Health Economics
Part 4

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Demand for health care

(Contd. From Part 3)

- Financial incentives and demand
  - Comprehensive review of literature demonstrates that
    - Physicians do respond to financial incentives, and
    - They do appear to influence demand, and
    - They do so partly in response to self-interest
  - Even with this research definitive understanding of Supplier-induced demand remains elusive
- To confirm
  - Whether patients are being induced to demand more services than they really want
  - We would need to know how much they would have demanded if they were as well informed as the physician
- No such study has been conducted

Demand for health care

- Price Elasticity of Demand
  - Elasticity measures the responsiveness of changes in one variable, to changes in another variable,
    - for example quantities demanded or supplied is sensitive to prices or income
  - The *price elasticity of demand* (*PeD*) is the percentage change in quantity demanded divided by the percentage change in price.

Demand for health care

- Responsiveness of consumers to changes in the price of a good or service by the price elasticity of demand
  - When measuring the degree of elasticity, a coefficient of (-) 3 is a higher degree of elasticity than of (-) 0.1
  - Because the coefficient of (-) 3 represents 300 percent decrease in quantity demanded for a 100 percent increase in prices
  - A coefficient of (-) 01 reflects only 10 percent decrease in quantity demanded associated with 100 percent increase in prices

Demand for health care

- The formula for elasticity of demand with respect to price is as follows:

$$\frac{\%\ change\ in\ the\ quantity\ of\ health\ care\ demanded}{\%\ change\ in\ price\ of\ health\ care}$$

- In general,
  - Goods and services which are close substitutes have higher price elasticities, and
  - Complementary goods and services have lower price elasticities
  - The demand elasticity for a good that constitutes a higher proportion of income is also generally higher
    - Because the increase in the price of the good or service requires curtailing more consumption on other goods
  - An example of this is the price elasticity of demand for very high cost medical procedures

Demand for health care

- In this case the patient may forego the technology if there is no insurance cost share
- The highest price elasticity estimates observed are for those demanding hospital outpatient services and for nursing home services
  - *(In US, nursing home services provide custodial care outside hospital)*
- Nursing home services have substitutes in home care and family care services
  - These costs represent a high proportion of budget
  - This is another reason why elasticities are higher for these services

Demand for health care

- Researchers have also estimated price-elasticity on sensitivity to variations in prices among physicians and hospital services
- Price elasticity for physician visit is much higher than that of hospital services
- These are called from specific demand elasticity that the lower number of substitutes for hospitals make the elasticity for hospital services lower than for physician services
- However, once a physician is chosen, this also limits the number of hospitals that the patient can utilise as well due to limits on admitting privileges of physicians

Demand for health care

- Time Costs and Price Elasticities
  - Time cost
    - It is the value of time used in a given activity
  - Estimates of price elasticity of demand for any good or service that requires time will tend to be based on
    - If one does not take into account the time and money costs as well
  - The time cost of consuming a health care service would be:
    - The waiting time for the appointment
    - Travel time
  - The total cost of services that require time will be higher for patient with higher wage rates because they have a higher opportunity cost of time

Demand for health care

- Any factor that increases the value of time will increase the opportunity cost of time
- Example:
  - When insurance pays for a portion of the market price of health care, the time component of the cost becomes relatively large as a component of total cost
  - Insurance coverage has been shown to make time a more important consideration in the decision about
    - how much medical care to seek, and
    - which providers to use
- It is shown that time costs are more important than money costs in the health care decisions

Demand for health care

- Aggregate Demand for Health Care
  - This can be determined by using a proxy measure such as per capita spending on health care
  - It is shown that most of the variation in health care demand among countries can be explained just by one variable, i.e., GDP per capita
  - It is clear that there is a positive relation between income and the demand for health care
    - The richer the country, the greater the demand for health care

Demand for health care

- Health Care: A Normal, Superior, Or Inferior good
  - Normal good
    - In this type of good, price elasticity is positive but less than one
      - This means that if income increases by a certain percentage, the quantity of good consumed increases
      - This increase is at a lower percentage than associated with income increase
  - Superior good
    - In this type of good percentage increase in quantity consumed is greater than the associated percent increase in income
  - Inferior good
    - If the percentage increase in consumption is less than the associated percentage increase in income, it is an inferior good

Demand for health care

- The answer depends on whether we are looking at studies based on
  - individual responses or
  - those utilising aggregate data
- For thirty years up to 1990, the studies were based on individual responses
  - It showed that most health care services have coefficient of income elasticity that are positive and the **r** ranging from 0 – 1, therefore classified as normal goods
- Studies based on macroeconomic data showed higher income elasticity coefficients for health care
  - Most studies have shown health care to be a superior good

Market for Health Insurance

- The Insurance Market
  - People who are opposed to taking risk of high expenditure in case of illness tend to buy health insurance
  - Insurance is a mechanism by which risk of higher expenditure is transferred to an insurer
    - The insurer is known as the third party payer
  - Insurance allows a person to pay a certain known amount by transferring the risk to the insurer
  - The insurance companies assume risks manage the risk by spreading it over a large pool of insured

Market for Health Insurance

- Insurance markets operate in an environment in which people are willing to pay enough money where the insurer assumes the risk
- There are various types of risks associated with health
- For example:
  - Risk to one's health and life associated with illness or disease
  - There is additional risk when one undertakes treatment
    - Treatment may or may not cure or alleviate symptoms of disease
  - There is also associated cost for treatment of illness and disease
- Risks can be reduced by various means, such as

Market for Health Insurance

- Getting vaccines
- Avoiding unhealthy environment
- Leading a healthy lifestyle

- There is, however, no insurance against bad health outcomes
  - People can insure themselves against financial losses associated with treatment of illness by buying health insurance policies
- People usually cannot save enough from their earnings to self insure for future illness
- Wealthy people also buy insurance because they are risk-averse

Market for Health Insurance

- Risk-aversion
  - In economics and finance, **risk aversion** is the tendency of people to prefer outcomes with low uncertainty to those outcomes with high uncertainty
    - Risk- averse people chooses this even if the average outcome of the latter is equal to or higher in monetary value than the more certain outcome.
  - Risk avers people are inclined to agree to a situation with a more predictable, but possibly lower payoff,
    - This is preferred more than a situation with a highly unpredictable, but possibly higher payoff.

Market for Health Insurance

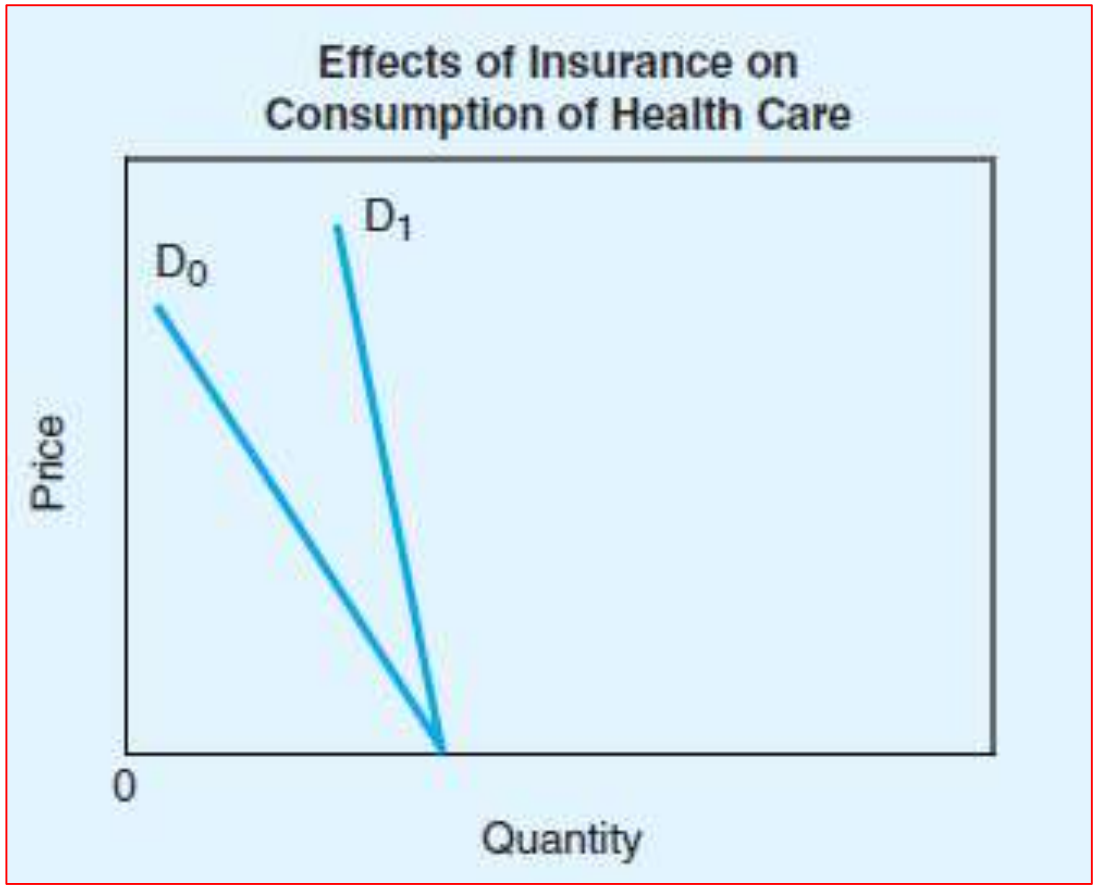
- For example,
  - A risk-averse investor might choose to put their money into a bank account with a low but guaranteed interest rate, rather than into a stock that may have high expected returns, but also involves a chance of losing value.

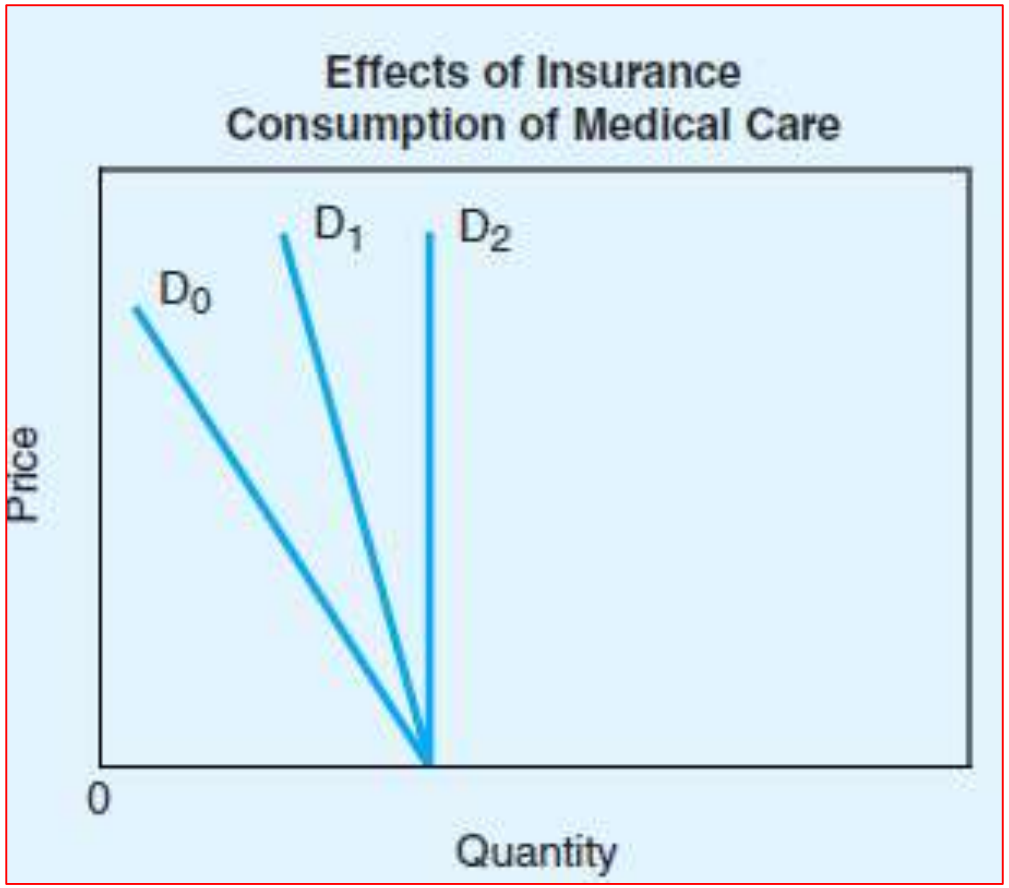
- Consumers' attitude toward risk depends on
  - The marginal utility of an extra rupee that is different in different ranges of wealth
  - If the marginal utility of wealth decreases as wealth increases,
    - There is a small probability of a smaller amount of wealth when the probability weighted or expected value of the alternative is equal
  - This is a situation of risk aversion

Market for Health Insurance

- Moral Hazard
  - This refers to the phenomenon of a person's behaviour
    - Behaviour is affected by person's insurance coverage
  - Moral hazard is known to exist in all types of insurance markets
    - Example:
      - People may become more careless with property that is insured
  - In health insurance, it is exhibited through increase in demand for health care services utilised
  - The next figure illustrates moral hazard in the context of health insurance market

Effects of insurance on consumption of health care and effects of insurance consumption of medical care





Source: Dewar M Diane. Essentials of Health Economics

Market for Health Insurance

- An individual's demand for health care when there is no insurance is depicted by D_0D
- If insurance pays 100 per cent of the health care bill, the demand curve will shift to D_2D, because the individual treats the service as free
- If insurance pays only partially the charges for the services, the demand behaviour is then depicted by the line D_1D
- Some degree of moral hazard exists when the price elasticity of demand for covered health care services is greater than zero

Market for Health Insurance

- Adverse Selection
  - There are usually two reasons for market failure of health insurance:
    - Adverse selection, and
    - Moral hazard
  - Adverse selection occurs when exactly the wrong people, as the insurance companies look at it, choose to buy insurance
    - i.e., those with high risk

Market for Health Insurance

- Those who are more likely to buy health insurance are those who have a high probability of becoming ill
  - They also more likely to incur higher costs than the average when they are ill
  - If such high risk people are the only ones buying insurance, insurance provider will make a loss
- Adverse selection arises because of asymmetry of information between insured and insurer
  - Those who want to buy insurance have better idea about their own risk status

Market for Health Insurance

- The insurance provider does not know the risk of a specific person
  - They know the average risk in the population
- Insurance providers base their insurance premium on the average risk of the whole population
  - This experience includes both high and low risk people
- This is known as ***community rating***
- Any person who assesses the probability of his/her illness is greater than the community rate will have an added incentive to get insured
  - Those with lower than average probability may avoid insurance unless they are sufficiently risk averse

Market for Health Insurance

- There are two approaches for preventing adverse selection:
  1. Experience rating
     - In this, insurers set different insurance premiums for different risk groups
     - Those who want to buy health insurance are asked to undergo a medical examination
     - They are also required to disclose any relevant facts concerning their risk status
     - There are two problems in this approach
       - First, the cost of acquiring the appropriate information may be high
       - The cost will be passed on to the insured people in the premium via a loading factor
       - This may mean health insurance may not be affordable any more

Market for Health Insurance

- It might encourage insurers to “cherry pick” people
  - They pick up people only with low risk
- This means that high risk people are unable to obtain health insurance

2. The second approach is to make health insurance compulsory

- By making health insurance compulsory, this is prohibited and adverse selection will not arise
- This approach is usually used for publicly provided health insurance
- The problem is that low risk people effectively subsidise the health insurance payments of those with higher risks
  - This may be regarded as in equitable

Market for Health Insurance

- Insurance Market in India[5]
  - In India, health insurance market is segmented by
    - Type of Insurance Provider,
      - Such as Public, Private, Standalone health Insurers
    - Type of scheme:
      - Such as Voluntary, mandatory, Community-based, Employer based
    - Type of coverage
      - Such as, individual, Family
    - Term of coverage
      - Such as term, Lifetime

Market for Health Insurance

- Product type
  - Such as, Disease, medical, Income protection
- Demographics
  - Such as, minors, adults, senior citizen

- Market
  - It is the fastest growing segment in the non-life insurance sector
  - The health insurance market grew 24% in FY 2017-18
  - It is witnessing a growth of 23% for the last 10 years
  - Roughly only 25% population is under some form of health insurance coverage
    - There is a very big potential for its growth and penetration to a larger population

Market for Health Insurance

- Ayushman Bharat
  - The National Health Protection Scheme was launched in September 2018
  - It provides coverage up to Rs. 500000/- to more than 100 million vulnerable families
  - This increases penetration of the insurance in population in India
- Drivers
  - Increasing awareness in the health care sector because of growing health care costs
  - Recent restructuring of general insurance business forced the insurance companies to focus on health

Market for Health Insurance

- Availability of specific products for senior citizens
- Availability of wide range of products that offer varied health covers, depending on the need of the customer
- A higher medical inflation rate of more than 15% has driven the health care costs beyond the reach of the needy
- Most of the insurance coverage is provided by the public sector. In 1917-18, public sector was providing 78% of cover while only 18% people were insured by private providers
- During this period only 4% people were provided insurance by stand alone insurers

Market for Health Insurance

- Health Ins insurance and Consumption of Health Care
  - It has been shown that health insurance increases the quantity of health care demanded
    - This is because of lowering the effective price to consumers
  - The extent of the increased demand depend on
    - How much the policy reduces the out-of-pocket expenditure below the market price, and
    - Price elasticity of demand for health care

End of Part 4