Health Economics

Dr. Pratap C. Mohanty

Department of Humanities and Social Sciences,

Indian Institute of Technology Roorkee

Week – 12

Lecture 60- Indian Health System and Challenges

Welcome, friends and scholars. It is our pleasure to provide you with the content on health economics as part of the NPTEL MOOC module. In this last week, we are targeting to do content on the Indian health system and its challenges. As we know, the Indian population has indeed faced a greater challenge, especially at the time of COVID-19. Number of issues were unearthed, number of problems were in fact highlighted. Hence, after discussing over the last 11th week and even this week, we discussed a couple of lectures; we thought it would also be good to conclude with some clarification on Indian health challenges.

Hence, the lecture is targeted accordingly. We are focusing on health status, what exactly is with us, its governance patterns, and future challenges. These are in fact our targeted this lecture. Coming to understand the Indian health system, since India has a federal structure of governance of healthcare, we have purely two tiers, though another extension is still a three-tier system as far the governance and political approaches are concerned, but health wise it is of two-fold, one is central and state or central subject and state subject.

The understanding of public health, sanitation, hospitals, and dispensaries is purely part of a state subject, and it is indeed the responsibility of the individual state to manage public health. Whereas population control, family planning, adulteration of foodstuff, control of infection or infectious and contagious diseases across the state boundaries, and issues governing the medical profession, etcetera, are part of the concurrent list where both the central government and the state government act together. Similarly, legislation, vision, financing, and delivery of healthcare services are part of the state government. Funding from the state government is like how funding is there: two-thirds of the public health expenditure in India is from the state government, and the rest of that is one-third is from the central government contribution as part of the public health delivery concerned. So, two-thirds plus one-third is the ratio where the public health expenditures are made.

So, as I said, this is the state government, bears, this is the central government. So, you can understand this way. Policy formulation and regulation on health insurance are largely

under the jurisdiction of the central government. Another aspect that is highly discussed in the present day is called social health insurance, and this is part of the concurrent list; both the state government and central government deal with it. The central government frames and produces vision and strategy documents from time to time, such as NHP (National Health Policy); there are different central government policies and documents, some of which we are just mentioning, which are very important and are framed over time.

One is the National Health Policy of 1983, then 2002, and then 2018 guidelines concerning Indian health, and public health standards are also discussed. So, the latest, in fact, is actually emphasized in 2018. Health services in India are delivered by public, for-profit motives, and also for not-for-profit private providers as well. There are in fact, so far, we have discussed the health system largely governed by bio-medicines, but still, in India, in practice, there are alternative medicines as well, alternative systems of medicine or indigenous medicine. It is also called the Indian System of Medicine, ISM.

However, in comparison with other countries, these are also part of the definition of traditional medicine. It includes the famously called AYUSH, and its acronym is Ayurveda Yoga, Naturopathy, Unani, Siddha, and Homeopathy. So, even though there have also been some revisions, you can also include them. Sowa Rigpa is another part of the new definition. So, as part of the definition of AYUSH.

So, coming to the understanding of the Indian health system and its structure, it has three levels: primary at the primary level, secondary, and tertiary. Primary includes your primary health center, which is PHC, and also the sub-centers. For example, if you are pursuing your degree at any university, they might have some health unit. Usually, they are considered to be the PHC or even at the level below, called sub-centers. So, you might be surprised to know why this is actually located even if the population is very low.

Yes, it has to be the standard definition of this distribution is through population only, largely through population. We also discussed that. Hence, if your university is inhabited by fewer people, then obviously, there will be a possibility of a sub-center. Then, at the secondary level, usually the surgical components are included, such as community health centers; some of these units deal with inpatient delivery as well as inpatient treatment. Hence, these are at the community level.

And those are called Community Health Centres, CHCs. There are super-specialized hospitals. In short, they are called tertiary-level hospitals. These include hospitals and medical colleges. So, we will discuss these things in detail. As per the guidelines, the population really matters to distribute these units.

The Indian government also followed this. When defining sub-centers, the population coverage should be 3000, including hilly and tribal backward areas. So, 3000 if it is hilly and where the population density is very low. Hence it is 3000. In general, in the plain area,

it is 5000 to have a sub-center. PHC has a range of 20000 to 30000, and CHC has a range of 80000 to 20000.

Once again, understanding sub-centers, we just say the range is from 3000 to 5000. Most peripheral, and this is the first contact point of the population close to the neighborhood; as you might have heard in the Delhi module, it is called Mohalla Clinic. They are usually considered to be at the sub-center level that caters to the direct needs of the population. Even the Mohalla Clinic model, as mentioned in the documents or even the news channels, also includes so many facilities, which is very minimal effort and even cost. The cost is almost free.

So, the total number as per the latest rural health survey 2021-22 report is considered to be the latest at this moment. So, the total number of sub-centers is 1,61,829, rural is 1,57,935, and urban is 3,894. Coming to the PHC that is at the primary health centers, the population, as we mentioned, is actually 20000 to 30000. I think we have already discussed this here. So, sometimes, you might be confused at the tertiary level, which is called district hospitals.

So, that is here. So the definition for it is for the PHC, which is 20000 to 30000 in population. The total number, as per the latest record survey, is 31,053, including rural and urban areas. Now you can see the rural coverage is relatively less than that of the sub-centre level. Meanwhile, at the CHC community health center level, where treatments are made, inpatient treatments are also dealt with. You can see that rural is 5,480, and urban is 584. This is covering a population of 80,000 to 1,20,000.

The district hospitals, as I already mentioned, and you can also read as the sub-divisional hospitals, then specifically number 1,275, both rural and urban. In particular, the district hospitals have a total number of 767, including rural and urban areas. Indian rural health system, as I already said, sub-centre, PHCs, and composed of these three sub-centres, PHC, and CHC and we ,already said that they are the most peripheral ones and catering to the community largely. As per the sub-center, one health worker is including ANM, and then even one health worker, female and male. ANM stands for Auxiliary Nurse Midwife, and this is as per the Indian Public Health Standard, and the total staff is considered to be three as the minimum one.

So, this is the IPHS norm. Whereas in the case of PHC, it is a referral unit for six sub-centers, which means sub-centers are part of the PHCs. So, one PHC is holding or, regulating or observing or managing six sub-centres. So, it is considered to be having four to six bedded hospital. A medical officer is in charge, whereas in the case of the sub-center, it is the ANM is more important, and bed provisions are not there.

The subordinate paramedical staff are recruited, and the total staff is expected to be 15 minimum as per the norm. In the case of CHC, you can see that it holds at least 30 beds. The hospital is holding 30 beds, and it has a referral unit for 4 PHCs. So, 4 PHCs are under

this one CHC, and those PHCs are supposed to refer to this CHC for further consideration. As I already said, this includes inpatient treatment. Hence, these CHCs include specialized services.

The total staff is expected to be 25 minimum, as per the IPHS norm. So, you might have understood the hierarchy of the hospital or the healthcare system in India. Once again, understanding the sub-center and their assigned task, they relate to interpersonal communication to bring about the overall change. The public services in different programs in the sub-center include maternal and child health, family welfare, nutrition, immunization, diarrhea control, communicable diseases, and non-communicable diseases. You must have seen the work of the ANM in your area, in your village, or your locality, and this is largely the provision attached to those ANMs or in the sub-centers.

As per the PHCs, primary health centers is established and maintained by the state governments under the Minimum Needs Program, MNP, and the Basic Minimum Services, that is also called BMS programs. The first point of contact or the contact point between the village community and the medical officials. As I already said in the previous case, the sub-center hardly has medical officials, but some trained DHAI or ANM staff are there. Hence, if any better needs are required, they refer to a medical official. Here, a medical official is recruited.

So, the assigned task for them is to have curative and preventive healthcare, then promotive and family welfare services; they emphasize preventive and promotive aspects of healthcare, as I already said. Coming to the CHC, these are established and maintained by the state government under the Minimum Needs Programs, MNP, and Basic Minimum Services BMS. So, they are required to have four medical specialists, including a surgeon, a physical, an obstetrician, a gynecologist, and a paramedical or pediatrician. Most importantly, there must be one obstetrician or gynecologist and physicians. So, we discuss the requirements of these four: surgeon, physician, obstetrician or gynecologist, and pediatrician.

So, these four include also paramedics and other staff. The task for them is curative and preventive healthcare, promotive, and family welfare services; they also emphasize preventive and promotive aspects of healthcare. After understanding the structure of our Indian health system, we discuss the challenges, especially those that have been identified through the shortfalls. According to these RHS 2021-22, as of 31st March 2022, the overall shortfall in the post of health workers may be female or ANM is of 3.5 percent of the total requirement. So, 3.5 percent is the norm for this requirement for the sub-center and PHC, excluding the surplus in some of the states. So, excluding the surplus in some of the states, the shortage is 3.5 percent, and this is the standard of IPHS. Then, for the health workers (male wise), the shortfall is 66.6 percent of the requirement. So, requirement-wise, we have a two-third shortage. At the PHC level, 37 percent of the sanctioned posts of health

assistance for males and females are vacant, whereas 23.8 percent of the sanctioned posts of doctors are also vacant. That is why it is largely debated and questioned to the government about the shortfall even the post-COVID has witnessed the problem of dealing with the issues at the ground level.

At the CHC, out of the sanctioned posts, 71.9 percent of surgeons, even as required, 71.9 percent of surgeons, 63 percent of obstetricians and gynecologists, 67.5 percent of physicians, and 69.7 percent of the pedestrians are vacant. So, that is, you can just note that at the CHC, the situation is even worse.

So, I mean largely two-thirds percent is actually vacant. So, more than two-thirds of that is a serious aspect. So, a patient who is thinking of getting treated at the CHC level, especially in the public health system, at a very tertiary level of care. So, the treatment is considered to be with a probability of one-third less than one-third. Hence, the patients are actually the prey of higher costs, and hence, the out-of-pocket expenditure is very high in India as compared to even underdeveloped and developing countries.

You can refer to our news editorials. We have written about this and highlighted how Indian patients are actually suffering from a high burden of spending. The overall shortfall is 79.5 percent of specialists at the CHC compared to the requirement for the existing CHC. So, now you can just see the components of the urban healthcare delivery model from the pyramid structure. So, the Indian urban healthcare delivery model follows similarly to a pyramid structure as per the need.

Hence, the community-level requirement is greater. Urban health centers are compared to less, and the public or impaneled secondary, tertiary providers are actually quite less. Few in number. So, National Rural Health Mission, National Urban Health Mission NUHM, we are now referring to the urban healthcare system coming to NUHM on 1st May 2013 as a sub-mission under National Health Mission. Again, under the National Health Mission, two components are usually discussed: urban and rural.

So, we are focusing on the urban side. Hence, a sub-mission is targeted on 1st May 2013 to provide equitable and quality primary healthcare services to the urban population. Special focus was on managing or handling the dwellers in the slum area and the vulnerable sections of the society in urban areas. NUHM is designed to provide health services at the facility level and at the community level. This is what I was referring to about the Mohalla clinic, which is part of the urban health mission. Though yes, we will also mention it is the responsibility of the state government or the center.

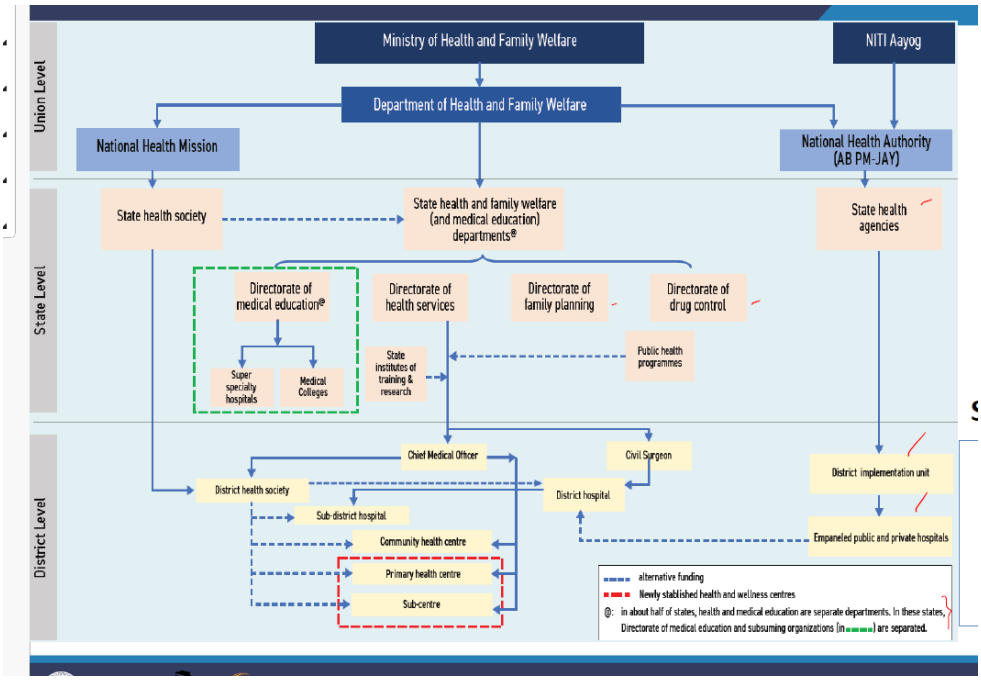
Largely, it is two-thirds, as we already said it is at the state government level. At the community level, the outreach services provided by ANM, the medical officials, and specialists, as well as home visits provided by ASHA and ANM, are important. They deal with preventive, promotive, and basic curative healthcare. So, the primary level healthcare

facility includes the same as we mentioned, but in the urban areas, it is of 50000 population. So, the coverage is preventive, promotive, curative, rehabilitative, and palliative care.

The services include OPD consultations, laboratory services, drugs, contraceptive dispensing, delivery of reproductive and child health services, multi-specialist services, population-based screening, referral services, and others. So, here it is about the urban community health centers that are also called UCHC, not CHC. CHC is specifically for the urban. So, UPHC, HWC, that is, Health And Wellness Centers, ensure the delivery of comprehensive primary healthcare services existing for the UPHC, which would be converted to health and wellness centers. So, this is important as far as urban health centers are concerned.

This has referral facilities for every 4 to 5 at the urban PHC level, likewise in the CHC in the rural areas. But this covers a population of 2.5 lakh to 5 lakh. This includes metro cities, especially in the metro cities, where every 5 lakh population with 100 beds is a mandatory requirement. Inpatient services, medical care, surgical facilities, institutional deliveries, facilities, etcetera are part of the need as per the standard.

Here is the work we are referring to: Professor Selvaraj et al. and their work of 2022. This is about the organization of health and the relationship between the union state and district levels. You can see this at the union level, state level, and district level. So, starting with the union level, it is the umbrella under the Ministry of Health and Family Welfare. So, the Department of Health and Family Welfare is attached to the National Health Mission and is even partly addressed by NITI Aayog as well under the National Health Authority, which is also called PMJY.



So, again, you can see different levels, at the state level, state health society, and hence you can see the director of medical education, director of health services, director of planning, director of drugs control, etc. Directly from the NITI Aayog and this connection with the Ministry of Health and Family Welfare, you could see state health agencies, then district implementation unit, then also specifically to the impaneled public and private hospitals where the PMJY is also implemented. Now, you can see that wherever we have made non-continuous or sporadic dotted lines, there are alternative funding channels. Whereas the red one, the blue one that is the red one actually highlights the newly established health and wellness centers. So, whereas you can see that in the green lines, specifically emphasizing, we have also mentioned here in the states where the directorate of medical education and sub-zooming organizations are actually separated, that is why it is in the box.

So, at the district level, you could see the sub-center, PHC, CSC, sub-district hospitals, and district health society; everything will actually be part of the district-level hospitals. So, these are the designs as presented; hence, we are referring to them. In the last couple of discussions here, we are just giving you a background of our health status and life expectancy increase from 1970 to 2020.

You can see 47.7 years till now, and in 2020, it is 69.6 years. This is lower than Sri Lanka, Brazil, China, and even Costa Rica as well. States with the highest gains in life expectancy over the period are Uttar Pradesh, Tamil Nadu, Odisha, Gujarat, Bihar, Himachal Pradesh, and Andhra Pradesh. India is undergoing a significant epidemiological transition, and the growing burden of chronic non-communicable conditions is very important. We are just referring to the Indian Health System Review 2022 data for further reference.

	1970	1980	1990	2000	2005	2010	2015	2020
Life expectancy at birth, female (years)	47.1	53.91	58.23	63.33	65.36	67.73	69.84	71.5
Life expectancy at birth, total (years)	48.35	53.76	57.54	61.73	63.69	65.72	67.47	68.37
Life expectancy at birth, male (years)	47.74	53.81	57.87	62.51	64.5	66.69	68.61	69.6
Mortality rate, adult, female (per 1000 female adults)	371.08	276.88	237.18	193.15	178	157.93	141.25	147.1
Mortality rate, adult, male (per 1000 male adults)	370.08	307.96	281.39	250.11	236.37	225.26	214.64	203.6
Mortality rate, infant (per 1000 live births)	142.6	114.5	88.6	66.7	55.7	45.1	34.9	32

Source: India Health System Review 2022

To have your starting point of research, you can work further. I am not explaining much here. Basically, we are giving the background information about our health status. This is indeed encouraging professional health participation, and health education and health policies are needed. Indeed, public participation is an important channel for it. Now, the future challenges that emerge from our analysis or our discussion are technological challenges and demographic challenges.

So, as we have seen, technological challenges and changes have actually posed other directions for the management of healthcare in terms of cost minimization, and there are some discussions of improvement in healthcare. Old age is an issue. India is continuously or steadily aging, and a higher demand for health is required. So, as far as technological changes are concerned, this has actually also helped us to improve our health status. Though technological changes are embedded here to manage the health system to simplify it, there is a coexistence of improvement in healthcare. Hence, aging is expected to be higher, and more health demand is also expected.

Hence, it creates a threat or kind of a challenge for those who manage more burdens in healthcare; hence, it is called Sisyphus syndrome. So, higher HCE is also expected. Similarly, there are challenges of international competition. Sisyphus syndrome, as I already said, is derived from Greek mythology; who was a Greek person who was condemned to roll a lump of rock off a mountain only to see it slip out of his grasp just before reaching the summit or forcing him to start all over again. Likewise, as I just said, technological change is actually posing another threat.

Again, we are starting with or dealing with more issues, and that leads to the paradigm shift in the health structure. So, we need to go further. We are discussing the challenges. Those are actually poised to be in a different form. Technological progress seems to be redressing the problem of healthcare.

Yes, of course, it has improved. However, it has actually increased other challenges, such as increased healthcare needs and higher life expectancy. So, in both directions, the population of the country is actually demanding. More healthcare. This is actually the Sisyphus syndrome, which we have started discussing, which is connected to Greek mythology, where a person continuously tries to load or lump up the rock to the mountain, but the person slips further. So, every time we use some tools or techniques starting from the beginning, it actually seems as if our efforts are becoming highly burdenful and repetitive.

So, the load on public health systems is increasing or mounting. So, the technological challenges that we have started discussing include process innovation, product innovation, and organizational innovation. In all those directions, it has actually helped to lower our costs, but simultaneously, as I already mentioned, you could see there are other issues. Like in organizational innovation, the cost of producing a good or service can be lowered by reorganizing production processes and including the restructuring of the entire firm. As I already emphasized, the demographic challenge is an issue; once again, additional healthcare expenditure is indeed required since we are shifting with demographic patterns because of higher life expectancy. So, the higher life expectancy can be claimed to buy spending in favor of health care expenditure.

Hence, there are three hypotheses that are important to maintain the status at the level that is called the status-quo hypothesis. Present age profiles can be extrapolated into the future, then expansion of morbidity hypothesis that predicts increased survival of costly individuals that would have or would have died. Then, the time-to-death hypothesis, the expensive years prior to death, will simply be shifted to higher ages. Last but not least, there is a direct international investment in hospitals as well. The challenge will consist of dropping the domestic purchasing clause in pertinent laws that have been prohibiting social health insurance from negotiating with foreign health care providers, as mentioned in Zweifel's work of 1999.

The advantage of multinational for-profit enterprises in terms of efficiency will have weighed against the possible benefits of a professional ethics orientation. So, after all, by saying all those things, I need to just sum up that international organizations are important, but we need to be cautious about how far this is increasing efficiency and, at the same time, dealing with the professional ethics of the Indian population. Besides, our healthcare system still requires more engagement from health workers, so loading as per the WHO standards should be maintained and addressed correctly. So, these are the important readings for your work.

That is all, and the rest will give you the possible assignment questions. I look forward to your participation. Thank you.