

Editors at O Globo  
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QUESTION:

***In social media and parts of the press, the new strain initially isolated in the UK is being portrayed as 'a new pandemic within the pandemic,' which would require different approaches and different vaccines. Could you please comment on these statements and clarify what we already know about it and how worried should we be about this specific new strain?***

ANSWER

We have known since SARS-COV2 emerged a year ago that as an RNA virus it would mutate, evolve and change, even more so as it spread around the world and infected millions of people. Many of these new strains will not confer any biological or epidemiological advantage to the virus, but some will. We now know that two different strains, that were first identified in UK and South Africa in particular are more transmissible and spread rapidly in the community. They do not seem to cause more severe illness, but a more transmissible virus which causes the same severity can and will have a profound impact as now being seen in UK and South Africa. We must take these strains very seriously. There is no evidence that these two strains will evade the immunity after natural infection or after vaccination. But the South African strain does seem to evade some of the monoclonal antibodies used for treatment. This is a very serious warning and reminder that we must have humility in the face of viral evolution. All monoclonal antibodies and vaccines currently target one protein on the virus, the spike protein, that is a major risk. The more viruses circulating globally, the greater chance that a new strain will emerge that may evade the diagnostic tests, the treatments and the vaccines. That has not happened yet, but we must work on the assumption that it can happen in the future and we must prepare now. We are playing with fire. We must reduce the amount of virus circulating globally. We need to support global efforts to monitor the viruses that are circulating, we need to share that information and equitably share the benefits of that sharing. We need to develop tests, treatments and vaccines that don't just target the spike protein, but are more broadly based and there is a manufacturing and regulatory pathway to allow these new approaches to be available very quickly and equitably if and when the virus changes. There will be many more strains. This is a human endemic infection it is not going away. As we deal with the current crisis, we must also prepare for the future, be humble and expect the unexpected and move from reactive to proactive to get ahead of the virus and this pandemic.

***In your opinion, which are the best ways to deal with the anti-vaccination movements and the negationist governments?***

Through transparency, engagement, understanding of what the drivers of these views are. There is not one 'anti-vaccine movement'. There are many people with very legitimate concerns and questions. We should appreciate the challenge, have respect and be willing to take the time to explain. With people, not to people.

I also believe there is an opportunity to improve the teaching of science, of ethics, and social justice in schools and universities. These issues have been at the forefront of public debate and discussion in this pandemic and have engaged and involved people everywhere. There is an opportunity to retain that interest and engagement and build on it so people have the information on which to make decisions. I believe we will have a cultural and scientific renaissance as we come through COVID. That starts with education and transparency.

We have flirted with populisms and nationalism over the last decade. It has been clear that populism and nationalism cannot provide solutions to the challenges of the 21<sup>st</sup> Century, from pandemics to climate change, to inequality or access to clean water or energy.

Poor governance, anti-science, nationlistic and populist governments around the world have been shown to be incapable of protecting their citizens at a time of crisis. Countries with strong governance, those who have invested in public services over many years, have made policy decisions based on good evidence and science and have a strong social contract between government and citizens and within communities have fared better. Independent of how rich they are. There are lessons from this which will be critical throughout this century as we face other challenges.

***From a public health perspective, how important are the reported efficacy differences in preventing symptomatic disease between the various vaccines?***

All of the vaccines now being deployed and those in late-stage development have efficacy against symptomatic disease that is beyond what many of us dared dream of a year ago when we started on this path. There clearly is immunity to this virus and the vaccines have been able to provide incredible efficacy. Science has been truly remarkable in 2020. But vaccine efficacy is only one element. What matters is not a vaccine, or a vaccine efficacy, what matters is making vaccines available to everyone, to offer and deliver vaccinations, equitably and universally independent of the ability to pay. This is a scientific imperative, none of us are safe until we are all safe. It is also a moral imperative. Investment in vaccines, diagnostics and treatments are the only way out of this awful pandemic. It would be the greatest investment humanity ever made.

***Although the numbers are small, according to the data made public so far, all vaccines appear to be equally effective in protecting against severe Covid-19. In your opinion, what is the importance, if any, of this observation for the evaluation of both the vaccine efficacy and to stimulate their uptake by the general population?***

This is very important, too many people are getting very sick and tragically far too many people are dying. I do believe we all want the vaccines to stop us getting sick and dying. That is the most important first goal. But we must also stop transmission. An ideal vaccine would stop transmission and stop people getting sick. We know the first-generation vaccines are safe, we know they stop people getting sick and needing to go to hospital. We do not know yet whether they stop transmission. We must do the studies, the science, to work this out. We have to reduce transmission, reduce the amount of virus circulating in the world. The more virus, the greater the chance of new strains emerging that may evade tests, treatments and vaccines.

***How satisfied are you that these vaccines are as safe as other vaccines that are part of the normal/routine vaccination calendar, particularly in reference to severe allergic reactions?***

I am satisfied that these vaccines are safe. I have not yet been vaccinated as I am not in a priority group, but as soon as any of the licensed vaccines are offered to me, I will have it. And I will suggest to my family that they are all vaccinated. The vaccines have rightly been developed very quickly, within one year an unprecedented achievement. But I do not believe that corners have been cut or there has been any shortcuts. Processes have been sped up in a very good way, in a way that I hope we learn from in the future. Safety has always been the number one issue.

***According to data recently published in the NEJM about the Pfizer vaccine, protection starts less than two weeks after the first dose. The same seems to occur with the other vaccines. Thus, in your***

***opinion, which would be the best strategy: to postpone the second dose for a few weeks (in the case of vaccines where this has not been tested) and thus rapidly vaccinate more people or to keep to the schedules that have been tested?***

I have argued in the UK and am in favour of offering as many people their first dose of the vaccine. I believe it will be better for individual and for public health to vaccinate twice as many people with one dose than half that number with two doses. But we must collect the data and have the evidence as we do this. I am in favour of randomizing the timing of the second dose, some people have the second dose at 1 month, others at 3 months, and some at 6 months. We do not know yet what the best schedule is and when we are not sure we should do the studies to be sure. And this really matters. We do not know how to get the best protection, how to prevent new strains, how to make sure we get the longest period of immunity following vaccination. We can all give an opinion, but it is just that, an opinion. We are not sure and when that is true the only responsible thing to do is to do the studies and gain the data.

***Given that it is unlikely that data will be available in the foreseeable future, how do you see the possibility of "mixing vaccines", i.e., a first dose of one, a second of another? Could this be a safe and efficacious way to guarantee that more people are vaccinated faster or is it an unnecessary risk?***

This is also a very important question and of global significance. We do not know. We need to know. I believe we urgently need studies of these mixed vaccine schedules. Over the coming years there will be issues of vaccine supply, many people will not remember which vaccine they had if further boosters are needed. We need to understand whether mixing the order of vaccines provides immune protection against SARS-COV2, in all ages, in all communities and for prolonged protection. These studies have not been done yet and must be done.

***Why is it so difficult to convince so many people to get a vaccine that can save lives when they are witnessing a pandemic which is killing so many?***

In many parts of the world infectious diseases have become less prevalent. In my parent's generation, in the pre-vaccine era, diseases like polio, measles, diphtheria, tetanus, were very common. Every family was affected, every family knew people who died or were left living with disability as a result of these and other infectious diseases. Within one generation and as a result of incredible scientific progress in vaccines, antibiotics and public health many of these diseases are no longer the scourge of my parents. This has been one of humanities greatest achievements. But those who never experienced the devastation of these infectious diseases understandably find it difficult to imagine what it is like to witness a world of one generation ago. There is also a growing mistrust of authority and in some parts of the world a mistrust of experts or of data and evidence. I remain optimistic. I believe the evidence for the very positive impact of vaccinations will be persuasive, as people become more confident of their safety, people can see the tide of the epidemic changing and as we start to get our lives back that there will be very broad support for vaccines and vaccination. But we must not take that for granted and we must remember this infection is not going away, it is part of humanity now and will continue to circulate. We will probably need to keep up vaccination programmes for many years to come. We need to make sure we are transparent and honest about that. There is no one shot that will end this pandemic and we all need the support of people and their communities.

***Are the vaccines as efficacious for reinfections as they are for primary infections?***

We simply do not know. Again, the only responsible thing to do is to do the studies, gather the data and the evidence and make that information available to everyone.

***In the most optimistic scenario, when do you think Covax will have enough vaccines available to distribute to all participant countries?***

We must make the vaccines available in 2021 to those at greatest risk, vulnerable people and health care workers. Politicians around the world have spoken eloquently with warm words with this commitment. Now they, and we, must deliver it. Warm words are wonderful. Delivering on them is what matters. The world faces a pivotal moment. Do we come together and make sure there is equitable, fair and universal access to tests, treatments, vaccines, oxygen, PPE and accessible health systems or do we only make these available to those who can afford them? We face a choice. A choice that will define the 21<sup>st</sup> Century. It is possible, it is achievable. It is up to all of us to make it happen. If not us then who?

***The editors insisted on this one: "how long do you think vaccine-induced immunity will last?"***

I hope a long time! But I do not know. As a theme running through these comments, this is a question we cannot answer today. We must do the research that allows us to honestly answer it. It is such an important question, one we can answer, but at the moment we do not have the answers. Research can give us the answers. We must support that research.