

Hi, I'm Deboki Chakravarti, I'm a science educator, and today we're going to talk about global health.

When we think "health," we don't always think about the health of whole communities, or even entire countries. It's not that we don't care about people in time zones far, far away; it's just that our own aches and coughs often take center stage.

But public health professionals have to think about health at the community level and even the global level. Global health is a field of public health that strives to improve the well-being of everyone around the world.

Sometimes global health looks like vaccinating people during a pandemic, like with COVID-19. Sometimes it looks like mass hygiene campaigns, like the one initiated in Brazil in 1997 to improve sewage systems.

At its core, though, global health's main challenge is to ensure that everyone can live their healthiest possible life, regardless of where they live. That's what we call health equity. But how exactly public health experts approach global health depends on the problem they're facing.

In the not-too-distant past, countries around the world came together against a common enemy: smallpox. Which was one of the leading causes of death.

By the 1940s, though, vaccination had nearly eliminated the disease from Europe, North America and Australia. But vaccinating the entire world would prove more difficult.

Part of the issue was that heat made the vaccine ineffective, and less-developed countries often lacked the infrastructure to make it themselves, or keep it cool while in transit.

So to address this global problem, a British microbiologist developed a vaccine that could withstand heat and be mass-produced. With the new vaccine, plus the financial and political support of various wealthy nations, the World Health Organization was able to launch an international program to fight smallpox.

And by 1980, after decades of mass vaccination, careful monitoring and containment of small outbreaks, the campaign worked. Smallpox was eradicated, meaning there were no more cases among people anywhere, and public health would never need to fight the disease again. Now, crises like smallpox get a lot of attention. Because with infectious diseases, one country's problem can quickly become everyone's problem.

But there are plenty of other opportunities to improve global health that have nothing to do with infectious diseases.

Take roads for example. In sub-Saharan Africa in the late 1800s, roads and rail lines were designed to allow colonizers to extract resources - not to help African residents get around. This made it harder to transport food, water and medicine across the continent, even after these countries gained independence from colonial powers.

So starting in the early 1970s, six African nations came together with the UN and used a combination of national funds and foreign aid to start building the Trans-African Highway, a system of roads that would connect residents to where they needed to go.

And while roads aren't vaccines, they still affect health. In general, developing road systems in the continent has strengthened food distribution and connected people to urban areas where they can get better medical treatment.

The Trans-African Highway is an example of countries having a say in their own health goals. And as public health strives toward global health equity, this will be increasingly important. Take the global fight against COVID-19 as another example. When vaccines against COVID-19 first became available, many African nations like Burundi and South Sudan lagged behind wealthy western countries in their vaccination rates, in part because affluent nations were buying up all the world's supply.

But they also struggled to obtain a vaccine supply because some shots require ultra-cold freezers. And while shipping millions of doses to those countries seems like a great idea on paper, many sub-Saharan African nations don't currently have the necessary storage to keep shots that cold.

Smallpox eradication showed us one way to address this gap – designing a vaccine that could be stored at room temperature so it's easier to transport within and between countries. But the Trans-African Highway showed another way – investing in infrastructure, especially in countries that continue to suffer the impact of colonialism. Building vaccine factories in the continent, for instance, would make it easier for African nations to make timely decisions affecting their health. Like controlling how shots are made and where they end up.

As of this recording, South Africa and Ghana have announced plans to build vaccine factories with the help of international partners, like Pfizer-BioNTech and Moderna– bringing us one step closer to closing that vaccine gap.

So the road to global health equity is paved with cooperation, empathy and as it turns out, actual roads. But when countries can lead the charge on their own health goals, and collaborate on shared health goals, we can make some serious progress.

Thanks for watching! This video is part of a series created by Complexly and the American Public Health Association to shed a little light on the important work that public health does. To learn more, visit [apha.org](https://www.apha.org).

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