

**Course Name: I Think Biology**

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**Lecture:50**

W10L50\_Public Health in India (Guest lecture) Dr. Abha Rao (Public Health Foundation of India)

Hi, my name is Abha Rao and I'm a research scientist and assistant professor at the Public Health Foundation of India. I'm here today to speak to you about public health in India. The Indian Constitution does not expressly guarantee the right to health. Article 21 of the Indian Constitution, however, does guarantee a fundamental right to liberty and the right to life, of which the right to health is an essential element. But it does so indirectly through various clauses related to social and economic justice, to human rights which relate to the standard of living, nutrition, clothing, housing, etc.

More recently, some state constitutions have passed the Right to Health Bill, or more accurately, the Right to Health Care. These bills require the state to ensure the right to health and to maintain public health. The Bhore Committee in 1946 was a report that shaped the Indian public health system as we know it today. It was envisioned as a primarily public health care system but is presently a mix of both and addresses both curative and preventive care.

For this presentation, we shall focus on the public health aspect of it. How is the health system organized, first of all? At the lowest level, you have these accredited social health activists, or ASHAs, who are community workers who operate at the village level. With around a million workers, it is the largest community health worker cadre in the world. At the next level, we have the sub-centers, which are the most basic unit. They are staffed by nurses or midwives and volunteer health workers. They can provide maternity care, very basic maternity care, advise on family planning, and treat some diseases like diarrhea and fever. For most people, especially in rural India, it is the first point of contact with the public health care system. There are approximately 160,000 sub-centers in the country.

At the next level, we have the primary health care center, or the Health and Wellness Centre, which is a referral point for four to six sub-centers. It is a bedded facility, has some laboratory facilities, has some pharmaceutical supplies, etc. It is staffed by medical officers and paramedical staff. And there are about 30,000 of them in the country today.

At the next level, we have a community health center. The community health center is a referral center for four PHCs. It has an operating theatre, it is staffed by a physician, an obstetrician and gynecologist, a surgeon, a pediatrician, and other allied paramedical staff. There are about 5,000 of these in the country today.

At the next level, we have the district hospitals or sub-divisional hospitals, also known as FRUs or first referral units. These are 24-hour tertiary care facilities. They can provide emergency care, obstetric, and neonatal care services. They have a blood bank and they serve, there are approximately 750 of them in the country today, approximately one per district. It's important to know that healthcare is free at all of these facilities and that covers consultations, diagnostic tests, medicines, procedures, etc.

In the early years after independence, the goal of most Indian public health missions and interventions was essentially to keep people from dying. We had a very high mortality rate and towards that end, we have made significant gains. Our life expectancy has increased from 32 to 70, infant mortality has fallen from 78 to 27 per 1,000 live births, maternal mortality has fallen from 556 to 113 per 100,000 live births, severe malnutrition has been halved, there's been a decline of 50%, and we've also eradicated smallpox and polio over the years, both of which were huge sources of death and disability. A lot of these gains have happened just in the last few decades and we've been able to better track this thanks to the implementation of the National Family Health Survey, which periodically collects data from all over the country.

However, these gains have not been distributed equally and many have leveled off over time. There are wide inequities across familiar axes of disadvantage, gender, caste, rural residence, economic class, etc. These have been documented across India for a variety of health outcomes and across a variety of social and demographic characteristics. This applies to outcomes that have to do with not dying, so curative care, as we've talked about, and it also applies to a second set of outcomes, more recently, which have to do with improving health outcomes. So these are preventive care methods like antenatal care, immunization, institutional deliveries, etc. It's important to note that often these axes of disadvantage can intersect with each other and multiply the effects of disadvantage.

In this map of India, we can see that there is a large variation in the life expectancy rates with a gap of over seven years between Kerala and some other states. In this map, we can see that the maternal mortality rate in some northeastern states is almost six to seven times as high as it is in Kerala, which has the lowest maternal mortality rate in the nation. In this graph, we can see that the under-five mortality rate is higher in SC and ST groups or scheduled caste and scheduled tribe groups compared to non-scheduled caste and scheduled tribe groups. Now, we can see the maternal mortality rate in some northeastern states, and on this slide, we can see that it is higher among rural children than urban children.

One sees similar patterns with the infant mortality rates with vast differentials between those in

the poorest and wealthiest quintiles. Sociodemographic characteristics such as low caste and rural residents intersect with other axes of marginalization such as female gender, poverty, or rural residents to further have an impact on health and survival outcomes. In this, we can see the immunization rates for children aged 12 to 23 months. Vaccination coverage ranges from close to 90% in Himachal Pradesh to only 60 to 65% in certain northeastern states like Manipur and Meghalaya. In general, coverage is higher for wealthier and higher non-tribal castes.

We see differences in medical expenditures between men and women. We see similar patterns concerning health expenditure for specific medical conditions with the largest differential concerning cancer treatment or the duration of hospital stays with the differential widening with the length of the hospital stay. In every instance, we spend much more on men's and men's health than we do on women and women's health. While we have made great strides in many areas, many issues remain. MMR and IMR may have declined, but they remain higher than some of our neighbors, Sri Lanka for instance, or our poor neighbors such as Bangladesh. They still fall short of the Sustainable Development Goals.

Anemia and malnutrition remain significant and have stagnated and even worsened over the last few years. India has the highest burden of tuberculosis globally and is responsible for around 220,000 deaths per year. This represents over a third of the global burden of tuberculosis. It also has an extremely high proportion of tuberculosis that is partially or completely resistant to drug treatment. Other infectious diseases, those caused by a pathogen, virus bacteria, etc., which include malaria, dengue, HIV, AIDS, cholera, typhoid, etc., remain significant issues. We don't have good tracking mechanisms for these diseases, particularly in rural areas. So the true burden is probably an underestimate.

Alongside these diseases, which are those of developing countries, on a first wave of epidemiological transition, we have a rising number of cancer cases. In the next few years, we are expected to hit close to 30 million cases of cancer in the year in the country. Every year, around 850,000 people die of cancer-related causes. The high death rate is due to limited screening and late diagnosis. The proportion of deaths due to non-communicable diseases, such as cardiovascular disease, chronic respiratory disease, and diabetes, has gone up from under 40% to over 60% in just a few decades.

These are due to changes in dietary habits, lack of physical activity, alcohol and tobacco consumption, and other such factors. Concerning mental illness, we know that 15 to 20% of Indians suffer from it. Primarily common mood disorders such as depression and anxiety, but also psychiatric illnesses. Rates have increased over the years. There's a lack of awareness, there's a lack of screening, there's a lack of treatment, and most importantly, mental health and mental health treatment remain highly stigmatized.

To address these significant health issues, we need health facilities that are available,

functioning, staffed, and stocked with medical supplies and medicine. We have to consider the number of people served per public health or primary health center, the population per hospital bed, the availability of equipment, etc. And the public health infrastructure – roads, electricity, running water. Addressing these overlapping and significant health burdens requires a strong public health system that meets the Indian public health standards. And this is often easier said than done.

In this map, you can see that India has approximately one hospital bed per thousand population when the global recommended standard is three per thousand population. A bigger problem is that they are largely concentrated in urban areas. So around 70% of our hospital beds are located in urban areas and fail to serve the rural population. And there are also huge disparities within the country. For instance, the population per hospital bed is nearly 15 times higher in Bihar compared to Karnataka.

What does our basic health infrastructure look like? According to our rural health statistics, we can see a large shortfall between what is needed based on our population and what is available. We can see that there are shortfalls at all levels of public health facilities starting from subcenters. Even when those subcenters or primary health centers or community health centers do exist, we see that only 4% of subcenters or 13% of PHCs and 4% of CHCs meet the requirements with many lacking electricity or water supply. Many of them don't have labor rooms or operating theaters or even a minimum number of beds. Here too we see wide disparities.

For instance, the number of people served per PHC is twice as high in Uttar Pradesh compared to Tamil Nadu over 45,000 compared to under 25,000. Over 90% of PHCs in Kerala have at least 60% of the required equipment compared to fewer than 10% in Bihar. So this is a significant issue as we can see that goes down to the very basic levels of public health facilities throughout India. Another pressing concern is that of human resources. At all levels, we have acute shortages of doctors, nurses, and other paramedical staff.

Although more recent data suggests that we are approaching the recommended ratios. But of greater relevance, they are once again largely concentrated in urban areas, not in rural areas where the majority of the population lives. The problem is acute when it comes to staffing in rural areas and here regional variations become quite evident. Doctor shortages are especially severe in states that already have poor indicators such as Bihar, Uttar Pradesh, and Rajasthan, and especially concerning specialties such as obstetrics and gynecology, anesthetics, surgery, and pediatrics. In the absence of key personnel and facilities at lower level facilities, for example, labor rooms, nurses and midwives, and so on, how does one safely deliver a baby? This also puts pressure on upstream medical facilities.

How is our health system funded? Health falls under the Ministry of Health and Family Welfare's annual budget and there is a budget of around 80,000 crores, give or take 10,000 crores and it is supplemented by state funding. This covers both direct services, care provision as well as capital expenditures such as infrastructure. A little over half of the health budget funds the implementation of the National Health Mission which includes what we consider our usual public health programs and priorities, maternity, child care, immunization programs, etc. A little under 50% funds central government hospitals such as the AIIMS and medical colleges, government medical colleges, public health insurance schemes, and specific schemes related to tuberculosis or AIDS control, medical research, etc. It is important to note that as a percentage of the GDP, India has one of the lowest expenditures on health.

When we should be spending at least 4 to 5%, we have rarely crossed the 2% mark and have often been closer to the 1.4 or 1.5% mark. As a result, Indians have amongst the highest out-of-pocket expenditures related to health care in the world. Numerous studies show that there are many associated costs that people must pay out-of-pocket even when they use public health services that are technically free.

A significant proportion of families total spending is on health and it is one of the primary drivers of impoverishment in the country. Some of the financial pressures associated with health care have been eased by the introduction of publicly funded health insurance schemes. This example brings together a lot of what we have spoken about though, social inequities, expenditures, etc. Until a decade ago, less than a third of Indians were covered by health insurance. Government employees and those who could afford private insurance.

The vast proportion, the vast majority of the country was uninsured. The introduction of publicly funded health insurance schemes has been a significant step towards health coverage. However, we see that there are nevertheless social inequities concerning how public health insurance has been implemented in the country. There are variations concerning awareness, enrolment, and utilization. For instance, we see that it is lowest among households in the two lowest wealth quintiles based on utilization on claims.

So the wealthier are benefiting more than the poorer. Enrollment and use are lower amongst vulnerable groups such as the scheduled castes, scheduled tribes, OBCs, Muslims, the elderly, etc. And often it is with these communities that health spending is associated with impoverishment. It is lower in rural areas and lower in poorer states. So for instance, it is very high in Kerala and Himachal, but lower enrolment and utilization in Bihar, Madhya Pradesh, Uttar Pradesh, and Assam.

Enrollment based on gender is also similar, but not on utilization in claims. For instance, women's health tends to focus on reproductive and maternal health at the expense of other forms

of health. Studies show that the implementation of the program is highly influenced by social inequities and there is a lack of coverage of certain health conditions which can again contribute to a high out-of-pocket expenditure. In summary, the right to health is undermined by four factors. India's high disease burden, its social inequalities, its inadequate health infrastructure, and its underfunding of health services.

On that note, I would like to conclude this lecture. Thank you.