



Dr. Stukus: Hello and welcome to "Conversations from the World of Allergy," a podcast produced by the American Academy of Allergy, Asthma & Immunology. I'm your host, Dave Stukus. I'm a board certified allergist and immunologist and serve as the social media medical editor for the Academy. Our podcast series will use different formats to interview thought leaders from the world of allergy and immunology. This podcast is not intended to provide any individual medical advice to our listeners. We do hope that our conversations provide evidence-based information. Any questions pertaining to one's own health should always be discussed with their personal physician. The Find An Allergist search engine <http://allergist.aaaai.org/find/> on the Academy website is a useful tool to locate a listing of board certified allergists in your area. Finally, use of this audio program is subject to the American Academy of Allergy, Asthma & Immunology Terms Of Use agreement which you can find at www.aaaai.org.

Today's edition of our Conversations From The World Of Allergy podcast series has been accredited for continuing medical education credit. The American Academy of Allergy, Asthma & Immunology is accredited by the accreditation council for continuing medical education to provide continuing medical education for physicians. Information about credit claiming for this and other episodes can be found at <https://education.aaaai.org/podcasts/podcasts>. Credit claiming will be available for one year from the episode's original release date. Today, we are pleased to welcome Dr. Tamara Perry to today's episode. Dr. Perry is the chief and professor of the Allergy of Immunology Division at the University of Arkansas for Medical Sciences and Arkansas Children's Hospital in Little Rock. Dr. Perry has led a distinguished career as a researcher and clinician, focusing her efforts on improving health outcomes for children in rural and underserved communities, including a lot of work using telemedicine and school-based approaches to assist asthma management. In addition, Dr. Perry is a current member of the board of directors for the American Academy of Allergy, Asthma & Immunology, and chair of the committee on the underserved. Dr. Perry is an excellent guest to help educate us all regarding today's discussion surrounding asthma disparities. Neither Dr. Perry nor I have any relevant relationships to disclose for today's conversation. Dr. Perry, thank you so much for taking time to join us, and welcome to the podcast.

Dr. Perry: Well, thank you, I'm delighted to be here today.

Dr. Stukus: Well, good, well, we're going to learn so much from this conversation, and it's so topical and important. But before we get into the content, you know, we're recording this right now in August of 2020, a time marked by, you know, a global pandemic due to COVID-19, and we also have tremendous societal unrest that was, you know, initially sparked by the murder of George Floyd, several months ago. And I've been asking a lot of our guests the very same question before we get into things, but if you're willing to share, how are you doing?

Dr. Perry: Well, thank you for asking. Well, I think I'm doing well, all things being considered. You know, obviously, like everyone else, I've had, you know, some increased stress and frustration. I've had to learn

to adapt to uncertainty, and you know, obviously, we've had a lot of changes in the medical community. But, you know, all in all, I've really tried to focus on some of the positives, like having an opportunity to spend more time, you know, at home with my family, just being a little bit more intentional about making those connections with family and friends. And fortunately, I've been also able to take up a new hobby. I've been cycling a few times a week. So, trying to look at some of the positives, you know, in a very stressful time that we're all experiencing together.

Dr. Stukus: I appreciate you sharing that. Is it outdoor cycling? Or are you doing something inside, on a stationary cycle?

Dr. Perry: Yeah, so I've been doing outside cycling. My husband and I both bought bikes recently, and we've been going a few times a week and loving it. It's great to get outdoors, especially, you know, since we can't travel or do some of the other things that we're typically doing at this time of the year.

Dr. Stukus: Oh, that's a great outlook. I know, we tried to buy new bicycles for our children, and apparently there's a huge shortage on all things that have to do with outdoor activities, and rightfully so, because everybody's thinking the same thing.

Dr. Perry: Yes, that's true. But the shop where we purchased our bikes said that they've been busier this summer than they've been in decades.

Dr. Stukus: Oh, my goodness. Well, you know, I appreciate your perspective on your personal challenges and how you've adapted. But, you know, what about in regards to your professional career? Have the events over the last several months changed anything for you in regards to your approach to caring for patients, or some of your research interests?

Dr. Perry: Oh, definitely. So, you know, just like we in the medical community have experienced a lot of stress and anxiety and frustration, I realize that our patients and their parents have as well. You know, we've all had to adjust to a new normal. So, you know, some of my parents who previously worked outside of the home are now working out-- in the home, and our kids are, you know, faced with virtual or home-schooling, and maybe even dealing with more serious issues, like illness or financial struggles. So, I've really tried to slow down a bit and listen to their concerns, because I know that those concerns impact their medical care. So just being a little bit more intentional about those conversations, and, you know, I think just like providers, our patients have had to quickly adjust to some different modes of therapy and modes of communication with their providers. You know, many of us are utilizing telemedicine more, and so, you know, this is all new for our patients as well. So just you know, trying to be patient and intentional in conversations with the patient.

Dr. Stukus: You know, I'm sure a lot of patients, you know-- it may not even occur to them, or they may not be forthcoming to bring these things up with you, but, you know, as you mentioned, we're all going through challenges. Do you have any examples of some of the conversation starters or questions that you use to sort of elucidate some of this information?

Dr. Perry: Oh, absolutely. So, usually, I just, you know, ask a straightforward question, like how are you coping with this pandemic? And you know, I've had a lot of patients and their parents who are very honest about how stressed they are, you know, the struggle that they're having, especially at this time of the year, when parents are struggling with how and where and when their children will receive education.

Dr. Stukus: Oh, that's great. Yeah, I've also had valuable conversations with families from the get-go, and I learn so much just by listening to them. So I think it's something that all of us can benefit from. And, as you mentioned, it really impacts their care and their health, and we're going to talk a lot more about that as we get into today's discussion. So, speaking of which, I'm looking forward to learning more about the disparities, but before we get into that, let's just start, so everybody sort of has the same background knowledge and definitions that we're going to use-- can you define asthma for us, and provide a description of, you know, why it's such a complicated and heterogeneous disease?

Dr. Perry: Sure. So, asthma is a chronic disease of the lungs, hallmarked by underlying inflammation of the airways, increased mucus production, and variable bronchoconstriction. Commonly, patients experience symptoms of coughing, chest tightness, wheezing, shortness of breath, and oftentimes, exercise intolerance. It's a heterogeneous disease that affects all ages and has variable expressions, with some patients having very mild disease and easily controlled symptoms, while others can have severe and difficult to control symptoms. You know, it's a very common chronic condition, affecting 25 million Americans. And children, also, have asthma as one of the most chronic-- I'm sorry, one of the most common chronic diseases, with about 8 percent of children having-- 8 to 10 percent of children, depending on the population, having asthma. That prevalence can be even higher in some high-risk populations. As many of our listeners will know, asthma disproportionately affects patients in low-income and minority populations. And these facts just suggest that asthma is a multifactorial disease, that results in, you know, variable expression and really explains the variability in patients that we see in the clinical setting.

Dr. Stukus: Is there a cure for asthma?

Dr. Perry: Oh, there's not a cure for asthma, but we definitely have effective therapies that have been proven to allow patients to have control of their symptoms, and have normal quality-- well, normal life and great quality of life, because those therapies have been proven.

Dr. Stukus: Yeah, so for any patients who may be listening, if you're not well-controlled with your asthma, and you're struggling because of frequent symptoms of exacerbations, absolutely contact your primary care doctor or allergist, pulmonologist, and, you know, there are ways to get things under control. So, that's a great introduction. Now, the next step, can you take a few moments to define disparities? What does that mean, and how does that relate to asthma? You mentioned a couple of teasers with your last introduction into asthma, but tell us more.

Dr. Perry: Okay. So, disparities-- well, I would define it as higher disease burden in one population, compared to another population. You can also define disparity as an inequality in health care access or insurance, decreased quality of care provided to one group, compared to the other. And unfortunately,

disparities in asthma, both prevalence as well as morbidity, have persisted for decades in minority and low-income populations, with those populations having a much higher disease burden as well as poorer access to quality asthma care.

Dr. Stukus: Now, so you mentioned that the prevalence is higher in certain minority populations. Are they just at higher risk to develop asthma in the first place? Or, you know, tell us a little bit more about some of the background behind that. What influences have we discovered through research?

Dr. Perry: Well, through-- well, I think, for many, many years, we have made some assumptions that genetic or biological factors were the-- were primarily responsible for some of the observed disparities. But I think, with recent advances in both genetics and epigenetics, we've found that that theory hasn't really been proven through the scientific evidence. In fact, you know, genetics has proven that people are-- of different races are more similar than they actually are different from each other. And I'm really not aware of any study that definitively show that genetics cause a greater burden of asthma or allergies among minority populations, or are related to worse outcomes, just on the basis of race. I think, you know, one of the things that we see, in terms of disparities in health care outcomes, are largely defined by some of the environmental and social factors that are really related to race and income, particularly in this country.

Dr. Stukus: Can you elaborate on some of those factors, and particularly how that may pertain to certain races or minority populations?

Dr. Perry: Sure. Well, we know that, you know, about 13-- in particular, because I am a pediatric allergist, so I know more the numbers related to pediatrics, but we know that about 13 percent of African American children have asthma. And that's much higher than white children in the United States. And because we don't have a genetic, you know, marker-- I mean, you know, with all the genetic studies that have been done, you know, there really haven't been any salient genetic features that have, you know, shown us that, you know, this is the reason why more African Americans are affected by asthma. Really, most of our studies have shown that, when you go back and look at social or environmental factors, such as housing, air quality, exposure to allergens or other environmental triggers, those are the factors that really impact outcomes, as well as likely impacts the increased prevalence of asthma in those populations.

Dr. Stukus: So, from what I'm hearing from you, it sounds like the-- certain minority populations are more likely to be exposed to certain environmental factors. That that is then influencing their increased risk to develop asthma. Does that sound like an appropriate summary?

Dr. Perry: I think that's an appropriate summary, and obviously, you know, they're probably-- there's a likelihood that exposure-- either prenatal exposure, exposure in early childhood, you know, all of those factors may have an impact on genetic expression of the disease, or the expression of the disease. I think that it is really important for us to think about how those environmental exposures, structural problems that children in low-income environments are exposed to that predisposes them to developing asthma.

Dr. Stukus: Are you talking about things such as the hygiene hypothesis and those sorts of theories?

Dr. Perry: Well, I think it really probably goes beyond that, to some degree, because we do know that, in some environments, we know that exposure to certain toxins or endotoxins or early exposures can be protective. So I think that also, you know, in terms of the hygiene hypothesis, it really does help us to see that it-- how important environmental exposures are, and how that might influence long-term outcomes, whether that's improved or worsening, you know, the likelihood that someone may have atopic disorders.

Dr. Stukus: I appreciate you spending some time talking about that, because what I'm hearing from you and what I want our listeners to hear as well, is it's no simple formula. It's a complicated, you know, interactions of, you know, potential polymorphisms and genetic predisposition, early life factors, and it's not just, you know, you grow up in a house with cats and you're protected or you're increased risk, or things like that. So I think that's a really good introduction to just how complex all of this is. And along those lines, you know, you mentioned some of these factors that are associated with increased risk to develop asthma, or higher prevalence. Do we see the same associations with just developing environmental allergies to things like pollen, animal dander, dust mite as well?

Dr. Perry: Yeah, I think so. You know, we know, from some of the prior research, that in minority populations, particularly Black or African American populations, we've seen higher levels of IGE, higher levels of FeNO, or fractional excretion of nitric oxide on, you know, pulmonary function testing. And so I think that some of these exposures are likely related to maybe modulation of gene expression that would relate to what we see, you know, in the laboratory or patients experience in terms of increased risk of atopy or having allergies.

Dr. Stukus: Okay. Now, I'd like to go back to-- you mentioned social factors. Can you describe some of those? You know, specifics that impact the disparities regarding asthma prevalence, and just, you know, how many people have asthma?

Dr. Perry: Oh, sure. So, well, in the United States, about 25 million Americans have asthma. When you look at the overall population of adults, that's approximately 7 percent of adults, 8 percent of children overall. And as I mentioned earlier, African American children are more likely to have asthma, with 14 percent of African American children having asthma.

Dr. Stukus: But in regards to the social aspect of it, is it access to care is different? Is it the type of insurance they have? Anything along those lines, that we've been able to identify?

Dr. Perry: Yeah, I think we've identified a lot of risk factors related to poor housing conditions, poor air quality, access to care is a major issue for some low-income and minority populations. You know, specialty care is accessible to a large percentage of Americans, but there-- we have many Americans who don't have access to specialty care, particularly those that live in rural environments, or those who may be uninsured or underinsured. We do know, also, that many of the large population studies that have been done in asthma have been done in urban environments. We have fewer of those types of studies in rural environments. But for those studies that have been done, we do know that, you know, having low-income, poor housing, you know, all of those things translate, even if the child or the person is living outside of an inner city. And in fact, you know, our group here has done some work in what's considered

the Mississippi Delta region of the _____ 00:19:17, which is one of the most impoverished regions of the United States, and we found, you know, very similar asthma prevalence rates to that of inner cities.

Dr. Stukus: That's interesting. You mentioned air quality, and I'm fixated on that, because with asthma-- obviously, with a respiratory condition. I would love your thoughts-- how do you assess that, when you have patients in a clinical encounter? What kinds of questions do you ask? What are the important exposures, both inside and outside the home, that impact air quality and potentially impact asthma as well?

Dr. Perry: Yeah, so, one of the things-- you know, obviously, I currently don't practice in an inner city, but I think for our listeners who may live in or who are practicing in inner city, air quality is probably more of an issue, because of traffic and dense population environments and pollution. So, those-- you know, those are things that you can definitely ask about. You know, are you living in an area, you know-- a large metropolitan or urban area with traffic and lots of air pollution? On the indoor environment, the number one issue that our patients have is exposure to environmental tobacco smoke in the home. And, so, I always ask about that and make sure that I educate our families about that risk, because that is definitely something that triggers asthma and can also be responsible for poor indoor air quality. We do know that, you know, about 30 percent of kids live in the home with a smoker-- or asthmatic children live in a home with a smoker, and that's probably one of the most modifiable things that we can do in the home to help our patients with asthma.

Dr. Stukus: You know, we've done a great job at my institution in Columbus, Ohio, where we've trained parents over the years, when we ask about, you know, indoor cigarette smoke. Every single one of them says, yes, we smoke, but we always smoke outside. So, do you have any tips for our listeners about, you know, how do you ask about-- how do you bring that subject up? I know it can be touchy for some folks. I've had great success just straightforward asking about it, but how do you ask about it?

Dr. Perry: Oh, goodness, I think all of our-- all smokers smoke outside. I mean, they know how to answer that question, right? Because they don't want to disappoint the doctor. But I-- you know, I just, you know-- I try to be real with the parents of my patients and say-- you know, just tell them the facts, and say, you know, I'm not judging them. I just want to create the best environment for their child, and, you know, give them some pointers on what they should do, you know, to actually decrease that exposure, which is actually smoke outside, remove the first layer of their clothing once they come back in, make sure that they are considering the car as a significant space where the child can be exposed to environmental tobacco smoke. If someone's smoking in the car, that should stop immediately. And, you know, just tell them what I know, in terms of resources that are available to them also, if they're interested in stopping or quitting.

Dr. Stukus: This is great. You know, I've-- I'm hearing you say sort of over and over again, in subtle ways, one, it's important for all of us just to be aware of the factors that really impact these disparities. But then, we have to take it to the next step and we have to actually ask the questions when we're seeing real-life patients in the office. And then, we have to be able to offer them something, whenever they tell us that they're having these exposures.

Dr. Perry: Yes. I think it's so important for us to, you know, not to take those interactions lightly, because I think that, you know, everyone wants what's best for their child. And the majority of patients-- you know, if they're adult patients who, you know, are struggling with quitting tobacco smoke-- or cigarette smoking, you know, they would appreciate you, as a provider, listening and helping them with that problem, if it's something that they want to do. If we can help them and provide those resources, I think they would be very appreciative.

Dr. Stukus: Absolutely. Now, we spent a lot of time talking about asthma prevalence, and it's well-established now that minority populations and those with various social factors, environmental factors, have disproportionately higher rates of developing asthma. But does that also translate to differences in their level of asthma severity?

Dr. Perry: I think it can, in some-- to some degree, because the exposure to those conditions that we talked about is more prevalent in those populations. So, exposure to triggers, poor access to specialty care, and also, poor access to-- or I'm sorry, not poor access, but more access to emergency or urgent care type settings in those populations is more prevalent. So we do see-- or it seems that, for those populations, the level of asthma severity may be skewed towards being more severe. But again, I think it's really hard to tease out, if it's actually worse disease or if it's related to some of these other factors that we've identified.

Dr. Stukus: Oh, that's a very important concept, and just another layer of complexity to the entire issue. You mentioned urgent care visits and emergency room visits, but when we talk about asthma morbidity, is it just really urgent health care utilization? Or are we talking about other factors as well, that impact somebody's life?

Dr. Perry: Oh, absolutely. So, emergency room visits are very-- you know, obviously, costly and important, but also, looking at utilization of other urgent care health care services, such as hospitalizations or sick visits to the regular doctor or to the urgent care clinic. And then, also, we have to think about morbidity as looking at things like decreased quality of life, increased medication use, and also, you know, some of the psychological factors that are impacts that asthma may have on someone's life.

Dr. Stukus: What about school attendance? Work? Things like that. Does that sort of fall into this category, as well?

Dr. Perry: You know, we definitely see, you know, direct medical costs as well as indirect medical costs increased, due to asthma. And we know about 500,000 hospitalizations annually, in the United States, are due to asthma and 1.3 million emergency room visits due to asthma, annually, are-- have been reported. But then, you have to look at the indirect costs associated with asthma, including decreased productivity at work, decreased or missed school for children. And some of those statistics are staggering. When you think about asthma for children in particular, they miss more than 13 million days from school, due to asthma, which is a completely treatable disease.

Dr. Stukus: Yeah, no. Those are sobering statistics. And speaking of, you know, one statistic that I rarely if ever hear about, especially in the media or in the mainstream conversation, is in regards to people dying from asthma. Can you inform our listeners about some of the statistics surrounding asthma mortality, and also, if this disproportionately affects minority populations?

Dr. Perry: Yes. So, we don't hear about death due to asthma very often. Fortunately, there has been a decline in the death rate due to asthma over the last few decades, and some of that has likely been related to improved therapy for asthma. Even though, you know, we have those therapies, about 10 people a day die from asthma in the United States. And again, Black and African American patients have a significantly higher mortality rate compared to whites and all other age groups. And, you know, one statistic that sticks out in my head is that Black or African American patients die at a rate three times higher than whites.

Dr. Stukus: Oh my gosh. So, and you're describing a chronic condition that impacts millions and millions of people, and yet, you've also discussed how it can be controlled, and a lot of these can be prevented. And we still have, as you mentioned, 10 people dying a day on average from asthma in the year 2020. That is, you know, something that I hope we hear a lot more about, you know, in the competing headlines these days. But, you know, speaking of management, we know that it requires a lot of education surrounding self-management. The ability to recognize symptoms, know when to treat, how to treat, and especially those with more persistent or severe disease, they have to take daily medications multiple times a day, control their symptoms, avoid exposures, all kinds of nuances to individual care. But can you talk about some of the specific challenges impacting populations at risk, and how that negatively impacts their ability to effectively control their asthma? What challenges do they face, in regards to self-management?

Dr. Perry: Yeah, so just like we were talking about asthma in and of itself being complicated, treatment of asthma can also be complicated for many patients. You know, we've had asthma-- national guidelines for the treatment of asthma for a couple of decades now, but, for some populations, and particularly low-income, minority populations, we know that those populations are less likely to receive the guidelines-based care. They're less likely to be prescribed, you know, the standard of-- standard therapy, which is inhaled corticosteroids. They're also less likely to receive a referral to an asthma speciality, and more likely to referral to receive asthma care in acute care settings like urgent care clinics or the emergency room, which also decreases the likelihood that they would receive, you know, the proper counseling or education that they need that would help them to effectively manage their asthma. And then, you know, further, I think patients in these populations are even also at high risk of being uninsured or underinsured, and they may not be able to afford the medical therapies that are prescribed to them.

Dr. Stukus: Wow, that that's a big problem, if you can't actually get the care that you need.

Dr. Perry: Right.

Dr. Stukus: Well, so, oh boy. A lot more to unpack there. But what about those who are prescribed medications and the therapy-- and there's-- you know, that's a whole separate conversation about the

variety of, you know, controller medications and rescue medications and ways to use them and things like that. But, are there identifiable characteristics that may occur more frequently among asthma patients from different racial or ethnic backgrounds that impact the way their bodies simply respond to specific medications?

Dr. Perry: Well, I think that the evidence for _____ 00:31:28 is-- has been, I would say, kind of weak. I think that we have seen some, you know, better or worse response to some medications among different ethnic populations. For example, there have been some studies that show that African Americans may respond better to inhaled corticosteroids compared to leukotriene modifiers. But I do think that some of that, you know, is also, you know, potentially related to, you know-- I think it's just really difficult for us to tease out all of those-- what we see, you know, those observed changes, medication responses, without looking at, you know, the social contexts. You know, maybe those patients are exposed to different environmental exposures, or triggers, that will-- would lend them to be more susceptible to a better response to certain medications. So I think we have a lot more to learn in this area.

Dr. Stukus: Yeah, that's a lot to control for, if you're trying to figure out, like you said, what factors are actually impacting response to specific medication. Sort of off the cuff here, in your experience and opinion as a researcher, do you feel that minority populations are adequately represented in research on asthma?

Dr. Perry: I don't. I think, in general, African Americans and minority populations in general have not benefitted from-- in particular some of the pharmaceutical trials. When you look at those studies, the African American population is generally much less than what we see in-- well, the population of participants in the study is much less than we see in the general population. And because we know that African Americans and other minorities have a disproportionate burden of disease, you know, I think it's important to maybe overpopulate studies with patients from these populations, so that we can learn more about response to medications.

Dr. Stukus: Yeah, that would be fantastic. What about community-based programs? What sort of programs have been developed, and more importantly, which ones have been shown to improve asthma outcomes among at-risk populations?

Dr. Perry: Well, fortunately, we've had a lot of success with some therapies that include school-based therapies for kids-- or interventions, I'm sorry, school-based interventions for kids, home-based interventions, and I think some of the most successful ones have been those that take a multi-pronged approach, because you know, as we were saying earlier, that this is a complicated, multifactorial disease. So not only addressing, you know, the medical needs-- medication needs of a patient, but also maybe addressing some of those exposures and things that happen outside of the medical clinic. You know, those types of interventions have been really successful. And I think some of the more successful ones have been those that have been developed with community-- people in the community who are invested, you know, building some partnerships with community advocates, so that, you know-- for instance, children who attend a community center after school or have a directly observed therapy done at school

or in an after school program, those types of programs have really been successful in improving outcomes for patients.

Dr. Stukus: Oh, and it makes sense. I mean, you described one of the major barriers to effective self-management is simple lack of access to care. You know, we've been expecting patients to come travel to come see us, but if we can actually go to them where they live in their community and their environment, it sounds like a win-win for everybody involved. You know, right now, you know, hopefully we have listeners from all over the United States, and often from other countries as well. And we talked before about the importance of not only increasing our awareness regarding these important factors, but then addressing it, you know, when we're seeing patients. Do you have a call to action for all of us? Are there tangible things that we can do to help individual patients? What would you like to see listeners take away from this on a practical level?

Dr. Perry: Well, I think we all have, you know, as providers, a skillset that we sometimes don't always put into practice, you know? We definitely know how to identify and treat, you know, asthma, utilizing the national guidelines as our, you know, guide. But one of the most important things I think clinicians can do to help individual patients is to listen, identify, and respond to social factors that might be contributing to adverse health outcomes. And we really need to treat the whole patient, and that might mean, you know, digging a little bit deeper in your questions. It might mean, you know, slowing down and just listening to what is being said without being said, you know? Because sometimes people give us little messages without actually saying the words. So, I'll give you an example, because, you know, we all struggle with this. You know, you're in a busy clinic, you look-- you may look at, you know, a prescription profile of a patient, and see, oh my gosh, they haven't picked up their, you know, controller med in four months. And, you know, I don't understand why, you know, they haven't done that. And so, you know, I had a recent encounter where that happened, and I talked to the mom, and I'm like, you know, I don't understand, you know? We've talked about the importance of taking controller meds, we've talked about, you know, that this is a controllable disease, and, you know, your child does not have to miss school, doesn't have to sit out from basketball. So I'm-- you know, I just-- there's something missing. And, you know, she just, you know, told me. She's like, well, you know, I don't have a car right now. And I can't get the meds. I don't-- you know, I don't have transportation to get to the pharmacy. And so it was like a lightbulb. I'm like, oh, that makes sense, you know? If you can't get to the pharmacy, you can't pick up the medications. And so, you know, we made a couple of phone calls and we were able to get home delivery for that patient. So, you know, I think that that is one thing that I hope that people will take away from this, is that, you know, sometimes, you know, we have to think and not judge why something may be happening in a patient's life, and help them problem-solve. So, when we identify, you know, those social factors that may be impeding our care, we can utilize our resources to help, you know, the patients problem-solve.

Dr. Stukus: Do you have any training in, or do you utilize motivational interviewing during these interactions?

Dr. Perry: I don't have any training, formally, in it. But I think, with some of the research that I've done, and just, you know, being in practice for many years, you know, I do try to employ those tactics when I'm speaking with patients.

Dr. Stukus: Yeah, as you mentioned, a nonjudgemental conversation, really. We're trying to help them, and they're trying to help their child. Absolutely. You mentioned that there's a lack of representation among minority populations, especially in pharmaceutical research and clinical trials and things like that. What do we actually have that currently exists in regards to efforts that are being done for research in this area, funding pipelines, and advocacy? Can you give us some more information regarding that?

Dr. Perry: There are definitely some new and exciting initiatives. I recently, you know, have been looking more into funding opportunities through some of our national and federal funding agencies that are looking more at antiracism research and research that addresses structural and social inequities. And so that's really exciting. And then, we also have a lot of research, currently, looking into technology-based solutions, which I think is going to be vitally important, you know, utilizing telemedicine and mobile applications to help with the health care delivery. So those are some really important and exciting things, I think, that are happening in the research community.

Dr. Stukus: That's great. And you mentioned telemedicine, which is something that was foreign to almost all of us, just six months ago, and now almost all of us are doing it, to some degree. But you've been doing it for a while, and I'd love to hear more. Can you tell us about your work using telemedicine services and school-based approaches to help patients living in rural areas, where you are?

Dr. Perry: Yes, so, you know, it has been really an uphill battle, you know? I think medical providers, or the medical industry, has been far behind many other industries, in terms of the use of audiovisual technology. And we were thrown into the fire in March. So, I was really happy about it, you know, being in my position as medical director of telemedicine, you know? We, you know, of course were crazy busy with trying to get people started with telemedicine, but I really feel like, even pre-COVID, that medicine was going to eventually get there, we just got there a lot faster than, you know, we had, you know, previously anticipated. I think that consumers-- patients are going to not only want but demand, to some degree, that their providers offer some telemedicine solutions. And we've, you know, I think, seen throughout this pandemic that telemedicine can absolutely enhance our practice. You know, there are some patients who we can speak to either, you know, over the phone or via a video visit, to handle some simple problems. And in particular, for people who live in rural areas, it is really, really convenient, and helps to improve the care that they receive, if we're able to see them while they're still in their community. You know, I think about, you know, some of my followup patients who, you know, I need to see, periodically, but I may not need to see them every single visit, especially if they're doing well, or if, you know, they have a simple medical complaint that I can handle via telemedicine. I can save them time traveling, I can keep the parent, you know, at work, and the child in school. So I think that's a win/win solution, and I'm really excited. I hate the circumstances under which, you know, we became more able to see all of these patients via telemedicine, but I think, on the other side of it, you know, medicine will benefit.

Dr. Stukus: That's one of the few silver linings throughout all of this, right?

Dr. Perry: Yes.

Dr. Stukus: Yeah. Now, what about asthma specifically makes it so great for telemedicine?

Dr. Perry: So, you know, I think with our program here, we've been doing telemedicine followups for a couple of years via telemedicine. And it's so perfect, because, you know, obviously, as part of the national guidelines for patients with persistent asthma, we should see them several times per year, to actually help with medication management, monitor for side effects, and, you know, again, some of those visits absolutely need to be done in person, but not all of them. And we've been able to successfully utilize peripheral devices to actually conduct physical exams for our patients remotely. We've also been able to conduct remove pulmonary function testing, and really provide care, you know, that's comparable to the care that we provide in person via telemedicine. So I think asthma's one of the chronic conditions that is perfect for telemedicine. It helps us to stay in line with the guidelines in terms of frequency of visits, as well as, you know, keeps us in touch with our patients without them having to miss even more school or work just for routine care.

Dr. Stukus: Oh, that's great. And, you know, I've also been fascinated by our rapid incorporation of telemedicine. And I love it as well, I think it works out great, especially for followup visits. And it saves travel, and you can provide the same level of care, in many instances. But, you know, we've also found that this can be an area that can actually highlight some of the disparities among our patients from various backgrounds. Can you comment on some of the things we've learned in regards to that?

Dr. Perry: Absolutely. So we have seen-- you know, we have been particularly plagued with technology limitations, internet access limitations, for some of our patients who live in really rural areas of our state. So I think that this is an area that needs to be addressed, you know, obviously at a much higher level. You know, this is a problem that needs to be addressed by our, you know, federal and state and local governments, to improve access to the internet and wifi, so that those patients who live in areas that are currently, you know, without access, can have the same benefits as patients who live in areas with those capabilities.

Dr. Stukus: Isn't it amazing that something we all take for granted with the phones we have in our pockets and the power that they bring us, and yet there are segments of our population in highest need, at highest risk, who just lack basic cellular service or access to wifi. It just-- that blows my mind.

Dr. Perry: Oh, it's amazing. You know, I've read stories about, you know, families-- you know, I think it also came to light during this pandemic when children were taken out of school, and a lot of schools had to convert to virtual, you know, education. And, you know, families that didn't have internet access were left out, you know? They had to go to public spaces or, you know, drive, you know-- still had to drive, you know, several miles, to be able to provide that internet access-- to receive that internet access. So I think it's something that's really, really important to be addressed with our government.

Dr. Stukus: You know, from your personal standpoint, with all of your efforts with telemedicine and research and advocacy and everything that you've done in your location, have you physically spent time in some of these rural locations? And if so, how has that changed your perspective?

Dr. Perry: Well, I'm glad that you asked that question, because yes, I have. So, you know, I actually grew up in a very rural area of the state. I actually grew up in the Mississippi Delta. So I know, firsthand, you know, some of the struggles and the limitations of living in a really, really rural area. You know, when I was growing up, we had to go to a physician probably an hour and a half away from where we actually lived, for medical care. So I think that that has given me a lot of perspective on the struggle that people have in rural areas. You know, obviously, things are a bit different now, because, you know, that was just a couple of decades ago, but I think some of the struggles still remain. You know, that poor access to medical care, limited access to internet or technology, and, you know, having a very medically underserved region-- you know, regions in this country. You know, those things remain to be problematic.

Dr. Stukus: When you interact with your colleagues from across the country that also have similar efforts like you do with trying to expand care into communities and rural areas, do you find that, anecdotally, do they have similar backgrounds? I'm fascinated, and I wonder how much of that-- you know, your growing up played into your professional interests, but have you noticed that among others as well?

Dr. Perry: I have, in some. But I've also had plenty of colleagues who grew up in, you know, large cities, you know, who, you know, have seen, you know, equally disproportionate problems in terms of access or, you know, other factors that impact the medical care that patients receive. So I think a lot of us with interest in disparities go into it because, you know, maybe some early life exposures to those conditions, or just an interest because, you know, we recognize it as a major problem and a gap that needs to be filled.

Dr. Stukus: Oh, boy, Dr. Perry, I could talk to you all day about this, it's fascinating. And I want to be respectful of your time though, and thank you so much for joining us. This has been extremely informative. Before I let you go, is there anything else you'd like to add?

Dr. Perry: Well, I'd just like to say thank you so much for addressing, you know, disparities in asthma, and giving me the opportunity to discuss it. It obviously is a passion of mine, and I am very hopeful for the future, excited about some of the initiatives that we spoke about, in terms of increasing the utilization of technology and you know, more research into the social factors that play a role in disparities. So thank you so much.

Dr. Stukus: The pleasure was all ours, thank you. We hope you enjoyed listening to today's episode. Information about credit claiming for this and other episodes can be found at <https://education.aaaai.org/podcasts/podcasts>. Credit claiming will be available for one year from the episode's original release date. Please visit www.aaaai.org for show notes and any pertinent links from today's conversation. If you like the show, please take a moment to subscribe to our podcast through iTunes, Spotify or Google Play so you can receive new episodes in the future. Thank you all for listening.