

Transcript Details

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www.reachmd.com
info@reachmd.com
(866) 423-7849

XVII International AIDS Conference: Progress Report

AFTER 25 YEARS, WE ARE LOOKING TO THE FUTURE IN HIV AND AIDS RESEARCH.

Our presidential election is only days away. Forty eight million people in America are uninsured and how care costs are rising 2 to 3 times faster than our nation's GDP, where will America's healthcare system be in 5 years?

Welcome to ReachMD's monthly series focussed on public health policy. This month, we explore the many questions facing healthcare today.

After 25 years, we are looking to the future in HIV and AIDS research.

You are listening to ReachMD XM 157, the channel for medical professionals. You are listening to a special segment on medical policy. I am your host Dr. Maurice Pickard and joining me is Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Disease at the National Institute of Health and the recent Recipient of the Presidential Medal of Freedom. He is also a leading architect at the United States President's Emergency Plan for AIDS relief.

Dr. PICKARD:

Thank you very much for joining us today.

Dr. FAUCI:

It's very good to be here.

Dr. PICKARD:

To begin with the 17th International AIDS Conference just ended in Mexico City. What was the mood at the end of this conference?

Dr. FAUCI:

Well, it was really somewhat of a realistic sobering mood and that we are aware of many rather breathtaking scientific advances, the availability of treatment for example of people in the developing world, but superimposed upon that is the sobering issue of so many challenges that we have ahead above. This is a bit different from the needing a couple of years ago in the Toronto where it was rather festive and the whole idea of promise for a new discovery is here was a realization that particularly in certain areas like vaccine and microbicides that although there has been some success, we have a long haul ahead of us. So, the focus was more on the long haul of what we need to do rather than what we have accomplished.

Dr. PICKARD:

By long haul, where was the focus, in other words is there going to be a change in direction of where we are spending dollars?

Dr. FAUCI:

I don't think there is going to be a dramatic change in direction, but there will be more of as we call a turning of the knob, particularly in the arena of vaccine development, which is really the last of the great hurdles from a scientific standpoint that we face in the field and that knob is going to be turned a bit more towards answering some fundamental basic questions. In the whole field of vaccinology, what you generally do is you have what is called empiric testing of concepts, namely you do what has succeeded in the past with other successful vaccines. HIV is very, very different for so many reasons that we can discuss, so when we talk about a change, we are really talking about answering some fundamental question before we engage on large clinical trials that are somewhat empiric in their approach as opposed to based on what we know about this virus, which as I mentioned is very different from any other virus we had to encounter.

Dr. PICKARD:

I remember the secretary of health, Margaret Heckler, in the 80s, mid 80s, when we discovered the virus lead us to believe that having a vaccine was just around the corner. The media leaped on this and I think we see disappointments in say vaccine developments. This has a different affect on the public as opposed to our research society.

Dr. FAUCI:

Well, yes, as a matter of fact with secretary of HHS, Heckler mentioned that a press conference very shortly after the discovery of HIV was ill advised in many respects, but understandable because what she was doing if she was extrapolating from the situation and what we do with classic vaccinology, when you develop or find the cause of a particular disease, particularly when you are dealing with viral diseases, it's usually a matter of a few years before you have vaccines that go into trial. It may take 10 or more years to get a vaccine, but generally it takes just a couple of years before you start the trial and that is in what we call classical vaccinology because in classical vaccinology, you kind of know what the appropriate immune response to a virus is because the body mounts naturally in response to infection. A response that ultimately gets rid of the virus in question regardless of what the virus is, smallpox, measles, polio, all the viruses for which we have successful vaccines, you use the body's natural response as your first experiment because the body is telling you that can actually handle this well. Ultimately, some people get sick, few die, but at the end of the day, the body's natural response eliminates the virus. So, she was assuming that that is what we are going to see with HIV, so now that we have the virus, we can just make a vaccine, what she didn't know and many people didn't know is how different HIV is in the most fundamental differences that is the reasons that we still don't understand. The body does not mount an adequate immune response against HIV and natural infection. So, if it doesn't do with the natural infection, you have to figure out a way to induce it artificially with the vaccine and that has been a very, very difficult problem that neither she, nor many scientists anticipated.

Dr. PICKARD:

We all remember, certainly polio, I grown up in Chicago and everyone used to leave Chicago during the summer time to avoid polio epidemics and yet all the people that I know that had polio, many of them recovered. They recovered with disabilities, but they recovered and certainly the same thing could be set about smallpox, is this because these diseases had a neutralizing antibody or cytotoxic lymphocytes, something that this particular disease doesn't have to begin with?

Dr. FAUCI:

Yes, as a matter of fact, I think, you nailed it. There are neutralizing antibodies and there are cytotoxic cells but they are inadequate in HIV and you used good examples that even though smallpox kills people, 15% of the people in the developed world would get smallpox and would die from it, that means 85% of the people not only recover, but they develop an immune response that protects them against future challenge. We call those correlates of immunity and you know when you have the disease like influenza that gives you neutralizing antibodies that if you develop neutralizing antibodies from a vaccine or from a natural infection, you will subsequently be protected. That is absolutely not the case with HIV. Rarely does an individual who is naturally infected with HIV make an adequate neutralizing antibody response or an adequate cell-mediated immune response. So, we are lacking the natural model of what a correlate of immunity is. If we knew what the correlate of immunity is in the vaccine field, we could develop what we call an immunogen to immunize somebody with that would invoke or would evoke these particular responses, but to our great frustration, not only does natural infection, not do it, we haven't been able to even do it artificially. So, the body is telling us in its own way that it cannot handle HIV adequately, which is a big, big stumbling block on the road to developing a vaccine, something we have just not seen in our attempts to develop vaccines against other difficult diseases like polio or smallpox or measles.

Dr. PICKARD:

Of the 60 million people who have probably contacted it, may be that is a low estimate, we can't even use the word cure; there has never been a cure in this disease.

Dr. FAUCI:

That is true. Cure in the sense of eliminating every last vestige of the virus from the body. There hasn't been a natural cure with someone got infected and their own immune system fundamentally and ultimately eliminated the virus from the body and certainly even with the very effective drugs that we have, we have not been able to do that, namely eliminate the virus to the point where you could regularly take someone off therapy and they would do well in the absence of therapy. That is not to say that we are giving up on trying to find a cure. We are still pushing the envelope as it were to see if we could develop various therapeutic approaches so that we could have a cure, but up to this point, again unlike virtually any other infectious disease that we have dealt with, both spontaneously and naturally and even with drugs, we have not been able to "cure this disease."

Dr. PICKARD:

I would like to return to this, but since I have the opportunity to talk to one of the leading architects of PEPFAR, the United States President's Emergency Plan for AIDS Relief, I would like to ask you most physicians and I think most Americans should really be proud of this particular plan, 15 billion dollars were spent in the previous 5 years, now 45 billion dollars is earmarked for this. How did this project begin, which we can stand back and have a real feeling of pride about?

Dr. FAUCI:

Well, it actually began with the President and that is the reason why it's called the President's Emergency Plan. In the spring of 2002, President Bush sent secretary, Tommy Thompson and I and a group of other people to sub-Saharan Africa to kind of scope out the situation to determine what the United States as a rich country with so many resources could do to help in the prevention treatment and care of HIV in the developing world. So, when I came back from the trip, they asked me at the White House and some others to really put together and I spent a lot of time on trying to figure out what the right modeling would do to get the most people under the umbrella of treatment prevention and care and we decided on originally 12 and then 14, and now 15 focussed countries, mostly in sub-Saharan Africa, but also in the Caribbean and in Asia to pledge and ultimately come through significant funds at a time that it was announced by the President in the state of the union address in January 2003, it was a 5-year 15-billion dollar program aimed at preventing 7 million infections, treating 2 million people with HIV, and caring for 10 million people including AIDS orphans. So, it really came about by the administration and the government, the United States of America wanting to do something, something substantial, not a little bit, but a lot of transforming program for HIV-infected people in the developing world and as you mentioned, this has been a highly, highly successful program that now has been reauthorized for 48 billion dollars over the ensuing 5 years after this expires.

Dr. PICKARD:

I want to thank Dr. Fauci for being with us today. We have been looking at the very complex and difficult problems that faced the research community as well as the total public health community in fighting this disease, which is now almost 25-26 years.

I am your host Dr. Maurice Pickard and you had been listening to Dr. Anthony Fauci, Director of National Institute of Allergy and Infectious Disease at the National Institute of Health and the recent recipient of the Presidential medal of freedom as well as a leading architect of the United States President's Emergency Plan for AIDS Relief.

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