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BOSTON UNIVERSITY PUBLIC HEALTH CONVERSATION
VACCINE HESITANCY: PAST, PRESENT, AND FUTURE
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>> ADNAN HYDER: Good afternoon, folks. Welcome to this Public Health Conversation. My name is Adnan Hyder. I serve as the Dean of the Boston University School of Public Health, and it is my privilege and honor to welcome all of you to this amazing conversation that we are about to have. Today, we're going to talk about Vaccine Hesitancy: Past, Present, and Future, and I want to thank the Dean's Office, as well as our members of our Communications team for making this possible.

All of you -- and there's a tremendous interest in this conversation -- we have over 300 participants already -- will recognize two things about this topic: First, that it has always been an important aspect of public health, which is, how do we use the public health interventions of vaccines to prevent disease and save the stream of death and disability from particular infectious diseases, specifically those that affected children, for example, over the past 50-60 years. And internal hesitancy and questioning has always been the norm, where you meet every single individual where they are and have a dialogue about its value.

But in recent times, of course, the external threats to this notion of vaccination have been enhanced and increased, and in fact, to some degree, what we call the political determinants of this issue are now at the forefront, and that's why we felt that it was incredibly important to have a conversation around this topic. And I'm so delighted and honored that some of the leading experts in this country are going to be talking to us about this particular issue, and I'm sure they'll delve into the political, ethical, social, and cultural aspects of this problem.

I'm also honored and delighted that moderating today's discussion is Dr. Nahid Bhadelia. Dr. Bhadelia is the Founding Director of the Boston University Center on Emerging Infectious Diseases. She's a board-certified ID doctor, and therefore, has real-world experience. She is also the Co-founder of something called the Biothreats Emergence, Analysis and Communications Network, or BEACON, that really is at the forefront of outbreak surveillance investigations. And obviously, when we have

unvaccinated populations, outbreaks are at higher risk of occurring.

I can say a lot more about Dr. Bhadelia, but I'm sure that she wants to get into the conversation. I'm honored that she is a colleague of ours and a leading light here at BU. Thank you, Dr. Bhadelia, for being here today, and thank you for moderating this conversation for us. Over to you.

>> NAHID BHADELIA: Thank you, Dean Hyder. Thank you for that introduction and for the School of Public Health for co-sponsoring this with the BU Center on Emerging and Infectious Diseases. As you mentioned, I'm an infectious diseases physician, and for me, this has been -- vaccines have been not just an important part of the work that I do, but an important part of how all of us understand preventive medicine, actually public health impact in our society, and they've made immense contributions to not just extending our lifespans and improving our quality of life, but also reducing the health and societal impacts of preventable and devastating infections.

A CDC study showed that here in the U.S. alone, vaccinating kids between 1994 and 2023 have allowed us to save 1.1 million lives and save about $540 billion by preventing illnesses and costly hospitalizations, but they have become a victim of their own success. And what we're seeing is just historic drops in parental exemptions from childhood vaccinations. After almost 20 years since the elimination, measles outbreaks are at an all-time high. We've seen almost 1600 cases across 44 outbreaks in this year alone, and we're only starting October. And we're seeing similar trends in other vaccine-preventable infections here in the U.S. and globally -- pertussis, mumps. At the same time, we're seeing a change in the policy, the funding, as well as the cultural landscape, and I would add, technological landscape, as we have larger platforms, greater influences externally, as Dean Hyder said, with dis- and misinformation, making it harder for many of us to discern what is real evidence-based information, versus dis- and misinformation.

And I am so, so honored to moderate this important panel with some of the leading experts who have been thinking about it from very different perspectives. I am going to go ahead and introduce today's speakers. I'll go through all the speakers and then turn it over to Ms. Lakshmanan to start us off.

So, let me start by introducing Rekha Lakshmanan. Ms. Lakshmanan is a nonresident scholar for the Center for Health and Biosciences and Chief Strategic Officer at The Immunization Partnership and with Rice University's Baker Institute in Public Health. Her work at TIP includes developing and implementing public policy strategies to improve Texas vaccination rates. As you know, one of the largest measles outbreaks this year centered around Western Texas. Advising other states and organizations on building grassroots networks and teaching constituents how to communicate with lawmakers. She is also a frequent speaker on state vaccination policy initiatives.

We will then turn to Dr. Michael Osterholm. Dr. Osterholm is the Director of the Center for Infectious Disease Research and Policy, CIDRAP, and a professor in the School of Public Health, College of Science and Engineering, and the Medical School, all at the University of Minnesota. Dr. Osterholm has been an international leader on critical concern regarding our preparedness for an influenza pandemic and on the growing concern regarding the use of biological agents as catastrophic weapons targeting civilian populations. Authoring more than 315

papers and abstracts, he is a frequently invited guest lecturer on the topic of epidemiology of infectious diseases.

We will then hear from Professor Wendy Parmet, who is a Professor of Law, the Faculty Director of the Center for Health Policy and Law and a co-PI on the Salus Populi project at Northeastern University. Professor Parmet is the author of over 100 law review and peer-reviewed articles and the Associate Editor for Law & Ethics for the American Journal of Public Health, and she has received Teaching and lifetime achievement awards in Public Health Law from the American society of law and medicine and the American Public Health Association.

Last, but not least, we'll talk to Dr. Jason Schwartz. Dr. Schwartz is an Associate Professor in the Department of Health policy and management at the Yale School of Public Health. His research examines vaccines and vaccination policy, decision-making in medical regulation and public health policy and the structure and function of scientific expert advice on government. His work has been published in a variety of journals across medicine, public health, and health policy. And the overall focus of his work is on the ways in which evidence is interpreted, evaluated, and translated into regulation and policy in medicine and public health -- very apropos for today's conversation and the current times -- and the role of ethics and values in those activities.

As a reminder to our audience, following all the individual presentations, we will have a moderated group discussion. But this is supposed to be a larger discussion, and we will have about 20 minutes left in the program, at the very end, and I'll turn to you, the audience, for your questions. So, start thinking about your questions as the speakers are going through their presentations and submit them through the Zoom Q&A function located in the bottom-middle of your screen. So, with that, Ms. Lakshmanan, I will turn things over to you now.

>> REKHA LAKSHMANAN: Great, and good afternoon, everybody. All righty. Well, thank you so much for that warm welcome, and I am delighted to be here with all of you this afternoon. I am kicking off this session with a combination of a little bit of everything -- a little bit of the past, present, and future of vaccine hesitancy -- by addressing vaccine debates in state legislatures.

Briefly, for those of you who are not familiar with The Immunization Partnership, we are a Texas-based nonprofit with a simple mission of advocating for disease prevention through vaccine education and evidence-based public policy.

Through the course of this afternoon's discussion about vaccine hesitancy, it is important to not overlook the impact of vaccine hesitancy in state legislatures. Over the past six years, The Immunization Partnership and the Baker Institute for Public Policy has been researching anti-vaccine rhetoric and vaccine hesitancy at the Texas Legislature. And over the years, we've been able to see shifts in messaging and in the language.

We started examining public testimonies in 2017 when we had our first onset of lawmakers filing anti-vaccine bills, and we also started to see the keeping up of anti-science beliefs within the Legislature. That year, two bills were given public hearings, which collectively lasted more than 19 hours. One bill was for a pro-vaccine bill, and another hearing was for an anti-vaccination bill.

And throughout the public hearings, we identified five myths witnesses repeatedly said during both those legislative

committee hearing meetings, such as vaccines are ineffective, vaccines are more harmful than the disease, vaccine-exempt kids do not spread the disease. I imagine that all of these are not unfamiliar to us, especially now. And the running theme we saw was opponents trying to litigate the science in public forums like these legislative hearings and not necessarily debating the policy or the merits of or the implications of the policy themselves. And this was, and frankly, still is a common tactic used. It is arguing everything but the merits of the policy. And this is extremely dangerous because it platforms the spread of deceptive information and legitimizes it without being able to correct the record fast enough. When you only have two to three minutes to provide public testimony and the volume of misinformation that is being shared, it takes a very long time to try to debunk and to correct the record fast enough. And so, the arguments, or the takeaway was, you argue science in those hearings.

A few years later, in 2021, at the peak of the pandemic, where we saw Texas lawmakers file dozens of vaccine legislation, we revisited vaccine misinformation through public hearings and through the testimony. That year, five bills received public hearings, and the themes slightly shifted from 2017. We were able to identify kind of three broad themes from the 2021 legislative session: A theme around medical freedom, so things like bodily autonomy and personal rights; themes around discrimination; and frankly, a full-on assault on scientists, whether it was going after scientists through public testimony, going after government agencies, or questioning research.

And so, while a few years prior, we saw "argue science in hearings," the takeaway we found in 2021 was "argue liberties and rights," which is much harder to combat.

After the 2023 Texas Legislative session, when lawmakers filed a record number of vaccine bills -- most of them were anti-vaccine in some form or fashion -- we wanted to take a closer look at how lawmakers with health and biology backgrounds voted on vaccine legislation, and we started to see a crack a few years prior, and so, we wanted to explore that idea a little bit more.

We expanded our work to include neighboring states and identified state legislators in Texas, of course, Oklahoma, Arkansas, and Louisiana, with these types of health backgrounds, including animal science, medical degrees, and biology degrees as well. And out of the more than 600 lawmakers, collectively, in those four states, 33 of them had some kind of health-related background.

As we were doing this research, we only looked at bills that made it to the floor for a full body vote because the entire body would be voting on that bill and all these lawmakers would be included, obviously, in that vote. And so, what you can see here on this chart is each dot represents a lawmaker. And points were awarded if they supported vaccines through the policy, and a point was deducted if they opposed it. And if the bill was anti-vaccine based on a set of criteria we had determined, a point was taken if they voted in favor of it, and then a point was given if they voted against it.

And what we found was a little bit alarming, which was, only 9 of those 33 -- or roughly 27% -- had a positive score. And when you did a little bit of a deeper dive and we looked at their professions, unfortunately, veterinarians scored the lowest. So, I suppose it's more important to vaccine animals

than it is to protect humans, followed by doctors and then a group we categorized as others, and these were individuals who may have had, you know, an undergrad biology degree or was an EMT, for example. The only positively scored group were nurses.

And so, our takeaway was, we are no longer seeing those lawmakers with health and medical backgrounds as supporters for public health, at least through their votes. Instead, we're seeing a politicalization of these issues with voting predominantly following partisan lines, and you can see that in that previous graph.

But I never wanted to spare. And so, to kind of wrap things up, I always like to share a few takeaways and action. Misinformation and hesitancy doesn't stop at the Capitol's doors. If we want to mitigate vaccine hesitancy for our policies and our state lawmakers, we have to be more vigilant and engaged in local activities

We are acutely aware that the headwinds of anti-vaccine activism is aiming to push vaccines into the shadows. We must hold health professional lawmaker colleagues accountable, and that could be done through working with their governing associations. We have to continue to find policy opportunities that improve and expand public health but are also comfortable for bipartisan support. The Immunization Partnership, along with partners in Texas, has successfully passed more than two dozen pieces of pro-vaccine legislation over the past decade, and that could not have been done without bipartisan support, so there are opportunities; we just have to just find them.

And then lastly, we need a broad coalition of voices to educate and to communicate to lawmakers. Vaccine advocates who do this day in and day out can no longer do it alone. And so, really, it is going to take all of us and a collective group of voices to be able to not only protect and defend our current immunization policies, but also to continue to strengthen it to make sure that every person has easy access to vaccines. And with that, I thank you so much.

>> NAHID BHADELIA: Thanks so much, Rekha. And up next, we have Dr. Osterholm. Mike, over to you.

>> MICHAEL OSTERHOLM: Thank you very much. First of all, it's a real honor to be with you. I appreciate this webinar. I think it's very timely, and obviously, critically important. Let me start out by providing some historic perspective. On the night of the election last November, after realizing that Mr. Trump had won, I actually went back and pulled out the 2025 document that had been touted as a game plan for what a new administration might look like and reread the parts on public health, and specifically, around vaccines. And at that point, I knew we were in for a battle.

The following morning, actually, at a staff meeting, announced that we would take on these issues because my anticipation was that there would be every effort taken to take vaccines away from us once the administration was in place and the likelihood that Robert F. Kennedy Jr. was going to be nominated as the head of HHS, whether he would be, in fact, supported in that position was unclear.

In November, later that month, Dr. Zeke Emanuel and I wrote a piece in the New York Times, indicating that, in fact, this was going to be a major challenge, and it was very likely there would be an effort to take vaccines away from us. I think most of the country at that time still didn't believe that what could happen would happen. And now we have seen that.

We noted in our op ed that, how would we perform as a country in our public health functions if, in fact, the CDC and the advisory immunization practices were utilized or in some cases, gutted? Well, we've seen that happen now. We know that that's the case. So it was with that concern in place we initiated what we now call the Vaccine Integrity Project.

In April of this year, we received support from a foundation to move forward with this, with the idea that our first job was to understand, what is it that public health and the medical community would need, if, in fact, ACIP and CDC became neutralized or were unable to provide information that could be trusted? And so, we held a series of six focus groups from around the country involving everyone from the basic R&D all the way to the final delivery. Some of the individuals in this screen actually were a part of those focus groups. And with that, we came away with eight different categories of information that we believed would be very important moving forward around vaccine promotion and taking on those issues of vaccine mis- and disinformation.

We elected at CIDRAP to actually pursue three of those areas. One was to develop a means of rapidly addressing mis- and disinformation, which we are still in the process of developing that major tool; but the second area was one of, well, who is going to provide the kind of information necessary to make the recommendations for the fall viral pathogen vaccines, i.e., COVID, RSV, and influenza? And as in the past, you know ACIP did a major lift every year to provide us with the most-current information around vaccine effectiveness, vaccine safety, et cetera, that had come forward in the previous time period since the last time that the ACIP reviewed that.

We also recognized that, in fact, that there would be certain subgroups of that population that would be recommended for those vaccines that had a more-urgent need, such as young children or pretty good women. And so, we embarked upon a prosperal perspective protocol that allowed us to basically systematically attempt to do what ACIP did, knowing that we were not ACIP, never will be ACIP, and that we desperately need them back in full strength.

But then in addition to that, we also recognized that we could not have access to the kind of data that they might have as a government agency, and so, we put forward our effort, stating from the very beginning, we were not a replacement for the ACIP, never would be.

We also recognize that as we move forward with our work that, in fact, it was going to be important for us to be as transparent as possible. And so, we brought in 26 experts from around the country, including Boston, and with our own staff at CIDRAP, launched this particular effort. We reviewed over 17,500 abstracts of information regarding these three vaccines that had been promulgated since the last time ACIP reviewed them. From there, we have been working diligently to bring this data together.

We did, in fact, provide a summary earlier this summer and a webinar that was attended by over 8,000 individuals, that allowed us to share, what did we find, for example, with the vaccines in children; our recommendations for what we found were shared then with the American Academy of Pediatrics, who used that information, in part, to come up with their own recommendations. We did, similarly, the issue with COVID and pregnancy and shared that information with ACOG, which also then

used that information. And what we've continued to do is provide the kind of data that for those organizations that in the past would have relied on ACIP for their recommendation, as well as the data to support the medical society's recommendations, we now are providing that kind of information.

We've worked closely with the payers so that we might find a way to come up with a common approach to the payment of these vaccines when, in fact, they might not agree with what the ACIP or CDC would put forward, and to date, I'm happy to report that we've been largely successful in that regard. We're going to continue to do our work. You'll see our efforts published very soon in a major medical journal. We just posted this past weekend an app on our website that allows you to get in and use all the same data that we had -- all 1700 abstracts, papers, everything you want to do on your own. In the sake of transparency, people can see what we did. Again, we did not make recommendations ourselves. Our job was to provide the data that could be then used to make those recommendations.

We are continuing that work. We are now taking on hepatitis B vaccine review and will take on additional ones in the future with the idea that one day we cannot wait until we are no longer wanted or needed and that the CDC and ACIP are restored back to their previous scientific credibility.

Also, the third pillar that we've taken on is that one of helping to coordinate activities around vaccine promotion and response to mis- and disinformation. There are a lot of very, very dedicated groups in this country trying to move forward the positive vaccine agenda. In many cases, they're surely effective, but how effective could they be if there was more coordination and common activities where we know who's doing what on this given day; maybe our job is best left over to another area. And so, we're working on that aspect of our efforts right now.

And so, I just want to conclude by saying, first of all, we can do something. I think we all have felt the pain of not being allowed to raise our head above the table in some institutions. We know that this work is not done easily without attack. I can attest to that personally. But, in fact, we are doing it. And I think this should give us all hope that there are other areas that can also be approached unconventionally, but yet, effectively, to bring about the appropriate and necessary use of these vaccines.

And I just want to close on a comment about the opening comment, Nahid, you said very well. In 1953, the year I was born, there were 58,000 reported cases of polio in this country, including 21,000 individuals with permanent paralysis. You know, that's in my lifetime. And so, when I hear Mr. Kennedy saying that sanitation in and of itself saved us from all these vaccine-preventable diseases, let me just use my polio example as one to say, no, that's not completely true. And I would close that the young boy sitting next to me in first grade was one of the cases of measles from our community that died from it. Vaccine-preventable diseases surely were, in a sense, living in a world that was much cleaner with the sanitation revolution, but please don't forget, there was a tremendous burden of death and serious illness with vaccines since that time. Thank you.

>> NAHID BHADELIA: Thanks so much, Mike, and thank you for that personal example in terms of the diseases that we've all seen in our own life span. With that, let me turn it over to Professor Parmet. Wendy, over to you. I think you're muted,

Wendy.

>> WENDY PARMET: Sorry, sorry. I was trying to share my screen. Thank you so much. It is a real honor to be part of this very distinguished panel and to discuss these important issues.

In the time I have, I want to talk a little bit about the central role that litigation has played and is playing in vaccine hesitancy and the broader conversation about vaccines that we're discussing today. Due in part to the existence of vaccine hesitancy, which has existed as long as there have been vaccines, smallpox mandates, which really refers put in place here in Boston, sitting in Boston, date back to the early 19th century, and they were always controversial, from the very start. As long as there have been vaccines, there have been mandates, and as long as there have been mandates, there has been an organized response in opposition.

Very early on, organized opponents of vaccines and mandates relied heavily on litigation to challenge the government's authority to mandate vaccination and to make their case, to use those cases to make their claim to the public that vaccines were dangerous and unnecessary and counterproductive.

In the 19th century, overwhelmingly, these opponents to vaccination lost. Courts almost uniformly deferred to governments. In 1902, as the smallpox epidemic surged in the Northeast of the United States, the Board of Health in nearby Cambridge, Massachusetts, ordered that all residents show proof of vaccination or pay a $5 fine. Several opponents of vaccination, supported by organized, vocal, and very prominent anti-vaccination groups, refused to be vaccinated and were arrested and really used their arrest as a, in a sense, show trial to test the constitutionality of vaccination.

I have on the slides an article that was in the local newspaper at the time. Among those opponents was a Cambridge minister, Henning Jacobson. Jacobson brought his case to the U.S. Supreme Court, and he lost by a 7-2 vote, in a decision by Justice Harlan. The Court rejected Henning's constitutional argument, stating famously that real liberty for all could not exist under an operation of a principle which recognizes the right of each individual person to use his own, whether in respect of his person or his property, regardless of the injury that may be done to others.

I think that's a point that we need to remember today. In so doing, Harlan also recognized that the decision of whether to mandate vaccination should be ordinarily left could be to the Board of Health, and that the knowledge and experience, that medical experience showed the safety and wisdom of the vaccine mandate.

Shortly after Jacobson, it became what we like to call settled law, that vaccine mandates were constitutional. And the Supreme Court reaffirmed that position in 1922 in a case called Zucht versus King, which said Jacobson settled it. And in the almost 100 years between Zucht and the pandemic, our most-recent pandemic, courts were very consistent about that.

Although the constitutionality of vaccine mandates were settled, vaccine opponents continued to employ a court-based strategy, challenging vaccines in courts to unsettle the market, disrupt the market, and draw attention to what they claimed were the dangers of vaccines. I'm not going to go through all this, but I'll note the DPT Litigation Crisis in the 1980s, which led to immunity and the passage of the National Childhood Vaccine Injury Act; then in the '90s and early 2000s, we saw a real

upsurge in Thimerosal-related claims. Courts rejected that. RFK's Children's Health Defense Fund kept bringing challenges.

They kept losing until in 2020, Justice Barrett was elevated to the Supreme Court. And almost immediately -- within weeks -- the judicial tide began to turn. The Supreme Court in 2020 and 2021 and 2022 issued a series of decisions that really upended vaccination law. They changed the Court's approach to free exercise of religion claims, which effectively began to enable people to make and prevail on claims that it is their right under the Constitution to opt out on religious grounds, and they also limited the ability of the Executive Branch under the Biden Administration to mandate vaccinations, for example, by large employers and recipients of federal funding.

We are now in what I call the era of judicial skepticism, in a paper that I wrote with Michelle Mello and David Jiang. We found 27 cases between 2020 and 2023 where courts were skeptical or supported vaccine objection claims. I'm not going to go through them all, but what I want to say here is that in these cases, we can also see courts, in a sense, legitimating and reaffirming opposition to vaccines, and talking about, for example, the Supreme Court saying a vaccination, after all, cannot be undone at the end of the workday, right? Talking, Justice Gorsuch saying people reject vaccines because their religion teaches them to oppose abortion in any form, and the currently available vaccines have depended upon abortion-derived fetal cells. The court is echoing vaccination language, and we can find many examples of this.

We now have this very unsettled landscape. There are several nonprofit litigation groups that are leading the charge, in particular a group called We the Patriots, which also has close ties to the Children's Health Definition Fund. There is a group, the Thomas Moore Society, Let Them Choose, and a few others.

We the Patriots a few days ago petitioned the U.S. Supreme Court to stay, to block a California vaccine mandate for children. Two years ago, a federal court in Mississippi ordered the state to add religious exemptions to their school mandates. Plaintiffs are winning now, where they used to lose Title VII cases, claiming their employer discriminated against them on the basis of religion by requiring vaccines, and meanwhile, tort litigation against vaccines is continuing, and Kennedy, of course, has called for amending the National Childhood Vaccine Injury Act to allow for compensation and greater ability to sue vaccine makers for autism-related claims.

All of these actions are, in a sense, again, legitimating, helping organize these anti-vaccination groups, do fundraising around their litigation, and importantly, they haven't won everything yet -- they haven't won most claims yet -- but they're winning sometimes, and that just wasn't the case for a very, very long time with very few exceptions.

I do want to also note, of course, that litigation is open to the other sides, and there's an important case that will be heard, eventually, here in Boston, AAP versus Kennedy, where the American Association of Pediatrics and several physicians have sued Kennedy for his actions with ACIP. So, litigation continues to be a forum for contestation and a place where the politics and public debate over vaccination plays out, but also a place where courts are now affirming in ways they never did before the rhetoric and the claims made by vaccine opponents. So, with that, I'll stop. Thank you.

>> NAHID BHADELIA: Wendy, thank you for that. And really quite frightening to see the speed of what's coming on the landscape. With that, let me turn it over to Dr. Jason Schwartz. Jason, over to you.

>> JASON SCHWARTZ: Thank you very much, as I get my slides ready to share. Here it is. Great to be with you. Thanks to our organizers at BU, as well as my fellow panelists. It's great to be with you all. I'd like to use my time today to raise an issue that's been on my radar over this past year with the new administration that while it hasn't been the stuff of front-page headlines -- and there has been plenty of that, to be sure -- I think it reflects a significant change in how the federal government -- among many significant changes -- is viewing its role in talking about, guiding, communicating vaccination efforts that will likely make these already formidable challenges in confronting vaccine hesitancy that much harder in the years to come.

And we've seen it most visibly over the past few weeks with respect to the recommendations that have changed from this newly constituted ACIP for COVID-19 vaccines, where the recommendations have been updated to refer to individual decision making, or as noted in the slide of their voting question, shared clinical decision making, as the frame in which these vaccines will be endorsed by the ACIP going forward, a topic that's already raised lots of confusion and questions about what that is, what that means, and doesn't that already happen already.

This has brought to the surface generally a pretty obscure aspect of federal vaccine policy making that has interested me for some time now regarding what we mean when we talk about these shared clinical decision making recommendations, which are not something that have been introduced just in the past few weeks, but in fact, have been an option available to the ACIP for the better part of 20 years and was a subject I wrote about in a paper in the Journal of Law, Medicine and Ethics with a former medical student some years ago.

And I think these recommendations, we are likely to see more of them, and that will make vaccine hesitancy efforts, particularly in the clinical setting, by health care providers, that much more difficult.

So, what are these recommendations, as you may have been hearing about in the wake of the ACIP changes for COVID? These recommendations are effectively a downgrade from the far more common, routine, traditional, sometimes called universal recommendations. They've had prior names in the past -- permissive statements or category B recommendations -- but fundamentally, they say that in the view of the ACIP -- and now the CDC -- that has affirmed those recommendations, an individual may receive a vaccine, rather than "should receive" a vaccine. And in fact, the fact that a vaccine is FDA approved generally already acknowledges that a vaccine may be administered, but it's a far softer endorsement than what we would typically expect to say for a vaccine that is recommended by public health authorities.

And in the past, it's been used in pretty limited ways. Typically, when there's some uncertain about the evidence or value or modeling of the use of a vaccine in a particular population, not for an across-the-board recommendation for a vaccine that may be used for tens of millions of Americans. But at least in theory, the presence of this recommendation status

does preserve the coverage for the Vaccines For Children's program, the critical tool to make vaccines available for Medicaid-eligible and uninsured children and other groups, and it should also preserve the insurance coverage requirements under the Affordable Care Act, as well as inclusion in Medicare and Medicaid programs, although we're already seeing some of the confusion resulting from these recommendations being confronted as these policies are implemented.

As I noted in the past, these are the very recently updated ACIP-recommended vaccine schedules, just updated in the last day or so, and there's a lot going on here. I won't walk through all of it. But the key point to note is that for all of the yellow bars and boxes -- in this case, in the childhood vaccine schedule -- those are the recommended doses that have that traditional exhortation of a vaccine dose that should be administered. And the far less-common, sort of powder blue, which you now see in the middle of the screen for COVID, is the shared clinical decision making, that at least for the adolescent and childhood vaccine schedule had only been used down there in that bottom-right of the slide for the group meningococcal vaccines for children, so, a very modest application for childhood vaccines.

And similarly, this is the adult schedule, that COVID vaccines have this status, but otherwise, the only vaccines that had received this downgraded recommendation were the HPV vaccine in older age groups, for individuals in their 20s, 30s, or 40s, where the thought is that the benefits of vaccination are less, given prior exposure to some of those strains in the vaccine, as well as some use of the pneumococcal and the hepatitis B vaccine in some older individuals who may have received previous vaccines. So, very much at the margins of our vaccination effort.

Now, why does this matter? It matters because we've already started to hear about these shared clinical decision-making recommendations from the administration in recent months in a round-about way, in ways that I think signal how they view their role in communicating the risks and benefits and value of vaccination.

Earlier this spring, on that earlier development on the COVID vaccine front, we saw the social media post from the HHS Secretary that was the announcement that the existing recommendation for COVID vaccines for pregnant women and children would be removed. And then a few days later, there was some surprise when CDC formally implemented those recommendations, and some of the headlines -- as you see here in the “Times” and the “Post” -- suggested that by including the vaccines in the schedules, but by shifting them to this shared clinical decision-making recommendation, prior to the votes we've seen this fall, that those decisions were contradicting the secretary in terms of keeping vaccines on the schedules. I don't think that was quite right, because I think what we saw and what we're seeing is actually an approach that is absolutely stepping back on the gas pedal for encouraging vaccines but without going as far as to remove vaccines entirely from the market or to remove recommendations entirely. It's somehow trying to thread that needle that echoes that claim that we're hearing that vaccines are not being taken away from anyone, even if they're clearly getting more complicated and more confusing to understand how best to use.

We saw this loud and clear, this idea about the role of the

federal government in providing simply information for individuals to choose for themselves regarding vaccines in this statement from Secretary Kennedy back in March, in the wake of that unfolding measles outbreak in West Texas and neighboring states. And this op ed on the Fox News 2 website I thought was fascinating. It was on the measles vaccine statement from Kennedy, but this caught my attention. It talked about the role of policymakers to ensure accurate information is available; engaging with communities to understand their concerns; and make vaccines accessible for those who want them. That idea of accessibility, but not, to be clear, did we hear the clear "you should get vaccinated" comments that we would typically expect from any public health official, whether it's the HHS Secretary or others, in response to this unfolding outbreak. Instead, we saw in that bottom quote here, the decision to vaccinate is a personal one. So, the idea of the federal government seems to be to provide the information that individuals can choose for themselves whether to receive vaccines, but we don't hear those unmistakable voices as a particular vaccine is something that "should" be given to help protect one's self and one's communities. And if you wanted to operationalize that, the shared decision-making recommendation, in lieu of that traditional recommendation, is what you would get.

So, my last minute or so. Just this week, we've seen when the Acting CDC Director, the Deputy Secretary spoke about affirming those new COVID vaccine recommendations, he wrote on social media and elsewhere: "Informed consent is back. CDC's blanket recommendation for perpetual boosters deterred health care providers from talking about risks and benefits of vaccination for individual patients and parents. That changes now." There's a lot to take issue with in that one paragraph, but if we take it at face value that the position of the administration is that a blanket recommendation, a routine recommendation for vaccines was a deterrence from talking about risks and benefits, frankly, it's quite difficult to see how COVID vaccines would be where that policy change ends, and that's why I think we're likely to see it for other vaccines.

Why does this matter? I think it matters because of the confusion, the complexity of these recommendations for efforts to address vaccine hesitancy, particularly for health care providers, that critical first line of defense and last line of defense for supporting vaccine decision making among parents and patients. We know how important those recommendations are. We know how important the strategies to talk about vaccines as a default option or as a social norm can go in helping address concerns. We know how important it is for health care providers to have those powerful endorsements from medical professional public health groups to point to, to affirm the value of vaccines. And these recommendations, particularly if they are to expand to Hep B or HPV or MMR or other vaccines, only will weaken those efforts to talk about vaccines in the clinic. It creates confusion, creates additional time to require to explain these recommendations.

We have survey data from prior uses of vaccines that show us this. And I think it increases the perception that vaccines that have this downgraded endorsement from our public health officials are somehow second tier or less important than those that received or used to receive a traditional endorsement. And all of these things will make those critical exchanges harder. So, I'm going to close there.

There's some data and paper from Allison Kempe in the Journal of Internal Medicine which showed how challenging clinical decision-making had been in the past, but to summarize, I think it will bring us really great clarity to recognize the importance -- if this is this new approach to thinking about the role of the federal government in exhorting vaccines, rather than this new view of simply providing information -- it will place a greater premium on all the work that's happening from other medical professional groups, from state and local health departments, from new entities to provide the kinds of clarity and guidance that can help empower both patients and parents and health care providers to navigate these really challenging and confusing times regarding the value of vaccines. So, thanks very much.

>> NAHID BHADELIA: Thanks very much, Jason. I'm reminded in these situations why my preferred position on a panel is the moderator, because I get to learn from all of you. If we could have all of our panelists actually come back on video, what I would love to do is just to ask a few moderated questions, and then, actually, turn over to some of the questions that we're already seeing in the Q&A. While I do that, it would be wonderful if those of you who have been thinking about these things, as the conversation has been going on, can go ahead and put your questions in there. So, let me ask each of you a question, then I'm going to open up it something -- I'll hold off to tell you what it is -- a question that keeps me up at night, every night.

Let me start with Rekha. Rekha, in these kinds of panels, we always put the "But what can I do?" Question at the end, and we run out of time. You talk about the state level, legislators, the role they're playing in codifying and potentially changing access, and basically, attacking public health and medical professionals. What can individuals do to engage their policymakers, their legislators at the state level? Are there tools that they can use if they're concerned about what's happening?

>> REKHA LAKSHMANAN: Yeah, thank you for the question, and I appreciate it. I think when it comes to engagement, think of it as a ladder. Everyone has different levels of comfort when it comes to public engagement, especially citizen engagement with policymakers. And I think there are many different simple actions individuals can take. First and foremost is, you know, go learn who is in your state immunization coalition. Just about every state has a immunization coalition or organization, and they are your best bet in terms of helping you navigate that kind of legislative landscape, whether it is connecting you to lawmakers and helping to assist scheduling meetings with lawmakers, giving you talking points and messages on how to speak to this issue to lawmakers.

Frankly, it really isn't rocket science, you know. Each and every one of you are experts in your own right, and it is all about just being visible and present. And the more decision-makers hear from the majority of us who support vaccines, it helps them make an informed decision and not a disparate decision by thinking that people who don't support vaccines are actually the norm and the larger group. But local immunization coalitions or your professional organizations also probably do some form of legislative advocacy, and they're a great starting point to help build you as a citizen advocate.

>> NAHID BHADELIA: Thank you for that, Rekha. Mike, I want

to turn to something that's been mentioned a couple of times in this conversation. You brought it up, then Jason brought it up with vaccines for children -- this relationship between federal guidance and paying for vaccines. I think if you go into what that relationship is about the federal government approving and what the mechanism is done through private insurance -- and there are many -- private insurance, CMS, the vaccines for children -- and what you see challenges for the payers that are coming up, for all those different kinds of payers, based on the changing of the guidance at the federal level.

>> MICHAEL OSTERHOLM: Well, I'll let Jason address some of this, because he is a real expert on that. But let me just say that, remember, vaccines are good, but they're not great. What's great is a vaccination. And anything that's a barrier to making that vaccination happen, whether it's because you don't have access, it's because you can't afford it, any of those will keep you from achieving that vaccination. And one of the challenges we have right now is because of the fragmented health care system we have in this country is the fact that we see a piecemeal of who pays for what vaccines for who, and who decides that.

And of course, as we've seen it in the past, it's been largely linked by states to the ACIP recommendations, and that's supported by the CDC. I'm encouraged by the fact that we're seeing a fair amount of movement in states around the country in terms of the federal and state-supported programs to actually cover vaccines now that are not necessarily recommended by ACIP, but rather, by another body of data that can be considered authoritative. And so, I think we're seeing a change in that, that I can't say is going to be highly effective, but I think it has the likelihood of being that way. And so, it's up to states now to take that on.

Now, having said that, red versus blue state actions are going to likely differ, and we've already seen some evidence of that now in terms of which states are most likely to take that on. So, this is a huge issue. But again, there are many.

We're now beginning to work, for example, with the group that oversees or supports self-insured health plans for large corporations. I mean, another group we haven't thought about who makes those recommendations. And so, it's an issue right now that is surely front and center about getting paid. And again, Jason, I don't want to put you on the spot, but this is one of your areas of expertise.

>> JASON SCHWARTZ: Sure, I'll just add. I'm sorry.

>> NAHID BHADELIA: Before you answer that, my question was actually to you, was part of what Michael asked you, so, speaking to that consortia, the state consortia that are coming up to take the place of federal policy and guidance around policies, as you answer Mike's questions around payers, can you speak to how successful you think those consortia will be and what challenges they may face?

>> JASON SCHWARTZ: No, absolutely, glad to take both parts because they are deeply interconnected. There is so much that can be done to try and, frankly, mitigate some of the disruptions to our vaccination system that are coming from federal changes, whether it's in terms of guidance or recommendations or evidence synthesis, even if it can't replace those existing systems. But one area where there are real challenges are those financing pieces, where the ACIP is not just that highly influential, you know, longstanding body for

the best practices for vaccines, but by design, Congress gave it the authority to shape inclusion of vaccines in the VFC, the Vaccines for Children's program, which is more than half America's children, and the Affordable Care Act and insurance requirements. And sort of ironically, that was done to insolate those decisions from budgetary or political considerations. So, it's far more difficult to find ways to work around potential disruptions to ACIP recommendations as they relate to funding.

That's where the state consortium -- there's one in the west coast of the western states and Hawaii -- there's one that involves my home state of Connecticut and several New England and Mid-Atlantic states -- are trying to figure out how to pool resources -- intellectual, potentially financial, and otherwise -- to think about what kinds of challenges they may encounter, not just with guidance and recommendations, but if they do have to figure out ways to deliver vaccines for their citizens that may no longer be available because they're no longer included, for example, in the Vaccines for Children's program, and ultimately, state Medicaid programs would be the primary source where we think about finding vaccines for those children and others.

So, I think these efforts, they're emerging, they're nascent. There's clearly a concern about the down sides of having fragmented, more voices at the table giving vaccine-related guidance and information, and I think that's a reasonable concern, but I think, frankly, the alternative of having a void that adds to so much confusion and uncertainty is, frankly, worse.

So, it remains to be seen what these groups will have to do, but I think for now, they're a very prudent way for states who share so much in common to try and confront these great uncertainties we're facing together.

>> NAHID BHADELIA: Yeah, and I feel like it's just going to add to the inequity, right? If you don't have a well-funded, well-resourced state mechanism or state mechanisms, maybe you can't jump into a consortia and may not be able to ensure the same kind of vaccine access for your citizens, potentially.

Wendy, I want to switch a little bit to what you talked about, which is these judicial efforts to basically litigate, right, access to vaccines, or the vaccine requirements. I'm thinking of the other side of that, you know. Given all of the dis- and misinformation, I'll frankly say we're even seeing coming from our own federal government in some cases, around vaccines, what are the judicial pathways for patients, parents, professional organizations that are seeing -- and you mentioned I think the American Association of Pediatrics -- I believe comeback, I think it was you, Wendy -- the efforts being made to address this on the opposite side. If there's been an injury, right, we're going to see shifts in access. People will get hurt. Coverage is already going down. We're already seeing outbreaks, which is causing increasing hospitalizations. What are the judicial pathways to addressing those? And do you see this Supreme Court, in particular, taking on a case like that or potentially supporting it?

>> WENDY PARMET: So, thanks for the question. You know, there certainly are opportunities and potential pathways to challenge some of the actions that you mentioned, the AAP case. I think it's a very important case. It argues under the so-called Administrative Procedure Act, there's a regular order that is required. Actions of federal officials cannot be

arbitrary and capricious. There are all kinds of statutory requirements that Kennedy needs to follow. And arguably, he has broken a lot of them.

So, there are pathways, and I think we may see other actions. But I, unfortunately, I need to emphasize that there is a significant asymmetry, right? It's a lot easier in our legal system, and it has always been, for someone who says, "I don't want to be vaccinated," to sue, than for someone to say "I got sick because other people weren't vaccinated." There are issues of causation; there are issues of standing; there are issues of duty, if it's a tort litigation, right? It's much easier to show the concrete kind of claim, and our legal system sees that as more redressable and more amenable to suit.

That's not even getting to the other issue you mentioned, which is the Supreme Court. I mean, I think we need to recognize that the Supreme Court -- I mentioned during my presentation how skeptical they were about the vaccine mandates that the Biden Administration put into place. They used the so-called Major Questions Doctrine. And if you read some of those cases, you'll hear very lofty language about how the President can't do it, and of course, Congress needs to decide things.

In the last six months, the language from this current Supreme Court has completely flipped. There's no opinions. They're certainly not talking about Congress. They're talking about the need for the Executive to be robust. And they've given great deference to this administration. So, you know, there is no case like AAP that is before them right now. They have not chosen to take, so far -- it will be interesting -- I mentioned a case that is currently before them. Will they take it, challenging California's vaccine mandate? They haven't wanted to jump and -- they have not overruled Jacobson; they've just kind of ignored it. They have not jumped into overruling state vaccine mandates, and they haven't yet been faced with a case questioning Kennedy's actions on vaccines, although they have on grants and things, and they found interesting technical ways to support Kennedy's decision to rescind grants in public health funding. So, I think we have to be skeptical about where they're coming from.

I hope I'm wrong. I hope that they will look at these cases, you know, really look at the facts, look at the precedent. But they certainly seem to be skeptical as they had about vaccine mandates when Biden did it. We don't see a lot of skepticism from this current Court about the actions of this administration. And I think that's just, you know -- I don't think that's contestable.

>> NAHID BHADELIA: Yeah. And I think I'll ask you a follow-up question after my last question, because I do want to turn it to the audience in a second. But a similar question that arises, right: Could you hold health care workers, professional health care workers, who enable vaccine hesitancy and mis- and disinformation, could you hold them accountable? So, I'll hold off on having you answer that, because I really want to get to this question.

And the question is, everything so far -- aside from the wonderful work of your organizations and your groups are doing -- everything we're doing seems to be reactive. And what keeps me up at night is what Mike said, whatever can happen will happen. So, what I would love to get a sense from you is where do you think this goes? How much worse does it get? You know, what are -- how do we project out to what might happen next at the

federal level, at the payer level, at the community level?

And then, whatever you identify as that upcoming challenge, you know, what do you see is a potential way for us to address it? So, I'll open it up to whoever wants to take that first. Mike, I see you smiling. I don't know if you want to take that.

>> MICHAEL OSTERHOLM: Well, you know, the question I have -- and there are several experts on the panel that can probably address this -- is, so, what happens when the autism spectrum is added to the Injury Compensation Program, and suddenly, you bankrupt that program, and then the only alternative is basically to go head on into lawsuits against the companies?

With the five manufacturers that we have here, how many of them will still be in business after that takes place? And so, it's one thing to think that you have access problems or payment problems to get a vaccine, but what the hell happens if you just can't get a vaccine? And I don't think we've thought through that nearly enough in terms of A plus B plus C plus consequences. So, that to me is my concern. And the administration will say, we didn't take your vaccines away from you, it was a choice made by the companies, okay? And they will then excuse themselves from any responsibility for it, even though I think that this could lead to that.

So, you know, I hope I'm wrong in every way possible, but if I just understood a little bit better, I'd see the faults of my ways here, but I fear that this could very well be a future that we have to live with.

>> WENDY PARMET: Can I add something? You know, that keeps me up at night, but there are other scenarios and other ways that, frankly, some of which I'm afraid to mention here, that the administration can use to disrupt the supply, right? We've seen them put pressures on lots of companies in lots of different ways.

>> MICHAEL OSTERHOLM: Yep.

>> WENDY PARMET: And if they really want to go frontally against the supply and not just rest on making it harder to get, but you can get it if you want, but there will be shortages. I think, you know, I think they may be aware that there would be a political price to pay for that.

And the last thing I'll say is that, you know, the history of -- I've spent a fair amount of time studying the history of the fights over vaccination, from the 18th century and 19th century. You know, it is a history of peaks and valleys and times. And what tends to happen, sadly, is there's an outbreak, and lots of people get hurt and died, and then suddenly, people remember and rediscover why they wanted to be vaccinated. I hope we don't get there, right, but it wouldn't shock me right now if that's what is necessary when you start getting not sort of isolated outbreaks, but truly mass outbreaks in ways that really change the political dynamics. I hope we don't get there, but it could happen.

>> JASON SCHWARTZ: I'll chime in with my list of worries that came up a few moments ago, this idea that we're going to see very different stories in different states across the country going forward, given the way in which the federal government is retreating from stewarding a national vaccination program. And I think we'll see enormous disparities in all sense of the term of how different states, based on their political leadership and their values and who's running their health departments, tries to step up and fill a breach in terms of

trying to sustain and support and advocate for vaccines, and other states where we're already seeing proposals to eliminate all school entry requirements and to take other measures that may, you know, leave populations particularly at risk with vaccines unavailable or unaffordable or actively discouraged.

And of course, it's a cliche in this world that infectious diseases don't respect national borders or state borders, but that creates vulnerabilities nationwide. So, I don't have the fix for that, other than to note -- I mean, the reason for optimism that I have, such that there is one, was some of the polling that came out that said, despite all of the rancor and polarization politically around vaccines these days, there's recent polling that shows still a large majority of individuals across the political spectrum -- not necessarily elected officials, not necessarily those in power -- but folks based on, regardless of who they voted for in the last election, still overwhelmingly believe that vaccines save lives and still overwhelmingly believe that most of our vaccines are important and valuable. COVID is a different story, to be sure. But the idea that there actually is a stronger base of support for vaccines, which is easy to lose sight of in this moment, gives me some hope that we can continue to amplify that, support those families in making decisions, regardless of where they live, regardless of who their governor or senator or health commissioner happens to be. And I think that's the path forward, little by little.

>> REKHA LAKSHMANAN: If I can just sort of pull on that thread, which is, you know, as Jason said, that the polling is showing that, you know, there's still a very large percentage of people who support vaccines. I mean, if you look at it, it's really 5 out of 6 families are still vaccinating their kids, which is wonderful, and it's reassuring.

But I think also, we have to think about it coming from my lens as a little bit from a micro standpoint. You know, are pressure campaigns -- because, you know, while we can look to the system to try to fix itself -- and obviously, we want to try to improve the policies and make sure that the overall landscape is amenable to allowing people to get vaccinated -- it's a supply-and-demand issue as well. And you know, for individuals, like myself -- and I imagine everybody on this panel and who's on this call -- who want to be vaccinated, that message has to be made very loud and clear to those people who are in decision-making authority that, wait a minute, if you start taking away my right and my ability to get access to vaccines, because that's the right decision I make for myself and my family, then we have to be able to articulate that and make sure that there is that amplification. And Wendy mentioned sort of the political consequences, not that we want to have a political discussion about it, but at the end of the day, those are the individuals who are setting policies for all of us, either within the state or at the federal government, but those decision-makers have to hear from us just as much, if not more, to help them, to help normalize what is normal.

>> NAHID BHADELIA: Thanks, all, for that. And as I switch to the questions from the audience, what I'm going to try to do is actually put a bunch of questions from the audience into one question that I can pose. And one of the bigger themes that I'm seeing right now -- apropos to the title of this webinar of vaccine hesitancy -- this underlying assumption that we have the public health, the medical community has lost some sort of

trust, that there is mistrust, right? We can't get around that. We hear that all the time, despite the fact that as many of you said -- and even conservative families tend to vaccinate their children. I think that 60%, I saw, or a greater number of even in the highest, most conservative states, parents are vaccinating, are supportive of school mandates, et cetera.

So, the question is: How do we empower ourselves as advocates? How do we empower health care workers? What messaging, what that opportunity of the 1-to-1 counseling, what are some effective ways to rebuild that trust to decrease true vaccine hesitancy? Not really people who really have decided this is not for them, but people who are curious, have questions, have heard about dis- and misinformation. So, maybe I'll open that up first to Michael and Rekha. Both of you worked a little bit around messaging with your organizations, but I want to open it to all of you.

>> MICHAEL OSTERHOLM: Go ahead, Rekha.

>> REKHA LAKSHMANAN: I'll kick it off. You know, I think, number one, if we're having conversations with people who generally have questions about it I think doing a little bit of a better job of listening mode. You know, I will say, and I will use myself as an example. You know, sometimes when you hear someone with a question, who's questioning about vaccines, there's sort of this sort of gut feeling like, oh, my gosh, I think I know where we're going with this, when that person genuinely is trying to get their question answered. And so, listening to the person you're speaking to and asking a lot of questions, knowing that you're not going to change their mind on that first encounter, nor should that be the intent. I think that's sort of the first, you know, first stage of building trust, and recognizing that it's got to be an ongoing conversation. You want to be invited back to that conversation. I think that's one thing.

And you know, another thing I would just add is, finding common values. I mean, I think at the end of the day, we all agree that we don't want children to be harmed; we don't want them to fall sick; we want them to not die; we want them to lead a healthy life. And that is sort of that common ground we all have. Now, we may go about it differently, but if we can find that one value we can agree upon, I think that allows us to get to that next stage of listening and having that conversation and that back-and-forth with that individual to, hopefully, get them to the right, informed place we want them to get to.

>> MICHAEL OSTERHOLM: You know, I think that we are confronted with a challenge that we don't really understand. And what I mean by that is that there isn't an anti-vaccine standard. There's not one thing. It's many different things. We're finding that the individuals will have very different reasons in the same community as to why they do or don't vaccinate. And I think that the whole area of social media has fundamentally changed how we think about or talk about vaccines and trust, you know?

And I'm struck by the fact that many people have attributed our current problems with vaccines to this administration, or at least highlighting it, while it was well in place long before this administration came in. But second of all, when you think about right now -- just take Canada. Here's a country with 40 million people, as opposed to our 340 million people. We have, you know, over 1,500 cases of measles this year. Canada has over 5,000. And if you did the population-based rates, Canada would

blow us out of the water. They don't have the same political situation that we do. It's much more complicated.

And I think what really drove home that point to me was some of my veterinary colleagues indicated that they are now seeing major challenges having their clients vaccinate their dogs and cats for rabies, because the individual owners will say, "I'll decide that. I'm going to do my own homework and I don't think I want that." That has nothing to do about personal rights, whatever. It's about what they think is best for their pet.

And so, I think we have to really open up a whole new field of study on social media, perceptions, beliefs, and why people do what they do, and don't accept the fact that it's one simple answer, if we just could find it, we could take care of it. I think it's much more complicated than that.

>> WENDY PARMET: Can I add one thought to that, which is, you know -- and I agree, it's many things. It's not just about vaccines, right? I mean, vaccines and distrust is actually connected to I think a wider sense of distrust, and frankly, dysfunctionality, much of it which is deserved, of our health care system, the fact that we have been individualizing all kinds of things.

Like, I'll give you an example that seems very far afield, but I've been thinking about, right? So, we went from not having direct-to-consumer advertisements to having advertisements to now having sort of bypass your doctor and get your prescription, right, from these companies. And so, we're telling people, you know, it's harder and harder to find a doctor and have primary care, to have a relationship. Primary care is overwhelmed. And we're telling people, be your own decision maker, go, right? And so, we have a system where we are sort of putting more and more on individuals and patients to do your own research. We shouldn't be surprised when we're telling more and more people to do your own research about everything from baldness to, you know, obesity drugs, that they're doing their own research about vaccines, and some of that research they're doing is not necessarily, you know, well advised or experts. But that's the way the system has become.

And so, the only thing I would say is, for people who care about vaccines, it's really also being a part of a larger movement to kind of work on that, on fixing our broken health care system.

>> JASON SCHWARTZ: Just one thought to add to this great set of comments that I couldn't agree more with, around that idea of shared values. And when I think about and teach about vaccine hesitancy to my students here at Yale, you know, we think about those ideas of that spectrum, that continuum of vaccine hesitancy. And yes, there are folks who are deeply passionate and convinced that vaccines are responsible for all sorts of harm; the folks who we might see on the news or protesting on state capitals or being the most vocal, active, engaged critics of vaccines.

But by and large, many of the parents -- most of the parents, I think we've seen -- who have doubts or concerns, who want to delay or space out or have some alternative approach to vaccines that absolutely are vaccine hesitant are coming from that place of trying to figure out how to best protect their child, how to try to make sense of this confusing, in the best of times world, and even more so today, way of how to provide the best care for their child amid all sorts of claims and

counterclaims and people shouting at each other and throwing out this allegation and this and that. And I think to the degree which we can understand -- and this is where our health care providers are so valuable -- that, of course, we want parents to be informed and understanding and engaged, and that anxiety that new parents appropriately feel shouldn't be seen as an opportunity to say, oh, here we go again with another anti-vaccine parent, but here's an opportunity to help change those minds. That's going to be the tipping point we find ourselves in where the most strident views are getting more attention than they ever have before, and that is a challenge for this discourse, to be sure.

>> NAHID BHADELIA: Yeah. This conversation reminds me of, there's work that my center did, the Center of Emerging and Infectious Diseases around an annotated bibliography for trust. And all of the things we know, whether it's polio eradication or management of Ebola, it's the same lessons that some of the audience have mentioned also in the discussion, which is boots on the ground, having consistent longitudinal interaction with the community so there's trust that's already there so you're not just there for that one disease; understanding and going, like polio, the global polio eradication, one of the major questions. And the same thing came up with Ebola: Why are you here for this one infection? So, why are you here for this one vaccination issue? Why aren't you here for the rest of the health issues in our community? So, this idea of addressing health in its completeness, rather than focusing on just one particular intervention. So, I will put the link to that annotated bibliography for those that are interested in the chat.

But I want to switch to the other side of this, and we have multiple questions on the provider or physician/nursing/clinician side of the issue. And a whole bunch of questions, one that I wanted to start with, Wendy, is can you sue your doctor or nurse if they tell you not to get a vaccine and you get hurt? Then there are comments with the discussion about, you know, this difference of clinicians who are against mandates -- may believe and know that vaccines work but are against mandates or against -- right? So, there's this idea, Jason, of bodily autonomy. So, how does this work in infectious diseases scenario, where like, if you don't support it well enough, right, you might actually get people who don't take the vaccine and it will lead to public health and medical implications.

And there was a lot of questions around comments about the idea of we're putting all of this for the discussion between informed decision making between provider and patient; how much time do clinicians really have? How much education do they get? Even now, how much education do boards, medical boards, you know, all of the other medical professional boards provide to clinicians to address these kinds of questions? I think many who are already in practice are having to do this on their own. So, what kind of resources could be there?

So, let me open up that whole splash of questions and have you answer them.

>> WENDY PARMET: I'll take this, can you sue question. Yes, but it's really hard, right? And it's really hard for two reasons, when you've got to show that the physician did not practice according to the standard of care. And I think one underrecognized point is that the ACIP change in recommendations

is -- one thing it could potentially do is alter the standard of care. Now, it's not definitive, and I think one of the reasons why states are coming up with their own recommendations is it, right, in states, what is the state standard? And you've got the State Board of Health in certain states saying it's different than the ACIP.

But the other hard thing that I mentioned earlier is causation, right? And causation's, as I tell my tort students, often where tort cases go to die. So, you know you're going to have to -- so, with a tort -- with a vaccine like COVID or influenza, you know, given their efficacy and the way they react, it's going to be very hard to show the cause and effect that you wouldn't have gotten COVID but for the fact that your physician suggested not to. With some of the other vaccines, it's going I think to be easier, but it's still hard because, you know, but could it potentially be malpractice? Yes, it could, but it's going to be difficult for plaintiffs to prevail in those cases.

>> JASON SCHWARTZ: I'll jump in on the mandate question here, because mandates are very much sort of a double-edged sword for vaccination policy. We know from decades of experience that they are, have been a critically valuable and successful tool in sustaining the high vaccination rates that we need to prevent outbreaks. But absolutely, along with concerns around safety fears, the specter of compulsion and mandates is incredibly prominent in debates around vaccines, even in cases where mandates themselves aren't being discussed.

Right here in Connecticut, we had a press conference with our health department to talk about respiratory virus season and the importance of flu and COVID vaccines, and that press event was taken over candidly by critics of our School of Vaccination Mandate Policies here in Connecticut that don't allow non-medical exemptions, you know, miles away from the topic being discussed. And I think that's emblematic of how so often, even the focus on informed consent that I mentioned in the comments from the Acting CDC Director, connect so many questions around vaccines to the fact that the state-level -- not federal -- but state-level school requirements are so closely connected to vaccines.

And I think it's a challenge. We need them. But it's an important reminder that if, by the time kids encounter those requirements -- entering daycare or kindergarten -- that is long after we would want them to be vaccinated. And I think sometimes recognizing the importance and value of vaccination long before mandates come into play and recognizing their important role, but really a supporting role in vaccines, would do us a lot of good because it creates a great deal of challenge for the discourse around vaccines.

>> MICHAEL OSTERHOLM: Could I just wade in briefly on the mandate issue and say that I think public health has to take a step back and re-evaluate the concept of mandates. And what I mean by that is that when we first put these in place, the vaccines were actually putting in place in those mandates where vaccines typically had a very high level of protection against infection; they reduced substantially transmission; they had durable immunity that lasted for some time. And you could argue that those were all the characteristics that would make a vaccine why you wanted to mandate it.

On the other hand, when we get into vaccines like COVID and influenza and so forth, where we have limited evidence of

stopping transmission, limited evidence of even stopping infection itself, but surely, these vaccines are very important in reducing serious illness, hospitalizations, and deaths, major consequences of these infections. Now, are those two vaccines likely to, from the standpoint of mandated to protect the community actually the same? And I think we need to take a step back and actually ask ourselves, because I will go to the wall on mandating vaccines for childhood, such as even hepatitis B, based on the characteristics of what they do.

On the other hand, if I have a vaccine like influenza or COVID, I will highly recommend them. I will push them all till the end of the day, but I can see where someone could argue, you're not making the community necessarily that much better from an infection standpoint; how can you mandate them?

And I think that I don't have an answer for this one, other than to say I think it's a question we need to explore, to say what makes a vaccine one that we want to mandate?

>> NAHID BHADELIA: Rekha, any thoughts particularly around physician clinician empowerment? And there are questions, and I don't know the answer, whether the vaccine hesitancy is increasing among clinicians? I have not seen that anecdotally. There are some medical professionals asking for the exception, which is surprising to me, but I have not seen an increase of vaccine hesitancy among clinicians. Have you all?

>> REKHA LAKSHMANAN: I'll chime in. I haven't seen anything specific related to vaccine hesitancy amongst providers. Anecdotally, here and there. But what I will say is there is this kind of odd, emerging phenomenon with pediatricians, for example.

I had a conversation with a few pediatricians last week, and you know, what they're finding is, as parents are bringing their kids in, there's sort of this bifurcation of acceptance of care from physicians. And what I mean by that is there have been instances where parents are coming in, and while they trust implicitly their child's physician on their advice on sleeping patterns, nutrition, and so on and so forth, when it comes to vaccines, all of a sudden, the parent is shutting down and has a distrust of the advice of their child's pediatrician is giving to that family. And I don't have a solution and haven't quite, you know, figured out how to crack that nut, but I think that is something to sort of file away and be aware of, that there's this potential dichotomy happening, even in that conversation, where we've known physicians have been kind of that leading, trusted resource, but yet, we're also seeing sort of this divergence of picking and choosing what I trust my clinician on. And so, that's something I think we're going to have to address, you know, in the near future to equip and outfit physicians who may be experiencing that right now or could experience it in the future.

>> NAHID BHADELIA: Yeah, and I want to kind of double down to my call earlier. I just don't see enough resources to have trained our young clinicians and providers to tackle this enough. And I feel like that should be part of the competency we teach on all health professions as they're tackling the vaccine dis- and misinformation.

We have one minute, but this is tight. In one minute, we're going to solve this very complex question. And I know Dean Hyder is coming on, which is, none of this is happening in a vacuum. This is the information age or like the post-truth age, right? There is AI. Which is going to -- I learned the term "cognitive

reality" -- it's going to keep changing our cognitive reality over the next five years. And when we think there is tons of information out there already to actually help people make decisions, people are saying, "Well, there's the evidence they're effective?" There seems to be a gap between, well, we think we're already providing this information, and what people are doing as an uptake of that information in processing and making personal decisions. So, I will end actually there, because I see Dean Hyder is actually on, and I'll give him the last word on this. But I do want to thank all of our panelists and also those who contributed in the discussion. There were a lot of personal stories from providers, from patients, so do take a look. Just, it's been wonderful to host this. Thank you.

>> ADNAN HYDER: Thank you so much, Dr. Bhadelia, first of all, for moderating this amazing panel. I want to thank all of the panelists for spending your time and bringing your experiences and expertise to this discussion. And as you've all highlighted, this discussion doesn't have a single answer, but I think what is really important is that you're moving the discourse. And hopefully, that will move towards some form of a package or a set of ideas that might ground us as in the new realities where I don't think this resistance is going away immediately. And as Michael said, I think we have to rethink the, in some ways, just like we are rethinking all of public health in some ways with the challenges that we have. So, thank you for being leaders in your area.

I want to thank the Boston University Center on Emerging Infectious Diseases, as well as the Boston University School of Public Health, Politics and Health Lab, for co-hosting this event. Thank you all for joining today. And please note that our next Public Health Conversation is on October 14th, and that actually has already been highlighted here somewhat. It's going to be on Public health and the New Media: Modes of Persuasion. And this blends nicely into that topic. I hope to see all of you back in great force on October 14th. Thank you again to everybody who made this possible and to all those who participated. It's been a pleasure. Bye-bye.

(Session concluded at 2:30 p.m. ET)