Economics of Health and Healthcare
Prof. Deep Mukherjee
Department of Economic Sciences
Indian Institute of Technology – Kanpur
Prof. Angan Sengupta
Department of Management, Amirtha Vishwa Vidyapeetham, Bangalore

Lecture - 19
Choice in Health Care

Hello everyone, so after discussing about cost production and before that supply and demand we will try to give you some understanding about the empirical or the theoretical perspectives of market demand or individual demand. Especially in terms of healthcare so the very fundamental economic theory based on consumer's demand was given by which is particularly or especially connected to the healthcare models was first given by Grossman in the year of 1972.

Where he basically talked that individual actually do not demand health care. But they demand health stock actually they are the producer of health stock not only the demand health stock through healthcare, but they are producer of the health stock. So, that was given by Grossman in the year of 1972.

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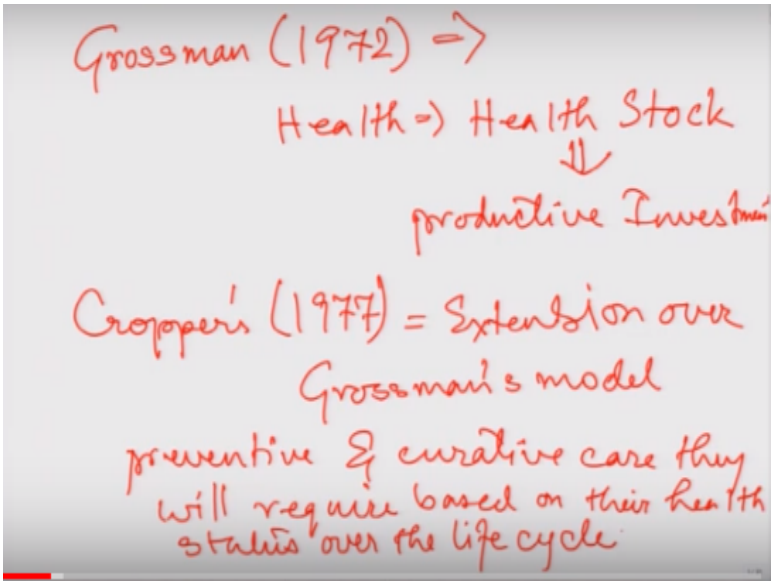

We will discuss about this after a certain while and where he talks about that that health is basically health stock here which is my productive resources which is my productive resources or productive investment. So, I invest for health stock on the other hand when I look at the

Croppers theory of healthcare demand which was given in the year of 1977. It was basically extended over Grossmans model and extension over Grossmans model.

And here he took it to the utility theory where the or utility maximization framework where he basically talks that individuals demand for health stock is generally determined by the preventive and curative care they will require based on their health status over the life cycle over their life cycle and this will differ from individual to individual and then hence the demand curve or the difference curve both will differ from individual to individual.

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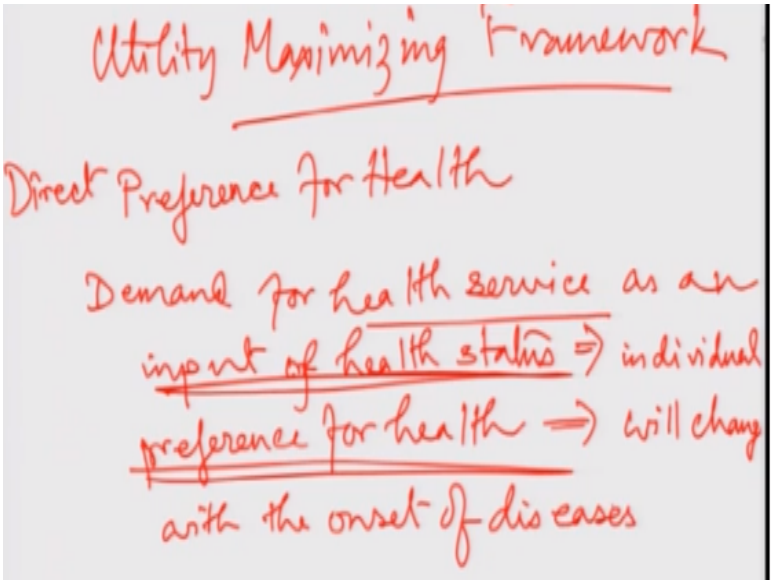

So, in both these cases we are actually looking at utility maximization framework or utility maximizing framework. Yes, so individual may have preference for health directly so preference for or I will say direct preference for health or it can come through as the individual demand health service which is as an input that health service as an input of health status. So, they are not basically demanding or preferring some health care.

Or some health outcome or some health service. They are preferring health service as a function or as an input of the health status number one and then this health status will be determined by the individual preference for health. Now sick person's individual preference for health will be different than a healthy person and the sick person's demand for health service as an input towards their health status.

Towards the improvement of health status will be different than that of the sick person. So, they will demand the health service as an input of health status and this health input of health status a demand for the input of health status will differ from individual to individual. As a preference for health service and it will change with the onset of diseases. Now a sick person a healthy person falls sick the immediately their demand for health service will be different.

Than he was having when he was healthy. So, it is it is very little the next thing what we have to keep in mind when we demand for health services are ample number of choices.

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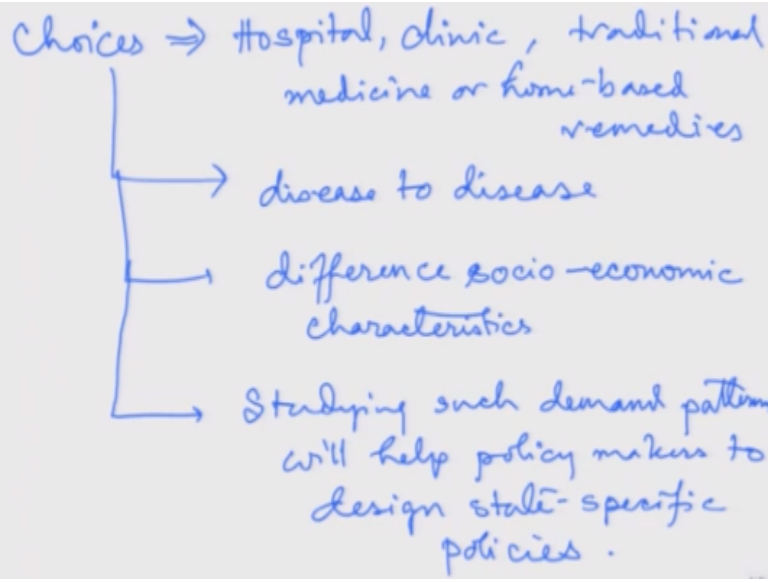

Choices of whether you will go to a hospital choices of whether you will go to a clinic or its a traditional medicine practice or traditional medicine or home based remedies. And these choices will also be differ from disease to disease across different socioeconomic variables or socioeconomic characteristics. By the income status rural and urban education, age, marital status so on and so forth.

And at the same time such demand pattern once it is studied properly will help the policy makers to identify that identify the pathways to target those particular health. Or health early those particular morbidities in a particular area in a particular time period and the behavioral aspects of

the community towards that particular disease. And how to track that how to improve the scenario.

So, studying such demand patterns will help policymakers to design state specific now this can be in several ways and or it can be the health status it can be the societal status it can be the state by the word geographical you know political boundary. So, design state specific policies or strategies yes therefore when we talk about individual preference to have a health care or health status or health stock whatever.

Or to avail a health service individual preference and when both Grossman and Cropper have started their own role has propounded there theories based on utility maximization framework.

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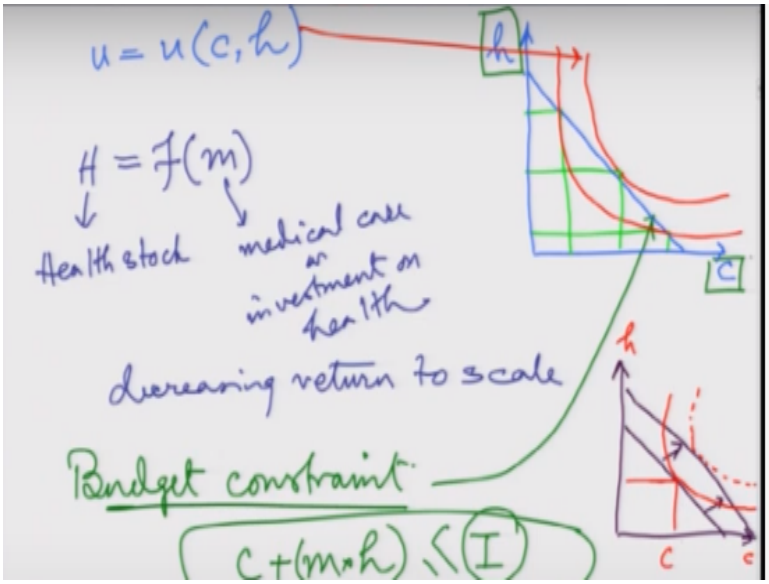

Then we can place it the utility maximization theory as a function or my utility is actually derived from c and h. C is the consumption for any other commodities h is the health consumption towards health or health status. Yes, if I draw it will be a 2 commodity framework where over here c over here h this being my budget and budget constraint. And I have several in different curves and I have different choices you know.

I have different choices that we learnt given my budget what will be my different choices between consumption of other commodities and health services or healthcare or health status.

You can eventually substitute it as either h for you know health status or small s or h small s as health services. Whichever way you know it can be both this graphical plot can be shown in both the ways simultaneously.

The problem we always have faced that if whether health can be you know can be quantified as a discrete variable you know as a single unit or something. So, there has not been a very convincing answer ever, but we have tried several proxy measures we have tried several measures but not all the health variables health related variables can be easily quantifiable then the economic theories have faced a little trouble.

And the questions have you know will arise on based on that how could you estimate health status. Now in terms of production because again Grossman and Cropper talks individuals are the producer of their own health stock. They invest on their health so if we are talking about this health as a production function then we can write our production function as h which is my health stock.

Or you can keep it capital h whichever you want to keep it as a function of medical care small m no you can keep your denotion. So, I will write notations anywhere you know I can write this is my health stock and this is my medical care or the investment on health or investment on health right. So, my health stock is dependent upon the what how much I am investing on health if I do not invest on health naturally my you know my medical care will be poor.

I mean my health stock will be poor and it always has a decreasing returns to scale. Because you know when you invest more and more on your health to improve your health stock towards your health care you would not regret. After a certain while you were healthy and even if you know invest on that you are not generating enough output in terms of your health stock improvement in your health stock.

So, it has a decreasing marginal returns to scale, so it comes down you know it is a downward sloping curve. Therefore, it is a decreasing return to scale when scale is the investment in medical care or just investment? Okay now coming to the budget constraint again because over

here we have talked about the utility at this point. We have talked about the utility talking about the indifference curves but over here we are talking about the budget constraint.

So, when we are talking about this budget constraint this blue line we have to think that we are actually investing on both on both see that is consumption of other goods as well as on h right? if I can think that m or is the expenditure on medical care then we can keep our budget constraint as I is this if this is my income will be <= sorry will be >= c consumption or other goods +m*h plus which is expenditure on medical care.

So, this consumption of other goods + expenditure on medical care again should be <=I I is my total income or total budget constraint. It can be in terms of production it can be in terms of so in terms of production you can talk about the I as cost line. If you are an individual producing your own health stock if you are a consumer asking for your individual preference than it is like your budget line budget constraint.

So, this particular formula can be used in both the ways so therefore whenever my budget improves if I go to this curve I will I will keep it in the same distance. So, my income improves so the budget plan shifts outwards and what happens to my preference. It also shifts outwards, so I can actually now over here when I was producing this amount of c and h this amount of c and h over here c prime and h prime.

Now with more income I can demand both of c prime and h prime I mean c double prime and h double prime maybe more. So, I am consuming more otherwise I am consuming I am asking for more healthcare. If healthcare is a normal good so what does it mean? normal? good suit with documents wind generally income increases, you will ask for more of a particular commodity if that is a normal good.

The contrary can be inferior good which healthcare generally is not. Inferior good is when your income increases you will demand for less of that particular commodity your income increases the demand for that commodity declines. So, it is kind of an inferior good before going there I

will just go, and we can move we will move to the income and this price effect that how it happens when the is if you know in terms of its income expansion curve.

But before that I would like to give you two different diagrams that when you know the individual preference or budget set changes when I am ill, or I am not ill.

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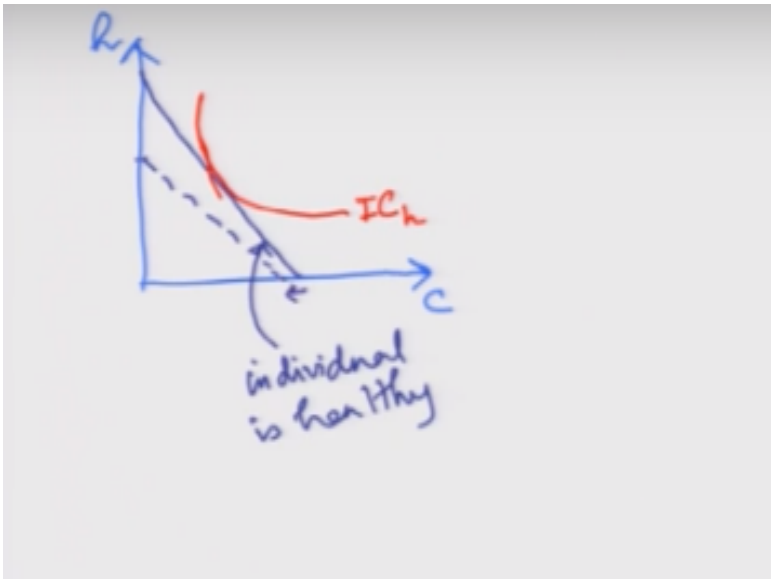

So, if I can show you in again a diagrammatic framework and then if this is my c and this is my h, and this is my first demand curve I mean the budget line when the individual is healthy. So, this is my budget line so what happens when the you know, and I can draw my indifference curve over here. This is my indifference curve maybe I can write in difference curve healthy. What happens when the person become fall sick?

That means they are spending more on healthcare or you know even though the income total budget constraint in a relative way can be shifted like this it can be like this. It can also be like this if the decline their consumption as well if they do not then it will start from this point. If they do, then it will decline, and it will you know the because the expenditure has increased. So, you can see the I/h will fall down until and the indifference curve will shift yeah.

So, it is not that they are actually they are relative consumption towards health has increased and their budget constraint has declined. That is primarily because they are not now we can take this

example that they are not able to go to work, so they are losing that income. At the same time the price of that particular you know the total expenditure the price for one unit of healthcare what I will require when I am ill is increasing right?

Because I have to spend more so it is you know shifting inside you know so that is why you can see that there has been a shift or the more shift towards this. Yes, and you know in the same way if we can we were here having more of health enjoying more of health and more of consumption we are now enjoying less health and less consumption. And even though my total relative spending over health has increased.

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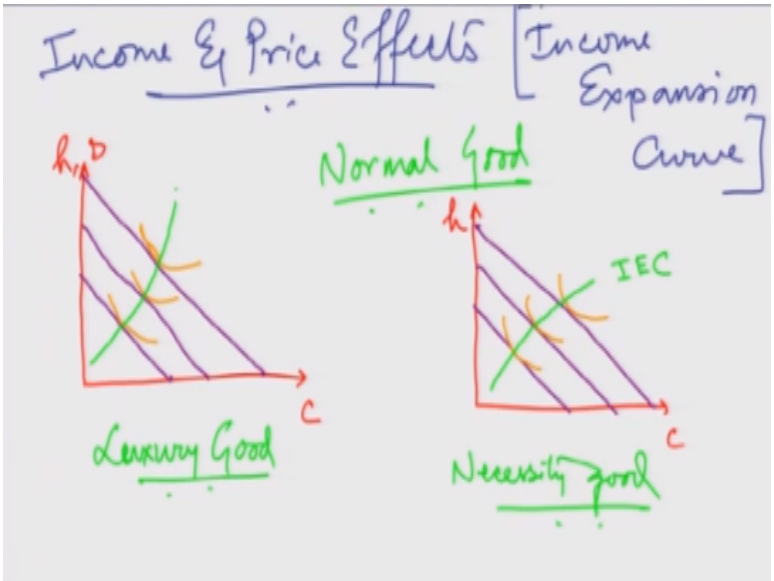

Anyways now income and price effects when we are discussing about income and price effects we will discuss it over the income expansion curve. So, how the price of a particular commodity changes and the income and it also changes with the income. So, an income and price effects this price in terms of the health care and we will take it to the income consumption curve income expansion curve.

And what it says that if it can be h it can be health, stock or I mean health status or health services you know the demand for health services it can be any way or if I have three different levels of incomes. Yes, budget line 1 more income budget line 2 more income budget line 3 and

with these respective incomes I have different preference levels and this preference levels can be stated as over here, over here and over here.

So, which gives me you know an income expansion curve something like this. Yes, eventually if it declines like this then these consumption goods is an inferior good. You know because with the more of the income I am actually demanding less of the consumption good if it declines if it moves like this you know it begins like this then health is an inferior route. Because more with more of the income I am demanding less of the health.

But health is a normal good we will always consider that health is a normal good. Therefore, we are not going to the inferior commodity framework. So, what happens over here if the health bends you know the income expansion curve bends towards this health access that means it is a luxury good. That with the more of income the consumers are demanding more of health, health is a luxury good what happens if health is not a luxury good if it is a necessity.

A commodity then with the increase in income with the increase in income my income expansion will be something like this. Yes, it is increasing my income expansion curve you can call it IEC my income expansion curve it is increasing. But at the same time what is happening? Here is a necessity good on this commodity it behaves normally you know you can think that consumption good.

Is it because the other consumption good maybe very much important as compared to health. So, they will with the income they will the proportion share of the budget will go towards more other consumption goods. Yes, but again it will differ from the health status so this can be health surfaces and health status and health services you know the demand for health services. Anyways so once we are in oboe and we are talking about this income and price effects.

We have to decide that how price changes which are the determinants of price.

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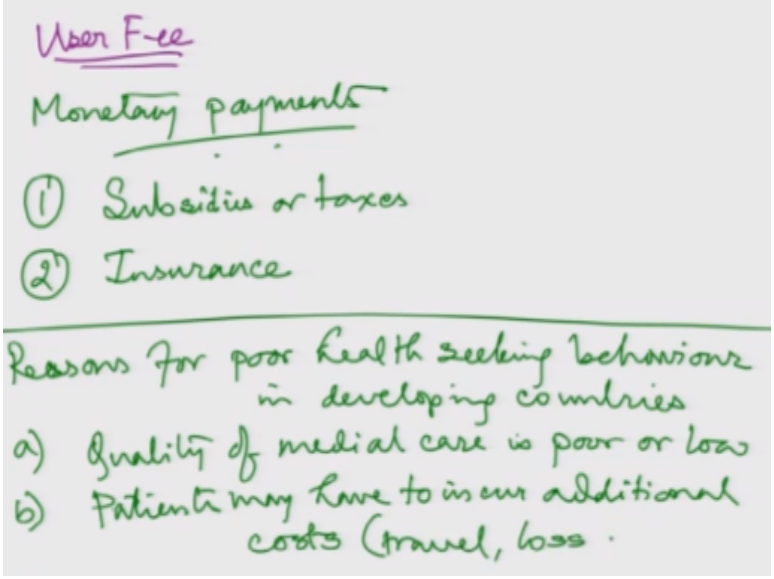

Before going to the determinants of price there is a common concept in terms of health care which is known as user fee user fee is the price what we generally pay when we go to a hospital for some consultation or to a clinic that is the user fee. You know the payment we make it is not the payment the insurance companies are making on behalf of us out of our health insurance is not that that is not a user fee if the insurance company.

Or I have been paid by some health scheme it is kind of an out of pocket expenditure know what the charges I am generally paying to avail my health services that is user fee. Now we generally think of price in terms of monetary payments but as I said that the dynamics changes completely if the government has a mechanism of subsidies or taxes. So, if the government is giving subsidies for a particular.

Say the government is giving subsidies for annual checkup for a certain group of people you go for a checkup and then the government gives a subsidy. So, naturally the demand of that particular commodity will increase. But at the same time if government asks for additional taxes to utilize certain things know say that GST has increased the price of the cool drinks or the more taxes levied on cigarettes.

Yeah so, the demand should fall down that you can think of them as a consumption good. But if you were thinking of certain commodities which is associated with health as well but being livid

with taxes that demand for those healthy commodities maybe protein supplements. So, people are moving out of the protein supplements they are following a better diet coming out of the protein supplements.

So, this payment mechanism even though I am not paying that you know directly or maybe indirectly even though. Mostly if there is a tax we are paying for that if it is a subsidy that maybe the government is paying that. But the pricing is you know is changing is varying and so does our demand. Apart from the subsidies and taxes the second is the insurance where the certain aspects of my health care is covered by the insurance.

And that changes the demand completely we will talk about insurance for you know laying this session. During a laying session but still I mean health insurance. This health insurance mechanism if I think that cutting nails is also covered by health insurance. So, I will go to visit a doctor and ask them please cut my nails because that is covered under health insurance or if certain you know even if hospitalization is not required.

But I will go for a hospitalization that is because if I do not go for a hospitalization the entire money for that purpose even if hospitalization is not required I will go for hospitalization. Because if I do not then the inter money I have to pay if I am going for the hospitalization then the insurance company pays for me and I pay a little amount which is much lesser than what I am otherwise paying not choosing for hospitalization.

Or one night stay in the hospital so here the hospital is being benefited I am also being benefited. But the pricing mechanism is harming that another industry that is insurance industry anyways but the you know the health seeking behavior the demand is completely changing based on what is being covered by insurance. Or whether I have insurance or not or what kind of insurance I do have.

Okay so and that is where these services also being rendered by the providers are also deferring that whether you know on a certain aspects whether they are being subsidized by the government or for some service delivery they are being taxed by the government. Or some service delivery

unit they are getting money from the insurance so that they can charge more. So, the service delivery completely or largely changes based on this payment mechanism.

So, and this variation is very high in a you know in a market which is which is characterized by a high income inequality or socioeconomic inequality or a developing market. Where the insurance is not formalized completely or the penetration towards the most of the sections of the society is very low. And we have seen that more advanced economy the percentage here from the GDP towards the healthcare has been very high.

So, that means the government is taking care of the health of its population, so the health seeking behavior is really improved. And what we learned in the first session and many developing countries that utility utilization rates of healthcare is pretty low pertaining to that most of these payments are coming through out of pocket expenditure who were you know making in terms of user fee and all.

So, it has been low so there is there can be basically two reasons so one is the quality of the medical care being poor or the trust is not that strong. So, the reasons why reasons for poor health seeking behavior in developing countries. A Or 1 is quality of medical care is poor or the accessibility is poor and second, they are in may the you know the patients may have to incur additional costs in terms of costs of travel and then all.

So, cost of travel loss of income yeah travel loss of income because they are health care is not being covered by themselves by somebody others and they have to cover it by themselves. So, it is pretty high for demanding the opportunity cost which is like not being able to you know to be to productively invest their time. So, they are losing their income as well the another challenge in terms of the pricing mechanism.

Or in terms of the what comes from the costing mechanisms in fact from the hospital or the health care providers is health care is not basically we cannot basically keep it under a single umbrella calling it is a single product. That health care or health status or health service is you know accumulation of multiple goods.

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And this multiple goods often causes difficulty this multiple goods because the services are different see the medicines are different the doctors are different. One particular service may require different types kinds of pathological diagnostic systems. The number of times you know they need to visit the doctor that requirement is different. The length of stay average length of stay in a hospital that is different.

And everything together and what kind of facilities they are going, or they are visiting for their treatment that is also different. So, everything together actually is you know is billed under that particular treatment cost and that multiple goods often if not directly collected or calculated or estimated you know causes a mistake in the in the pricing. And so this multiple good and once it is you know every component of this goods together.

Or every component of this health service can be separate differently priced differently taxed different a way that they are covered under insurance whether they can be returned back or how many what is the percentage of the insurance coverage. So, depending upon all these the entire you know the payment from the patient is estimated and which is not an easy task. Similarly based on the quality as the demand curve shifts.

So, like the quality is better the demand curve shifts outwards because they want more and more of that better health quality treatment. If the quality is poor, then they do not really want to go for this healthcare so the you know the second behavior is poor and then this demand curve comes down, so it is like that. And also it is just shifting so the question is whether a really high quality determines the health care.

If yes which we generally find yes, then there is a requirement of policy intervention. Because better the quality butter is the health intervention I mean health seeking behavior bitter is the health seeking behavior better is health status health status better is the productivity and it has a direct impact on the GDP of that particular country. So, there is a possibility of you know policy intervention so when we want to model this enter health economic variables together.

And model means we if we talk about these econometric modeling regression equation so and so forth. We basically you know we will keep our dependent variable as health care you know and in terms of it can be that what is my demand what is the expenditure. Can it really be estimated in terms of the expenditure I am making towards my health needs or requirements. If that is so and then which will be my independent variable if I am estimating, you know the demand curve.

Or the demand framework or the demand status then the it will naturally be prices again price being highly ambiguous does not matter. And generally if it works like that then we can work it out on a simple ordinary least squares where both the variables are continuous you know. But while regressing we must keep in mind that the overall heterogeneity in our health care system when I am you know I am trying to I am trying to regress this.

Or trying to get to different demand curves you always need to keep in mind what is the scenario what is the status? otherwise there is I am leading to an ambiguity given the complex structure of this entire healthcare system. I cannot really bring everything together under a same regression equation or the same econometric modeling. Thank you.