

Dr. Anthony Fauci

Behind the Mask

October 19, 2022

Barr: Good afternoon. Today is October 19, 2022. My name is Gabrielle Barr, and I'm the archivist with the Office of NIH History and Stetten Museum. Today I have the pleasure of speaking with Dr. Anthony Fauci. Dr. Fauci is the director of the National Institute of Allergy and Infectious Diseases (NIAID) and is also the chief medical advisor to President Biden. Today he's going to be speaking about some of his COVID-19 experiences and memories. Thank you very much for being with me.

Fauci: Good to be with you. Thank you for having me.

Barr: At the January 28, 2020, press briefing, you mentioned that NIH was well underway with both vaccines and therapeutic studies. When did you first learn of the virus? How did you learn about it? What steps did you take in putting things in action?

Fauci: The first glimpse of it was on December 31—New Year's Eve—of 2019. Then the first couple of days in January of 2020 I was in contact with Dr. Robert Redfield, the director of the CDC, who was in contact with his colleagues at the CDC equivalent in China—Dr. George Gao and colleagues. As soon as we found out that it was a novel coronavirus on January 10th, when the sequence was made available in the public database by the Chinese, it became very clear that we had the available information to begin to develop a vaccine. Literally within a week and a half in January 2020, we began the development of the mRNA [messenger RNA] vaccine candidate, and within 65 days we already had it in a phase one trial. That was the most rapid we have ever gone from obtaining the sequence of a virus to a phase one trial. Then, ultimately, it turned out that when we went into the phase three trial, we proved the safety and the high degree of efficacy—in this case 94%—by the end of November or the beginning of December of 2020. That was the fastest ever in history that we went from the awareness of a new virus to a vaccine that was actually ready to be distributed to people.

Barr: What was it like for you to find out the efficacy of the Moderna vaccine? Where were you when you found this information out?

Fauci: Well, there were two things that happened. I first heard of the efficacy of the Pfizer [vaccine], which was about a week before the results came in for the efficacy of Moderna. I remember I was at my home sitting on my back deck when Albert Bourla, the CEO of Pfizer, called me up at about 8:30 PM on a Sunday night. He said, "Tony, are you sitting down?" I said "No, but I will." I sat down, and he said, "You're not going to believe this, but the vaccine is 95% effective"—more than we ever expected. We

were hoping that it would be 70% effective at best. Hoping for that. One week later I got a similar phone call from the CEO of Moderna telling me that their results were comparable at 94%. Here we had the two candidates that we were working most closely with, one 94% and the other 95% effective, which was amazing. It was a very emotional experience because we were working on it for about a year—from the beginning of the understanding of what the virus was. We had been preparing for several years before that for the possibility of developing a vaccine with the mRNA technology and the structure-based design of the spike protein in its pre-fusion stabilized form. All were things we were doing for years before with MERS [Middle East Respiratory Syndrome] and SARS-CoV-1, so it was very, very exciting.

Barr: How about with Johnson and Johnson, Novavax, and AstraZeneca, which NIH has supported in different ways?

Fauci: That was similar, but it was a little anticlimactic because we already knew how effective the mRNAs were. So, when we saw that the other candidates were effective—not quite as good as the mRNAs, but it was tested during a different variant surge so we really couldn't compare it completely, but the results were, really, still quite good—we expected that because of the prior experience with the mRNA vaccines.

Barr: What was it like for you to be vaccinated with the Moderna vaccine in December of 2020? That had to be an emotional experience for you.

Fauci: Oh, it was. It was very exciting. We went to the Masur Auditorium at the NIH Clinical Center. I went on the stage there with the nurses from the Clinical Center and rolled up my sleeve and got vaccinated. It was really a very touching and moving moment.

Barr: Speaking of mRNA vaccines, were you surprised about the mRNA short-term efficacy and why that is the case?

Fauci: When you say “surprised” you mean because it wasn't very durable—it didn't last very long.

Barr: I guess “efficacy” isn't the right word. Durable.

Fauci: We were a little surprised, but when you think about it, it is compatible with the fact that, even with natural infection with a coronavirus, your protection against re-infection doesn't last very long.

That's very unusual. [With] Most infections, when you get infected and recover, you are protected for a significant period of time from re-infection, but that's not what we saw with the mRNA—and that's exactly what you see with a normal infection with the coronavirus. It is disappointing but not surprising.

Barr: Interesting. Will you talk about some of the other COVID vaccines in the pipeline? There are some intranasal vaccines, the pan-coronavirus vaccine, and other vaccines being looked at as possibilities.

Fauci: We refer to them as the “next-gen vaccines”—the next generation, which goes beyond the mRNA and does things like nanoparticles with multiple spike proteins attached to them, vector-expressed immunogens, and one that is very important for the prevention of infection and transmission, which is mucosally administered to protect you from initial infection. The vaccines that we have now do very well in protecting you against severe disease, but all of us have a lot of experience that they don't do as well in preventing infection. I know myself, I was vaccinated and doubly boosted, and I still got infected. Yet my disease was really quite mild, and I ascribed that to the fact that I was well-protected against severe disease by the vaccine, but I was not well-protected against infection.

Barr: With the advent of home testing for COVID, how do you feel that has skewed the data and thus the modeling—and at times allocation of resources—with COVID?

Fauci: Well, I think we are taking it into account that with home testing a substantial proportion of the positive results are not reported. So, we are chronically dealing with an underestimate of the number of infections that we are experiencing. For example, the latest numbers now are that our daily infections in this country are about 45,000. That is not an accurate number because how many people that we know take a home test, are infected, have mild symptoms, but never tell anybody about it? So, the rate of infection is probably considerably underestimated.

Barr: At this point in the pandemic, what aspects of understanding the virus SARS-CoV-2 and the different mechanisms to subdue it do you feel need further attention by the scientific and medical communities?

Fauci: Well, I think the emergence of so many variants that are driven by immune pressure is something that we need to understand better because we really are forced to deal with it. I mean, we had a surge of BA.5 that followed the surge of the first Omicron—BA.1, BA.2. And now as we enter into the fall and the winter, we are dealing with the emergence of multiple sub lineages of Omicron and BA4/5 like BQ.1, BQ.1.1, XBB, and others—BA.4.6, BF.7. There are so many variants that are subvariants of Omicron that it becomes very difficult to keep up with them.

Barr: Long-COVID is still a really major concern. What do you find intriguing about this condition, and what efforts are being put towards further studying it—both at NIH and other initiatives as well?

Fauci: The most intriguing thing about it is that we do not understand yet what the pathogenic mechanisms of it are. We know it is a real syndrome. We know it can be incapacitating. We know that anywhere from 5% to 20% of the people get it. It is estimated that as of now there are between 7 million and 20 million people who have long-COVID—about 1 million of whom have it so severe that they cannot return to work. And yet we do not know what the underlying pathogenic mechanism is. The fact that we do not know makes it very difficult to do anything about it because you cannot treat something if you do not know what it is that you are treating. That is the most disturbing and fascinating aspect of long-COVID.

Barr: How do you hope the infrastructure and research for COVID-19 will be used to solve other health challenges?

Fauci: Well, I think that we will see with COVID the same that we saw with HIV. We built up an infrastructure of HIV clinical trials that we leveraged very successfully to help us with the clinical trials of a vaccine for COVID. And all of the preparedness and response that we have invested in responding to COVID-19 I am certain will be part of the pandemic preparedness plan that will prepare us to respond to any subsequent pandemics.

Barr: With COVID-19 becoming an endemic disease, how do you see the research and support for it shifting?

Fauci: Obviously whenever you get something under reasonably good control, the resources that are invested tend to become less and less. We are hoping that we do not lose our corporate memory of why it is important to sustain the resources for preparedness and response, and we do not lose sight of the fact that we have gone through a terrible experience with COVID-19. We need to continue to have a sustaining investment if we want to be perpetually prepared—because we have a perpetual challenge.

Barr: In addition to your work on the Coronavirus Task Force, you are also well known as the director of NIAID. What do you hope NIAID will focus on in the next few years in regard to SARS-CoV-2, both in terms of vaccines but also therapeutics and next generation monoclonal antibodies?

Fauci: Well, we have programs for each of those. We have an APP program—Antiviral Program for Pandemics—which is one where we hope to get about three billion dollars to develop the next generation of small molecule antivirals. We also have as part of the program a monoclonal antibody

development program. And as I mentioned before, we have a program with a major investment to develop the next generation of various vaccines including nanoparticles and vector-based immunogen expression.

Barr: Speaking of your role at NIAID, how did you balance your work on the COVID-19 Task Force with running the institute, especially with it being so heavily engaged in COVID-19 research?

Fauci: I balanced it by trying to do it all [laughs]—and that is what we did. I mean, it is a lot of work [over] the last three years. I have had maybe one day off in three years if you look at it. We work every day—every Saturday and part of Sunday. Not just me, but the entire team.

Barr: The pandemic has highlighted America's significant problem with health disparities. How do you feel that some of these disparities were exposed with COVID? What were some ways that some of these gaps were bridged with work pertaining to COVID-19, and what work do you feel still needs to be done in this very important area of medicine?

Fauci: Health disparities had a bright light shone on them because, similar to HIV, the disparities were particularly seen among racial minorities—not only in the incidence of infection, but in the complications leading to hospitalizations and death. That was quite related to the years and decades-long social determinants of health that relate back to the fundamental, as we call it, “original sin” of racism in this country that led to the social determinants of health weighted against minority populations. We have tried very hard, for example, to get proper representation of minorities in our clinical trials. We put a very strong effort in getting representation in the vaccine trials that was commensurate with the representation of that cohort in the general population—13% African American, 18% Hispanic—and we succeeded. But we still have a lot of work to do because the disparities are not going to go away overnight. We have got to make sure we address them and do whatever we can to mitigate them, but that would require a decades-long commitment. It is not going to get taken care of overnight.

Barr: Can you comment on the increased politicization and polarization of America's COVID-19 response?

Fauci: Well, unfortunately, yes, I can comment on it because I have experienced it right up front and center. There has been a terrible divisiveness in the country which has interfered with an adequate response to the virus, where decisions and recommendations about vaccinations and mask usage have been determined by political ideology. When you look at the map of the United States, you see that the red states, or the Republican states, are under-vaccinated compared to the blue states, or the Democratic states. That is unfortunate because there are disproportionately more deaths from COVID

among Republicans than there are among Democrats, and that is purely because of the disinformation about vaccines and about masks—which is very unfortunate.

Barr: How do you think that the politicization with COVID will extend to other diseases, such as people getting vaccinated in general or wearing a mask with other outbreaks of respiratory diseases?

Fauci: I am very concerned about that. We are already seeing a spillover of the anti-vax movement that goes beyond COVID into normal childhood vaccines. It would be really disastrous if we stop vaccinating our children against vaccine-preventable diseases, which we have essentially eliminated in this country.

Barr: As you're well aware, the communication landscape in conveying science to the public has really changed a lot since the AIDS crisis in the 1980s. What are some of the opportunities and challenges of these new forms of communication, and what do you hope the scientific community learned about how to relay information to the public?

Fauci: The evolution of social media has been a game changer. In some respects, in a positive way, but in some respects in a very negative way, because it gives disinformation and misinformation an open season on spreading. The only way you can counter that is by putting out as much correct information as you possibly can. It is going to require people who are in a position to disseminate correct information to be very aggressive in keeping up with and surpassing the flow of disinformation.

Barr: Many societal occurrences transpired alongside the pandemic, like the Black Lives Matter protests, the refugee crisis at the border, and the rise of gun violence. How did you tailor your COVID-19 messaging accordingly to demonstrate that you are conscious and sensitive to these other very real and tragic issues?

Fauci: Well, I think you just gave me the answer with your question—you must remain very sensitive to the fact that we are dealing with a whole host of challenges. If you're going to message about what you are interested in, you have got to appreciate that society is beset with a variety of other issues and challenges and integrate your message into the complexity of the other messages that people are getting.

Barr: What did it feel like for you to be the public face of NIH, and for many, the United States, in conveying COVID-19 information? That's a big responsibility.

Fauci: It is good news and bad news. It is a big responsibility, which I welcome, but I am a big target for the disinformation of the far-right movement that continues to try and discredit what we are saying. That makes it difficult, but you cannot let that stop you from continuing to put the correct message out there.

Barr: In terms of COVID-19 response, were there any countries you admired for how they dealt with their COVID cases?

Fauci: Yeah, several countries did a good job. I think Australia, New Zealand, Singapore, and Israel did a very good job. There were several other countries that did a really good job.

Barr: What do you think that NIH—and you—could have done differently during this pandemic?

Fauci: Oh, you always could do things differently. One of the problems is that the knowledge, and the evolution of the knowledge, was a moving target. What we knew in April, we did not know in March. And what we knew in March, we did not know in February. And what we knew in February, we did not know in January. So, it would have been nice in January to know everything we now know. We would have done a lot of different things differently. That is for sure.

Barr: What were some of your fears throughout the pandemic?

Fauci: Well, I wouldn't say "fears," but it was constant surprises, like the emergence of variants and the different waves. We all thought we were going to get a big blast, and then as soon as the winter was over, we would be good to go and that would be it—it would be over. Here we are almost three years later, and we are still in the middle of it. I never, ever would have predicted that.

Barr: How have you kept your spirits high throughout these past two and a half years?

Fauci: Concentrate on your job and the fact that you could have a positive impact, and that kind of keeps your spirits up and your energy up.

Barr: What formative lessons from your upbringing as well as your infectious disease work on things like AIDS, Ebola, and Zika, did you draw on in dealing with COVID-19?

Fauci: I think my experience with HIV/AIDS—which was a brand-new emerging infection where there were so many things that evolved that we did not expect—put me in good stead to realize that there were going to be a lot of surprises with COVID. I believe my 41 years of experience with HIV as well as my experience with Ebola, Zika, pandemic flu, and the anthrax attacks all were very intense periods in my life, which actually prepared me very well for the intensity of COVID-19.

Barr: What have you been proud of during this period?

Fauci: Oh, I think that the fact that at the NIH we played a major, major role in the successful development of highly effective vaccines that have saved millions of lives. That is something that I and all my colleagues at NIH should feel very proud of.

Barr: Definitely. Is there a particular moment or situation that stands out for you these past two years?

Fauci: No, there are too many to mention, Gabrielle. [laughs]

Barr: Are there some that you would share?

Fauci: For example, the realization that we really, really had a very big problem. When we saw what was going on in January and February in Northern Italy when they were getting their hospital system overrun. That was a highly developed country with a very good medical system that was being brought to their knees by this outbreak. When I saw that happen, I knew the same thing could happen in the United States. That was a very sobering moment for me.

Barr: There's a lot of people at NIAID that are from Italy.

Fauci: Yeah. I had a lot of fellows who trained in my lab who went back to Italy and those were the ones that I communicated with that were telling me how terrible the situation was in Italy.

Barr: What do you hope your legacy will be in regard to the COVID-19 pandemic?

Fauci: Well, I hope people would realize that I gave it everything I had, 24/7 now for almost three years. As I have said before, I left it all on the field. I did not walk away from it.



Barr: Do you have any last things that you would want to say about your time at NIH? You have been here for decades in both your current role, and you started in 1968 as a fellow.

Fauci: Right. Well, it has been an amazing experience. I value so much the 54 years that I have been at the NIH and the 38 years that I have been the director of the institute. It was just a privilege—truly a privilege—to be able to be part of this extraordinary institution.

Barr: Thank you very much for all you have done, both with COVID and throughout this last half century.

Fauci: Thank you. It is good to be with you, Gabrielle. Thanks an awful lot for the opportunity.