Health Economics

Dr Pratap C Mohanty

Department of Humanities and Social Sciences,

Indian Institute of Technology Roorkee

Week – 05

Lecture 21- Health Care Financing

Welcome, friends, to our NPTEL MOOC module on Health Economics. As you know, this course is unique in the sense that healthcare is very essential; it requires strong policy-making and attention in every field, especially when counting its financing aspects. As we have seen, healthcare spending is an important indicator of household decisions because the spending percentage is very high, and private spending is very high. Whether it is the market that is going to deal with the provisioning or the government. So, whether the market really fails in this context or not etc., there are so many directions but at this moment we are not addressing all sorts of things; we are only sticking to healthcare financing.

This is the one where we are deriving from our previous unit, which was on equity and health, where we emphasized equity in health distribution and equity in healthcare access. In this lecture, we will be discussing healthcare financing, laws of health resource allocation and healthcare financing in India in particular with reference to the latest important government document, that is, health accounts, also called National Health Accounts, NHA 2019-20 and we will also be discussing on capital and current health expenditure. So, as a background to this unit on number 5 on financing and insurance in healthcare, our title is accordingly defined. Here is healthcare financing, it is the title we are carrying for this unit.

So, what do you mean by healthcare financing? It is basically a system that a society uses to pay for healthcare services. Financing healthcare has evolved from personal payment at the time of service delivery to financing through health insurance prepayment by the employer or employee at the workplace. We have already discussed this in other units, even the healthcare systems unit. In the health financing cases, this involves not only the methods of raising money for healthcare but also the allocation and use of those funds. The subsequent slides of this lecture will explore the generation, allocation and use of these funds.

We will also highlight how healthcare financing is made in India as well. So, the emphasis will be on the Indian context. The beginning with the healthcare financing will certainly emphasize households where the payments are made from their own pocket, which is basically called out-of-pocket payments, and hence, they receive treatment. In an ordinary market, there are two stakeholders: consumers and producers. Consumers are

the users who hand over money in exchange for the service, whereas sellers or producers receive the money required to provide those goods and services or healthcare providers.

And sometimes, it involves the role of a third party. It is not just the household and the healthcare providers; a third party might exist. The third party is called private insurance providers, government insurance providers or social insurance funds. And how it works? It starts with paying for healthcare from the household side in terms of user charges, private insurance premiums, social health insurance and taxation to the third party. As a third party, they are responsible for providing healthcare to households through healthcare providers. Hence, there are reimbursements. The involvement of a third party they are financial intermediaries who serve the dual function of generating revenue and reimbursing service providers. There are principles followed in theory; we refer to Evans' 1997 paper called Revenue Expenditure Income Identity principle, which explains the flow of money in these three heads, starting with revenue expenditure to income. The sum of the revenue generated from different sources represents the total budget for possible expenditure. This expenditure will always end up as income to those provider services.

How is revenue generated? It is through patient payments called PP, private insurance payments, PI, taxation on health that is TH, and voluntary donations called VD. So expenditure is equal to the unit of cost times the quantities of the healthcare commodity, whereas income is the hours of labour times the wage rate compared to the labour. Hence, these three are presented here. The second one is expenditure, and the third one is income. And this is highlighted here to clarify that this identity is required in the financing structure.

“Revenue-Expenditure-Income” Identity

Revenues ≡ Expenditures ≡ Income

Revenue = Patient payments (PP) + Private Insurance (PI) + Taxation on health (TH) + Voluntary donation (VD)
Expenditure = Unit cost (C) * quantities of health care commodities (Q)
Income = hours of labor (L) * wage rate per hour (W)

$$PP + PI + TH + VD \equiv C * Q \equiv L * W$$

Any change in one variable will lead to change in at least one other parameter.
It can be either offset or balanced by a change in other parameters on the same side of the identity ($|-\Delta TH| = |+\Delta PP|$), or the change will lead to the same-sized total change on each of the other two sides ($TH \downarrow \rightarrow Q \downarrow \rightarrow L \downarrow$).

Any change in one variable leads to a change in at least one another parameter. It can be either offset or balanced by a change in other parameters on the same side of the identity. So that the change is mentioned as maybe equalized with its mode value. The change in TH might be negative, but equalized with the change in the PP which is called patient payments,

or the change will lead to the same size total change on each of the other two sides. That is basically when the TH falls, the quantity of these commodities will fall and the hours of labour requirement will also reduce.

Hence, there will be some adjustments. We said it is called revenue expenditure income identity in the financing structure for healthcare. Once again, we are just clarifying that out of all citizens, a certain percentage of patients require help from health providers, and there are voluntary donations or patient payments. Hence, as we have already mentioned, they receive commodities as the sum of Ci times their quantities (Qi) and income in terms of labour. So, these three, first we say their expenditure, then these three identity revenues, expenditures and income we have explained.

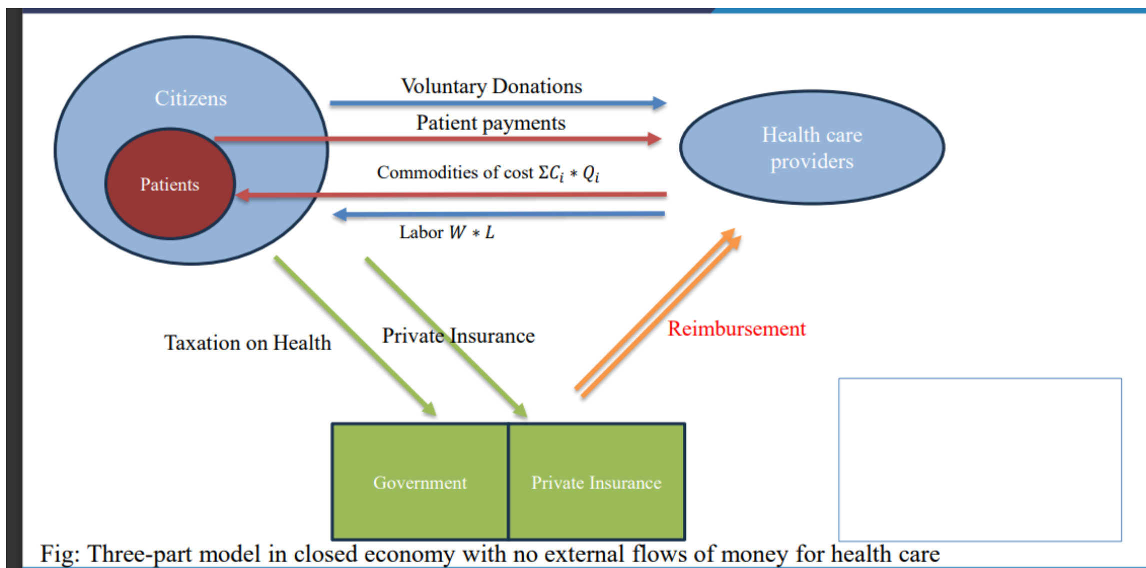

Fig: Three-part model in closed economy with no external flows of money for health care

Again, through the third party, it is channelized through their taxes, taxes on health, and then private insurance, and there is embarrassment to the healthcare providers. This is explained for your clarity, and we will clarify each direction further. So, health resource generation, as I already mentioned, total revenue is through patient payments, private insurance, taxes on health plus voluntary donations.

Total revenue = Patient payments (PP) + Private Insurance (PI) + Taxation on health (TH) + Voluntary donation (VD)

The distinguishing characteristics of four sources of revenues deal with whether payments are made ex-ante, like prior payments are required before sickness, such as premium payments, etcetera through the third party or exposed even that is at the time of service or just after the sickness from the patients. So, the payments are either ex-ante and exposed, whether paid fully individually, depending on the individual's healthcare use or with any element of cross-subsidization.

Either the individual is fully paid, or there is some redistribution channel through cross-

subsidization; we will discuss all these things here. So, here are the characteristics of these channels and the financing relationship. So, as I already mentioned through ex-ante, we will clarify one by one, exposed or no cross-subsidization or cross-subsidization. In the case of cross-subsidization, the rich or the healthy is subsidized for the poor or for the sick. Hence, this is linked to the redistribution of income.

Why do people pay ex-ante rather than exposed? The answer is to avoid risk. I will clarify all sorts of things. The distinction between ex-ante and exposed deals with the extent of people's preferences for health insurance, and risk aversion is the key where ex-ante payments are made as premiums, while distinction on the vertical axis deals with the extent of people's willingness to cross-subsidize and their fellow citizen's use of healthcare through redistribution. The horizontal emphasizes the ex-ante and exposed principles of financing. We are addressing health resource allocation.

Due to the limited availability of resources, fund allocation is hugely competitive in any health system. The decision of allocation effects, what services are provided and which services to be given priority etc. are important. Special consequences of resource allocation decisions are major determinants of healthcare economics. Balanced resource allocation for all the sub-sectors of the health system is required to ensure regional and socioeconomic equity.

We are presenting some of the principles and the laws of health resource allocation starting with Sutton's law. This has been taken; you can just have a recheck. We have cited the source, economics of health, publishing new public health in 2014 and the page number is also cited. First, Sutton's law discusses the priorities. How can priorities address resource allocation efficiently?

Based on a statement by a notorious American bank robber, Willie Sutton. When the reporter Mitch Onstad asked Sutton why he stole from the bank directly, Sutton answered that they did it because that is where the money is largely confined and one's first choice would be to choose the most obvious route of extracting money. Similarly, in healthcare, the most emphasis should be given wherever the need is. Taught to medical students as a metaphor for emphasizing the most likely diagnosis rather than wasting time and money investing in every conceivable possibility. That is all about called Sutton's law.

The second one is Capone's law. This is based on a statement by Capone, a well-known gangster, who divided the area of Chicago among colleagues. They usually gangster divide their areas, this is their zone, and there should not be any conflicts of service. Similarly, healthcare also it is applied. In health context, planning should be made accordingly, not necessarily it is the single planning model that will address all the choice functions.

Hence, planning may reflect the provider's interest instead of the public interest so far as Capone's law is concerned, creating a problem. So, Capone law mentioned that the area-

wise division of the allocation of resources is very important. Another is called Roemer's law, which states that hospital beds, once built and insured, will be filled. To some extent, this is explained through the supply side, which creates its own kind of demand. As the supply of hospital beds increases, the use of hospital services also increases.

This hospital beds lead to an overutilization of hospital services when the observed demand outpaces the population's actual need for services. Insanity to control both hospital bed supply and utilization is important in health planning in industrialized countries. The next one is called Bunkers law, which states that, like more surgeons and more surgery, a greater supply of surgeons generates more surgery. Less care and gatekeeper functions limit referrals to specialists. Professional organizations and governments limit training positions, and licensing for specialized services is required.

We are taking the national health accounts as the latest evidence to give you an understanding of health financing. Health accounts, what is this? Health accounts for health expenditure and flow of funds in the country's health system over a financial year. It focuses on the sources of health expenditure, healthcare expenditure, who manages these, who provides healthcare services, and which services are utilized. Health expenditure estimates are prepared according to the global standard framework, called system of health accounts, SHA in 2011. Our health accounts are maintained as per the SHA.

Hence India's health record is comparable across the globe. System of health accounts is basically an international accounting framework for systematically tracking health spending. SHA 2011 establishes an integrated and comprehensive methodology for tracking health expenditure through a set of uniform accounts comparable across countries. It has coverage on final consumption and tracks resource flows through the health system from their sources, patterns of provision including providers, factors of provision through to its use, healthcare function, disease program, etc. So there are regarding total health expenditure, there are different disaggregated units, such as current and capital expenditure, which we will be emphasizing one by one.

Current health expenditure in short called CHE is presented as it includes revenue of healthcare financing schemes, healthcare financing schemes, healthcare providers, and healthcare functions. Like when we include revenue of healthcare financing schemes, these entitles provide resource to spend for health goods and services in the health system. On the other hand, healthcare financing scheme entities receive and manage funds from financing sources to pay for or purchase health goods and services. And regarding healthcare providers, these entities receive finances to provide or to produce health goods and services. Healthcare functions describe the use of funds across various healthcare services.

On the other hand, capital expenditures cover the expenditure for capital generation such as new infrastructure, training of doctors etc. Current expenditure really matters in case of

matters much to deal with the everyday challenges. We are further clarifying the facts and figures regarding total health expenditure. We have mentioned that it is of two parts: current and capital health expenditure. So, coming to capital health expenditure this is indeed called capital health expenditure because it deals with the Capital health investment, include health infrastructure such as buildings, machinery, technology, IT, and stocks of vaccines for emergencies and outbreaks. In the case of current health expenditure, there are estimates of current health expenditure, such as healthcare goods and services consumed each year. This indicator excludes capital health expenditures such as building, machineries, etc. So, here are the key health financing indicators that need emphasizing or we will emphasize, like total health expenditure, which is already mentioned, but it should not be just its absolute amount that is important. It has to be taken as a percentage of GDP and per capita.

Current health expenditure as a percentage of the total health expenditure, government health expenditure as a percentage of total health expenditure, out-of-pocket expenditure OOPE as a percentage of total health expenditure, social security expenditure on health as percentage of total health expenditure, private health insurance expenditure as a percentage of THE, the external or donor funding for the health as a percentage of THE and government health expenditure or the GHE as a percentage of general government expenditure GGE, household health expenditure as a percentage of total health expenditure, union or state government allocation or health expenditure as a percentage of GHE that is government health expenditure. Recently, the Ayush ministry has been emphasized, and its allocation as a percentage of total health expenditure, pharmaceutical expenditure and out of the CHE or the current health expenditure. So, as mentioned, these are the important indicators of the national health accounts of 2020 of India. And I re-emphasize again that these all are really interesting if you are extending your work in your research in healthcare, specially those who are working on efficiency analysis, our productivity analysis; these indicators are the most we have also discussed in our chapter in unit number 10. You can also recheck these, which are some of the inputs in health efficiency, and these will be useful for writing articles, research articles, and even consultancy services and their analysis.

Health financing in India and its records from the National Health Accounts 2019 figure are explained in our slides. Here you just read between the line and its figures. Clearly, the current health expenditure carries more than 90 percent of the share as of the capital health expenditure and out of the total health expenditure share. And these are the different years where, per the NHA record, national health accounts record from 2013 till 2019-20 figures are here. I have already emphasized different key indicators, such as total the THE as percent of GDP, THE per capita at current prices, etc.

There are which ones have been declining and increasing, which is indeed current health expenditure is declining, government health expenditure is rising, and out-of-pocket expenditure is also declining, which is indeed good. As per the latest figure of NHA it is only

47.1 percent and this is OOP as a percent of total health expenditure. Total health expenditure as percent of GDP declined, share of current health expenditure decline means more capital expenditure is there and OOP decline, but still it is a sizable percentage. Who contributes to current health expenditures in India? Like you can just have a check.

The households are the most important contributor to the current or running expenditure for healthcare. Households carry around 60 percent of the total share of the current health expenditure. The exact figure is 59.25 percent and out of 59.25 percent paid by household 52 percent is out-of-pocket expenditure.

That is another interesting aspect which is still very high and should be reduced. What services are consumed from current health expenditure in India? You can just have a see. Inpatient curative care, outpatient curative care and day curative care. Thus, these three indicators cover more than 50 percent of the services from the current health expenditure. Coming to the again current health expenditure, which provides healthcare services from current health expenditure, you can just see the share is mentioned here and there are percentages, you can just have a check.

Private hospitals provide a higher percentage, followed by pharmacies, government hospitals, and so on. Who contributes? Now, We are discussing about capital health expenditure. Who contributes to capital health expenditure the most? You can just have a check. It is the state government as we know that health is concurrently state government share is highest followed by the union government. Gross fixed capital formation in the health system is measured by the total value of the fixed assets that health providers have acquired during the accounting period and that are used repeatedly for more than one year in the production of health services.

So, you can also use gross fixed capital formation as an indicator in your analysis for your research paper. Improverizing in the effect of healthcare payments in developing countries like India and underdeveloped countries where most of the population live below or just above the poverty line, they face the risk of being pushed into the trap of poverty as of high health care spending. This phenomenon is also known as the improve harassment effect. You can just check some of the figures we have taken from one article of EPW, Economic and Political Weekly published in 2010, citing these authors who have calculated the impoverishing effect. Then see the improverism effect is by inpatient care and outpatient care.

It is different in Kerala, especially outpatient care is considered to be high. And why is it so? This is because healthcare provisioning is also much higher in Kerala. Whereas it is quite low in some of the other states like even in state of Odisha, and even in Madhya Pradesh. So it depends on how people are utilizing from their own pocket and hence they are in the prey of paying higher amount and their resources are allocated largely on healthcare which is to be addressed by policy. You can just have a check we have

highlighted on the national average is here and there are states which have exceeded the national average.

Here, we need to cite Kerala's highest effect again, which I just said may be due to low levels of household consumption combined with higher education and propensity to use healthcare. Madhya Pradesh shows a low rate of health-related impoverishment, possibly due to high level of the base of poverty and lower education, and lower access to health. Outpatient services account for larger share of financial burden than inpatient. So these are some of the directions for all of you to work for your own research will be useful.

Hence, it has a connection with poverty. There is an association between out-of-pocket health expenditure and poverty. OOP will raise financial hardship, health expenses versus other necessities or the challenges poised with the family and there will be catastrophic effect. You might see that 40 percent of the expenditure might exceed their out of the total non-health consumption goods. There are different catastrophic expenditure articles you can refer. And in India as per the NHA figures, OOP as a percentage of total health expenditure is 47.1% whereas out of the current health expenditure is of 52 percent which is still much higher than many countries in the world. In another article of Sirag and Nor studied from the data of 145 countries between the years 2000 to 2017 found that if OOP exceeds the threshold of 29 percent, this leads to increased poverty in the households. This kind of work is relevant for further research. We have already discussed financing and funding Indian healthcare. Even earlier chapters, in our other chapters, we discussed health systems and cited Bismarck and beverage model.

India is a microcosm to all the healthcare system in the world as per the PWC report 2018. This is even from the PWC report. And where you can see a number of indicators related to payer, financing, provider, government role, price controls and even there are different examples of which country follow which kind of model. If you are facing difficulties understanding the clarification of each of these, you need to follow our health system chapter. We discussed this in chapter 7 or unit 7, which is on economies of health systems.

Healthcare models will be covered. As I already said, since this is our unit on 5. So, we are going to cover this in the economies of health system in unit number 7. So, it is largely covered. Rest, if you have any difficulties, do reach us, and our team will be very happy to address each of the directions. The most important reading for you is here the NHA which I have already said for all facts and figures for Indian context, NHA, National Health System, health accountability or accounts, national health accounts is very important.

So, this will give you all the estimates related to the Indian health systems and its estimates. Olson Abel's book published by Oxford University Press on principles in health economics and policy is also important. So, these are all I think in the next lecture, we will continue the health financing structure and explore the concept of uncertainty and health

insurance in detail. Hence, today, it is going to be very useful. I suggest you to get the best out of it. Thank you.