridge, MA: Harvard University Press.
- Pauly, Mark V. 2005. "Effects of Insurance Coverage on Use of Care and Health Outcomes for Nonpoor Young Women." *American Economic Review* 95 (2) (May): 219-223.