Health Economics

Dr. Pratap C. Mohanty

Department of Humanities and Social Sciences,

Indian Institute of Technology Roorkee

Week – 07

Lecture 32- Tax and Social Health Insurance Mechanism I

Welcome, friends, once again to our NPTEL MOOC module. Welcome to the course on Health Economics. This is the course that you can take for your credit hours as well. As per the IIT and most of the IIT council mandate and rules, as well as the NEP, New Educational Policy Structure, and MOOC courses, they are considered to be useful. So far, I heard it is 40% of the content. It is suggested that it be included in your credit hours. Hence, health economics has a huge value. Health economics of this kind of version will be useful, and this is a four-credit course as per the IIT equivalent structure. Now, we are explaining the issues of the health system. In our previous lecture, we also discussed the economics of the health system. Now, we are discussing tax and social health insurance mechanisms as part of the health system.

Here are our objectives to accomplish the directions towards understanding the health system. We are now covering theory and the evidence for different options for financing a healthcare system. The second objective here is to discuss the inherent strengths and weaknesses of the tax and social health insurance mechanism. The third is the acceptability, transparency, stability, and cost control aspects of addressing health systems. Yes, it is very lengthy.

We may divide this last objective into the next lecture. We will discuss if it is perfectly fine to accomplish this within this time; otherwise, we will be extending it to another lecture.

So, the first aspect is in order to have a better healthcare system; we should understand the financing structure of it. There are several ways to finance medical care. The important aspect where the large burden is on the patients or the individual is through their private or out-of-pocket spending. This is usually directly paid for the healthcare. The second type of finance is through voluntary health insurance schemes that are usually paid through premiums that may be partially or fully financed.

And the VHI, Voluntary Health Insurance Premiums, is again through private health premiums. The third one is also counted in developing countries' contexts where the role of government and the regulations really matters since the market does not function efficiently. As we discussed in the last lecture, the imperfectly competitive structure and

the market failure have led to the intervention of public policies. So, policymakers' influence is very essential. Otherwise, the insurance market may not function very well, and eventually, that may spoil the entire health system.

Hence, the third category that is relevant is none other than public sources, which include again how the public manages this financing; it is through either taxation or social health insurance. To pay for healthcare services, in this case, the government pools the taxes or through social where income a certain proportionate of the income is contributed to healthcare. So, we will be discussing different models that are used in different countries. We will also cite the important literature which has covered these aspects. However, we may also derive the context for the Indian scenario, such as how the Indian health system is functioning, how effective it is, and how far it is performing.

Hence, the funding mechanism is for the policymakers that influence the funding, and this also helps in the allocation of resources within the health system. So, the control mechanism is essential, as I already mentioned. There is a scope to determine how much money should go into health and how that money should be distributed to match up the designated priorities. So, it is not just healthcare per se; it should be a priority. Since our supply and demand framework in healthcare does not match, it does not give the right allocation, which may lead to some kind of disturbance in the healthcare functioning or healthcare system.

Hence, designated priorities have to be identified. When healthcare is actually funded from out-of-pocket payments, it is usually purely private and directly distributed to healthcare institutions. In that case, the market really matters. If the market is functioning well, OOP is considered to be quite rational. Since the market is not guaranteed and its functioning is very difficult to evaluate and may not give a win-win situation every time, the government has to enter.

But in this context, in the OOP payment case, the government has no direct control over the resources. As I already mentioned, it is not just the healthcare that matters; it should be based on the needs of the patients or the individuals. So, the priorities or the designated priorities and, hence, allocating resources are important. We have to discuss the sharing of the burden of payments of healthcare fairly across the population, how the sharing is made, and who really bears the burden, even if it is taxes. Is it too easy? Even if it is the allocation through or the pulling through income, a certain proportion of income, that income is not just directly imposed on the employer or the employee; that might be some sharing. Achieving appropriate levels of preventive health measures also and this need-based will also deal with important other objectives as well.

So, the resources for financing are broadly divided into direct taxes, indirect taxes, health insurance premiums or direct payment, and other mechanisms. Individuals are the ultimate

source of healthcare funding. There are typical important features of the healthcare system. The first aspect is the universalization of insurance if it is made through insurance. In that case, universalization, when I say it is possible, it has been observed that it is the government or the single player who has made the services universal; it is not differentiating accesses.

The government provides insurance coverage to all the residents automatically. The cost of this insurance is covered by taxes rather than premiums. Thus, there are no enrollment fees. In free care, another feature of the better healthcare system, even the healthcare system we usually address in this case, is that our public healthcare system has these features. Another is free care, where no cost is required.

The cost of medical care is either free or extremely inexpensive at government clinics and hospitals. Any premiums, deductibles, or coinsurances are not the responsibility of the patient. The third one is provisioning, public provisioning healthcare or public healthcare provisions where it is publicly managed instead of making it completely free or pan India level through universal insurance schemes. Like the last one we said is public managers, the hospitals or clinics. So then we have to understand health insurance, how it is funded, and the three categories that are usually there.

The most important aspect is tax and tax-based insurance, followed by social health insurance and private health insurance. Here, we will compare tax health insurance and social health insurance as they inherited several characteristics, but the divergence between these is also important to discuss. How are these concepts different? How far is this creating a load on society? Who is bearing the burden? We will be discussing whether the burden is leading to some kind of disturbance, whether that disturbance is stable, or whether disturbances are creating further disturbances. We will be covering that aspect as well. Let us unfold the discussion of tax-based insurance.

The simple source of this is called tax. So, this is considered to be a direct source of revenue. And especially when we are counting income tax, there are indirect taxes as well through consumption taxes or other government revenue such as licenses. This included direct revenues like income tax, indirect tax revenue, indirect taxes as well, and licenses, which I have already mentioned. These resources are pooled by the government and allocated across all the demands on government resources such as health, education, and defense through the normal budget allocation process.

A simple example is some of the countries are following, like the UK. UK has the National Health Service Scheme, called NHS, which is largely tax-funded. The residents are free at the final receiving end for the healthcare, and funding primarily comes through general taxation. Such models are even prescribed; we will also refer to the UK's context, and

Beveridge's model is more cited. Thus, it is also called a nationalized healthcare system or a nationalized healthcare scheme.

This is Beveridge's model, which was named after William Beveridge, a British economist. The establishment of the NHS, which is the National Health Service in the UK (United Kingdom), after World War II. And this is, as I told you, primarily through general taxation. The principles of this universal access, this model actually emphasizes the principles of universal access to healthcare services. The priority of this model is eliminating the price rationing of healthcare.

Price rationing has its limitations. It creates non-access and mostly creates inequalities in society because persons who are not or are in the lower income quintile may not be able to afford it. So another type of financing is called social health insurance, which makes the health system robust. In simple terms, social insurance is paid by the employees and by employers and levied on their payrolls. It is paid in various ways, such as by the government or for the benefit of the unemployed, the retired, and other non-working dependents.

On behalf of the persons who are covered by the program, the social health insurance funds pay care providers. Some examples have also been cited for your reference. Here, Japan is mostly discussed in the context of social health insurance, and they have a scheme called NHI, National Health Insurance Scheme. This covers all residents, and the contributions are from the income. The government also provides subsidies to low-income individuals since they are paying capacity or the contribution capacity is low.

So, the Japanese model is usually cited. The social insurance schemes are derived largely from the Bismarck model. That is also called Bismarck's social insurance model. This is named after Otto von Bismarck, the Chancellor of Germany. Bismarck introduced the concept of social health insurance in the late 19th century. So, it is even before the previous insurance model we discussed.

Health insurance is provided through social health insurance systems, which are, in short, called SHI, according to different literature. So, there is a mandatory contribution from the employees as well as employers to address society and create a better health system. Multiple competing health insurance funds or sickness funds are also important examples of this aspect. Bismarck's health system shares the defining traits of the model, especially for universal insurance, community rating, and regulated private providers. The set of policies that comprise the Bismarck model reflect two major values.

They are called solidarity and economic liberty. Since we emphasize a social framework, the first one is that strong solidarity is expected in this scheme, and that defines the health

system as robust. Similarly, it also has strong economic liberty against tax-based schemes. The choice between the Bismarck model and the Beveridge model often reflects a country's historical development, values, and policy priorities. Many countries adopt hybrid models, which also mix up these models and incorporate elements of both approaches to strike a balance between equitable access and efficient resource allocation.

You can refer to the paper for further clarity on solidarity and economic liberty so far as social insurance policy is concerned. We will also discuss some of these details in our insurance chapter. I think, if you remember very well, at this moment, we are discussing the economies of the health system, and we have a unit called Financing and Insurance in Healthcare. In that unit, we have complete coverage on uncertainty and health insurance, etc. We also discuss adverse selection and moral hazard issues and, to some extent, emphasize how much it is strengthening our health system.

Let us assess tax-based versus social health insurance. Which one is relatively better? What are the strengths and weaknesses of both the system based on the criteria? We have considered five criteria: acceptability, transparency, stability, cost control, administrative cost, equity, and incentive structures. In all five directions, we will try to evaluate. Another important aspect and the six most important categories are also referred to understand their implications, implications of these two for the country. Implications may be checked through whether it is sustainable or not.

Is this funding going to be sustainable or not? Does it have better accountability and efficiency? So, we will discuss these criteria one by one. Then, here it is acceptability and transparency. So, the first aspect of this is that the structure we adopt or follow should be acceptable and transparent, and in that context, there should be more or greater willingness to pay aspects must have been dealt, greater willingness to pay for higher social insurance payments due to the increased value placed on transparency in collecting and utilizing money. So, social insurance payment has a higher degree of willingness to pay because of its transparency and the utilization of that money by the people. So, due to transparency, social health insurance strengthens patients' rights as consumers of healthcare, potentially influencing the quality and accountability of health services.

Tax finance transfers and grants are frequently used to supplement or bail out social insurance coffers. The second point is called stability. The stability of the taxes is influenced by the type of structure we are following, tax structure we are following. The income taxes are, in fact, more stable than the taxes that are imposed on more discretionary sources of revenue such as term duties, etc.

So, the first aspect of stability is income. Social insurance contributions are levied on incomes and are a relatively stable source of revenue, and this is indeed balanced against the fact that the financing base is narrower than with overall tax revenue. However, though

it is narrower, it is balanced with the social insurance scheme. Here are some examples from different papers, especially Wagstaff's 2009 work, which examined the system-wide impacts of shifting between social insurance and tax finance systems. So, this author examines which system to adopt and what kind of shifting is given. The author finds that the switch to social insurance leads to a reduction in the formal sector share of employment, which may, in turn, lead to a fall in the level of employment.

That is one of the important findings. When we are saying the social health insurance scheme is actually largely dependent on the income of the employees, that may negatively influence the employees, and the extent of employment, as already derived by the author, has been negative. Hence, that is sometimes considered questionable. Given the concentration of social health insurance on payroll contributions, there are concerns that social health insurance has a negative impact on employment. This is what is mentioned.

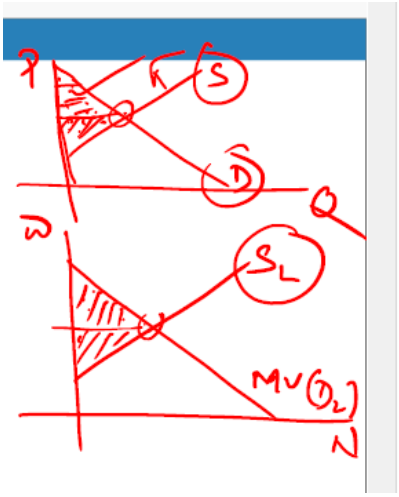
The development of a formal system of healthcare finance in the 19th and 20th centuries centered mainly on employment and the workplace. There are several reasons. First, it is in the financial interest of the employers to have a healthy workforce with a low absence of sickness, so the employer-sponsored health service may be a rational profit-maximizing strategy. Second, there are advantages of risk management to large numbers in health plans.

The large number employed provided better medical insurance, which is considered to be efficient and has a low transaction cost. In a competitive market, the share of effectively paid by the employer depends on the elasticity of labor supply. So, the elasticity of labor supply really matters. We will clarify what this elasticity is and how far this defines the stability, which we have already discussed. Yes, to some extent; in our insurance chapter, we will be covering the type of insurance and the role of the market, selection, choice of the individual, etc.

But we had not emphasized in that chapter what stability is. At this moment, we are trying to emphasize the issues of stability through the elasticity of labor supply function. Now imagine two contexts. One is the stability in terms of employment or in terms of receiving the contract and receiving the wage rate. In what case is the impact more? Who is bearing the burden? Like the social health insurance structure, we know that nowadays, even in many countries, it is mandatory to have social insurance schemes.

Both the employer and the employee will be paying. Who is actually bearing the larger burden of this cost? Of course, this is considered to be a cost. In a typical demand and supply diagram, if I just draw it here, you will see that I am just doing rough work. So, for demand and supply, we usually take quantity and price over here. So the owner who is providing has its supply curve, the responses of supply at different price levels, and demand for the product by the consumers. However, in the context of the labor market, it is considered to be a little different since the labor market is derived from demand.

Hence, if I just start with rough work, demand curve, and supply curve, now the supply of labor and demand, as I already told you, is based on the marginal valuation, and this is also D_L. Who is demanding labor? It is, in fact, the production unit that is demanding. Now, we are no longer referring to quantity. It is actually the number of employments. Here, the rate at which employment is decided is due to the wage rate.



Again, there are lots of arguments related to the rigidness of the wage rate, whether it is nominal or real. We are not going into that debate, not going to capture the issues of rigidity in the labor market, etc. We are only simply trying to understand the implications of this cost-sharing, the implications of this social cost, social insurance cost, and whether it is more on the laborer. The supply side is actually determined by the laborer.

Hence, the impact will be observed differently. I just say if you were in terms of consumer surplus and producer surplus differently for this point and this point, we know that this portion is actually the consumer surplus and producer surplus, total surplus. In this case, it is also the total surplus. So far as the typical demand and supply function is concerned. But in the labor market, we will find just the difference.

In this context, we have the diagram, and we will try to clarify it further. Here is the diagram. I will also show you the detailed diagram in the next one. Don't you think that the implication of the social cost insurance will be different based on the bargaining power of either the demander or the supplier? So, the bargaining power lies with the demander or the suppliers.

Let us see which curve is going to be shifted. As in the typical demand and supply curve, we have seen that the supply curve, due to taxes, etc., supply curve used to be shifted backward. But in this case, we are just counting the derived demand function, and hence, the approach will be a little different. The demand curve here is the labor demand curve by the producers, which is, in fact, hard hit due to the bearing the cost of social insurance. Whereas the supply curve of labor is largely shifted backward or rightward depending upon

whether we have an outrightly different health system, the health system is improved hugely so that the supply of labor or the population increases or we have a new registration system, or we are comparing a huge two different time period where our supply function, supply of labor is expected to be different. Whereas the demand for labor is a function of its marginal productivity, demand is also dependent on shifts, which are also dependent on certain external factors.

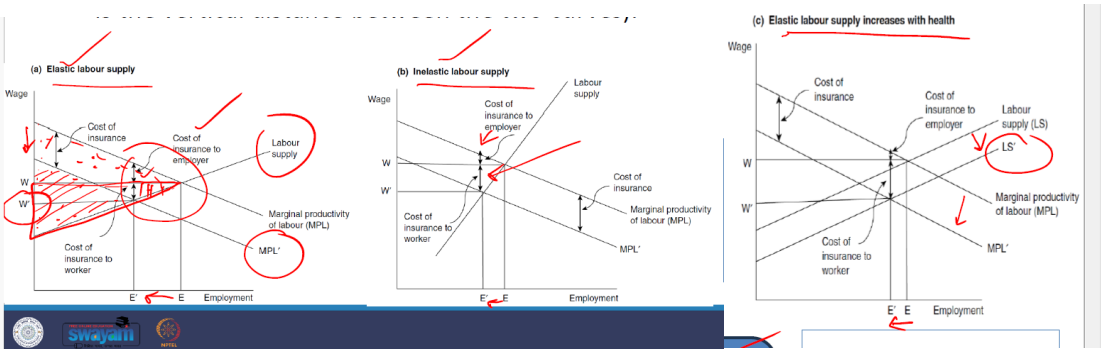
See if the cost to the company is very high. Nowadays, corporations are giving salary to cost to the company, CTC salary. In CTC salary cases, we usually see that they include all kinds of costs as part of their salary to their employees. So, when the CTC component increases due to the social insurance scheme, it is quite obvious that there will be backward implications of the demand curve. The demand curve we just started is like this dL or dL here.

There will be a backward shift. And the supply is not going to the natural supply curve; we are not going to disturb it. Why should it start from this point? Because of the reservation wage rate. You can read it through any macroeconomic chapter. So, if due to the social insurance scheme, we will find that there will be some backward shift of the demand curve. The vertical gap is called the cost of social insurance.

We can easily plot two points. In one case, we have taken a demand curve, which is fairly elastic; in another case, we can take a fairly elastic demand curve. And accordingly, we will find a shift, and accordingly, we will check the supply curve, and so on. I am just giving you a background at this moment. When the demand for labor is different, we will start with the supply curve; based on the supply function, we will first evaluate, and then we will also evaluate based on the demand curve.

At this moment, we are shifting the demand curve based on the cost of social insurance. However, if the supply curve is the same, then the evaluation will be different based on the demand curve. If the supply curve itself is different, the supply curve is elastic or inelastic, then the nature of where we are presenting everything. In one case, you can see an elastic supply curve, and another is an inelastic labor supply curve. This is what I was trying to say, but at this moment, I mentioned simply the same diagram and the same supply curve.

But to simplify you further, I was just trying to do the implications of how deadweight loss, etcetera, is calculated. You can see that due to this change and the new shift, we will have a new equilibrium point. There is a backward movement, and the employment rate is reduced to this level. There will be net change. You can mark this change through the deadweight loss, which we will also present.



In the above diagram, the cost of insurance, which I have already said, is mentioned. This vertical gap is the cost of insurance. The first one is called the first block of the diagram, the first one is called the elastic labor supply curve, and the other is called the inelastic supply curve. So, this is relatively flatter; the first one is relatively flatter, and the other is relatively steeper. When the supply curve is elastic, that means with every incremental change in wage rate, there will be more supply, relatively more supply.

So, bargaining power is more with the laborers. Whenever the cost to the company through the insurance is more loaded on the buyers or the supplier of labor, in this case, we have already seen in the previous one that due to this shift, the new MPL, marginal productive labor, is here and thereby we have seen that the wage rate is declined. When the wage rate declines, our supply curve is fairly elastic, which means the bargaining power is more with the laborers. Hence, the cost of insurance will be less for the laborers.

You can see the vertical gap. I can quickly clarify. The first one is the whole shaded area; this whole entire area is the consumer surplus before any kind of distortion or changes or insurance scheme. This area is, in fact, the consumer surplus, the new consumer surplus. You can easily mark the total change in the consumer surplus. Basically, loss of consumer surplus is this trapezium area. Out of that, what is, in fact, the loss due to the distortion of the labor market is, in fact, due to this loss.

So, that means this one is relevant for us to discuss. So, we know that the wage rate has declined, and this portion is used to be the surplus with the laborers. The vertical distance is marked here, whereas the upper portion is with the employer. So, this vertical distance is there. You can easily see, given the labor supply curve, which is fairly elastic, that the gap between the cost of insurance to the employer is higher than that of the cost to the worker.

The reverse is true, and it is marked here. You can see more load when the elasticity of labor supply is fairly inelastic; the cost of this social insurance scheme on the worker is higher than that of the employer. In both cases, we have seen that the employment level declined. The third one is when there will be a shift in labor supply. You can follow and clarify all the details we have identified and mentioned in our analysis. Please note that in

both scenarios, the simplifying assumption is made that the provision of insurance does not affect the supply of labor, which we have already said supply of labor we have not mentioned.

In the next one, we will discuss what will happen when the supply of labor also changes. You can see when the supply of labor is changed, not just the cost to the company; this was already there we discussed in our previous two models. When the supply of labor also changes, it may be due to a better healthcare system; what really happens? Even in this case, we will identify that the employment level was also badly hit. Yes, the extent of employment in foreign employment is less than in the other two, but the load again depends on the elasticity of demand and supply. So, the bottom line in all these three models is that when the elasticity is higher, the contribution of the worker is reduced, whereas the contribution of the employer increases. When the elasticity of demand or the demand for labor is lesser, that means the contribution of the workers is higher, and the contribution of the employers declines.

In this model, particularly when elastic supply also increases with a better healthcare system, when your healthcare system is robust, and you have a disease rate is less, and your mortality rate is very low, your population might increase so that you can add more labor supply. So, in this case, we see that the labor supply function really matters. So, the contribution of the workers increases. In earlier cases, we have seen that the load on the worker was less, but what happens is that the bargaining power will be more on the employer. Why? Because they are getting different contract levels, they are getting more labor supply because of higher labor supply functions.

So, the contribution of workers increases, and the contribution of employers falls. Then, it is also dependent upon the comparative elastic demand of both of these. In the next class, we will discuss how we will continue this health system. We have discussed stability as an important direction for social health insurance schemes.

In the next class, we will discuss cost control. We will also share the exact readings, etc., with you. So, I am just closing here. I am expecting your presence in the next lecture. Thank you.