

Course Name: I Think Biology

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W10L49_Introduction to Public Health (Guest lecture), Dr. Abha Rao (Public Health Foundation of India)

Hi, my name is Abha Rao and I am a research scientist and assistant professor at the Public Health Foundation of India. In today's lecture, we will talk about what public health is and then discuss what it looks like in the Indian context.

Public health is an interdisciplinary field of study, which focuses on protecting and improving the health of populations worldwide. It is linked to, but separate from, the provision of individual medical care. There are many pathways to promoting public health.

This might involve population level activities, such as advocating for better air and water quality or road safety, vaccination drives and supplementary nutrition programs, improved and accessible sanitation facilities, and so on. It might also involve the promotion or encouragement of individual level drivers of health behavior, such as promoting the use of hand washing before the preparation and consumption of food, encouraging the use of condoms to prevent unwanted pregnancies or sexually transmitted diseases, wearing footwear before one goes outside, promoting exercise, asking people to quit smoking or reduce their alcohol consumption, and so on.

As you can imagine, the range of questions that one can ask regarding human health are immense. You can ask questions at the level of the individual. How does the consumption of tea or coffee impact anemia, or how does the availability of contraception impact women's reproductive health?

You can ask questions at the level of the neighbourhood or the community. How does the presence of open defecation impact the nutritional health of those who reside in that community? Or you can broaden your lens further and ask questions about states or broader regions. How does deforestation impact the health of local tribal communities? Or how does the overuse of antibiotics impact our ability to fight infections and infectious diseases?

Armed with the answers to those questions, we can then go on to develop public health interventions. How do we educate people to make healthier choices? To take their medicines appropriately, to exercise, to get cancer screenings? But also, how do we make it possible for people to lead healthier lives and make those healthy choices? By providing open spaces, by regulating the food and medicine supply, ensuring that water quality and air quality maintain certain standards, etc. These activities might require the public health scientists to wade into broader debates.

They might have to contend with social norms. How do you ensure, for instance, that within a household girls eat at the same time as their brothers and eat the same food? Or how do you ensure that an unmarried teenager is able to access sexual and reproductive health services in their community? You might have to wade into economic debates. Is it better to give cash or is it better to provide supplementary nutrition to better prevent childhood malnutrition? You might have to enter the political stage. What does government funded health insurance look like? And what should it cost and what should it cover? And you might also have to enter the international arena. There are lots of debates around vaccine access or patent regulations and so on.

The examples that I've given so far have largely pertained to physical health. And until recently, public health research was dominated by this area. But over the last few decades, our understanding of health has expanded to include not just the prevention of disease, but also the promotion of well-being. This has brought mental health issues and mental health concerns to the forefront, including more commonly understood and observed diseases such as depression or anxiety, and the less common more complex ones like schizophrenia.

From a public health perspective, how does one create an environment in which mental health issues are recognized and treated appropriately? These concerns have become increasingly important in today's world, where there are many disasters to contend with, both natural, such as the wildfires and floods that we hear about in the news, as well as man made ones, resulting in migration or forced displacement for people escaping war or ethnic conflict.

Asking such research questions, addressing the needs of different populations, designing and implementing interventions, as you can imagine, involves a mind bogglingly large group of specialists. It involves research scientists, doctors, biostatisticians, epidemiologists, social scientists, and more. And at the implementation stage, it requires again, doctors, nurses, midwives, community health workers and educators and trainers, and so on. Developing a good solid public health system, one that serves the needs of the entire country including the most disadvantaged or the most remote is a challenging task. But the need for one has become increasingly important in the face of global pandemics such as COVID-19, and also local outbreaks of say, dengue or Japanese encephalitis or Nipah virus.

In the next lecture, we'll take a closer look at the Indian public health system, see how far

we've come, and figure out what we need to do next. In the meantime, thank you for your attention to this introductory lecture on public health.