Course Name: I Think Biology

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W10L51_Discussion on Public Health Dr. Abha Rao (PHFI) and Mr. Pratush Brahma (University of Florida)

Welcome back to the NPTEL course, I Think Biology. My name is Pratush Brahma and today's lecture is a special interview on the topic of public health. So public health discussions are essential for raising awareness, promoting disease prevention, and advocating for inclusive healthcare policies to create healthier communities. We have with us Dr.Abha Rao a research scientist and assistant professor at the Public Health Foundation of India. She has more than 10 years of experience in research and teaching and her research interest focuses on the health issues of marginalized sections of society. So let's get ready for an insightful conversation on the importance of public health and its impact on society. So Dr. Abha, what do you think are the major public health challenges that India is facing currently?

India has what we would consider like two sets of issues going on in parallel, right? So the first is diseases or health conditions of developing countries, high infant mortality rate, maternal mortality rate, malnutrition, those kinds of things and you have problems of what you would consider developed societies, non-communicable diseases like cancer or cardiovascular disease and so on. What's happening in India is that we have not resolved the issues of that first epidemiological transition and we've already been burdened with the burdens of the second epidemiological transition at the same time. So we have made a lot of improvements certainly in our infant mortality rate and maternal mortality rate over the decades but they remain very, very high. So they fall short of the sustainable development goals that were set out by the WHO. They are still very high compared to even our peer nations for instance. So we still have a higher maternal mortality rate than Sri Lanka and we have an infant mortality rate that is on par with other very poor nations.

We really should be doing better. Malnutrition and anemia have stagnated, they've even worsened in some cases over the last few decades and so these along with the newer diseases have created a massive health burden upon the country. So you're speaking about these non-communicable diseases. So as I hear from you, some of them are diabetes, cardiovascular disease, and cancer. So could you tell us how we address the issue of these diseases which are becoming increasingly prevalent in India? Yes, it's the way to address an NCD or a

noncommunicable disease requires a strong public health system.

The same way that we require it to even address issues that are more infectious or communicable and so on. And having a strong public health system requires us to take the same steps, right? I think there is a tendency towards privatization in terms of treating noncommunicable diseases and so on. But I think having a strong core public health system is key to treating any of these conditions. So when we speak about public health, obviously there is this growing burden of mental illness. And when we talk about public health, something that comes to a person's mind is the image of a hospital and people lying in bed with diseases and everything.

So how do you think we can educate people about the significance of mental health? What is the ground reality of mental health care in India? And what are the existing challenges, gaps, and opportunities for improvement? Mental health, I mean, one can also say that it requires a strong public health system, but of course, it has a slightly different set of issues associated with it. Historically, India has typically folded people who have mental health issues into society. So there are examples of somebody in a village who you know is a little bit off, but that person is folded into the household and the village's routines and so on. And at times Westerners have even looked at it as a positive way as opposed to excluding that person from society. I do think, I mean, that's a good thing, but that view has to change a little bit because by folding them into society, we might be missing out on opportunities for treatment.

And now we do have much better mental health treatments than perhaps we did a few decades ago. Part of the issue is that mental health is stigmatized, right? And that's unique to mental health compared to other kinds of diseases. And with that stigma comes a lack of awareness because people are not educated about what different diseases are and how it manifests when you should take someone in to see a doctor. We have very limited options for treatment. As I said, the treatment available has expanded greatly, but India doesn't have a lot of mental health facilities.
It doesn't have enough mental health specialists. So we have an extraordinarily low proportion of psychiatrists, for instance, and not to speak of mental health workers at lower levels, you know, counselors and therapists and so on. So addressing mental health in India is an even bigger issue than treating health more broadly. It requires a very active community health approach, which has taken root in certain parts of the country, thanks to non-government organizations. The government itself has taken a very active role in sort of addressing and folding mental health care into regular health services.

But we have a long, long way to go with mental health for sure. Yeah, we are glad at least the process has started for creating this awareness. How do you think, like when we come to your area of expertise, how do you think the quality of health care is distributed among different

sections of the population? Because like in a populous country like India with a huge disparity in social economic status and access to resources. So how do we make sure that health care is accessible to all members of society, regardless of their income or race? I think having a good public health system is key, obviously, but you need to have a public health system that serves all people equally. And right now, this is where we fall very seriously short.

We see health inequities along many, many axes, you know, you look at non-communicable diseases, you look at communicable diseases, infectious diseases, mental health conditions, and so on. And they tend to affect the disadvantaged more than they affect the advantaged. And these and what we consider disadvantaged are very well known within Indian society, you know, so if you're a woman, if you are a person of a disadvantaged social caste, if you are poor, if you live in certain parts of the country, if you're rural, if you're of a tribal background, all of these things are highly health disadvantages. And what's more problematic is that these sort of intersect with each other as well. So if you are a poor girl, living in a rural part of the country, you're doubly or triply disadvantaged in a way, right? So these disadvantages pile up on top of each other.

And so I think having a good we need to be able to address these social inequities. And that's not what we think of when we think about the delivery of public health or medical care. But it's very necessary to address the social inequities to have the kinds of impacts that we would hope to have when we invest in public health. You might notice that I'm using the words inequities and inequality or disparities, you know, you see these words floating around. And I want to make clear that these mean very distinct things in the public health sphere.

So inequality defines a difference, right? So it says that, you know, men have this level of anemia and women have this level of anemia. Or you might say, you know, this community and that community are predisposed to developing diabetes. So that is just a description of an inequality between two groups or two genders or what have you. Inequity is when that difference is due to avoidable reasons. Right? So if you can say that, okay, you know, these two people are equally two people who have developed diabetes fine.

But if you say that person from one is of a poorer person who has not had access to medicine and so on, their experience of diabetes, how they get it, how they're screened for it, how they're given medication for it and so on is very different from the experience of somebody else who might be a wealthier urban person. So the difference is there that the sorry, commonalities that they both have diabetes, but why and how they have experienced diabetes are very different. And that is an inequity. So this relates to things in terms of who has access to resources, who has the financial support to seek care, and those kinds of things. So when we say inequality is inevitable in a way in society, you're never going to have a situation where everybody is on par all the time. But inequity is avoidable. And that gives us opportunities for figuring out where to

intervene. So we need to make that distinction clear. So having a good public health system that addresses social inequality and social inequity is important.

The key is that we need to focus on not just creating a public health system and that looks, I mean, relatively straightforward. It's not easy. You set up clinics, you staff those clinics, and you make sure that medicines and equipment and so on are available. But how do you make it, how do you ensure that it serves the needs of the people? So we have what we call and this is a term that's used in medicine as well, you know, they call triple AQ. It refers to the availability of services, the accessibility of services, the acceptability of services, as well as the quality of care that's provided. So by availability, we mean, I mean, quite practically, is that facility available? So is there a public health center or a sub-center available in this area? Is there a community health worker who visits this community to ensure that, you know, basic childcare services are provided? So that that sort of very simple, very basic requirement.

It could also mean, you know, for instance, a migrant who has moved from one state to the other for work purposes, is he or she available? Are our services that were available to them in their home state? Is it available to them here? You know, for instance, we have, you know, the PDS cards, our public distribution system cards in a lot of states, and I know states are working on this and so on. If you collect rations in one state, you are you're not eligible to be necessarily collected in another state. So how do you ensure? So this is an entitlement that's available to them and nutritious foods should be available to them. But how do we ensure that that happens? Right. So that's what we mean by availability. So the actual practical provision, the existence of these services in the first place.

The second one is about accessibility. So let's say the services are there. There is a health care clinic within, you know, half a kilometer of a village. Everybody can walk to it and so on. Nevertheless, if you're disabled, for instance, would you be able to access that clinic? Even it might just be half a kilometer. But is there a way for a person to come from their home or their village to the health center? Or is this the kind of community in which an adolescent might freely be able to seek care? So once again, they might be aware of the clinic. It might even be an adolescent-friendly health clinic. They've set these up throughout the country. But would an adolescent be comfortable visiting this service? Right. So that relates to the accessibility part. So the facility is there. But also, is it accessible to all members of society, all members of that community?

The third one is the acceptability of these services. So let's say the service is there. It's staffed. People can access it. Are they providing the kind of services that the people there actually need and can use? So, for instance, you have cases where, you know, is it in line with, you know, the religious or cultural norms of that society? The food recommendations that the doctors give, other health providers give, is it in line with the local dietary habits and so on? So, you know, you can say that, OK, if you have diabetes, you shouldn't eat white rice so much. If that is what is local to the community and they've been eating it for generations, how do you give them

recommendations that are acceptable to their local habits? A lot of tribal communities eat a wide variety of meats. But if you go in and say, no, no, you have to address your anemia by taking iron folic acid tablets.
That's a very simplistic solution. How can you work within the local customs? And that will be acceptable to them as well, to eat wild game, perhaps, rather than to be given artificial tablets. So how do you provide services that are acceptable to them?

I'm going to add another A, which is the affordability aspect of it. It doesn't necessarily make sense in the context of Indian public health, because as we know, it's supposed to be free. But realistically, we know that for a lot of people, healthcare is expensive and a lot of people do take and need money to access care. So the affordability part is also, I'm just going to tuck that in there as well.

The last one is the Q, which is the quality of care. This is a little more of a social thing, perhaps than a medical thing, which is that when people, I don't want to say patients, because these are people just seeking regular healthcare. When they visit these services, when they're met by the providers, how are they treated? Are they treated respectfully? Are they treated with dignity? Are they given confidentiality? So they want to talk about something very private, are their doors closed? Are their records kept confidential? In our village society, often these things are not stored carefully, things get around. How do you ensure that kind of... To make the person who visits this facility feel like they've been treated respectfully as a human being, make sure that they have autonomy, they have a voice, and so on. And how responsive is the provider as well to the concerns of the person who's come to see them? Often providers have a sense that, we know what's best for society, or what will an adolescent know about their health or their health concerns. They might say, oh, I might have to talk to your mother or father when the adolescent might not want that to happen. So how responsive is the provider to the concerns of the patient or the person who's coming to see them? So I think there are a lot of factors that play into it.

.. So building the infrastructure is the first step, right? To address all of these social inequities, we have to get to all of these other steps as well. So I think that's where the complication is, frankly. Building infrastructure, and capital expenditures is one thing, but I think we have a long way to go concerning this second part. I think it was very nice to understand your perspective on this social inequity and inequality that we are facing. This brings us to the understanding that everyone has the right to health.

So how do you think we can overcome these challenges for people to realize their right to health? Oh, this is just such a complicated question. And I think over 75 plus years of Indian independence, we've tried to answer this in as many ways as possible. And unfortunately, there's no simple answer. We have to do so many things at so many different levels to address this issue. I think the first thing necessarily is investing more in health.

The Indian government over the decades has put in maybe 1 to 2 percent of their GDP into health and family welfare and so on. This is very, very low. And often it's been around 1.4, 1.5 percent at best. 2 percent was at 1.9 percent was a high point. They say that a developing country typically needs about 4 to 5 percent of the GDP invested in health care. And we are such a long, long way from that. So I think the first step is just making health an important subject.

It's just not a priority. You know, if you talk to Indian voters and ask them what matters to you, health is not often up there. You know, there are economic concerns and so on. And we have to make it important and pressing enough for the government to be willing to address it seriously. So I think that's a very first step. The second one is also a kind of a long-running concern, which is that we have a shortage of human resources, frankly.

We have a shortage of doctors. We have a shortage of specialist doctors, you know. So if you want an obstetrics and gynecologist, if you want a psychiatrist, for sure, there's an immense shortage of doctors. There's an immense shortage of other providers at all other healthcare levels as well.

Right. So there's a shortage of nurses. This is not due to a lack of training of nurses, but nurses don't necessarily want to work in this country. The way working conditions are challenging and so on. And we are lacking in terms of medical technicians and lab workers and therapists and physical therapists and those kinds of things. So we are heavily understaffed at every one of these levels, frankly speaking. And once again, you can build hospitals, you can build clinics, but unless you have qualified people to staff them, it is really hard to meet this shortfall.

And once again, what are some of the things that we can do? We need to invest in medical colleges. We need to, I mean, this is, and once again, there's been a lot of effort in that direction. You know, there's a goal in Karnataka, for instance, to have a medical college in every district in the state. And we're slowly making our way there. But there's a shortage of qualified faculty to teach at all of these medical colleges.

So that is, you know, so making it incentivizing doctors to come back into the public health system, into the public medical education system will be necessary here. And we also just need to train more people in allied and paramedical professions. And then once you've trained them, you want to keep them here. The problem is a lot of people get trained and then move on to other opportunities. We have to change, make our hospitals and clinics, and all of our public health facilities have much better equipment and supplies.

You know, you hear narratives all the time from doctors who graduate from medical college. They're very eager to go into the country and make a difference and so on. And then they're in a

hospital where they're lacking medicines, they're lacking a working x-ray machine or a blood bank or something like that. And it is extremely frustrating for them to practice medicine in such a situation. For people who are in lower level positions like nurses and technicians and so on, you know, the Indian health system and medical college system, and all of these are very hierarchical.

And it's not necessarily a great place for those who are in the lower levels. You know, they're constantly disrespected and not given as much autonomy as they probably could have. So make the place not just physically well stocked, but also create a sort of a social culture where health care providers feel respected and supported. So I mean, I was talking about whether the patient feels respected and so on, but I think the same goes for the providers as well.

So we need to create that kind of environment. So building facilities, staffing them with qualified faculty, and creating an environment in which they can practice is, will be, this is a very big ask, I suppose. But I think it's necessary once again. I mean, these are the two low-hanging fruit. I mean, hardest to pluck, I suppose, with the low-hanging fruit, which is very obvious. And I think even the casual observer of India would understand that these are the conditions.

But there are several other steps also that we need to take. So one is we need to be much better at collecting data. Right. Yes. So we don't have very good surveillance systems, for instance. So when, you know, a disease comes up and we can be able to track it, to figure out where it started, who is at risk, and what kind of treatments they need.

All of this requires good data. Some states are much better at this than others. But at the national level, we still fall short of, and you know, for instance, when you have an infection that's spreading, if you can quickly identify it and stop it, it can prevent it from becoming a public health emergency or an epidemic or something like that. And we need to be better at that. At the more basic level, we also honestly are not collecting enough data on births and deaths. A large proportion of Indians, of people who are born every day and die every day are not registered.

That's gotten better. Once again, over the decades, we've made immense strides in this. In just a few years, we've gone from under 60 percent to over 80 percent now in terms of registration of births and deaths. But we still have a long way to go. I mean, in certain rural areas, for instance, children might be born and die without their birth or their death ever being registered. So now it doesn't reflect in any, you know, statistics related to infant mortality.

It isn't reflected in statistics related to birth rates. And we've lost an opportunity to learn something from that. Even when the death is registered, a very small proportion of those registrations talk about the cause of death. So, for instance, if we want to know how our elderly are doing and what they are dying of, and that knowledge is important for us to know how to

intervene in the healthcare of the elderly, for instance, we don't know that. We just register that they've died.

This is often for administrative purposes. You know, the family has to register the death. But that doesn't help us from a public health perspective. So we need to be collecting all of this kind of, so all sorts of data on the ground we are lacking. So that's another thing.

There are just so many issues that we have to deal with while doing this. But what about the, like, as you said, we need the education from qualified doctors and staff. So these medical colleges, like, do you think their role is important as well in these scenarios where addressing the issues? The medical colleges? Yes. I mean, a lot of medical colleges in India are public. You know, there's a tie-up between like the district hospital and the local district medical college and so on. And you think about the fact that you know, the students who are doing their internships and residencies in this are learning how to be doctors from their senior providers. They're learning how to be doctors with the most disadvantaged sections of society who are often accessing these facilities. And that's why I said, you know, changing the culture of medical colleges, changing the culture of public health facilities is important for them to deliver sensitive care, not just delivery of clinical care, but also other forms of interpersonal and other forms of services.
And also social support as well. Okay. Yeah.

So there's this interesting thing that we hear about the One Health approach. So what could you like tell us about the One Health approach and its significance? I mean, there's just a growing understanding that you know, so far we've spoken about public health mainly in terms of the human beings, whether they are the people who are receiving care, giving care, seeking care. I mean, and we're talking about individuals as if they're just disconnected from the rest of society. It's become increasingly important to understand how humans are built into broader ecosystems as well. Right. And this is not new knowledge. I think we're just devoting more attention to understanding that right now. We, I mean, COVID, for instance. I mean, we still don't know exactly how it started. The origins still are a bit unclear to us. But at the very least, I think it's perhaps safe to say that it arose from some human-animal contact at some point in its process.

And that's just the biggest and most recent example. But all forms of avian flu and swine flu and MERS and all of these things that have happened over the last few decades have arisen from human-animal contact at some level or the other, whether it's through consumption or hunting or testing, lab testing, whatever. It's come through something like that. Right. So we and Indians and Indians, human beings in general, have always had a lot of communication or contact with domesticated animals.

Right. Perhaps in the Western countries, you know, animals are grown and raised away from the human population, although that connection remains there. But in a lot of countries, we grow

up next to our cows and our chickens. Right. So so whether it's wild animals or domesticated animals.
There's just this understanding that we can't separate the two. And the third piece of this picture is the environment that we're living in. We humans have increasingly encroached on, you know, wild spaces and forest spaces and so on. So diseases that have been harbored quietly in the jungle for a lot of time for generations and years and decades, perhaps. And now suddenly they're being awakened by the fact that humans have shown up there and are cutting trees and changing, using the land in different ways. So I think this is a very complicated interplay going on between animals, the environment, and human beings that we need to address.

And we see that right. I mean, in India, we've seen the Nipah virus, for instance, which has arisen out of something like this. And even if humans are not actively going and changing the forest spaces around them, the fact is the globe is changing. There's climate change happening and, you know, the disease ranges for certain parasites or certain vectors have expanded.

We don't even have to go seek them out. They are entering our territory now, you know. So I think it's some approach now that requires not just doctors. I mean, public health has typically been, you know, medical providers and public health specialists and so on. But we need to work with veterinarians. We need to work with animal scientists. We need to work with environmentalists and conservation biologists to understand how all of this knits together.

It's a very exciting new field of inquiry. And we're just about getting started asking these very difficult questions. Yes, indeed. It's a very fascinating take on how everything is connected around us. And if anything gets affected, so everything around it gets affected as well. This brings us to what we have talked about a lot of the public health concerns in India.

Are there any other concerns that are related to the public health system of India? Yeah, I want to step back a little bit. I think there are a couple of more points that I wanted to say before we get to broader and outside concerns about the public health system here. So I think I already mentioned that we need to address social factors, discrimination, and bias against certain communities and groups, ensure that opportunities are made available for them to make better choices, to seek health care as freely as possible, and so on. We need to work better to develop health literacy or health education so people are knowledgeable about what, you know, for instance, tobacco or alcohol consumption does to their bodies.

But once again, it's not enough to educate people. We need to give them opportunities to exercise and make better choices. Right. We have a lot of, for instance, improving air water, and soil pollution. We need to make open spaces available for people to exercise, and for people to go on walks.

So you can tell a diabetic or you know, you must go on a daily walk. But if you live in a place where that opportunity is not available to you, that kind of information or advice is useless. So I mean, this has to come. I mean, this is not one health, but it does come from the fact that we have to work with sort of multi-sectoral parties to ensure that people can make these right choices. One issue, and I think this also will come back to the question that you asked, is that we have India has a very high rate of drug resistance. And this is due to, you know, antibiotic resistance is very, very high in India, especially in cases of diseases like tuberculosis and all that.

Now, tuberculosis is a highly treatable disease, but in India, it has become virtually untreatable because there is a very high rate of drug resistance. People are not responding partially or fully to these drugs. So we went from tuberculosis to multi-drug resistant tuberculosis to extremely drug-resistant tuberculosis. And now they're saying we're unable to treat it at all.

Our current line of drugs is not able to address this very fundamentally important disease. This requires, once again, a multi-sectoral approach. So, you know, you need to have people understand that when you're prescribed antibiotic medicines, you have to take the full course. You cannot drop it halfway through.

You cannot give it to other people. You cannot flush it down the toilet. You have to consume it and finish the course. We also have to work with providers to ensure that they're not making irrational drug prescriptions. I think there's a sense in India that if you get an injection, it'll help whatever you're suffering from. If you get antibiotics, whether or not it's a bacterial infection, that's a way to address it.

So this is also a complex issue that needs to be discussed. But that brings me to the question that you were talking about. So you said whether there's any other sort of pressing concerns. A lot of public health scientists throughout the country are increasingly concerned about the role of, the growing role of private entities in public health. Now this just seems like an oxymoron, frankly speaking, to talk about private entities in public health.

But that's happening in a lot of ways. So there is one is just the privatization of care. Now this is in and of itself not such a big deal. You know, you and I probably go to a private hospital or go see a private doctor for care. And that is fine.

We want to have, we want to enforce sort of private care into public care as well. This is a large country. There's a lot of need for services. So whoever can provide it, that's a good thing. The problem is when they start entering into spaces that we consider public health. So we have, for instance, a lot of private entities who are now involved in delivering primary health care services. So some of these PHCs, for instance, throughout the country, are now run through public-private partnerships by private entities.

We have a midday meal scheme or some sort of, you know, nutritious meal scheme in many states and many programs. In many places, they are run and supplied by private companies. Once again, like I said, this is not in and of itself a bad thing. The issue is when the government is pulling out of these services and making space for private players to come and do this because they have a different set of goals.

They have a different set of priorities. And we are subsuming our priorities to that. And the issue is also that even that one can say, OK, they're delivering care, they're delivering medicine. What kind of problem do you have with that? They're having an increasingly large role in the public health priorities of the country itself. So who sets public health priorities for this country and who sets the solutions to them? You know, what kind of services should we be involved in providing? They have started playing, having a voice in all of that as well. And this is not just in India, by the way, it's happening globally. You have large private non-government organizations setting global health agendas and setting global health priorities.

And we see it happening in India as well. In India, and I say private, I just don't mean private companies also, like CSR, Corporate Social Responsibility Initiatives, all of that. I mean, it's a very big muddled picture, but points increasingly to the role of private entities in public health. This is one issue that you know, when you come as a public health researcher, you tend to view public health as we saw, it's a very multi-sectoral, multi-factorial thing.

And when organizations come in, they tend to target a single issue, for instance. Right. So they will come in and say, you know, we are going to address, we're going to address just, you know, malnutrition. So we're going to give food, we're going to give food supplies to the children in this community. Good thing. Fine. But you cannot treat just nutrition and neglect all the other things that go around with it. If there's not good sanitation in those areas if the children aren't wearing footwear. So these are all sort of bigger, more global issues. Right. So and I think so you tend to see the silo-isation, as they say, of a single health concern and excluding everything else that goes around it.

You know, you see a lot of it around like vaccine delivery, where you're like, OK, this is the health condition. It's easily treated by vaccines. Let's give af these, everybody vaccines for this condition.
And that's a good thing. We do want our children to be vaccinated. We do want our adults to be vaccinated. But that can't be the only thing that you're looking at, because how vaccination is given also depends on how vaccines are produced, how they're transported, how they're stored, and who is trained to deliver the vaccine. So you have to address sort of supply chains, you have to address human resources, all of those things you have to attend to. So that is another concern with the privatization. Like I said, now you have a lot of private hospitals also folded into the

public health care system.

So even for tertiary care, we were talking about primary care and now it's folded even into tertiary care. So, for instance, there's a lot of government programs that say that if you're ill, if you're sick, you know, you can go to one of these impaneled hospitals, you know, which are folded into the public care. And you can say, OK, I need this treatment done or this surgery done. And then the government sort of reimburses the hospital for that. In reality, these have not worked so well.

I mean, some of it is miscommunication, perhaps between the private entity and the public entity. Some confusion about what is covered, and what is not covered. Ultimately, it's the person who suffers because they are not able to get the care they needs. So that is sort of another concern that has been floating around. Ultimately, you know, a private hospital is interested in curative care rather than preventive or promotive care.

So they'll be happy to do heart surgery and get some money reimbursed for that or do a knee replacement. However, they are not going to be invested in preventing people from developing heart disease in the first place or making spaces accessible for people with disabilities. So the goals of a private and public are very, very different. And while private can play a role, it can't be the it can't have such a significant voice in this. The third thing where private has mattered a lot is this in private insurers.

You know, so there's been a huge movement lately towards moving from health care to health coverage. So health care is, as we've talked about, it's a very complicated beast. It's very tricky and there's a lot of social and financial barriers to providing care. So we've moved towards saying, OK, we'll cover it.

So if somebody gets sick, you know, you go get the care we need and we'll cover it. And health insurance is a good thing. I mean, until recently, a very small proportion of our population was insured. And that was often through, you know, government schemes. If you're a government employee or if you could afford it, private health care insurance, private health insurance.

But this did not cover the vast majority of our people. And insurance is a good thing. I mean, it's extremely expensive. Anybody who's been to a clinic or a hospital knows that. And we do need to provide these kinds of financial protections. But once again, it moves the focus away from the provision of care to covering the cost of care, which are two different things. And I think these trends have gone hand in hand with the rise of private parties as well. You know, this last issue concerning privatization is a little bit different, but it's about the pharmaceutical industry, which is largely dominated by private players in India.

And India has long been considered, you know, the pharmacy of the world and justifiably so. We're pretty proud of it. We've made life-saving drugs affordable to many, many countries. I mean, to India, Indians themselves, of course, but to many poor people in Africa and others in Southeast Asia and other parts of the world as well. But the company, but the pharmaceutical industry is highly privatized and it's highly unregulated. So we don't have a good handle on what kinds of medicines are going out.

And now and then you see news items about, you know, somebody who took some cough syrup and died from it. And this happens in India. This has happened in Africa, for instance, more recently. And this is also obviously very problematic. So we need to have better systems within the country. And once again, this is a private industry, so it needs greater regulation to make sure that the drugs we're producing are of good quality and so on.

So I think most public health scientists are very, very wary of this very significant role played by private entities. And I think as we dream about what kind of public health system we want to see, we have to account for this as well. So I think that's a big issue right now. There are just so many challenges that we're facing in the public health system now, and I think we might need more and more people to be invested in public health. So for people who have to make, who want to make a career in public health, like how do you suggest they go about it? Like, what are the key areas of study they can go to? Or what skills and knowledge are essential for them to enter this field? Any say on this? No, this is a very optimistic note, I think, to end the interview. We need a growing, there's been calls by a lot of public health scientists who have a cadre of public health researchers.

And scientists at the national level, you know, so you work with the central government and the state government to advise and so on. Right now it's medical rather than public health, our approach has, it's largely been so far. So I think the easiest, I mean, the best way to enter public health is to do a master's in public health. There's an increasing number of institutions throughout the country that offer that and that is a worthwhile way to enter the field of public health. If you are a doctor or if you're medically trained, you have a significant role to play.

So you have doctors and dentists and nurses, all of whom, many of whom I know have, you know, work as primary care providers. But they've also started because if you're a primary care provider, you very quickly see that you can't just give medicine for this one ailment and expect it to be okay. Because there are often other things going on in the environment and lifestyle that also need addressing. And at that point, you're essentially thinking like a public health scientist. If you're not medically inclined to get an MPH or a medical or a nursing degree, there are other ways that you can contribute to the field, certainly. So if you have a degree in epidemiology or biostatistics or population studies, all of this gives you a good understanding of not just individuals, but of communities, of their interaction with the land.

And all of the, you know, you get a broader picture of what's going on in the country. All of that is helpful. And finally, and I don't think a lot of people think of this, but if you're a social scientist, as I said, a lot of public health is not about medicine. It's about the social dimensions of care. And so if you're a social scientist, you bring that understanding and that knowledge as well. So sociologists and anthropologists and demographers and economists, you know, who work on health financing and health economics, for instance, all of them bring essential skills and knowledge sets to understanding public health in India.

And perhaps playing a role in making it better in the future. I think this was a very, very fruitful session for us to understand, like, all the challenges that we face, what are the possible things that we can do, maybe potentially do to counter these challenges, and how to get into it.

So we would like to thank you, Dr. Abha, for sharing your expertise and all this insightful information with us. And to the audience, thank you for watching this lecture. We hope this discussion has provided you with a lot of information and a deeper understanding of the public health system in India and how to proceed further from this point onwards. So let's work together to create healthier communities and ensure that no one is left behind in the journey towards a better and more equitable future. Thank you.