

We often think of health as this self-centric phenomenon that begins and ends with “me”. I choose what I eat, when I exercise, and how thoroughly I bathe. When I get sick, my body uses medicine and rest to get better. And not to brag or anything, but that sushi-induced food poisoning I had when I was a kid was my sushi-induced food poisoning that I had in my stomach, thank you. But the truth is, while each of us is the protagonist of our own health journey, we’re not the only ones involved. Our personal health is just one plotline in a rich story of evolving research and policies that make up the world of public health. This story has been co-authored by thinkers, scientists, caregivers and policymakers across thousands of years, and it’s still being written today. Hi, I’m Vanessa Hill, and welcome to Crash Course Public Health. [Music].

Before we dive into what public health is, what it isn’t, and why it’s kind of a cheat code for making everything better for literally everyone, let’s start with a basic question: What is health? The word health can be traced back to the Old English word *hale*, which meant wholeness or a thing that is complete. It also has ties to a common greeting during the Middle Ages, *hail*. As in, “Hail to the king!” or “Health to the king!” But before we even had the word health, the idea of health and health care had been around for a long time. As far back as classical Greece, the physician Hippocrates wrote extensively about health and what makes someone good at, you know, the not-dying thing. And a lot of the features of modern hospitals, like the use of medical records, hygiene, and even pharmacies, were developed during the Islamic Golden Age, AKA the 8th to the 14th century common era. Fast forward to the 20th century and our understanding of health has made a lot of progress. In 1946, the World Health Organization defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” But complete physical, mental, and social well-being is a pretty lofty goal. Like, under this definition, someone with high blood pressure might automatically be considered unhealthy, because they’re not in a state of complete physical well-being. But many people with high blood pressure don’t necessarily feel unhealthy. And many live long fulfilling lives.

Rather than treating health as some ideal state of being that we’re constantly striving for, some 21st-century approaches to health have treated it as a capacity or a reserve that each of us possesses. We use that capacity to do all sorts of things, like playing sports, or eating pizza, or hosting educational YouTube videos. And that capacity changes throughout our life, and is relative to each of us. What health means for you might look different than what it means for me, or your parents, or a president. But when our health reserve is depleted, like when we’re sick or injured, it’s important to take steps to restore it. That could mean resting, making a lifestyle change, or visiting a doctor. So now we have a better understanding of what health is and how we use it. But there’s still the matter of that word “public” out front there. While notions of public health vary, the American Public Health Association defines its goal as: “promoting and protecting the health of people and the communities where they live, learn, work, and play.” In other words, public health is an approach to preventing disease, prolonging life, and promoting health. While medical professionals address the specific needs of a specific patient, public health experts look at the external conditions that affect the health of whole communities.

Dr. Camara Jones, an American physician and former president of the American Public Health Association imagines the work of public health using the analogy of a cliff. We build our communities

on a so-called cliff of good health. When we fall off the cliff, we're met at the bottom by an ambulance that rushes us to medical care. Now the ambulance is great, and I definitely wouldn't turn it down. But Jones argues that in general, people prefer to be in a state of not having fallen off the cliff in the first place. So instead of just investing in ambulances, we ought to invest in things that reduce the need for ambulances, like trampolines to catch us on the way down the cliff, or a fence that keeps people safe from the edge. Trampolines and fences represent the preventative measures that we can take to limit health issues for the whole community. In this same sense, public health experts don't dismiss the need for acute medical care. They just want to minimize the need for it to begin with! But who are these mysterious, public health experts and what are they actually doing? Like, bankers bank, detectives detect, and public health experts do a bunch of different things, as it turns out. They include restaurant inspectors, policymakers, and disease researchers.

A public health expert is anyone who addresses health at the population level. Populations are groups of people who share common characteristics. Like being from the same region, or culture, or economic class. Or even just having the same jobs or interests. Thinking in terms of populations helps public health experts identify patterns and distributions of diseases, putting experts in a better position to address those health issues. Take lung cancer, which is the leading cause of cancer deaths worldwide. A doctor concerned about lung cancer might screen a patient who smokes, conduct a lung biopsy, and come up with a treatment plan. But public health professionals imagine the problem of lung cancer more broadly. While doctors are diagnosing and treating, public health experts are asking things like, what would happen to lung cancer rates if we took steps to limit smoking in workplaces and restaurants? And as it turns out, limiting smoking and preventing lung cancer in the first place is more effective at saving lives than treating lung cancer once it's there. And that's all thanks to public health. But public health experts don't stop there. They take the interrogation further, asking questions like, why is it that Black Americans are more likely to die from smoking-related diseases than white Americans, despite data showing that Black Americans actually smoke fewer cigarettes on average? What are the social and economic conditions, like differences in levels of education or employment, that could help explain this contradiction in health outcomes?

A health outcome is what happens basically anytime our health status changes because of, well, something happening in the world. And as we'll see, that something can be a lot of different things. These differences in health outcomes, which arise from the social or economic conditions of a community, are what we call health inequities. Addressing health inequities is core to the public health mission and core to how we'll think about health in this series. Now, the goal of public health isn't to create some super-sanitized, post-germ utopia where everyone lives forever. Public health experts recognize that one of the hazards of having a body is that your body isn't, you know, a permanent fixture. Disease and injury are inevitable, but public health experts recognize that they're not just entirely random occurrences, either. They're often made worse by poverty, war, or injustice. But that also means they can be minimized by improvements in things like affordable housing. Let's take a closer look at how public health works in a community or city, let's call it Vanessa city. Researchers at the local Department of Health observe that the city's residents suffer from heart disease at a rate higher than the nation's average, and it's most concentrated in a low-income neighborhood without an easily accessible grocery store. The researchers identify the lack of access to healthy food as the probable cause.

Let's go to the Thought Bubble. So to address the healthy heart problem, the health department has to address the healthy food problem. From a public health perspective, there are multiple solutions to this problem. First, there's addressing the short-term issue: people need easy access to healthier food—and they need it now. So, the Vanessa city Health Department partners with local rec centers, to open round-the-clock food access sites with fresh produce and other nutritious options. The health department provides free bus transportation to the food sites and even hires people in the community to drop off foods directly to homes. The food sites also feature free blood pressure screening services, a useful tool to gauge someone's susceptibility to heart disease. And these are some great first steps, but they're sort of like a temporary nutrition Band-Aid for the community. That brings us to the long-term problem that needs addressing: the neighborhood hasn't been given the resources necessary to make healthier foods easily accessible. To address the long-term needs, the health department works with government officials to develop a tax plan that incentivizes small grocery stores to move into the area. This way, people in the community aren't reliant on healthy food donations from outside the community. Meanwhile, the health department sponsors the local gardening club and connects them to city officials. Together, they turn a local abandoned parking lot into a community garden full of produce that residents can grow and sell. And while the results might not be immediate, the health department does start to see gradual improvements in heart disease reported in the neighborhood. Vanessa city's moving' on up. Thanks, Thought Bubble!

So, we get it, public health is in the business of making everything better. But it's also a real, proper financial investment. Because in general, it's more expensive to treat existing health conditions than it is to prevent them in the first place. Like, for every \$1 invested in childhood vaccinations in the U.S., we can save up to \$11 in medical expenses. In fact, the Centers for Disease Control and Prevention estimates that vaccinating children born between 1994 and 2018 has saved the U.S. nearly \$406 billion in direct medical costs. Public health is basically a money-saving, life-extending, world-bettering cheat code for improving health outcomes for literally everyone. So, if it were up to me, I'd be investing in public health like it's Apple in 1980. Or the Slinky in, you know, whenever Slinkys were invented. But in a world where it can feel like we're constantly teetering on the brink of crisis or the edge of the cliff, investing in long-term solutions like tax incentives and community gardens just doesn't feel urgent at any given moment. Plus, when public health is working, we don't always see its impact. Our brains are just better at noticing when things aren't going to plan.

The result is that in places such as the U.S., public health tends to get ample funding only when there's an active health crisis. So, when health issues aren't dominating the headlines, public health is often seriously underfunded, which can lead to a downsized workforce with outdated equipment, setting us up for long-term failure. In the United States, for instance, we spend only about 0.5% of our total healthcare budget on efforts to prevent diseases like lung cancer. This ranks as one of the smallest investments among high-income countries.

So, over the course of this series, we're going to pull back the veil, so we can notice public health at work. And where we fit into the picture. Because when it comes to public health, we all have a part to play. Yes, humans are great at transmitting germs and bacteria and disease. But we're also pretty good at spreading other things, like new information and better ideas. We'll get into some of those ideas next time. See you then. Thanks for watching this episode of Crash Course Public Health, which

was produced by Complexly in partnership with the American Public Health Association. If you want to learn even more about Public Health, head over to APHA's YouTube channel to watch "That's Public Health" a series created by APHA and Complexly. Crash Course was filmed in the Castle Geraghty studio in Indianapolis, Indiana, and made with the help of all these lovely people. If you'd like to help keep Crash Course free for everyone forever, please consider joining our community of supporters on Patreon.