

From Associate CDC Director Srinivasan's [Interview with PBS](#) on June 28, 2013



Dr. Arjun Srinivasan is an associate director at the Centers for Disease Control and Prevention. He spoke with FRONTLINE about the need for more action to combat the problem of antibacterial resistance. This is a partial transcript of that interview conducted on June 28, 2013.

Let's talk a little bit about the antibiotics themselves, the drugs. What's different today from the '60s and '70s with the drugs?

We've done a lot with antibiotic development since the very first antibiotics were discovered. We have antibiotics that are very nontoxic. They're very safe to give. They're very, very targeted at the bacteria. ...

They kill bacteria, and they don't do much harm to the host, to the human cells, and that's great. It makes them drugs that are easy to use. It makes them drugs that are nontoxic to use.

We've over time developed antibiotics that got around a lot of the weapons that the bacteria had to become resistant, so we were really ahead of the game for a long time. We were quickly developing new antibiotics. When bacteria developed resistance, we always had a new antibiotic waiting in the wings, and we had new therapy that we had to offer.

So what happened?

It all changed several years ago. What we found is that the pace of development of new antibiotics really began to slow down about a decade ago, and now we began encountering these highly resistant infections, and we didn't have new antibiotics to use. We had the ones that we had, but we didn't have anything new.

Why did it begin to slow down?

...There's probably a variety of factors that have contributed to the fact that we don't have new antibiotics. One might be that we developed a lot of the antibiotics that were easy, if you will, to develop...

There are some people who say we sort of picked all the low-hanging fruit, and then it got really hard to develop new antibiotics.

Another reality is there's not much money to be made in making new antibiotics, so we saw a lot of drug companies who left the field of antibiotic development because of this combination of factors, that it was getting really hard to discover, to develop new antibiotics, and you don't make a lot of money in selling these drugs, so the market really wasn't there.

...I can't tell a patient who has a resistant infection, "If we can get you through this next six months or this next year, there's going to be a great drug that's coming." Or I can't tell oncologists, for example, "Well, six months from now we're going to have therapies to offer you; we're going to have something to combat these infections."

Why? The drugs aren't there?

The drugs aren't there. And we know it takes a long time to get drugs from the development stage through testing and into the market. Right now, I can't tell you when you're going to have a new antibiotic to treat these highly resistant Gram negatives. The best I can say is it's probably going to be several years, but I can't point to one that's in development and say, "We're going to have that one in three years." And that's a scary place to be in.

... You say you can't make much money. I guess our society took it for granted that antibiotics were relatively cheap compared to chronic-disease drugs, but also isn't there some economic calculations in these companies as well? Pressures on them? I don't think they pulled out because they just don't care anymore, right?

...Infections are not that common compared to other types of conditions like high blood pressure or high cholesterol. It's a reality that many of the drug companies left this market because of financial realities that are placed on them. These are companies that are for-profit companies, and like you said, they have to answer to people. They have to develop drugs that will make money, and that's not an antibiotic.