

## Safeguarding Health, 24/7

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**Director, Centers for Disease Control and Prevention**

The Centers for Disease Control (CDC) has a big job: Twenty-four hours a day, seven days a week, the agency works to protect America's health, safety, and security from diseases and other health threats—whether they're acute or chronic, whether they start here or abroad, and whether they're the result of natural causes, human error, or deliberate acts. Here, CDC director Dr. Tom Frieden talks about how he prioritizes the seemingly overwhelming number of competing issues, what we've learned from the Ebola epidemic, and why working in public health is so satisfying.



### **Opening the door to public health**

I've known I wanted to be a doctor since high school. My father was a physician. He pointed out to me that being a doctor isn't so much a career choice as it is an opening for a number of career choices. Once you become a physician, there are many different things you can do. I've found that a career in public health is a wonderful way to connect with others, help protect com-

munities, and do work that's both intellectually challenging and emotionally satisfying.

It's a diverse field that includes epidemiology, health policy, maternal and child health, behavioral and social science, and biostatistics and informatics. There's a lot you can do, and you can get into the field in many different ways, whether it's with a bachelor's degree or a master's degree, a Ph.D. or an M.D., or even a D.D.S. or a D.V.M. Three-quarters of the new diseases that affect humans come from the animal world.

### **On-the-job training**

In the early 1990s, I participated in the Epidemic Intelligence Service, a two-year CDC program where you become an expert in controlling a disease or working on a

specific health threat. You figure out how to find and solve a problem—which is really the essence of what the CDC does: It brings science to bear on public health problems, whether it's people being killed in car crashes, overdoses, drug-resistant bacteria, or anything else that shortens our lives or undermines our health in a way that we can prevent.

I conducted 24 different outbreak investigations on everything from resurgence of measles—which was a huge problem in the early 1990s—to multidrug-resistant tuberculosis to outbreaks of diarrheal disease in homeless shelters and an outbreak of typhoid fever relating to a baptismal ceremony at a church.

### **Programs that save lives**

It's tremendously rewarding to help design and obtain support for programs that prevent thousands or even millions of deaths. As a CDC assignee in New York City, I assembled a team that went into crack dens to talk with people with tuberculosis and into doctors' offices to make sure that patients with TB were getting and completing appropriate treatment. The result of that program was a very rapid control of an outbreak of multidrug-resistant TB.

In India, I helped implement tuberculosis control programs that have saved more than three million lives. In New York City, with Mayor Bloomberg's leadership, we implemented programs that reduced adult smoking by 25 percent and teen smoking by 50 percent, saved over 100,000 lives, and extended life expectancy in New York City far faster than in the nation as a whole.

### **The challenge of getting it right**

While we've made a lot of progress, tobacco use remains the leading preventable cause of death in the U.S. We continue to lose nearly half a million Americans a year from tobacco-related disease. We've also made a lot of progress in lowering the incidence of heart attacks, strokes, and kidney failure through public health interventions and by treating high blood pressure and high cholesterol, but we're getting the treatment right only about half the time. If we could get it right 70 percent of the time and improve community-wide prevention, we could prevent a million heart attacks and strokes over a five-year period.

Globally, we need to do a better job with women's health and safe childbirth, and we need to address the growing epidemic of cancer. An estimated 1,650,000 new



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cancer cases were diagnosed in the U.S. alone in 2015, and over half a million people died from cancer.

### **Prioritizing public health**

I prioritize by asking, how can we save the most lives? The great British public health physician William Farr said, "The death rate is a fact. Everything else is an inference." Fundamentally, what we need to do is figure out a way to drive the death rate down. If you look at the world with public health eyes, you see that today, most of the people who die don't have to die when they die. They're dying from conditions that could have been prevented or conditions with which they could have lived for many more years.

### **The no-cost wonder drug**

Physical activity is the closest thing we've got to a wonder drug, because it improves everything you'd like to improve and reduces everything you'd like to reduce. It reduces your risk of heart attack, stroke, diabetes, cancer, and depression. It improves your mood. If you're in treatment for any of those conditions, it improves your control of those conditions. Even if you don't lose an ounce of weight, it makes you much, much healthier. We encourage people to do physical activity they love: walk, play basketball, walk the dog, or dance. Do something that you're going to keep doing for many years.

### **Unfinished business**

We still have the unfinished business of disease control. After killing tens of millions of people, smallpox is gone from the world forever. Now we have to get over the finish line on polio. With HIV, we've made a lot of progress, but we have much further to go. There are still 45,000 new cases of HIV infection each year. And while we've made a lot of progress with TB and malaria, they continue to kill far too many people. Over a million people die from malaria each year—most of them children under five years of age.

### **Dangerous drugs**

We need to make more rational decisions about how and when we use antibiotics in order to reduce the rate of drug-resistant bacteria. We also have a burgeoning problem with opiate addiction in this country—not only heroin, but prescription opiates and other synthetic opiates. We have to be able to address people's pain with the understanding that opiates should be a last resort. These are dangerous drugs: we take a few of them and we may be addicted for life; we take a few too many and we can die.

### **A near miss**

The Ebola epidemic wasn't as bad as it could have been, but it was much worse than it should have been. If Liberia, Guinea, and Sierra Leone had had basic core public health services in place—laboratories, epidemiologists, or disease detectives—the epidemic wouldn't have become as widespread. We were able to contain clusters of Ebola in Uganda, the Democratic Republic of Congo, and elsewhere, but they were not contained in West Africa. Those countries have very underdeveloped public health systems. Ebola could easily have gotten out of control in Lagos when a cluster occurred there. If that had happened, it could have been spreading throughout Lagos, Nigeria, and all of Africa for years.

### **The lessons of Ebola**

There are important lessons to learn from Ebola: Every country in the world needs to be better prepared to find, stop, and prevent outbreaks. When countries are overwhelmed, the more developed countries have to be able to surge in more rapidly to assist. And infection control is extremely important in healthcare facilities to protect healthcare workers and the public.

The lessons are clear. The question is, will they be learned and acted upon? We now have a rapid test for Ebola that gives results in 20 minutes. That's great, but technology can never replace the core activities of finding and speaking with patients, getting samples, and analyzing data. ■

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