Economics of Health and Healthcare
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Lecture – 25
Imperfection in Healthcare Markets

So now understanding this marketable, ideal market conditions, in terms of a healthcare market. We will try to understand that under which circumstances they move towards imperfection.

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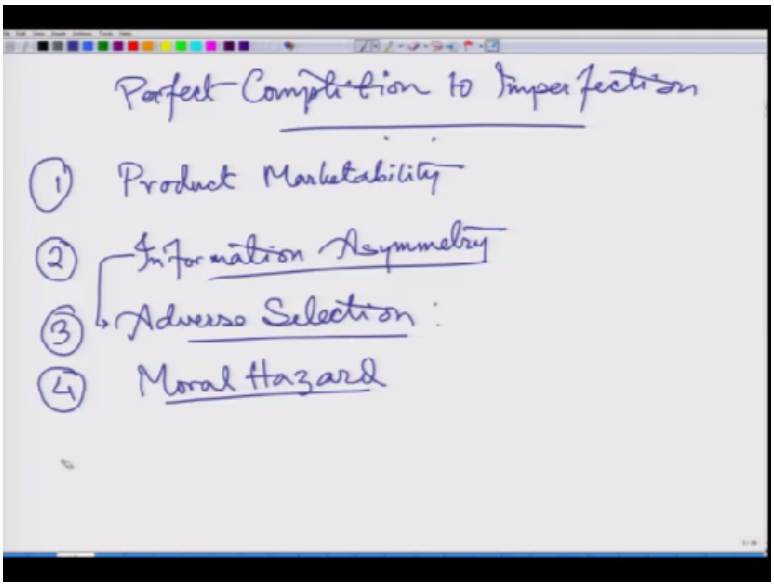

So perfect competition to imperfection.

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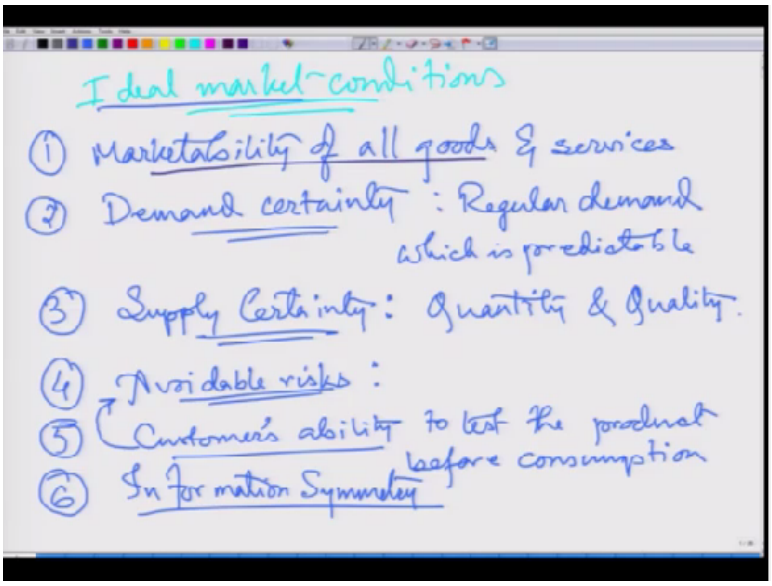

The first one as we have learnt here, as we have learnt here is the marketability. So here also we will talk about the product marketability. And what is product marketability? We already talked about that that all the products are not of the best of the quality, the accessibility is not good, the price has been too high. So there are several conditions under which the healthcare products are always not marketable and there has remained a question in terms of that whether there is an excess supply or not.

If there is an excess supply, then the price may be high and there is a surplus, right. And in that price, there is a shorter demand, lesser demand. So there is a surplus. So which will finally bring down the price and if there is a, the product is not really marketable or there is a large number of product, goods and services which is not properly marketable or marketed, then the price, the market is not in an equilibrium or is not intending to produce an efficient outcome, yes.

So the second one, just after this comes information asymmetry. In terms of information asymmetry again what we learnt that information asymmetry from both the sides, supply as well as demand, I mean the consumers as well as the doctors, so there should be information symmetry or symmetry in terms of information. What happens if there is an information asymmetry, then there is always a possibility because the healthcare providers have the information.

They generally have an advantage over the consumers, yes. And then they can lie to us and then they can fool us with extending some unnecessarily services which are not required at all. Because we do not have idea and we trust them because our life, our health is at stake, so there is always a chance that again the product, the production is being produced at an inefficient way of course, or in an inefficient output, quantity of output where the price is high and then the consumers are not actually getting the cost effective output, services or the health.

So they are paying more than what they are actually getting. And that primarily arises because the consumers do not have enough information to make their best of the decisions, to choose that whether to get a service or not to get a service. Similarly, the doctors do not know that or the health insurance do not, insurers do not know exactly at which point say the health insurers, do not know exactly at which point the price of the policy, the premium has to be set.

Because if the patient is lying that they are not unhealthy, that means the price is being set at a high level, the price is being set at a low level, what should be, then what it should be because the probability of sickness of that person is being judged by their health provide which is wrong in this case and then the probability of sickness estimated is low and hence the expected payout for that particular person is low and then the premium for that particular person has been estimated low.

And now when that person falls sick, because of this counselling the information, so what happens that the person is actually falling sick and expecting a higher claim as compared to what the health insurer has estimated or expected or kept for them so the net amount at risk, so the chance of making loss has increased for that health insurance company. Again that puts them in a condition where to make that loss up, they will try to find further healthy customers and will ignore the unhealthy poor customers.

And then it is falling back to the, from adverse selection to another adverse selection towards cherry picking and by that they are causing debt spiral. And this is not ideal because those who are finally what is happening because of this information asymmetry, those who require insurance because of some people, they are not getting the insurance. The third one in terms of

the doctors if they do not get the information properly, they fail to give the best treatment.

If they fail to give the best treatment, because they give the treatment based on the information they have got. If the information is not proper then the treatment process probably is not at its best and if the treatment process is not at its best, the health outcome is not again the most efficient one. Therefore, the price may be they are paying, the consultancy charge they are paying to the doctor, has remained the same, yes, has remained the same.

But what is happening, the outcome is differing. Now the outcome is low. So there is again wastage. This is known as deadweight loss, what we will learn more when we are discussing about externality. The third one is adverse selection. As I said that if again it comes from the information asymmetry that we have already discussed because of this information asymmetry, the adverse selection appears.

Adverse selection leads to this cherry picking and market failure for the health insurance companies and then the health insurance companies become very very choosy. So adverse selection is not the best way and then the underwriters actually face a huge difficulty because of this adverse selection. They do not really know that what should be the price because the actuals and is just estimate the probability for the health insurance company based on the information they have got.

And then they do not know that whether the information is right or not and because based on that probability estimation, the underwriters set a premium and because of that estimation is wrong, so the premium is estimated wrongly. Yes, so the fourth point is moral hazard where we find those who have insurance, they have a higher tendency to seek medical care and which are often unnecessary.

Just like that we have learnt about moral hazard but I will still if you have missed that session. So I will still like to reiterate that moral hazard is when I have insurance and then I go to the doctor to trim my nail or just for a toothache and if maybe it is nothing, but then I still go to the doctor and then for some unnecessary services as simple as trimming my nail. So nobody goes to the

doctor to trim their nail.

But it is covered under my insurance. And then the doctor probably could provide that time to a person who really require some serious treatment and then that, because again it is kind of common resources or even if it is not a common resources, even if it is private good, there is a rivalry in consumption and if I am going for some stupid reason to see the doctor because I have got insurance, I am actually denying somebody's chance to meet the doctor.

And then the outcome per unit time from that doctor, yes, is actually or the hours of labour the doctor is providing, right, that is my labour. So the average productivity of the labour is actually going down because my output is way lesser than if he could give somebody who really some input consultancy treatment, who really wanted seriously.

So this moral hazard, it leads to again the insurance companies to take a backseat because what happens and then they are very very careful while giving the insurance and often go extremely desperate to get the healthier patients to make the profit because of this moral hazard, they lose lot of money. And it often happens that even if I do not require a hospitalization because I have health insurance, just for a say I have just twisted my hand and a plaster or some bandage will help me.

But just to get that I will get a hospital admission. Because if I get a hospital admission, then probably I will get the insurance and if I get the insurance, now say if I have got my plaster, to get the plaster, it charges me around 15,000 rupees, sorry 200 rupees and or say 5000 rupees in a day. But if I am going, opting for a hospitalization, then probably it is 15,000 rupees and my copayment is maybe 10%. 90% comes from the insurance company.

So how much I am paying basically out of 15,000 rupees, 1500 rupees, right. So anything more than 1500 rupees that difference is my savings, yes. So if it was 5000 rupees and I could come back home, now I am paying 1500 rupees. So I am saving 3500 rupees. If the hospital, they were getting 5000 rupees, now if they have a free bed, now they could make that bed occupied, now they earn 10,000 rupees more, from 5000 to 15,000.

What is the loss of the insurance company? They did not actually had to pay, have to pay anything. Because it does not really make sense to ask for an insurance, right. So from 0, now they are paying 90% of 15,000 rupees that is 13,500 rupees. So that is the loss they are making. And to make this loss or to make this to manage this particular loss, to make this up, so they will go for a healthier patient, I mean healthier, not a patient, healthier individual, yes. So and then the fifth one, I will go to a next page.

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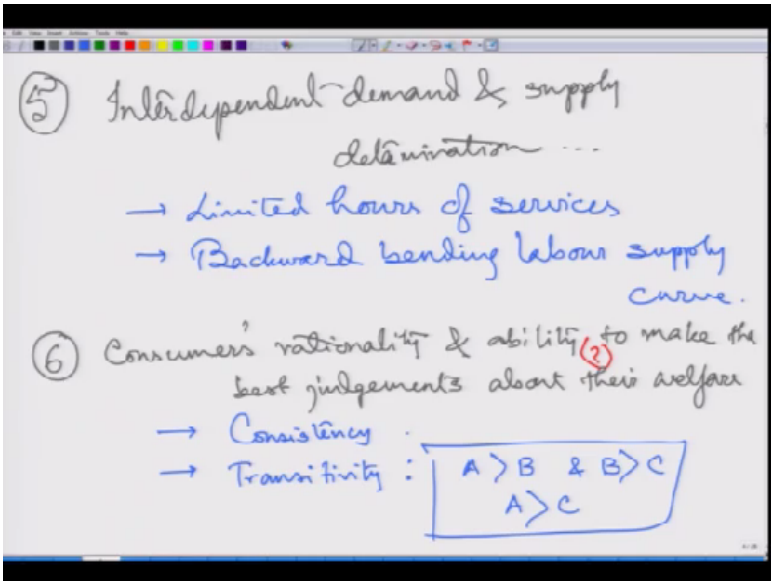

Fifth one is interdependent demand and supply determination, yes. So what happens is with a higher demand, we know that when the demand is high, there is a tendency that the price may go up and what happens an increase in demand because of say some flu or some major viral issues in a particular locality, the doctor says that there is a higher demand and then the customer base has really increased.

So what happens that the doctor initially maybe they want to earn 5000 rupees a day and he could earn by seeing maybe 25 doctors charging 200 rupees from them. Now as he can see that there is a higher demand, so they decide, oh fine, okay, I will not to just to earn my, the profit is not by the number, the target is not the number of patients they are seeing. The target is 5000 rupees.

So if they want to earn this 5000 rupees and now there is a demand, right, they will get 25 people very easily. So what they will do, they will now see that say 20 people charging 250 rupees. Or even 17 people charging 300 rupees. So that makes sense and we know in a short run, the price elasticity of demand for healthcare if it is not basically self-induced or if it is during the emergency, during the disease period, it is very very, the price elasticity of demand is very elastic.

With that increase in price, the quantity demanded does not really fall. Therefore, and when it is inelastic, what happens? The total revenue by the supplier increases during that inelasticity, right. So similarly, during this inelastic period when there is a major rise in demand and then the price increases which does not really have an impact on the demand, so the doctor can actually limit their number of hours of services.

Yes, eventually what is happening by limiting this number of hours of services, we actually see a backward bending labour supply curve. We see a backward bending labour supply curve, yes. So this interdependent demand and supply determination then based on demand, the supply will be determined or based on supply, the demand is determined but it is not really so prominent that based on supply, the demand will be determined.

Because healthcare scenario is I do not really want to see a doctor if I am not ill. The health seeking behaviour is mostly like that, yes, mostly. So based on supply, the demand is, yes, of course in terms of quality, they can choose if there is and we know that the product marketability has been questioned under when we moved towards this imperfection and based on this product marketability, my interdependence between demand and supply can vary, right.

So the sixth is consumer's rationality and ability to make the best judgement about their welfare. Yes, what does this means that consumer's rationality and ability to make the best judgements about their welfare is, they have, the consumers should have a perfect knowledge what they do not. So the consumer's rationality and ability is questioned. Yes, they do not have an idea about, they know the preference but they know the budget constraint.

So they know that based on that preference and budget constraint, what is their highest, based on their indifference curve and then the budget constraint that this much of health and this much of leisure I can avail or this much of health and this much, I mean doctor, this much of medicine I can avail and something like that. But at the same time, while they are taking their judgements, they are often not very clear about how the welfare is being ensured.

How their health, best health is being ensured? Whether it is really being ensure or not. They have taken the decision to chose their doctor, chose the hospital but they do not know whether the doctor or the hospital is the best one for their particular case. So this has remained a question. So the consumer's rationality and ability even if it is there, or the rationality is there but the ability to make the best judgments about their welfare is often not their and in terms of rationality when the persons do not have enough education.

They are not very rational to take their decisions. Yes, they do not have much knowledge. So they are not very rational to take their decisions. Or eventually maybe the accessibility and affordability is not there. So they are rational now but the rationality leads them not to chose for healthcare, right. So this rationality because they cannot, even if there is no accessibility and affordability, they cannot ensure the, that okay fine, let me get the treatment because it is not far away or it is not expensive either.

So they chose not to get the treatment because that is the rational decision. They cannot spend 3 days or they cannot travel 100 km, right. So that rational decision leads them and that is not the most efficient healthcare production. And of course, if they do not have awareness, they do not have knowledge, so the decision is never rational because they do not know the importance of the health or they do not realize or they do not know importance of a particular disease, that how far it can lead to.

Or importance of say health hygiene practices, the sanitation, the immunization, right. So the seventh one can be, or in terms of this the consumer's rationality and ability to make the best judgements, there are 2 things which mostly the suppliers looked at. They look at, because the suppliers always will try to get an idea about the consumer's pattern, demand pattern, to have a

better predictability of the demand condition.

So the 2 things that they try to judge is the consistency and transitivity. Consistency is how consistent the patients are or how consistent the decision makers, the consumers are while they face the same condition again and again whether they are making their demand at the same consistent pattern or not. In terms of transitivity, it is a mathematical condition. In transitivity, we try to see that if A is preferred over B and B is preferred over C.

A is also preferred over C. So transitivity means this condition prevails, right. If I prefer allopathy over homeopathy and homeopathy over ayurvedic, so I will prefer allopathic over ayurvedic. But we often do not see this clear, distinction while it comes to their choice making in terms of the healthcare behaviour. Because our healthcare demand in a developing country with lesser education, lesser awareness is often not this rational to follow this transitivity.

And we have seen that often this healthcare behaves very differently in this setups. There is a networking effect. There is a bandwagon effect. There can be a (()) (21:52) condition. And the demand predictability or the consistency both its transitivity and consistency are compromised and the rationality or the patient's, or the consumer's or the healthcare seeker's decisions towards their welfare are not basically the most rational and efficient one.

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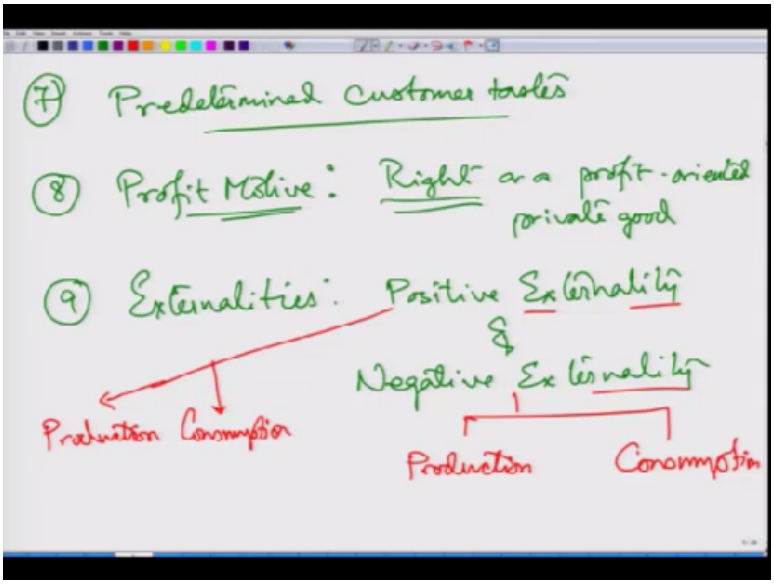

The seventh one is predetermined customer's taste. This predetermined customer taste is they have an idea or they know that I will go to this homeopathy doctor only. I will go to this particular hospital only. I will take this particular only. It can come from a brand loyalty. It can come from a tradition. In many cases, in many countries, in many societies, we have seen that they have a family doctor and the family say if there are 2, 3, 4 doctors, then it can happen that the family has different doctors, right.

So this is like predetermined customer taste and maybe while I went to a particular doctor and then my fever was not actually coming down under that doctor's treatment and I went to another doctor and then his medicine reduced my fever. That may be that even if I would have continued with the previous doctor, my fever would have come down on the fourth day. But on that fourth day or the fifth day, I went to that other doctor.

So the nature of the fever was actually mistaken under this the doctor's preference. So it is like and then that makes my choice that the first doctor may be was not the best doctor, right. So the predetermined customer tastes often lead to a market failure and that is where the allocation of the products or the services are not at its best because if in a particular locality people prefer to go to allopathic doctors or say homeopathic doctors or say even a quack, if there is a qualified doctor may be 5 km away, so they do not, or say 10 km away, they do not go to that qualified doctor.

They go to a quack who sits in that village only because that is their predetermined choice, right. And then the efficiency is actually compromised and here in the first case maybe the consistency is not there and then the second case what happens the transitivity is not there. So the predetermined customer taste is a very important point to lead to the market imperfection. And then eighth is the profit motif.

It also raises the question whether health is a right or a profit oriented private good. If it is a right like what we see if in case of what universal health coverage says, what World Health Organization says, what Cuba says, that it is right. And everybody should have equal amount of most efficient health status or healthcare services, everybody equally, yes, of the efficient one.

But what happens is, it is often of course in most of the countries, it is difficult to ensure that the government will provide health for everybody.

So who fills the gap? The private organizations. The private organizations will not work on the same line how the government philosophies work or a right based approach works. Because they are private. They do not bother about anybody. They just want their business. They just want to make money, right. The government gives the money out of the tax and whatever but private, so it is their business.

This is their bread and butter. So they have to earn a profit. They cannot operate in a normal profit, literally. And they have families, they have other their own demands, choices and preferences. So naturally there will be a profit motif and if there is a profit motif, then the market fails. It is in terms of from the ideal situation, yes. So the hospital will have a profit motif, the clinics, private clinics will have a profit motif, the diagnostic center will have a profit motif.

But then how far it is entertained? That the government is to take a decision. So it should not be extremely high that it discriminates among people and they cannot keep it very low. So it should be justifiable that the level of profit they intend to earn. And say just for an example how this profit motif leads to a fragmented market or leads to a price discrimination? I stay in Bengaluru. A particular immunization for a child in Bengaluru say its charges 4000 rupees. I go to in a private nursing home or a hospital.

I go to a government hospital; it charges 200 rupees. I go to a government hospital in Hosur or not a government hospital, may it be a semi-government hospital or something like that, a charitable organization. I go to Hosur which is just half an hour away from Bengaluru, maybe in Tamil Nadu or I go to say Mysore or nearby Rama Nagar or somewhere which is a small towns around Bengaluru, that eventually comes down say 1500 or something like that.

So you can see the profit motif, the difference in the price and that is a market differentiation and that is really not nice, right. That is an uncanny business but government has to regulate. We do not know. We cannot go to a government hospital, stand in a queue for 2 hours to (()) (28:47). So

if we can afford, we prefer this. And then there is a snob effect as well. So we will go to that private hospital, 5 minutes' business, just get the immunization, come back.

We do not bother that whether it is 5000 rupees or 3000 rupees. So I just cannot stand for 2 hours, 2000 rupees. Because otherwise I have to take a leave on that particular day. Probably my opportunity cost is higher than what I save by that 2000 rupees. The next one is externalities. It can be both positive externality and negative externality. Now this positive externality can appear from production as from consumption.

Similarly, my negative externality can appear from my production as well as my consumption. So the production externality means and what is the positive externality and negative externality? They are particularly that when, what is externality? This is the difference in terms of the social benefit over costs and social cost over benefits.

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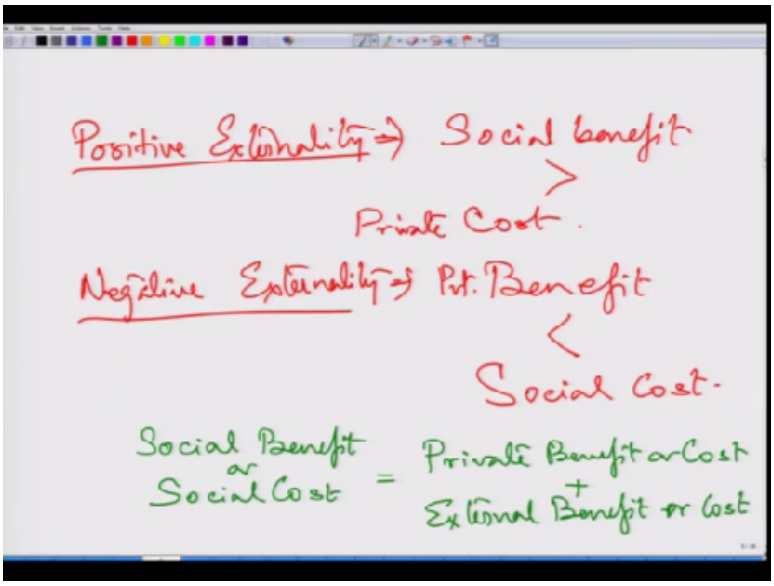

So if my, in terms of positive externality, my social benefit should be greater than the cost whereas for a negative externality, my social benefit or my benefit, mostly private benefit, so when positive externality, we talk about social benefit and private cost, mostly, yes. Not essentially. Here, private benefit is less than the social cost, yes. Here again mostly private benefit.

Now here also we can talk about social benefit is less than social cost but now what is social benefit? Social benefit is basically or social cost is basically private benefit or cost + external benefit or cost. If my private benefit has or my production has, if I produce something, I have a benefit or if I consume something, I have a benefit.

And if because of my production and consumption, some other people who are not directly paying for that or producing or consuming that, they also have a benefit because I am producing something or I am consuming something. Because of my production, because of my consumption, if they are having a benefit, then that is external benefit and together that is social benefit.

And if the social benefit is more than my private cost, that is a positive externality. Similarly, if I produce or consumes something and I pay a cost, I get my benefit but because of my production and consumption, somebody else is having a cost. It can be a pollution, smoking cigarette, anything. They are also bearing a cost that is their external cost, right. They are not getting any benefit.

That is their external cost because of passive smoking. So this together is social cost, right and this social cost may be more than my private benefit, then there is a negative externality. We will discuss about this more in the, just the next session. But the last point which leads to the market imperfection from out of the ideal market condition that is returns to scale.

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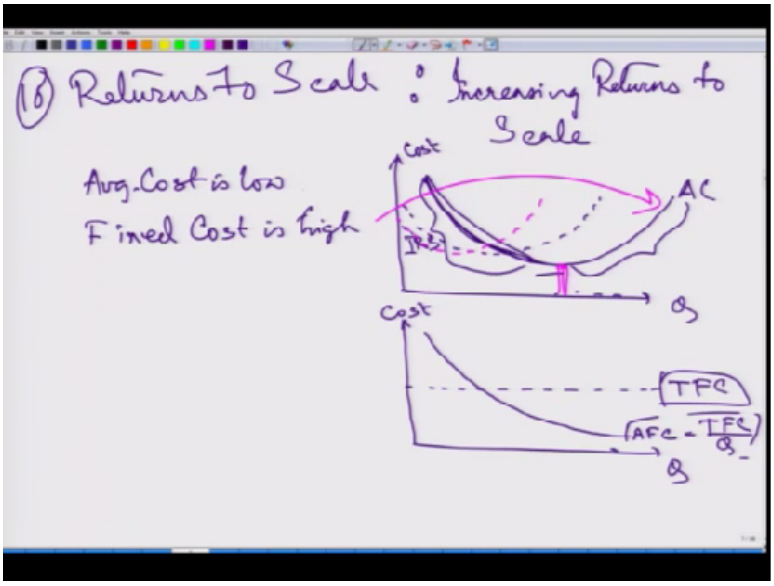

Which colour, okay. Returns to scale, point number 10, yes. And this returns to scale is basically, they talk about increasing returns to scale. If you remember what is increasing returns to scale that is my output increases more than the or my rate of increase in my output is more than the rate of increase of my input, right. If I increase my capital and labour by twice and I get more than that, I get say from 100 to 200, 100 to 200, my capital and labour increases but my output increases say from 1000 to 4000.

That I increase my capital and labour twice and twice but my production increases by 4 times. So anything more than 2 times, so that is my increasing returns to scale. What happens during increasing return to scale? Again if you remember, we are on the downward slope of the average cost curve, right. Here we basically see the increasing returns to scale. Here it is decreasing return, constant return, right. So in increased returns to scale, what happens? Our average cost is lower, right or it eventually goes down and down.

So with this average cost, when we have this lower average cost, there basically we found fixed cost is high or the share of fixed cost and total cost is high. And with the production, if you remember again, with the production, the average fixed cost comes down, right, because it is total fixed cost which is the straight line/quantity, yes.

And if it is coming down, right, that means, if this share, this particular share is high that means

when I produce like at the initial period, I have probably for to setup a hospital, I have to get a lot of equipments, lot of base diagnostic equipments, certification charges, a big hospital building, ambulances, a lot of human resources, so the fixed cost. Initial investment for this building, capital and all, this is very high.

Once it starts operating with the quantity of the production, then patients being treated and all this, once it starts operating, that fixed cost gradually goes down and more is the patient, more it goes down and down. So what we find when we have this total fixed cost more, that means a capital intensive system which we can compare between a big hospital as compared to a smaller hospital.

That means that big hospitals are technologically sound, have more capability to serve more number of patients, are more holistic in nature, can accommodate his doctors or complicated services, that means they are having an edge over others in that market, right. So they have, they can slowly gain the market share. Because with the more and more customers, their average cost is going down.

And once their average cost is going down, their profit margin is increasing, right. Once their profit margin is increasing after their breakeven point, they are slowly moving towards from the breakeven point, they are moving towards that positive total revenue total cost period where the total revenue total cost is more. If they can attain that and they can strategize in a better way so that they can perform in that, in difference returns scale, this lower section of their average cost curve, or can work out a better revenue strategy, what happens?

They can rule over the market and slowly with this with increasing returns to scale or say the lower average cost, they will not only survive with the profit but they will eventually be a price taker because with that profit, they can invest more. With the investment, they can eventually get more uniqueness towards their system, they can pay towards more advertisements. So from perfect competition, they are moving towards monopolistic competition, more advertisement, more product heterogeneity and then they are moving towards more oligopolistic market.

And if they can, because in that way they are being larger and larger and then their market share is increasing as compared to the smaller ones. Because the smaller ones did not actually invest much, their average cost after a certain while starts going up because with more patients when their average cost starts, they may have a smaller average cost curve and further more smaller average cost curve.

So with, after a certain, very small number of patients, their average cost goes down. So they cannot really accommodate a large number of patients and then they actually trickle down to this and where they can accommodate still a very large number of patients, this big firms. And this gives them an oligopolistic nature in the market. Slowly they can may cut from duopoly and a monopoly eventually.

So this increasing returns to scale leads to a market imperfection where they can move to a perfect monopoly or natural monopoly and with this price discrimination, they can do a product differentiation, they can do a price discrimination at all. But what the government can do that this market imperfection is really not that is at once. So to reduce the effect but we know that it is nearly impossible.

Everybody cannot be Cuba, that it is nearly impossible that they can reduce the market imperfection or everything can be government controlled where Cuba dreamed that is providing the best of the services as compared to the many developed countries but the government can ensure the equity and efficiency based on taxes, based on subsidies, the best distribution and allocation of funds, increasing the accessibility, providing several schemes, health insurances, towards the underprivileged ones so the distribution is more, affordability is there.

So they have to distinguish between how far the profit motif can be entertained and till how much I can sustain with my human rights concept of health care provision. And looking at the social benefit and social cost, they have to identify that whether it is a public good and how much benefits can be provided.

And if it cannot be private good because of the tragedy of commons or free rider, they can move

slowly towards the private good and maybe walk out a public private policy or a corporate social responsibility and like Grossman says that everybody has a health stock which goes down, depreciation, through the depreciation but they can improve that.

They can improve that with better education, occupation what the government has to ensure that the better education, occupation along with the health, all the tentacles, awareness and everything. So that is where the government has to bring a strong philosophical foundation of the healthcare system. If their philosophical foundation is strong, they know that what is there, we are, we have a lower market imperfection in terms of healthcare. Thank you very much.