THE PRODUCTION OF HEALTH

1. How to think about health care, What is the good?
   Dentist drilling out tooth
   Physical exam
   Eating our vegetables

What gives us Utility is what we derive from the action.

We all have some reservoir of health that we want to make as big as possible, all else equal.

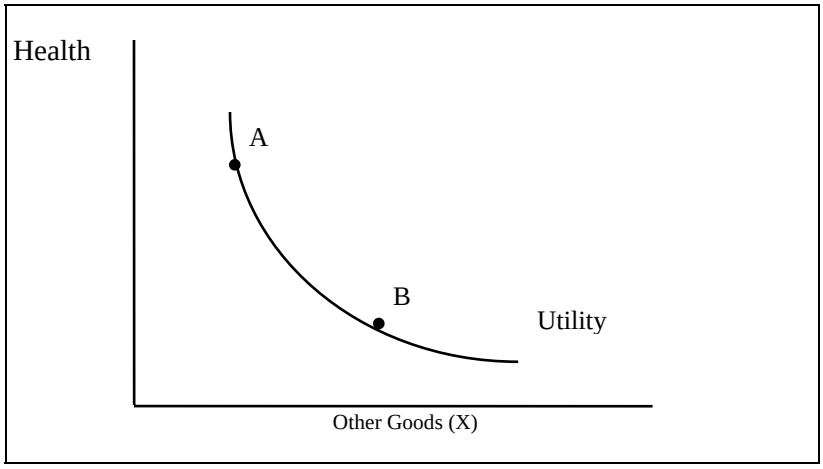
Health is a durable good (like a car, house, refrigerator, etc.) We are endowed at birth with a stock of health and the rest of our lives we make choices that affect that stock.

As consumers our ultimate goal is to maximize our utility

$U = f(X,H)$ where X is other things and H is our stock of health

Note the interdependence of X and H: if H increases MU_x increases, if X increases MU_H increases

We can think of health care as things that increase our stock of health



Note the IC goes asymptotically toward infinity: all the X in the world is not good unless you have some health and vise versa.

We will come back to this in deriving the demand for health care, but note that it is not bad to consume French fries or cigarettes as long as we understand the costs involved!

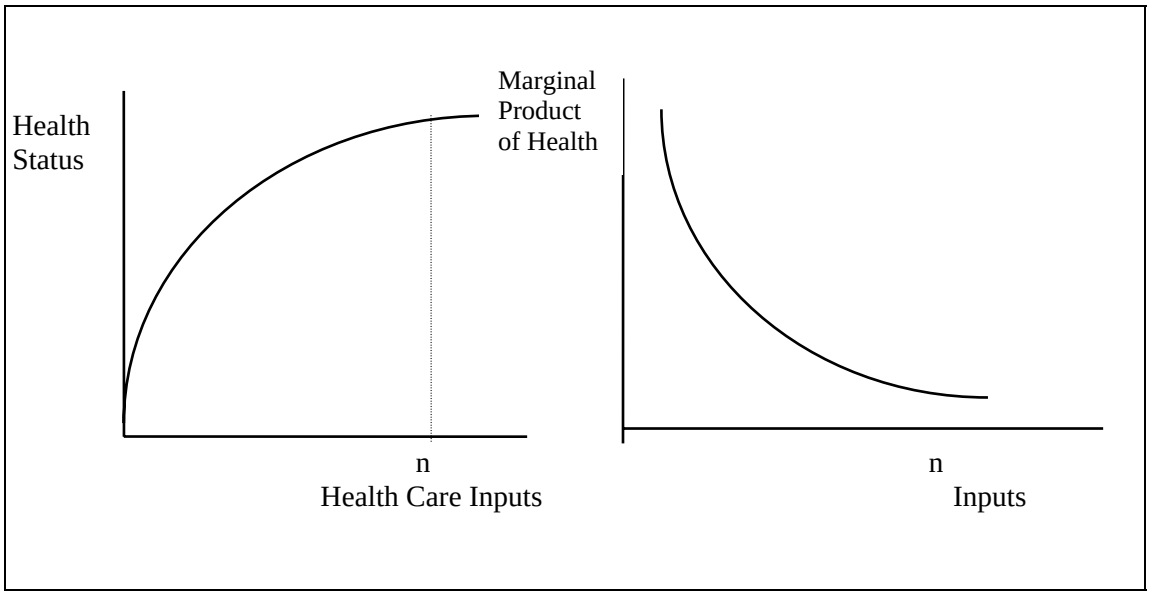
Almost 40% of deaths for those aged 15-24 due to vehicle crash - raise driving age to 25?
Smoking increases the risk of heart attack by 2.5 times, high cholesterol by 2.4 shouldn't we ban these as well?

2. The Production of Health

How to think about the production function

Our stock of health is a function of lots of things:

HS = F(health care, life style, environment, X)



Health care is some aggregate measure, maybe total expenditures. Note we are holding constant all the other inputs to the production function. If any of them increased, the curve would shift upward.

The marginal product of HC is the increment in HS from a 1 unit increase in HC.

Note the *Law of diminishing marginal product*
If we were currently at n - HC has made a large total contribution to HS - AP is high, but the marginal product will be quite low. Additional expenditures on HC will not impact health

The MP is probably the most relevant for policy!!

Curve could eventually reach a point where MP negative - over use of medical care - lots of unneeded surgery etc.

Conclusions from empirical studies.

1. MP of HC is quite small elasticities around .1 to .3. Although health care is very important for some groups: infants, minorities, etc.
2. reduced use of HC suggested to have little impact on health
3. lifestyle very important
4. education substantially increases health, although the causation is unclear

1. Grossman

better educated people understand the technology or know-how needed to stay healthy. If this were true then a transfer of funds out of medical care into education would greatly improve health. That is expenditures on health would yield the MP from production fcn studies.

2. Fuchs

Self selection problem. People who choose higher education also more healthy people with low discount rates tend to have higher education since they are patient. Similar thing is happening with their stock of health. May be willing to give up unhealthy activities today in return for an increased life span. Likewise those who do not obtain a lot of education are impatient - they want it now. Thus, they are less likely to choose a healthy lifestyle - more likely to drink, smoke, eat onion rings, etc. The implication is that increased expenditure into education will not improve health much.

THE DEMAND FOR MEDICAL CARE

A. The Demand for Health Care

1. Conceptual Framework

Grossman adapted human capital theory to explain the demand for health and health care. His theory demonstrates how health demand is different from other goods:

1. Not medical care per se that consumers want but health

2. The consumer does not passively purchase health but produces it - medical care demand is a derived demand for an input to produce health itself. People want health and they demand medical care to produce it (along with lots of other things)

3. Health last for more than one period. It is a durable good.

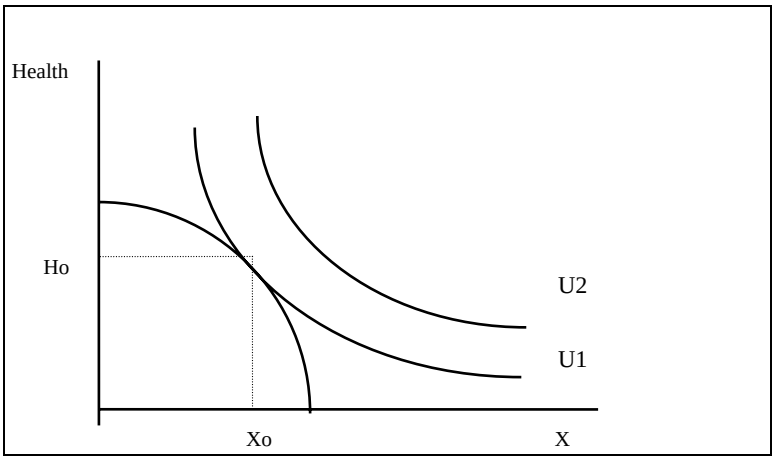
4. The demand for health has two aspects:
    1. Pure consumption aspect - health is desired because it makes people feel better
    2. Pure investment aspect - health is desired because it increases the number of health days available to work and thus increases income.

5. The Demand for health is uncertain. The idea is that unlike other goods, we really do not know what our demand will be like in the future. This adds to the mix, because we need to allow this uncertainty or risk to affect preferences. This gives rise to the market for health insurance, and also leads to many of the problems in health care markets.

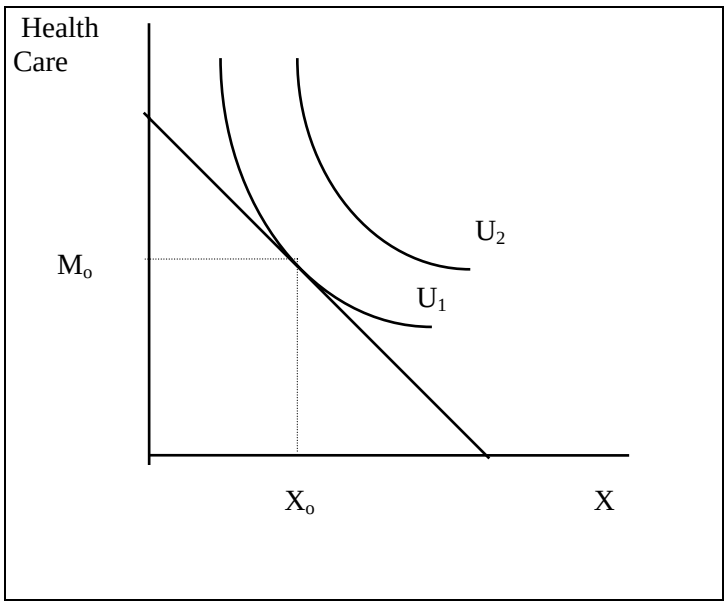
First we will deal with demand with certainty to see how the consumer choice model plays in here, and then we will add the complication of uncertainty later.

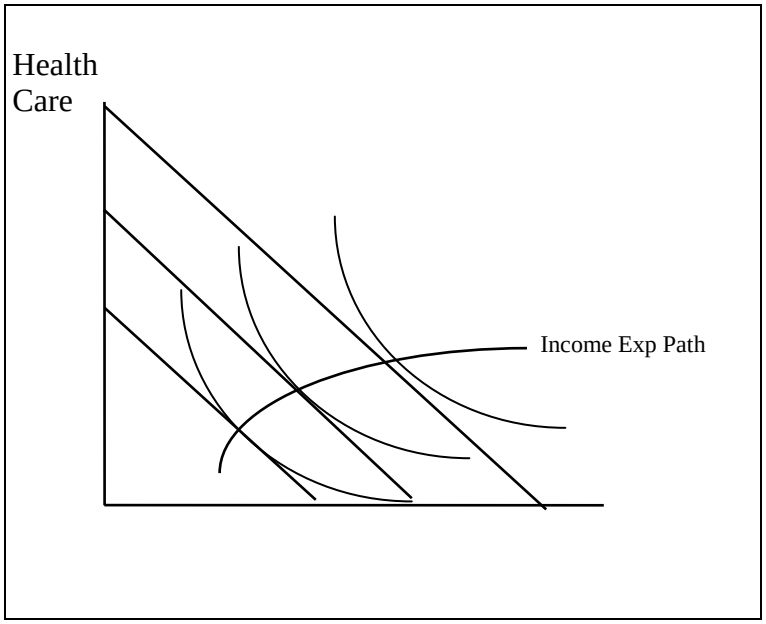
2. Consumer choice and demand

First lets assume a simple good to show where demand for health comes from - then look at some more complicated issues specific to health (insurance, time preferences, production)



PPF shows feasible sets of X and health that we can attain (as individuals) given our production process and our budget and the utility derived from various combinations of X and H. Underlying this is some production process one of the inputs into this is health care. Thus we can derive a similar graph for X and health care that looks more familiar to us.





Sanitation Effect - initially
Health Spa effect - increased income results in a change in lifestyle - can afford to pamper yourself
Life in the fast lane - increased risk taking - driving bungee jumping etc.

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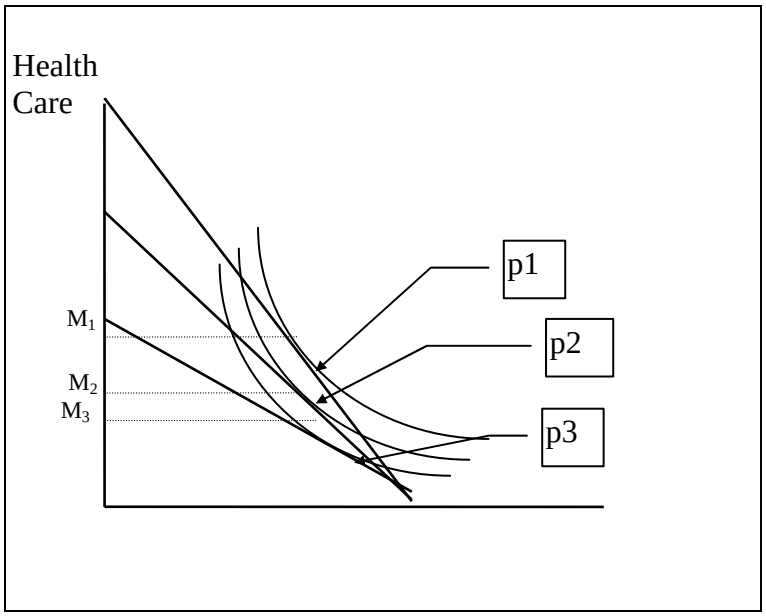
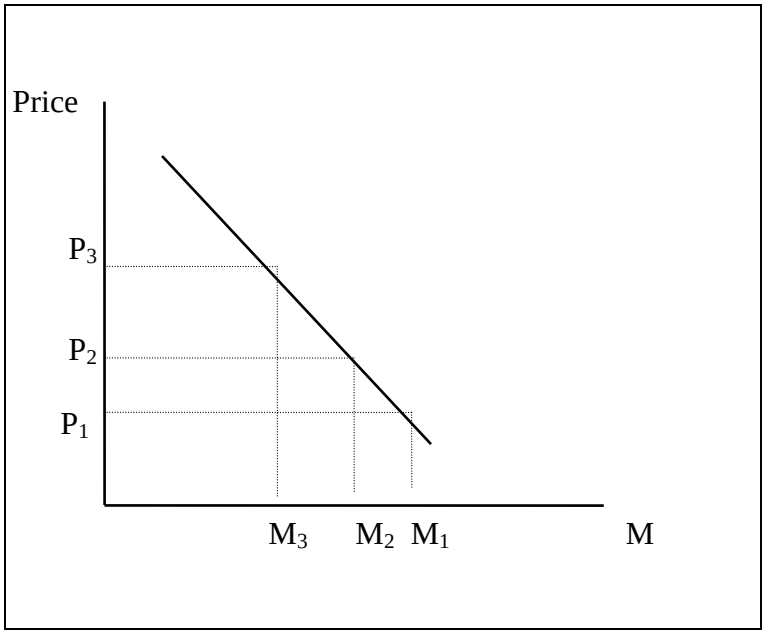
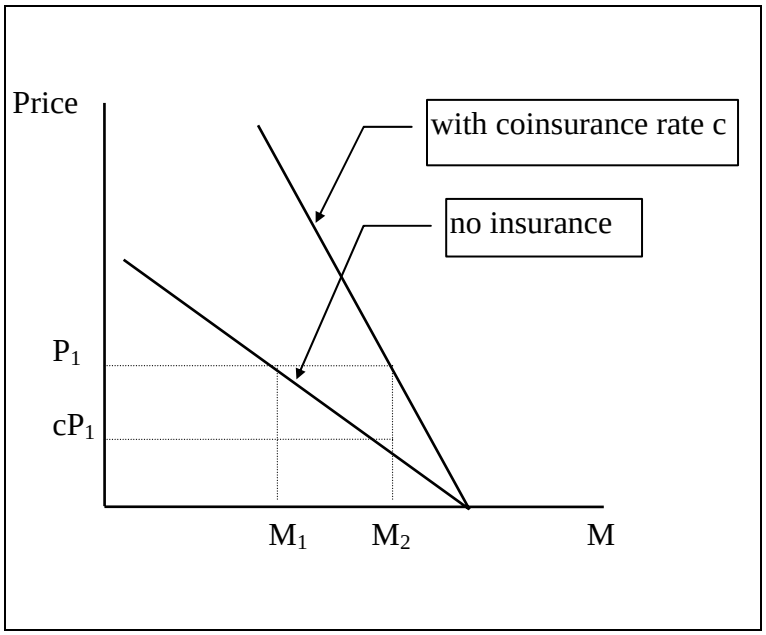
The demand for health care is derived in the same way as before.





Coinsurance
Often consumers are covered by health insurance. Typically coinsurance refers to the percentage paid by the patient while co-payment refers to the amount paid by the patient.

Individual effect

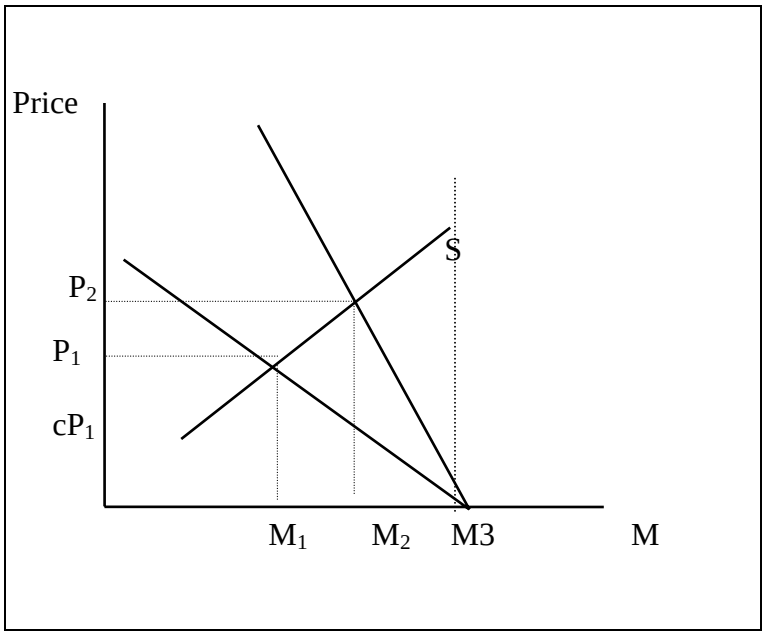


With insurance the demand becomes more elastic

Without insurance, if the price was P_1 then consumers would demand M_1. But with insurance they consume M_2. It is as if the price fell to cP_1.

The more generous coverage (or the lower the coinsurance rate) the steeper the demand curve become until it becomes vertical at c=0. Critical feature here is that coinsurance makes the demand less elastic.

Note the effect on the market



The effect of insurance on the market is to rotate out the demand. Assuming an upward sloping then that increases Medicare care from m1 to m2 and increases price to p2. Thus expenditures in health care increase from p1*m1 to P2*m2. This is a major factor in the increase in medical expenditures over the last 40 years. At least according to some.

This response to the economic incentives is termed ***Moral Hazard*** – the increased usage of services when the pooling of risks leads to decreased marginal costs for the services. It is also used to refer to the change in behavior that may occur when risk is reduced – driving more dangerously because of insurance and seat belts, FDIC.

Note that the more inelastic the demand for health is the less this loss will be. Also the use of coinsurance rates reduces this. Note that in the absence of c the consumption would be M3.

See "The Moral Hazard Myth" from the New Yorker Magazine.

4. Empirical measurements of demand elasticities

A. Price Elasticities most estimates are inelastic when they look at market elasticity. These tend to be estimated in the -.05 to -.2 range for hospital services
-.15 to -.3 for physician visits.

Pretty inelastic.

However when *Firm Elasticity* is considered we get a different story:

Physician Services using physician price or visits: -3.0 to -5.7
Hospital services patient days or admissions: -.74 to -.80

Note the contrast = suggests that market for physicians is quite competitive while there is considerable market power in the market for hospital services.

B. Income Elasticities : Generally quite small, but positive. More income causes a slight increase in health care.

Insurance and Risk Aversion

1. The Economics of Risk and Uncertainty

Why do we buy insurance? On average we pay more in premiums than we receive in benefits
Why do people buy lottery tickets? For every $1 you bet, you receive back $.50

The fact that the outcomes of some events are uncertain, cause us to change our standard utility theory.

First we will talk about the problem in general and then will apply it to the health care market.

Example 1:
Suppose you have a choice:
1) 10,000 for sure
2) I flip a coin:
H=25,000
T= -5,000

EV(1) = 10,000
EV(2) = .5(25,000) + .5(-5000) = 12500 + -2500 =10,000

What if changed 2 to
H=40,000
T= -5,000

EV(2) = 17500

What if changed to
H= 50,000
T= -5,000

EV(2) = 22500

Now what if :
H = 10000
T = -5,000

EV(2) = 47,500

What if:
H = 1,000,000
T = -5,000

EV(2) = 497,500

Note that if expected value was what was driving our decisions, everyone should have been indifferent to the first gamble, and jumped on number two for all the others. So obviously we do not try to maximize our expected value. What do we do then?

Expected Utility (von Neuman and Morgenstern)
Rational decision makers will choose the course of action that has the highest expected utility

The vonNeumann - Morgenstern utility function shows the decision makers preferences w.r.t. risk. Indicates how we convert wealth into utility, accounting for different states of the world. When deciding which of the above gambles to take (1 or 2) we compare:

EU(2) =.5U(40,000) + .5U(-5,000)
EU(1) = U(10,000).

This approach allows an unequal weighting of outcomes: a loss of 5,000 may be more undesirable than a gain of 40,000 is desirable.

Suppose $U(x) = \sqrt{x}$ if $x > 0$ and $-\sqrt{|x|}$ if $x < 0$ where x is wealth, and wealth from all other sources =0.
So now:

EU(1) = $\sqrt{10,000} = 100$
EU(2) = $.5\sqrt{40,000} - .5\sqrt{5,000} = 100-35.36 = 64.64$

Thus this person would prefer the sure thing to the risk even though the expected value of the gamble is greater than the expected value of the sure thing.

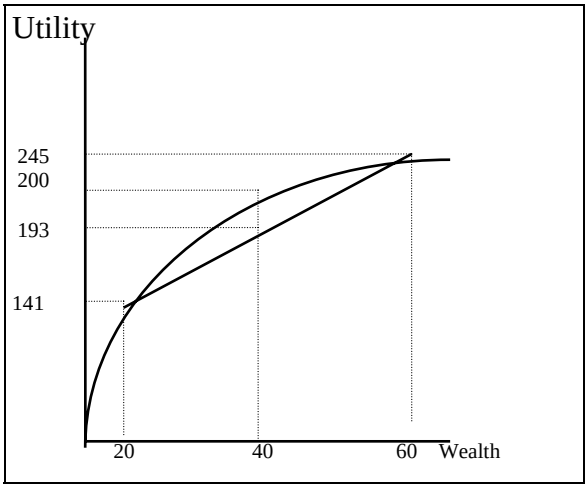
Now suppose Pete's utility function is $U(x) = x^2$ if $x>0$ and $-x^2$ if $x<0$

EU(1) = $10,000^2$ = 100million
EU(2) = $.5(40,000^2) - .5(5,000^2)$ = 800m - 12.5m = 787.5m So Pete would flip the coin

What sets these two individuals apart?

Risk lovers vs. Risk averters>

A *Risk Averse* Utility Function:



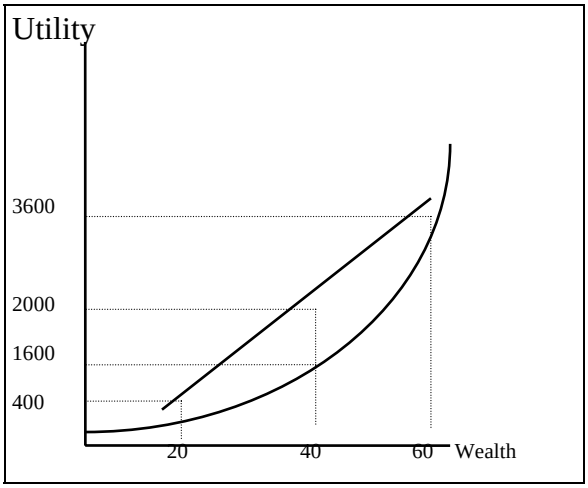
For a Risk Averse person utility increases in wealth but at a decreasing rate : diminishing MU of income.

Suppose we are choosing between 2 jobs:

1) 40,000 for sure
2) .5 *20,000 or .5*60,000

The expected value is 40,000 for both, but EU(1)=200 while EU(2)=193. So the risk averse person would choose 1. **That is a risk averse person would turn down a fair bet.**

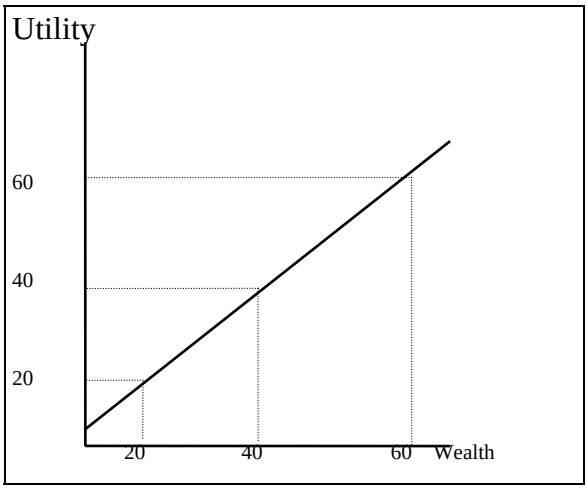
But a risk lover will act very differently:



For a Risk Loving person utility increases in wealth at an increasing rate : Increasing MU of income

Now this person if offered the same opportunity:
EU(1) = 1600
EU(2) = 2000
So a risk lover would go for the risky job.
That is a risk lover would accept a fair bet

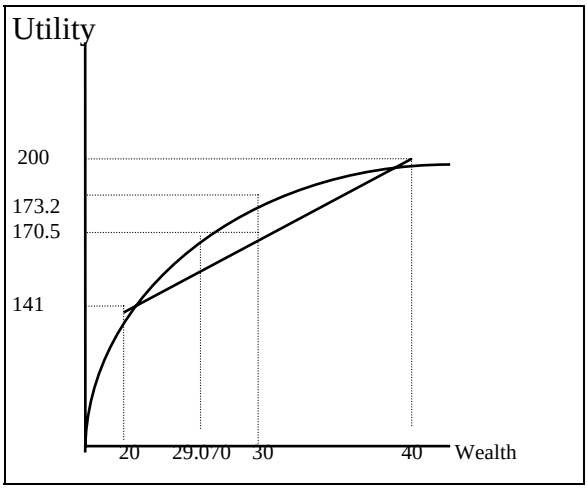
Risk Neutral:



For a risk neutral person utility increases in income at a constant rate. So this person would be completely indifferent to a fair bet.

2. WHY PEOPLE BUY INSURANCE (or the demand for insurance):
We can use this theory to explain the market for health insurance
Suppose you think there is a .5 probability you will need surgery with a cost of $20,000 and suppose your income is 40,000.

Suppose your utility function is $U(W) = \sqrt{W}$
So that U(20,000) = 141
and U(40,000) = 200 and the expected utility of no insurance is 170.5



Now suppose you are offered an insurance policy that will cover all of your expenses in the event of illness and this will cost $10,000. Will you buy this?

If you do, you get 30,000 for sure and U(30) = 173.2. So yes, you would buy the insurance. You will be better off with the insurance than without (but note your expected income is 30k in both cases).

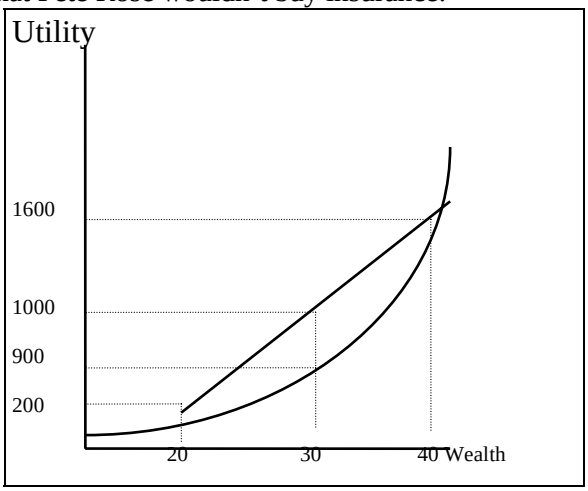
How much would you be willing to pay for insurance? Or at what income for sure would you be just indifferent to having no insurance? EU(no insurance) = 170.5

so find the W that solves: $\sqrt{W} = 170.5$ or $w = 170.5^2 = 29{,}070$

so if the insurance policy was 40,000-29,070=10,930 you would be just indifferent to buying the policy. This is know as a *Certainty Equivalent*

The more concave the utility function the larger this amount - or the more the person would be willing to pay to avoid risk.

Note that Pete Rose wouldn't buy insurance:



His utility from no insurance is 1000, but if he gets 30k for sure his utility is only 900 so he wouldn't want it. He would only buy insurance if the expected utility was higher with it than without it. So without it he will get an expected utility of 1000 find the wealth for sure that gives 1000 or $X^2 = 1000 = 31623$ so he would only pay 8377 for insurance.

But note that the insurance company would not be willing to sell insurance for this price!!

So the more risk averse a person is - or the more concave their utility function is - the more likely they will be to buy insurance

Also the lower your assessed probability of getting sick, the less likely you will be to buy insurance

Lots of uninsured people in the country - they deserve insurance?

Many are younger with low probability of getting sick, and who may not be very risk averse.

So many are uninsured by choice

Note it is the uncertainty that is important here, not necessarily the high cost of the adverse events. There are many high cost events in our lives that we do not have insurance for (my sons will need braces, they will want to go to college, etc.) But the difference is that I know this and can plan for it (I know that in a few years I'll have to buy braces so I'd better save now). But with health care, the problem is that many events are not predictable. If I knew that in 5 years I would need heart surgery, I could (in theory) save enough to pay for it by then. But the problem is with uncertainty – there is a small chance that I will need it this year. It is this risk that insurance gets us out of.

An alternative way of looking at the insurance issue is from the standpoint of ability to pay. Note that heart surgery is pretty expensive, and even if I knew it was coming I might not be able to pay for it no matter how well I planned. But since it is a relatively unlikely event, it will only occur to a small fraction of the population. So insurance transfers money from healthy people to the sick and enables them to pay for highly valuable services they would otherwise be unable to afford.

Another Example:

Suppose your wealth = \$400,000 and $U(M) = \sqrt{M}$
there is a probability = .001 you will need an operation which will cost \$400,000 and reduce your wealth to zero. What is the most you would pay for insurance to cover this risk?

Without insurance $EU = .001(0) + .999(\sqrt{400{,}000}) = 631.8$
We want to find the insurance premium that gives you some level of wealth for sure that makes you just indifferent to not having insurance. Or $u(m) = 631.8$ or $x - 631.8^2 = 399{,}200$
or 400,000 - 399,200 = \$800 is the maximum premium you would pay for this insurance.

Now suppose $U(M) = \sqrt[3]{M}$ Will you pay more or less for this insurance?

EU no insurance = .999(73.68) = 73.6 so $x = 73.6^3 = 398{,}688$ for sure would give the same utility so you would pay 400,000 - 398,688 = 1312 for insurance.

Now what if your wealth is 1million Will this make you more or less willing to pay for the insurance?

$EU(\text{without}) = 0.001(\sqrt{600{,}000}) + .999(\sqrt{1\text{m}}) = 0.775 + 999 = 999.775$
so $U(W) = 999.775$ implies $W = 99{,}955$ so you would be willing to pay \$450 for the same insurance.

Conclusions:

1. Insurance can be sold only in circumstances where there is diminishing marginal utility of wealth or income – risk aversion.
2. Expected utility is an average measure; the individual either wins or loses the bet.
3. Even though people will have less wealth as a result of the purchase of insurance, the increased well-being comes from the elimination of risk.
4. insurance, by pooling large groups of people with a low rate of incidence allows people to have more access to care than they would otherwise.

3. The supply of insurance

Now consider the insurance company's problem:

Suppose there is a 0.01 probability that a person will need surgery and the policy will pay 100,000 if you need surgery. The company expects to have to pay out on 1% of all policies sold or it will pay, on average, 1,000 per policy sold. If it sold its policies for 1,000 then it would break even - this is known as the actuarially fair premium. As the insurance company became more and more competitive the price of a policy would approach 1,000. Note that the existence of the market is dependent on the risk averse nature of consumers. If they are risk averse they would prefer to loose 1,000 for sure vs. A .01 chance of loosing 100,000. So the market exists.

Recall the moral hazard problem
The above assumed behavior did not change as a result of insurance. But we know that it will. So that the consumption will increase and so the premium of 1,000 would tend to be too little to cover the insurer's costs. So in order to cover costs rates increase.

Thus an insurance premium has two components. The first is the premium for protection against risk, assuming that no moral hazard exists. The second is the extra resource cost due to moral hazard.

Experience rating alleviates moral hazard – car insurance vs. health insurance.

But note that experience rating reduces the income transfer effect from the healthy to the sick that allows more access to care.

Asymmetrical Information and Agency

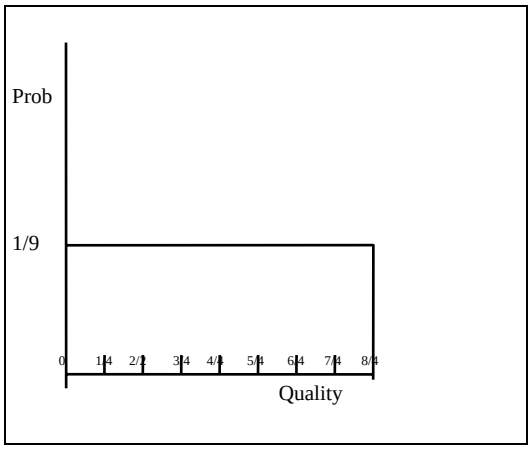
The assumption in economics is typically that individuals have perfect information about their relative choices. As we saw last time, if there is uncertainty, markets for insurance arise. One of the side effects of health insurance is the over consumption caused by the reduction in risk to the consumer (moral hazard).

In this section we will talk about two more problems that arise with lack of information: the case of information asymmetry is when one party of a transaction has private information. We will see that this causes problems in the market. This occurs in two places: in the market for insurance the consumer may have better information about his health than the insurer, and thus the market for insurance may operate inefficiently. Secondly, physicians may have better information about the health of the patient, and thus may be able to exploit this (this, known as Supplier Induced Demand (or SID) will be addressed later

Asymmetric Information and the Lemons Principle

The guy who first described the problem applied it to the used car market, so it makes sense to begin there, then we will move to the market for health insurance.

Suppose there are 9 cars in the market, some are in mint condition (peach) and some are complete lemons. Suppose the sellers of cars know the true quality but the buyers do not. Further suppose that quality follows a uniform distribution such that of the nine cars, one has a quality of 0, then 1/4, 1/2, 3/4, 1, 1 1/4, 1 1/2, 1 3/4, and 2 or :



The horizontal axis shows the quality of the car and the vertical axis shows the probability of selecting a care of given quality (since there are 9 cars with diff probability the prob is 1/9 for all of them)

Suppose sellers value their cars at $1 per unit of quality, so that if he had a car with quality 1/2 he would sell it for any price greater than $.50. Buyers value cars at $3/2 per unit of quality so a buyer would be willing to pay $.75 for the car. Since buyers are willing to pay more than the minimum acceptable price to the seller, the market exists.

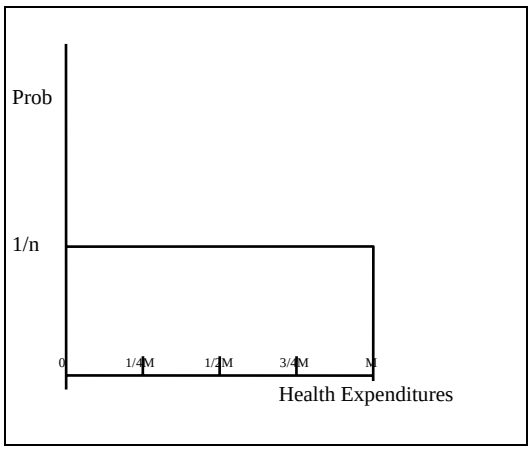
But how does asymmetric information change things? Suppose an auctioneer called a price of $2. All owners would be willing to sell their cars, however, buyers would not be willing to pay $2 for a randomly selected car, they would be willing to pay $3/2 the average quality or 3/2*1 = $3/2 or 1.50. But suppose now the auctioneer lowers the bid to 1.50, now what will happen? Note that the top two quality cars would no longer be offered for sale since owners value them at 1 3/4 and 2 respectively. But note this affects the average quality. By chopping off the top two cars average quality is now 3/4, so buyers would only be willing to pay 3/2*3/4 = 9/8 = $1.125 for a car and again the price called by the auctioneer is too high.

Will an equilibrium be found? No, not unless more information is given. The owners of the top quality cars are pushed out of the market by the lower quality cars; the bad drives out the good.

Note this is NOT the same as imperfect information, if both were in the dark about the quality of cars, the market would work just fine.

This problem is solved (or reduced) in the market of used cars through:
--Markets for information – you can pay a mechanic to give an assessment of a used car
--Reputation
--Warranties

How does this apply to health insurance?



Here the horizontal axis measures the level of health expenditures from 0 to $M. And the vertical axis represents the probability of a given level of expenditures. Suppose the consumers know their own probability, but the insurance company only knows the distribution. For simplicity assume risk neutrality for both buyers and sellers. The addition of risk aversion does not change the basic conclusion and only complicates things. Suppose the auctioneer calls a price of $0. All buyers would jump at the chance, but note that the company would expect to pay out 1/2M per policy so would require at least this amount to supply policies, thus no policies are offered. Now suppose the auctioneer ups the price of coverage to 1/2M, then all potential buyers would expect to need more than 1/2M in care will buy the coverage, those expecting less will not, but the insurance company knowing this, changes its expected pay out to 3/4M, thus the higher risk individuals tend to push out the healthier people from the market, and since the insurers need the healthy to make money, the insurance market will fail under this type of asymmetric information.

How does the market solve this problem?
The main way is by the provision of insurance through the employer - this tends to pool risk and takes the adverse selection problem out of the buyer's hands, Individuals typically do not have the choice to accept or not accept the insurance.

People who obtain insurance outside of employment or some other type of risk pooling arrangement are typically given stringent screening tests and evaluations to determine an individuals probability.

Why do insurance companies not allow pre-existing conditions in new policies?

COBRA and adverse selection

Also high deductibles tend to screen out high risk individuals. Accepting a high deductible policy signals you as a low risk individual. High co-payments also serve this purpose.

How do the elderly fit in to this analysis? Note that in the absence of Medicare, the elderly would be required to participate in private insurance markets. Would this work? It may be quite difficult to screen elderly patients adequately (note most will be retired) and thus the higher the price they charge the larger the portion at the top of the distribution that gets chopped.

Note to that to a certain extent insurance linked to employment creates it own adverse selection problem - only the relatively healthy (and young) are the ones who are employed, leaving the highest risk group without coverage, thus in order to get coverage, they must charge very high prices. This gives validation to the notion of government provision of health insurance to the poor and elderly. Note that these are not optional, everyone participates (by paying taxes) with community rating

Community Rating vs. Experience Rating.

Many insurance plans use experience rating systems. In the case of employer-provided health insurance, premiums are based on the past experience of the group, or other risk-rating systems to project expenditures. Automobile insurance, on the other hand, is individually experienced rated.

The impetus of Managed care was to alleviate the over-consumption (or moral hazard) associated with fee-for-service insurance. But one of the criticisms managed care has received is that of "cream skimming" or "cherry picking." That is selecting out the most healthy patients so that expenditures are lower. Through experience rating the HMOs are able to share some of these savings with their enrollees. The problem then is that the more risky patients are left on their own making it more expensive for them to obtain insurance.

A community rating system, in contrast, is one where the insurer charges all groups within an area the same premium. Note that this will eliminate the adverse selection problem, but what about moral hazard?

Cream Skimming is a form of adverse selection

Medicare Advantage
Specialty Hospitals?

Imperfect Information: Supplier Induced Demand and Small Area Variations

I. The Principal Agent Problem

A big issue here is something known as the principal-agent problem. The idea is that there is a principal (the patient, etc) who has some objective (improve his or her health) and they hire individuals to help them achieve their goals -- agents (physician) who are supposed to represent the principal's interest. But a problem arises if the agents do not have the same incentive as the principal. Generally this requires asymmetric information.

The Principal-Agent problem occurs when agents pursue some of their own objectives in conflict with achieving the goals of the principal.

The perfect agent physician chooses as the patients themselves would choose if the patients had the same information the physician does. Medical codes of ethics are intended to do this.

The problem for the principal is to determine that the agent is acting in the principal's best interest.

Patients often establish long term relationships with the physician. This allows the patient to more carefully monitor the physician's behavior and referrals.

But this leads to another issue in health care dealing with information. Often the physician has better information about the good than do the patients. Thus health care providers may be able to use their superior knowledge to influence demand for their own self interests. This is known as Supplier Induced Demand (or SID).

Theory

Supplied-Induced-Demand (SID) - health care providers have and use their superior knowledge to influence demand for self-interest.

Doesn't only apply to health care -
mechanics
shampoo - lather rinse repeat
advertising in general

The key idea is the asymmetric information of the market - physicians have a better understanding of the "good" than do consumers, thus suppliers are able to shift out the demand for their good.

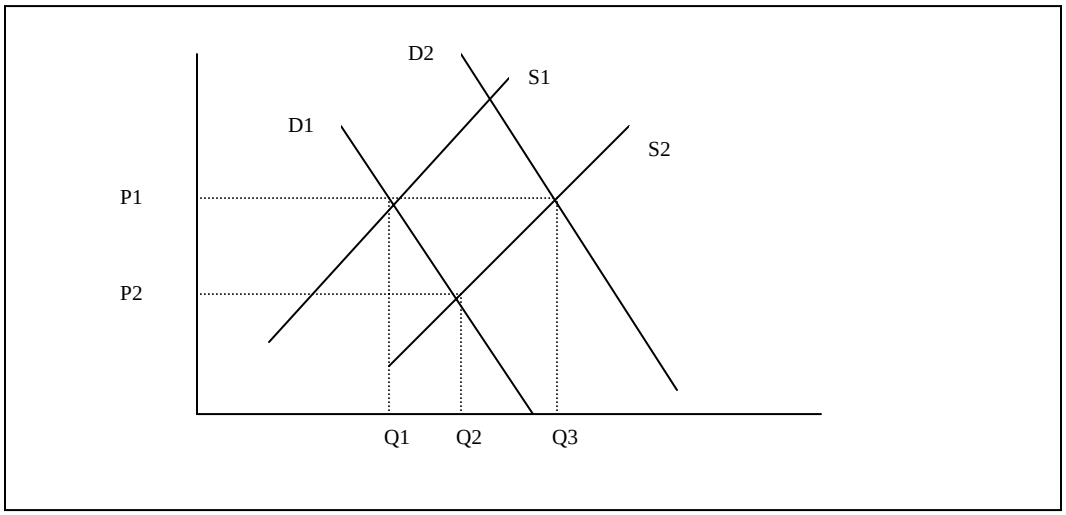
SID and Economics

From an economic standpoint SID is not a real satisfying theory of behavior. What is the motive to induce demand? Why do providers not simply induce fully all the time? What

is the mechanism through which they induce demand? How does inducement change in the face of increased supply?

Price Rigidities

One factor that could allow demand inducement to occur would be price rigidity. Suppose prices do not adjust quickly to changes in demand or supply due to, say, insurance contracts or other institutional factors.



If we start at an equilibrium of S1, and D2, then the price is P1 and quantity is Q1. If the supply of physicians increases to S2, then the normal response of the market would be to lower price to P2 and quantity to Q2. But suppose the price remains at P1, then there will be an excess supply of physician services. This would give them the motive to induce demand. If they could they would induce demand so that the new demand curve is D2, the market would be back in equilibrium.

Disutility

One model to understand this incentive begins with the notion that physicians attempt to maximize their utility (U) which is a function of income (Y), hours of work (W), and discretionary influence to induce demand (D):

$U = U(Y,W,D)$

Y has a positive effect on utility, W and D have a negative effect. Physicians prefer not to induce demand, but this is counterbalanced by the increase in utility from additional income. In this framework, a physician will induce demand to the point where the marginal utility of the additional income equals the marginal disutility of the added work plus the marginal disutility of the demand inducement.

In the end most economist are somewhat skeptical that physician-induced demand is an important phenomenon in health care.

Markets for information
Reputation Effects
Competitive physician markets

Oncologists and chemo medication?

Doctors in Japan and prescription drug use

II. Small Area Variations

Another area where imperfect information is potentially an important factor in health care, deals with physician's information about the relative effectiveness of various treatments. For certain conditions, physicians may well have different beliefs about the effects of various treatments. There are large geographic variations in treatment rates across many conditions. This is known as small area variations (SAV).

In a 1934 study the American Child health Association chose 400 schoolchildren to be examined by physicians to determine whether or not they should have their tonsils removed. The children were examined, and the physicians recommended that 45% of them have a tonsillectomy. The 220 that remained after the first round were examined by another group of physicians who recommended that 46% of them have their tonsils out. A third exam by another set of physicians on the 118 who were left provided recommendations that 44% of them have their tonsils removed.

The conclusion was that the decision to recommend a tonsillectomy was not based on signs or symptoms, but upon a generally held opinion among the doctors consulted that they should give tonsillectomies to one-third to one-half of all the children they had treated in that age range.

Note that SID occurs due to the asymmetric information between the patient and the doctor, differences in treatment patterns across areas may occur because of physician uncertainty or ignorance over the best method of treatment.

Lots of evidence showing large variations in practice style among physicians (within specialty) across geography and time. Even when one controls for differences in health status, education, and income, these variations remain.

Those conditions for which indications are not so clear, or for which there are good alternative forms of treatment, show large variations (knee replacement, spinal surgery for back pain, tonsillectomy, psychoses). However, where there is a clear indication and a generally accepted treatment, the range of variation is much smaller (hernia repair, open-heart surgery, lung resection).

Explanations:

1. legal incentives

2. small sample inference
3. ties to medical school
4. insurance coverage
5. social networks
6. patient demographics

There is work being developed now to develop more formal **clinical pathways** – sets of instructions developed by the medical staff, based on verified results of scientifically validated studies. These suggest how a particular illness should be managed. Of course many doctors criticize such efforst as cookbook medicine. Others argue they improve efficiency.

Many managed care organizations use "**provider profiling**" which tends to lower variation.

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Ed Schumacher

Homework 1: Due (on or around) 2/2

Discussion Questions

1. For each of the following statements using supply and demand analysis, indicate whether you believe the statement is true or false and briefly justify your answer.
    a. An increase in industry demand will increase the profit of a perfectly competitive firm.
    b. In a competitive industry, a decrease in the price of labor will increase the short-run equilibrium industry output and the short-run equilibrium price.
    c. The more inelastic the short-run industry supply the greater is the price increase that a given increase in industry demand will generate.
    d. If a firm is earning negative economic profits, it will raise its price in order to increase revenues.
    e. Minimum staffing requirements for registered nurses in hospitals will either result in higher prices to patients, or lower profits to hospitals.

2. What are the attributes of health and medical care that make the demand for medical care unique? How does health insurance influence the demand for health? Explain the allocative inefficiency that can result from traditional fee-for-service insurance. How do coinsurance payments and deductibles help to alleviate this problem? What are the tradeoffs between community rating and experience rating with health insurance?

3. Explain the key role that information plays in the relationship between the patient and physician. According to Dranove, what is "Marcus Welby Medicine?" How did this resolve the "shopping problem"? What were the pros and cons of this type of system and how did these give rise to the market for managed care?