

Dr. Peter Hotez

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Marianne O'Hare: Welcome to Conversations on health care. This week we welcome renowned vaccine and infectious disease expert, Dr. Peter Hotez on the Omicron sub variant driven COVID surge, vaccine efficacy, and confronting the anti-science movement.

Dr. Peter Hotez: I worry that this vaccine resistance refusal is not going to halt at COVID-19 vaccinations but is going to become more universal phenomenon on childhood vaccinations.

Marianne O'Hare: Lori Robertson checks in from FactCheck.org and we end with a bright idea improving health and well being in everyday lives. Now, here are your hosts Mark Masselli and Margaret Flinter.

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Mark Masselli: Our guest is a renowned vaccine developer and pediatric infectious disease expert, who has been nominated for the Nobel Peace Prize, but now he's battling his own case of breakthrough COVID.

Margaret Flinter: Dr. Peter Hotez is acclaimed for helping to create a patent free COVID-19 vaccine. It's been called the world's vaccine. Dr. Hotez joins us from Texas Children's Hospital Center for Vaccine Development at the Baylor College of Medicine.

Mark Masselli: Dr. Hotez, we saw you at the beginning of the year and thank you for being back. But we understand you're testing positive for COVID, nearly 60% of Americans have caught the virus, including most children according to the CDC. How are you feeling and tell us about your treatment?

Dr. Peter Hotez: Well, I'm feeling good. I'm on Paxlovid and I think one of the reasons I'm doing well is because I'm fully vaccinated and double boosted so that's the difference between being in a hospital bed and speaking to you on Zoom comparing bow ties and so doing quite well which I attribute primarily to the vaccination although probably the Paxlovid is helping well, so a little bit of headache and sore throat and some congestion, but overall doing pretty well, and which I attribute to the modern miracles of science.

Mark Masselli: We're glad to hear that.

Margaret Flinter: Absolutely. And Dr. Hotez thanks for joining us in the middle of all this, and I will say I'm very glad we're living in 2022 now and not 2020 pre-vaccine pre-Paxlovid, but there's op-ed in Stat from a primary care doctor that says, well, there was only a single trial for the drug that included only unvaccinated people. This primary care doctor says he's left guessing if it'll help vaccinated people like you. What are your thoughts on that subject?

Dr. Peter Hotez

Dr. Peter Hotez: Well, it should, it should help vaccinated individuals. I'm wondering if, you know, sometimes when you're trying to release for emergency use authorization, it's sometimes difficult to get all of the I's dotted and T's crossed when you're moving quickly. But I think it's a good drug. The evidence was pretty solid. There's no reason why I believe it would not work well. And I think the bigger issue is given this BA.2.12 the approval and all the clinical trials were done before BA.2.12 hit and maybe that's the game changer. That the amount of virus and virus replication is much higher and so potentially we need a longer course of treatment than five days because there's right now a number of relapses. In other words, you take that five day course, you're feeling better, you finish, you test negative, and then a number of people are now turning positive again, and having rebound symptoms. In some cases, the rebound symptoms are worse than the original. And that was seen about 1% to 2% of the time in the clinical trials. Anecdotally, it's happening at a much higher frequency now. So I understand the National Institutes of Health and the Centers for Disease Control and the Food Drug Administration are all looking into it right now and hopefully soon we'll have some answers there.

Mark Masselli: It seems to be understandable on emergency use authorization but we don't seem to have a lot of data from the CDC about what are we seeing in terms of who's in that hospital, more likely people who haven't been vaccinated. We're just not seeing a lot of information on strategies to avoid the vaccine, what's the real chance outdoors, can I go inside with a mask and have dinner if I just keep my mask on, and it seems like we have a paucity of data on people's experience from the CDC. What's your thought about what's lacking here or is this the best we can get?

Dr. Peter Hotez: I think what's missing is we don't give accurate and timely advice based on community levels of transmission. And that's what it comes down to whether or not you can go to an indoor gathering safely or eat in a restaurant safely. It very much depends, I think, on levels of community transmission. So when we were in nadir or when we're in between waves, I think there's a lot more we can do we have a lot more flexibility than when you're starting to see a big wave accelerate. That's point one. So for instance, when you're on the upswing of the Omicron wave, which was the worst in terms of number of new cases, we saw lots of people getting infected even with breakthrough infection, although those were not as severe as opposed to on the downside of things. And I think the same is true right now for this BA.2.12 current wave. When it started, I was kind of hopeful that there will be some pre-existing immunity with Omicron, as well as the people who were vaccinated, so it'd be more than a bump than a wave. And indeed, you didn't see the numbers going up very precipitously. So I was starting to feel comfortable. But I think what happened was, so many people are doing home testing and are

positive and are not registering with the Centers for Disease Control, that we're missing that wave. Throughout this pandemic, we've underestimated the number of new cases, generally by a factor of four or five. I think what's happening now is they're probably being underestimated by a factor 10 or maybe more, because of that underreporting. So the official numbers are about 100,000 new cases a day, which is still pretty high, but most likely, that's more like a million cases a day. So I think that's point one.

I think point two, the CDC, you know, was aware of the importance of getting people to understand levels of community transmission. And they put out this hybrid map, a hybrid map of levels of community transmission together with hospitalizations. And because the hospitalizations are not going up that much, the map looks like what I call the field of green, you know, meaning that it's pretty much safe across the country, except for some areas of Maine and up in the Northeast. I think that was misleading. I think what they should have done is focused exclusively on maps of community transmission, not factoring in the hospitalization, so people could accurately assess their risk. And when you do that, well, everything's lit up in red across the Northeast, from the mid Atlantic states up into the New England states and then where you are and then into Michigan and Minnesota and then in California and the Southwest. And then we get a much more accurate picture of what's going on. The bottom line is the level of transmission is so high right now, if you go to any indoor event without a mask, there's a good chance you're going to get infection or breakthrough infection. And I think there could have been a little more transparency about that.

Margaret Flinter: Well, Dr. Hotez, one I want to thank you for having been such a steady and informed voice for us over these last couple of years and two I think if I went back and looked at all of our conversations I would be left with If I only knew then what we know now this constant kind of wave of new infection has been one of the hardest things for people to understand. But with the vaccines, what we consistently have said to people is the chance of you being seriously ill or being hospitalized is vastly reduced if you're vaccinated. And then we added Paxlovid as a---

Dr. Peter Hotez: Well, actually I'd say vaccinated and boosted.

Margaret Flinter: Vax – yes, I have to admit, remember to get that, fully vaccinated and boosted.

Dr. Peter Hotez: Yeah, we still have that very poor messaging. I don't understand, we have to stop calling fully vaccinated fully vaccinated, because it's not. It's two doses and we are seeing a lot of hospitalizations among those individuals, especially if they're a few months out. So it really depends how far out you are from your last dose and I think we need to

emphasize that more. Even after the third dose, with Omicron what we saw is after four or five months, the protection against hospitalizations is around 78% against emergency room visits, 66% still good, but not nearly as good as it was, and hence the reason for the recommendation of the second booster. And we're not pumping out that kind of information enough. Only about 30% of the U.S. population has gotten their first booster and now when you look at the second booster, it's me and a few others, right?

Margaret Flintner: Three of us.

Dr. Peter Hotez: Yeah, the three of us. So we're all second boosted. But I think we've not really gotten the urgency of doing that out. And then I think we also need a longer term plan for the nation because what happens as the immunity wanes from the second booster again it's still going to hold up, okay against hospitalizations and emergency room visits, but not as good as it could. So, is this plan now that we continuously boost every few months knowing that the American people are just not accepting it or do we look at a larger vaccine strategy for the nation? I'm of the opinion that maybe we need to look past mRNA vaccines and look at some heterologous boosting with protein based vaccines in order to give more robust, more durable protection, because what you really want is you want to keep this up for four or five years if you can, and that's what happens with other vaccines. I think what we don't know is, is there something about mRNA, is there something about this unique Omicron or BA.2.12 variant that's not holding up as well. All that needs to be looked at and I've recommended to the White House to really hold a vaccine summit of experts to kind of track it.

Mark Masselli: Well, is there anybody doing those types of tests now? Is there any trials going on exploring this because there also seems to be sort of a black hole here in terms of information about other vaccines that have been developed and where they are in trials right now. It's a mystery. I'm not sure why all this is a mystery.

Dr. Peter Hotez: Yeah, we're doing this with our vaccine in India, but there's no mRNA vaccine in India. So we're looking at booster studies with the AstraZeneca vaccine, followed by our vaccine or the Chinese inactivated virus vaccine. But I think there needs to be a larger study looking at mRNA, followed by a number of other newly available vaccines that have come online.

Mark Masselli: What about the India results? 30 million children have received the vaccine, you helped develop that, what type of impact are you hearing about it on the ground?

Dr. Peter Hotez: It seems to be well accepted. It's got a great safety profile. We're not seeing the myocarditis, which is great. And you'd expect the safety

profile to be pretty good because it's similar to the technology used to make the recombinant Hepatitis B vaccine that's been around for decades and that's one of the best safety profiles out there. So we're quite pleased. Now 30 million have gotten the first dose, about 10 million or so gotten the second dose, that's in the 12 to 14 year olds. We are waiting for the approval on the 5 to 11 year olds, as well as a booster for adults. And we're also waiting for the green light from the World Health Organization to release this for emergency use listing globally, which will also make a big difference.

Margaret Flinter: That is exciting news. But we're seeing such vaccine hesitancy here and we wonder do you see this kind of vaccine hesitancy in other countries the way we're seeing it here or is there a different role message communication about public health and what you need to do in other countries than here in the U.S.?

Dr. Peter Hotez: Well, the U.S. vaccine refusal or resistance has some unique features to it and that is it's much more highly politicized. And this started about seven or eight years ago, even before the pandemic with this health freedom movement that says you can't tell us what to do about vaccines. And then with COVID-19 groups, especially in the more conservative states and Texas and the Southern states began to see vaccine resistance or defiance as a form of allegiance to these kinds of political leanings. It makes absolutely no sense. And it's so self defeating. So I'm quite concerned about that, that that's what's happening. And now it's spilling over into other pediatric vaccines as well. And so I worry that this vaccine resistance refusal is not going to halt COVID-19 vaccinations, but it's going to become more universal phenomenon on childhood vaccination. So I'm worried for the future that we've not really been able to contain the anti-vaccine activism and sentiments very well and so this is going to continue to accelerate.

Mark Masselli: And it's roiling the political environment too obviously at a time when masking should be taking place indoors, we're seeing politicians sort of back off from taking those actions. Certainly we'd like to hear your thoughts on that. But maybe also some thoughts on how effective masking is if it's an N-95 and worn properly. And then if I'm outdoors, am I pretty safe outdoors, any type of transmission that happens outdoors?

Dr. Peter Hotez: Well, if you're outdoors in a relatively un-crowded area, it's okay. If you're outdoors at Fenway Park and it's on a Sunday afternoon and completely packed, that's a different story. But that's a little bit unusual. Generally speaking, if you're outdoors, you don't necessarily need a mask provided there is a really low population density where you are. Remember the mask work both ways. It helps if you have a mask on to reduce the likelihood of inhaling via aerosol the COVID-19

virus, but it works especially well if the person next to you has a mask on and is not exhaling COVID-19 virus. So the efficiency of masks goes up dramatically. There's a synergy when everyone has a mask on, both those who are releasing COVID-19 particles and those who are inhaling it. And that's what we're missing now with so few people masked.

Margaret Flinter: Dr. Hotez, the second global COVID-19 summit was recently held and resulted in about \$3 billion more in new financial commitments. Do you see the funds going to the right places and the right causes from your perspective? Were you satisfied with how that all came down?

Dr. Peter Hotez: Well, just having the acknowledgement that this is a global crisis and recognizing that these are our next variants of concern are arising is really important. I think by being so slow to vaccinate in the African countries and South Asia and Latin America early on, we missed an opportunity to prevent that. Now we're trying to play catch up, you know, that also allowed the anti-vaccine groups to move in. So you're starting to see some of those doses go unused as well. And that's why we're hopeful for our vaccine, because it's might be better accepted, because it's a technology that parents have already used for their kids for decades, similar to the recombinant Hepatitis B vaccine. So I do think it'll help. We do have to make more vaccines accessible. But I think getting more vaccine doses donated is a critically important step, but it's not the only step. We've got to figure out a way to counter this very aggressive vaccine hesitancy that it really accelerated in the U.S. during this time of COVID-19 but now it's starting to contaminate low and middle income countries. So I would have liked to see a little more language around that in terms of what they're planning on doing.

Mark Masselli: You know, we've moved away from having conversations about new variants that are out there. But what are you seeing out there and this sub variant is one that's spreading like wildfire across the country, but anything new on the horizon that you're concerned about?

Dr. Peter Hotez: Well, I think I'm hoping that will start to go down as we hit and go into June, and then the question is, what's next. You know, in South Africa, there is now another variation on the theme called BA.4 BA.5, will that accelerate, I think that's one of the things I'm looking at. I'm also a little worried about later in the summer and into the early fall because historically that's when we saw a variance of concern out of Texas and the Southern United States within 2020 and 2021. So I have to believe in 2022, we will still be vulnerable to that. So the big questions are when BA.2 goes down, when if BA.4 BA.5 have a role in the United States at all, and then moving in later in the summer and fall, are we vulnerable for variant TBD-To Be Determined about that, and I don't think we really know but because we're not doing a great

vaccinating the world that's a concern and then over the winter as well. So my initial hope was that 2022 would be the year where the pandemic winds down. It doesn't look that way. I think we have to keep our tray tables locked in the upright position and our seats forward and seat belts snugly fastened around our waist, at least for the rest of this year and then maybe 2023 will be the year.

Margaret Flinter: Dr. Hotez looking forward the White House has suggested that we could see 100 million infections this fall. You have stated that 1 million American deaths, which did get a lot of attention in the Times and other places recently due to COVID was the choice. Do you think the country has accepted that this was in fact a choice that we made and that we're accepting infections this high in our future or do you think the country thinks that we're still prepared to fight this?

Dr. Peter Hotez: I don't think we've had a good accounting for fact that, you know, after May one last year when the Biden White House announced that anyone who wants to get a vaccine could get vaccinated, the fact that we still had two big waves of death with Delta and Omicron, including 200,000 Americans who refused to get vaccinated who lost their lives. That was an unforced error that was totally unnecessary. So we haven't had that accounting of, you know, we still call it misinformation or disinformation. What it is, is anti-vaccine, anti-science aggression, and it came from Members of the House Freedom Caucus and the U.S. Congress, it came from those ample anti-vaccine sentiments were amplified nightly on Fox News, and we've never really had that truth and reconciliation that those lives did not have to be lost. And I think that I'd like to see us come to terms with and that's a hard conversation to have, right? Especially if you're a scientist because all of my training as a physician scientists is you're not supposed to talk about Republicans and Democrats and Liberals or Conservatives, we are supposed to be beyond all that. I don't know how you get past and let you have the discussion and it's been well documented now by the New York Times and Axios and the Kaiser Family Foundation, that the vaccine refusal and deaths occurred along a partisan divide and yet we're afraid to talk about it because talking about politics is considered impolite in this kind of discussion at best or we get accused ourselves of politicizing this when I'm really doing it to save lives.

Everyone's entitled to their conservative views, even extreme conservative views but don't adopt this one. And so trying to thread that needle I think is a tough conversation to have. I think the other tough conversation to have is around long COVID. In some ways the million deaths is just the beginning. We're looking at a whole generation potentially of Americans who, especially among the unvaccinated because vaccination seems to reduce your risk of long COVID, who are suffering from respiratory insufficiency and heart

palpitations and neurocognitive decline and gray matter brain degeneration because of this, how do we handle that as a nation and the fact that our health systems are not as strong as we'd like them to be and now you're going to throw in literally millions of Americans with long COVID and how do our health systems cope with that, how do we manage this at the insurance level and managing people who are going to take early retirement? Now because of disability or who have to leave the workforce one reason or another, that's going to be the next big thing that we're not even beginning to have that discussion.

Mark Masselli: Yeah. And clearly the health system is not equipped to handle I think long COVID and another thing it might not be equipped to talk about or be ready to address. What are your thoughts about the likelihood of another pandemic and our readiness?

Dr. Peter Hotez: Well, you know, we've had SARS in 2002. We had MERS in 2012. COVID-19 was the worst of all, but we may have another big Coronavirus pandemic because and exactly why we're seeing these Coronavirus waves? Is it because of these originate from bats, is it deforestation, or are we aggressive urbanization encroaching onto animal habitats, is that the basis for the Ebola epidemics that we've seen in Democratic Republic of Congo or in West Africa? I think, you know, we need a better global system in place, especially around this concept of One Health that is diseases transmitted from animals to humans, which seem to be accounting for some of our worst epidemics, which includes also Nipah virus, as I said, Ebola and also now this Monkeypox, which I don't think this is going to go too far. But that's another illness that's transmitted from animals to humans. And as we continue to take down sections of our rainforest, people are coming into contact with animals now for the first time ever. More humans live in urban environments than rural environments. And then climate change and I have written about this in my last book called Preventing the Next Pandemic, all of the big social determinants together with climate change are some of the big drivers now.

Margaret Flinter: Well, Dr. Hotez, we wish you well, as always, thank you for joining us today and thank you all so to our audience for being here. And remember, you can learn more about Conversations on Health Care. Sign up for our updates by going to www.chcradio.com. Dr. Hotez, thanks so much.

Dr. Peter Hotez: Thanks for having me.

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Mark Masselli: At Conversations on Health Care we want our audience to be truly in the know when it comes to the facts about healthcare reform and

policy. Lori Robertson is an award winning journalist and Managing Editor of FactCheck.org, a nonpartisan, nonprofit consumer advocate for voters that aim to reduce the level of deception in U.S. Politics. Lori, what have you got for us this week?

Lori Robertson: A string of unexplained hepatitis cases in children has been reported in the U.S. and other countries. The cause is not yet known, but the top suspect so far is a strain of adenovirus. Contrary to some social media posts there is no evidence that COVID-19 vaccination is involved. Most of the children are too young to even qualify for the vaccine. In April, the Centers for Disease Control and Prevention and the World Health Organization issued alerts about a number of unusual severe hepatitis cases in children due to an unknown cause. Across the globe, around 170 cases had been identified as of late April. Hepatitis is often associated with several well known hepatitis viruses, but the condition itself refers to inflammation of the liver, which could be due to a variety of causes.

Health authorities are still investigating to understand what is causing the rare hepatitis in these children. Many but not all of the kids have tested positive for adenovirus, the adenovirus family which typically cause mild illness in healthy children. Most of the affected children have not been vaccinated for COVID 19, so there is no indication that COVID-19 vaccination could be the cause. In the U.S. the first reports of unusual hepatitis in children occurred in Alabama between October and February. Nine children were treated in the hospital for severe hepatitis. Two kids needed liver transplants. All tested negative for hepatitis viruses and SARS-CoV-2, but they were positive for adenovirus. Physicians at the University of Alabama said that parents do not need to panic as the cases are very rare, but people should seek medical attention if a child shows signs of liver disease. The CDC is now investigating 109 cases among previously healthy children, including five deaths that occurred in the U.S. over the past seven months. Since so many of the children have tested positive for an adenovirus, many investigators consider the virus the top suspect the cause is still very much an open question.

And that's my fact check for this week. I'm Lori Robertson, Managing Editor of FactCheck.org.

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Margaret Flinter: FactCheck.org is committed to factual accuracy from the country's major political players and is a project of the Annenberg Public Policy Center at the University of Pennsylvania. If you have a fact that you'd like checked, e-mail us at www.chcradio.com, we'll have FactCheck.org's Lori Robertson check it out for you here on Conversations on Health Care.

Dr. Peter Hotez

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Margaret Flinter: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. It's a known fact that the current generation of American children is more obese than any previous generation and at a Washington DC Community Health Center Unity Health Care, a pediatrician was in a quandary over how to tackle this growing health scourge. He began with a unique solution targeted to a teen patient whose body mass index or BMI had already landed her in the obese category. What he did was write a prescription for getting off the bus one stop earlier on her way to school, which made her walk the equivalent of one mile a day. Dr. Robert Zarr of Unity Community Health Center understood that without motivation to move more kids just might not do it. The patient complied with the prescription and has moved from the obese down to the overweight category, certainly an improvement. He then decided to expand this program by working with the D.C. Parks Department mapping out all the potential walks and play area kids have within the city's parks, mapping 380 of them so far.

Dr. Robert Zarr: How to get there, parking, is parking available, if someone's going to drive, bike racks, there's a section on pets, park safety---

Margaret Flinter: Dr. Zarr writes park prescriptions on a special prescription pad in English and Spanish with the words Rx for outdoor activity and a schedule slot that ask when and where will you play outside this week.

Dr. Robert Zarr: I like to listen and find out what it is my patients like to do. And then gauge the parks I prescribe based on their interests based on the things they're willing to do.

Margaret Flinter: With some 40% of his patient population grappling with overweight or obesity, he wants to make the prescription for outdoor activity adaptable for all of his patients and adaptable for pediatricians around the country. And he'd like to be able to track his patients' activities in the parks. Rx for outdoor activity, partnering clinicians, park administrators, patients and families to move more, yielding fitter healthier young people, now that's a bright idea.

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Mark Masselli: You've been listening to Conversations on Health Care. I'm Mark Masselli.

Margaret Flinter: And I'm Margaret Flinter.

Mark Masselli: Peace and Health

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Dr. Peter Hotez

Marianne O'Hare: Conversations on Health Care is recorded at WESU at Wesleyan University, streaming live at www.chcradio.com, iTunes, or wherever you listen to podcasts. If you have comments, please e-mail us at www.chcradio@chc1.com or find us on Facebook or Twitter. We love hearing from you. This show is brought to you by the Community Health Center.

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