# Pfizer's CEO thinks a vaccine-resistant COVID variant is 'likely'—but that's not as scary as it sounds

Albert Bourla talks about responding to mutant strains, managing the vaccine rollout, and getting stuck in the middle of the political crossfire. BY CLIFTON LEAF February 3, 2021 12:00 PM GMT+1

**MAN ON A MISSION: Albert Bourla, vet-turned-CEO of the Fortune 100 pharma company, has overseen the delivery of over 50 million doses of Pfizer's COVID-19 vaccine.**

Photograph by Mackenzie Stroh

## There are a slew of proven ways for constructing vaccines, but you

**chose to go with mRNA[1], a technology that had never before produced an approved vaccine. Why?**

I knew that we were working with mRNA in flu [through our partnership with German firm BioNTech]. We had adenoviruses that we continue to work with in making vaccines for other diseases. We had recombinant proteins, you name it. But my team [led by head of vaccine research Kathrin Jansen] went through each technology, and said our recommendation is to go with mRNA, which could be scaled up very quickly once it was developed. It's true that there had been no vaccine made before with mRNA technology—but if we are successful, then ours would be the first.

My team wanted to get started very fast. And BioNTech [CEO Ugur Sahin, who had reached out to Jansen in a March 1 phone call] also said they wanted to do it very fast. So we started investing, and they started sharing their data with us—without even a contract.

**Your day job, of course, is to find solutions at Pfizer, where you've been trying to jump-start growth. You've projected annual revenue growth will reach 6% soon. That's well above where the company has been for the last couple of years.[2] Are you still confident in that trajectory?**

I'm very confident now. And also, I want to say the projection is for "at least 6%" revenue growth. The 6% is not the ceiling, it's the floor. And I'm very confident—excluding anything coming from the COVID-19 vaccine—that the remaining segments of the business will deliver these numbers. And to that we need to add whatever the final impact of the COVID vaccine will be. We haven't released any projections for that—though I believe on revenues, we will be higher than $3 billion.

**The need for speed was one reason to go with an mRNA vaccine. Another benefit is that you can change the genetic recipe for the**

**vaccine on the fly—something that may be necessary as the virus continues to mutate and more variants emerge.**

Exactly. Speed was of the essence and flexibility was of the essence. This was exactly the reason why we've chosen this for flu.[3] Flu has the same characteristics. Every year is a different flu. So every year the vaccines that we're getting for flu are different from the year before. [With other technologies] each takes months to develop. The RNA vaccines could disrupt that, because you can do in weeks what you'd need months to do in the other cases.

**The current coronavirus variants that have emerged are causing alarm. How effective is Pfizer's vaccine against these mutant strains?**

We are quite confident right now that we can neutralize these variants. We have proved that in the lab—and this experiment that we did in our own labs has been already replicated in multiple labs in universities and hospitals. Right now we are covering both of the new variants [that have emerged in the U.K. and South Africa]. I think the fundamental question is, What are the chances that a new mutation that will not be covered by the vaccine emerges? Theoretically, it's a very possible scenario. If you protect a very big part of the population, and if there is a strain that emerges that can use this [vaccinated] pool of population to replicate while the current strains cannot, obviously this will overtake the original. So it's not a certainty, but it is now, I believe, a likely scenario. But that proves even more the case for an mRNA vaccine—because now you can very quickly develop a new version of the vaccine that either adds to the current immunogenicity or creates a very different one that can cover the new mutations as well.

**How quickly is "quickly"?**

That will depend on multiple factors. One of them, it is the regulatory

framework. But I believe we will be able within two months to have it. And, of course, we would still likely have to manufacture at risk.

**Speaking of risk, you made a second big bet not to take any government money to develop the vaccine, as some of your competitors did.**

The government said, "We can finance this." But when the offer came, I thought a little bit what would happen if we take the money because it was the easiest thing to take. I realized that if the government gives you money, there's no way that they will not want a seat at the table. "How are you going to do it?" they'll ask. "How will you use the money? Give us a report." Within a massive company like Pfizer, we have a lot of bureaucracy to deal with. I was betting that I would take control, so as the ultimate decision maker in the company I would waive all bureaucracy. My goal was to say, "You talk to me directly. I'm replacing all governing bodies. I'm making the decisions." But I couldn't do that if I was taking the government money. I knew that we'll never be able to make the impossible possible if we didn't do that. Keep in mind that we started much later than Moderna[4], for example. But also we didn't need the money. I'm sure Moderna needed it. Now, if we failed, was it going to be very painful? Absolutely. But if we failed, was that going to be the end of Pfizer? Absolutely not. This is why I was put in this position: to be able to take the right risk—not to be reckless, but also not to be conservative and not move when the world needs us.

> ***This is why I was put in this position: to be able to take the right risk... not to be conservative and not move when the world needs us.***

*Albert Bourla, CEO, Pfizer*

**For all the logistical feats you've pulled off[5], there has been widespread frustration with the vaccine rollout in general. What's gone wrong?**

Look, there are two phases. There is the phase that I was worried about a lot, where Pfizer is sending the vaccine to vaccination centers in every country that has asked. That is our responsibility and fortunately we were able to do that very difficult logistical step quite successfully. We were able to see almost 99.99%[6] successful shipments—on time without any issues with the quality, because we were monitoring the temperatures on every single box that we sent. But a lot of the countries, including the U.S., were not ready to distribute those vaccines. They didn't have enough capacity in the vaccination centers. I'm sure—and I hope—that all of them will get their act together. They will change their plans and they will be able to dramatically increase the vaccination rates. And then, if they do that, we may have a period that we are the bottleneck and we need to produce much more, and we are preparing for that. We announced recently that we are increasing our expected production this year from 1.3 billion to 2 billion doses.

## Everything is politics

**As complex as the task of making and distributing this novel vaccine has been, you've had to deal with something even more challenging over the past year: politics. That came the moment you suggested your vaccine might be available this past October and you found yourself at the center of a bruising presidential campaign fight.**

It was a whole different game—completely different than what I was expecting. And let me clarify something. The October timeline was the one I'd set in March with my team when I pushed them to go as fast as

they possibly could. I was thinking that October is the flu season—without even thinking, of course, that in November we have elections. Suddenly it became the biggest political issue. It was shocking when I heard the first presidential debate and COVID and the vaccine were being discussed in political rather than in scientific terms. This is when I made the statement the next day that some people want us to go faster, some people want us to do it slower. I'll tell you, we'll go at the speed of science. And so be it. And then, the vaccine ended up coming a little bit after the November election. And now, what for some had been "too early," for others became "too late." Well, what can we do? I tried hard to navigate this political minefield. And one of the reasons why we didn't take the government money in the first place was that. Because if you take governmental money, then everything that you do becomes even more politically charged.

**You called Johnson & Johnson CEO Alex Gorsky and discussed asking other leaders in the pharmaceutical industry to push back as a group on the politicization of the vaccine effort. What prompted that—and how did it play out?**

It was at a time when some were publicly accusing the FDA as being "deep state." I started getting very worried because the politicization of the potential successful vaccine had already started. And that had created a lot of confusion for people and a lot of doubts. People were wondering: Is this going to be the Trump vaccine or is it going to be a *real* vaccine—a scientific vaccine? And the only one who could be the arbitrator there—the one who could be the judge—was the FDA, which is renowned for its science and integrity all over the world. They are the agency of reference, indisputably. So I was worried that an attack on FDA was also an attack on the independence and scientific integrity of the vaccine effort itself. Alex Gorsky is a good friend, and we talk often on multiple topics—and so I raised this concern with him. I said I thought we needed to do something: that we needed to make a statement ourselves

that, no matter what, we will never cut corners—that we'll follow the FDA guidelines no matter how much pressure someone might put on us, political or otherwise. Immediately he said, "You are right, this is what we need to do." And then I said, "Why don't we write something?" And within the next day, I think, I sent him a version of a statement and he sent it back. Then I said, "We need everybody to sign." So we made a list of all the companies [in the industry], I took half and he took half. And then we started making phone calls. Everyone accepted immediately.

**There's a new administration in the White House and a new Congress. Sounds like a good time to push for some long-term solution on drug pricing—an issue that continues to dog your industry.**

Let me first say that I'm a very strong believer that reform is needed. The current status quo is not sustainable and it's not desirable. The vast majority of my peers are already in this column as well. Everybody says that we need to make changes. But those changes, I believe, have to have two fundamental pillars: They need to be pro-innovation and pro-patient. There is of course a major debate in the U.S. over drug pricing. But there are two different aspects to drug prices: One is the cost of medicines to the system, for example, to Medicare, the federal budget. The second is, what is the cost of medicines to individuals—the person who goes to the pharmacy and has to pay something out of his pocket? Those two are very different. The first one [how much the system is paying for medicines] represents 12% of the overall health care cost. So by definition, it cannot be the "big" problem, okay?

But when it comes to patients—the people who buy their medicines—this is by far their biggest challenge. Because right now, Americans are paying for their medicines as if they don't have insurance—even when they do. They pay a huge amount out-of-pocket. That needs to change. Now, to move costs out of the patient's hands, then someone has to pay, because

it’s not a zero sum. We are willing to take over a very big part of out-of-pocket costs for the patients right now. I don’t say—and I don’t think anyone would say—that it’s fair that we take all of it. But we are willing to take our fair share and even more. But this is where the money should go. I don’t think that the money should go to cover the black hole of federal budgets that will grow and grow. But in any case, we must find a solution and we must find it now—this year.

**How long do you see COVID as being a continued challenge for society—and what does that mean for Pfizer’s business?**

Look, you can never be certain—and still, for the time being when it comes to investors, we will treat the vaccine as separate item. So we will give visibility to our investors about our base business contribution, top line, and bottom line—and also the top line and bottom line for the COVID-19 business. Because it could be a one-off, two years, three years, something like that. But the truth is that a lot of indicators are telling me that it could be a forever bit of business, like we have for flu, and like we have for pneumococcal disease. And that’s not only because we may have to repeat [booster shots] periodically, for the current strains, but also because of the chance that we will have new mutants and variants coming out so that you will have to evolve your vaccines, as happens with flu. I don’t know if that’s going to be the case. What I do know is that we are preparing for this scenario. So we are making sure that we are building our capacity for the long term. We are making sure that we are refining our process—so if variants come out, we’ll be able to address them in a very quick manner (as I said, in six weeks or two months). And we are also building more transportation-friendly variations of the vaccine so that we can avoid the cold chain complication. Although it’s very successful, it’s still a complication and very expensive for us, by the way, because we assume the full cost of transporting the vaccine. If we can find a better solution, that will contribute significantly to the bottom line.

**Let's talk for a minute about flu. The quest for a "universal vaccine"—one that can neutralize whichever strain of flu emerges each season—has been eagerly sought for decades. Pfizer was working with BioNTech on developing an mRNA flu vaccine before the COVID crisis. What's the timetable for that?**

I hope much faster than our previous plan. Because now we have proven that we can make the impossible possible. Also, the truth is that, in the last nine months, we have accumulated scientific knowledge and expertise on the RNA technology that would have taken years to accumulate under normal circumstances. So I don't want to give a specific commitment date right now for a flu vaccine, but our plan is to bring it [to market] much, much faster than we normally would do. And the plan is exactly what you said. Right now, the flu vaccines, in many cases, have a 40% or 50% efficacy. Our aim is to bring a vaccine that will have more than 90% efficacy against flu. That would be a game changer. And we want to be able to do it very quickly.

**Will the mRNA platform play a role in individualized, targeted cancer drugs, given that cancer is a genetic disease? Presumably, the principle of creating individualized targeted medicines very quickly would apply there too.**

This is absolutely true. And in fact, most of the work pre-COVID of BioNTech was in the cancer field. I believe that the mRNA technology will open a lot of new avenues in cancer therapy.

**You began your professional career as a veterinarian[7] and now spend most of your time focused on human disease. Has studying animal health helped you see things in your current role that others might not?**

I believe everything that is a little bit out of the ordinary helps bring different perspectives. As you say, I'm a veterinarian and that lets me

understand the science so I can better communicate with our drug development teams. I also worked in the animal health group of Pfizer [since spun off as Zoetis], and when I moved to the human health side—11 years ago—I realized that Big Pharma, at the time, was very much brand focused. It was the brand that mattered. That was never the case in animal health. There, it was the customer who mattered—it was the owner and the dog; it was the veterinarian.

Also, I think coming from a small country like Greece—one with glorious history, but which in the current reality doesn't have a very big seat at the international table—has brought some perspective. You learn how to fight, [you know] it's not going to be easy. Being Jewish in a country where the Jewish population was almost exterminated during the Holocaust taught me to be adaptive, and to be much more flexible in society so you can survive. My mother was arrested and survived. My father was hiding and survived. But it was not the same with their families. So brothers, parents, they were exterminated. That gave me an identity.[8] The fact that in my career in Pfizer I lived in eight different cities in five different countries has also made me appreciate the power of diversity and how every culture is unique and brings things to the table. My own experience taught me to be very sensitive to that. All of that gave me perspectives that have helped me become who I am, and I think everything helped.

## Between the lines

**(1) Message received:** Unlike traditional vaccines that use part of a disabled or dead virus to elicit an immune response, these vaccines use messenger RNA to instruct cells to make a harmless protein associated with the virus—which, in turn, alerts immune-system defenders.

**(2) Annualized trailing five-year revenue growth:** Strong growth in Pfizer's biopharma business, the company notes, was offset by declining

revenues within its former Upjohn unit (recently spun off and combined with Mylan) and by a consumer healthcare joint venture with GSK in 2019.
***Bristol-Myers Squibb:*** 19.0%
***AbbVie:*** 13.2%
***Merck:*** 3.6%
***Johnson & Johnson:*** 3.3%
***Eli Lilly:*** 3.3%
***AstraZeneca:*** 0.7%
***Pfizer:*** 0.3%
(*Source: S&P Global*)

**(3) Dream team:** Before COVID-19, Pfizer and BioNTech were working on developing a flu vaccine. "Right now, flu vaccines, in many cases, have less than a 50% efficacy," says Bourla. With the success of their coronavirus vaccine, he expects the partners "to bring a vaccine that will have almost ultimate efficacy of more than 90% against the flu."

**(4) Booster benefactors:** Several U.S. agencies helped Moderna, a much smaller company than Pfizer, finance the development of its mRNA-based coronavirus vaccine. The Moderna vaccine received emergency use authorization from the FDA one week after Pfizer's.

**(5) From lab to logistics:** Pfizer has delivered more than 50 million doses to more than 10,000 vaccination points around the world.

**(6) By the dashboard light:** The figure is not an estimate. Pfizer tracks its actual success rate in shipping vaccine through a real-time dashboard that monitors the location (by GPS) and temperature of each box.

**(7) Animal spirits:** Bourla, who holds a DVM and a Ph.D., practiced veterinary obstetrics at a university hospital in Greece for five years, specializing in in vitro fertilization, artificial insemination, and embryo transfer.

**(8) Greek tragedy:** “In my city of Thessaloniki,” says Bourla, “there were 55,000 Jews and only 2,000 survived the Holocaust. And then actually many of them left. So eventually, when I grew up, we had a community of 700 or 800 people in a city where we once made up half of the population.”

*This article appears in the February/March 2021 issue of* Fortune *with the headline, "The Conversation: Albert Bourla."*



## More stories from *Fortune*'s print edition:

- Your father’s stock market is never coming back
- Meet the woman running the highest-ranked Fortune 500 company ever to be led by a female CEO
- Inside the ad, ad, ad, ad world of YouTube
- How COVID-19 and a “Great Reimagining” reshaped the Fortune 500
- Investors want Exxon Mobil to change. Is it ready?