MICHAEL: IN THIS EPISODE, I'LL BE TALKING WITH MR. DAVID SAUNDERS AND DR. ALEXIS SANTOS. MR. SAUNDERS SERVES AS THE DIRECTOR OF THE OFFICE OF HEALTH EQUITY WITHIN THE PENNSYLVANIA DEPARTMENT OF HEALTH AND JOINS US FROM HARRISBURG, PENNSYLVANIA. DR. SANTOS IS ASSISTANT PROFESSOR OF HUMAN DEVELOPMENT AND FAMILY STUDIES HERE AT UNIVERSITY PARK AND RESEARCHES SOCIAL DISPARITIES AND STRESS, HEALTH, AND MORTALITY. DR. SANTOS IS ALSO A DEMOGRAPHY DATA FELLOW WITH THE PENN STATE ADMINISTRATIVE DATA ACCELERATOR.

FIRST OFF, THANK YOU BOTH FOR TAKING THE TIME TO SPEAK WITH ME TODAY.

DAVID: You're welcome.

ALEXIS: Thanks for having us.

MICHAEL: I JUST WANTED TO START THIS OFF DISCUSSING IN BROAD STROKES SOME OF THE WORK THAT WE'VE DONE IN COLLABORATION WITH THE DATA ACCELERATOR AND THE OFFICE OF HEALTH EQUITY. IN PARTICULAR, ALEXIS, SOME OF YOUR WORK IDENTIFYING THE ASSOCIATIONS BETWEEN HIGHER POVERTY LEVELS AND LOWER LIFE EXPECTANCY IN PENNSYLVANIA.

ALEXIS: Sure, so we got a petition from Mr. Saunders asking us to look at potentially replicating an analysis that was published in a prestigious journal, but specifically for the case of Pennsylvania. What we did was access the data for Pennsylvania through the United States Census Bureau health metrics, and we were able to reproduce that analysis. Our findings were quite interesting, and I know we'll go into detail later on, but it's looking at what are the correlates or the associations between socioeconomic characteristics of the counties of Pennsylvania and life expectancy, which can potentially help us address disparities across the state from a policy perspective.

MICHAEL: THAT'S GREAT. ONE THING, DAVID, WE REALLY WANT TO LOOK AT THIS THROUGH THE LENS OF HOW MANY SOCIAL DETERMINANTS OF HEALTH ADVERSELY AFFECT VULNERABLE COMMUNITIES. CAN YOU JUST GIVE US A LITTLE BIT ON WHAT YOUR OFFICE DOES AND YOUR MISSION, AND HOW THIS INTERSECTS WITH SOME OF ALEXIS' GOOD WORK HERE.

DAVID: I definitely can. Our office focuses in on vulnerable communities throughout the state—not just racial and ethnic minorities, but those that are, in many

cases, disenfranchised, impoverished rural communities, as well as urban communities—and we collaborate across with board with other agency county groups to advocate—or educate I should say—mostly look at ways to collaborate along policy lines, along a system. Any way that we can possibly do to make the citizens of Pennsylvania the most healthy as they possibly can be.

MICHAEL: GREAT, AND AS WE HAVE IDENTIFIED THROUGH ALEXIS' WORK, YOU REALLY LOOKED AT SEVERAL—A VARIETY OF DIFFERENT VARIABLES OF SOCIOECONOMIC PERSPECTIVE, RIGHT?

ALEXIS: Yeah, so from a social determinants of health perspective, you would—a would think that there's a certain number of characteristics that put people or groups at different odds or probability of having higher or lower life expectancy. For example, some of those are characteristics that are things we acquire like education level, and we have—certainly, there's barriers to achieving or attaining a higher level of education and, of course, we know that education and higher levels of education places you in a better position to have a better income down the road.

This perspective—what allows us to do is frame or start looking at the variables that we can start starting correlations across the state. Again, some of these groups that Mr. Saunders mentions are groups that have not only one of these characteristics, but they may share areas of them. For example, lower education attainment has been associated with higher poverty rates in areas across the nation and around the world. What this analysis allowed us to do was to scratch the surface of the problem by looking at associations, at the county level, of these various characteristics. For example, household income, persons who have a health insurance—and we know that income is a strong determinant of having a health insurance in the United States. Whether or not the person is employed or not. Whether or not there's a high concentration of poverty in the county.

Framing this analysis from the social determinants of health allowed me to identify which variables could have a potential link with life expectancy differences in the state, and that's how I approached the problem so that we could produce this report.

MICHAEL: THAT'S FASCINATING, ESPECIALLY BECAUSE IT'S REALLY APPLYING A RIGOROUS ANALYTICAL FRAMEWORK TO—AS WE SAID EARLIER—TO WHAT HAS BEEN A NATIONAL MODEL IN THE PAST, AND HAS NOT REALLY LOOKED AT INDIVIDUAL STATES AND WHAT PENNSYLVANIA, IN PARTICULAR, WHAT STORY THE DATA TELLS HERE.

ALEXIS: We found that for the state of Pennsylvania, we had a high life expectancy in counties such as Centre County; Union County; Chester County; Pike County; and Montgomery County, which were counties that were identified as having more than 80 years as life expectancy at birth. I think what was concerning to us was also that we saw differences in life expectancy—oftentimes a gap as big as six years—and some of these counties include Philadelphia County, Forest County, Fayette County, Sullivan County, and Schuylkill County—Yes, so I don't know if David has any perspectives on these last five that I've mentioned.

DAVID: Well, you know what's interesting. Even a couple of the municipalities that you mentioned like—not municipalities, but counties that you mentioned—like Montgomery County. One thing we need to be mindful of, even those counties in some cases that have a high life expectancy—they're doing well from an overall health outcome standpoint—they may have municipalities within them that are not doing so well. Like Montgomery County has Norristown—those pockets of, in many cases, racial and ethnic minorities that tend to not fare as well as the overall county, so I did want to pull that out.

You mentioned those counties like a Philadelphia, like a Fayette, like a Schuylkill County—those rural counties like Fayette and Schuylkill counties—in many cases, of course, the industries that really supported individuals in those counties are not as present—not as prevalent as they used to be—steel and coal. Fayette is pretty far away from the center of the state. In many cases, those rural counties are not doing well.

Then you come back to a Philadelphia. Very much so, it's a tale of two portions of the county—of two portions of the city. You have a Center City, Philadelphia that in many cases have a higher income level. You go outside of Center City, Philadelphia into north and west Philadelphia where there's a lower income level, and those are the areas of Philadelphia County that have a lower life expectancy, poorer health outcomes, and it could be the difference between living to 78 years of age or 68—it's that vast of a difference—within 2 to 5 miles away. It's a stark difference depending upon where you live in the state of Pennsylvania. The same way across the country. Those pockets of impoverished individuals. Those are the areas where they're faring the worst from a health outcome standpoint.

ALEXIS: Yeah, and particularly if we're thinking about this as a social determinants of health, it may be possible that these counties that I mentioned with low life expectancy, it may be that the social enclaves or the characteristics of the populations themselves are quite different. For example, Philadelphia County may have a diverse population, but it may be dealing with homelessness, and some other counties may be dealing with a shortage of access to care.

MICHAEL: I WAS WONDERING, AS YOU WORK THROUGHOUT THE STATE, ARE THERE PARTICULAR TOOLS IN YOUR TOOLBOX THAT YOU TRY TO LIFT UP TO SUPPORT VULNERABLE COMMUNITIES ACROSS THE GAMUT, IN PARTICULAR?

DAVID: Yeah, we have several. One is something that we call Public Health 3.0, and that's at the county level. We try and bring around the same table those representatives that, either they're from education or from housing, government, and health, and we want to break down those silos. We develop health coalitions at the county level, if you will, and we make sure that we work with them to ensure they're focusing in on those priorities like obesity and tobacco and substance abuse and diabetes management, as well as oral health, and we provide technical assistance, access to funding where possible, and we connect into a variety of different agencies and organizations that could support the effort.

We also have something called the Pennsylvania Interagency Health Equity Team. We're the first—and actually only—state in the entire country that has a team made up of state agencies meeting on a regular basis looking at policies, looking at systems, looking at environmental changes that affect those social determinants of health across the board. We have, for instance, transportation—the departments of transportation, education, and economic development, and aging all around the table trying to get the resources to the counties and to those municipalities across the state, so they could address their own local needs. We have the top level of agencies—at state level—getting down to that more county and community level. We're trying to connect the two. That's just two of our programs, if you will.

MICHAEL: THAT'S GREAT. I'VE BEEN A PART OF THE PIHET MEETINGS, AS THEY'RE KNOWN—OR P-HET SOMETIMES. THE PENNSYLVANIA INTERAGENCY HEALTH EQUITY TEAM. DAVID HAS GRACIOUSLY INVITED PENN STATE AROUND THE TABLE, AND IT REALLY IS A REMARKABLE COLLECTION OF—AND KIND OF AN INNOVATIVE TECHNIQUE THROUGHOUT THE STATES MODELED AFTER THE FEDERAL SYSTEM, AND I THINK IT'S BEEN REALLY POWERFUL IN CONNECTING PEOPLE.

ALEXIS: I think David's comment is on point. Maybe we need to start looking at more smaller units, and this may be something that we can do through the accelerator with the restricted data that we have.

At the county level, what we found was a strong correlation between high poverty rate and low life expectancy as we would expect from the social determinants of health model. We found that the median household income—which may actually be another way of measuring how is your socioeconomic status—that also is correlated with life expectancy, so if you had a higher

income, the county was more likely or correlate it with a higher level of life expectancy.

The last one in this income category variable that we found that was interesting was the median house value for owner occupied houses. It means that if houses of a higher value at the county level were associated—or price was associated with a higher life expectancy.

These are three variables that are letting us study differences in life expectancy with different focus. One is individual income, the other one is household income which may be pooling resources together from the whole family, and the other one is just a measure of wealth—is the house that you own, and the three of them are giving us consistent patterns of the better off this number is, the better the life expectancy of the county is.

DAVID: In areas like, let's say Harrisburg, you have lower levels of individuals who own their home. If you own a home, you pay taxes on that home. The taxes that you pay on that home contribute to the school district—the local school district. If you don't have that tax base, your educational system is deprived. They're deprived of resources, computers, warm facilities—or cool facilities in the summer—books, training for teachers, extra-curricular activities. It's not a surprise that in areas that are impoverished, you have lower high school education. There are lower numbers of individuals that graduate from high school. Lower numbers of individuals that graduate from high school in four years, which is the health equity measure.

It's no surprise—let's say in Centre County where the levels of education is higher—there's higher numbers of individuals who own homes. All these things are connected. If I have a higher income—no matter what the person's skin color is—if I have a higher income, I'm going to have access to better grocery stores. In some areas of this state, there are food deserts where you don't have access to a Giant or Weis. In some cases, you're going to the dollar store, and at the dollar store—which there are more dollar stores than there are Walmart's and Target's combined—they have a dearth of perishable food, so you're not gonna get fresh fruits and vegetables.

In the rural community, you have a lack of medical facilities. In many cases, emergency rooms are the first place that people go to when their sickness is at a level where they have to go to the emergency room. It's a cycle that is both prevalent in the urban communities such as Philadelphia, as well as some of the outlying rural areas.

One of the things that I try to make sure that people understand is, while there are some racial and ethnic issues—discrimination, racism is clearly an issue in this state as well as across the country—there are rural populations made of white American's that are dealing with some of those same issues that relates

to these social determinants of health and lack of income, and those areas need to be addressed just as much as the urban areas of the state, and it all comes back to income. When it boils down to it, it all comes back to a lack of income and opportunity.

ALEXIS: You mentioned that there's spatial differences—the urban spaces versus rural—we found that the highest percent of population is 65-years-old, so counties that have higher concentrations of older adults have lower life expectancy, and this may speak of the rural component of Pennsylvania and the need for us to start addressing, also, the necessities and the health necessities of those areas as we move forward in the policy discussion.

MICHAEL: THAT'S RIGHT. YEAH, I HAVE TO THINK THIS ALL LEADS US TO THE POINT WHERE WE ALL AGREE, RIGHT, THAT THESE ARE ALL THE SPILLOVER EFFECTS OF A SYSTEM THAT ALL AFFECTS EACH OTHER. WHAT I'D LOVE TO DO IS TALK ABOUT SOME OF THE IMPLICATIONS FOR THIS WORK GOING FORWARD, AND HOW WE CAN BE SUPPORTIVE OF THE MISSION OF THE OFFICE OF HEALTH EQUITY AND OVERALL GOVERNMENT AS WELL. REALIZING THAT IT IS A COMPLICATED AND VERY STRATIFIED PROBLEM.

DAVID: Yeah, I'll chime in there. I think the work that Dr. Santos did is an example of what agencies like ours really would love to do, but don't necessarily have the time to do. We have epidemiologists on staff, but in many cases, they're connected to federal grant and that sort of thing, so they could do specific things, but there are some times where we have a great need to look at one area or another that's not in a long-term plan under a specific grant, and the work that Dr. Santos did really gave us an opportunity to look at a particular issue, and we used that information to help us develop a financial health forum.

I know Penn State is doing a lot of work around the opioid epidemic, but there's burgeoning issues really have been on the table for many years around infant mortality, maternal mortality. I know Penn State itself is looking at telehealth, and really what I'm hopeful of, going forward, to accelerate the improvement of health is really to engage universities like Penn State and really looking forward. Looking backwards to a certain extent in how did we get to this point, but really looking forward. Looking at the data that we currently have available to us. Filling in gaps where we don't have data, and really accelerating processes to improve health. Looking forward with the resources that Penn State has available to them.

To me, we should really be looking—based upon what we currently have in regards to data—at what we should expect in 5 to 10 years as opposed to, in 10 years, reacting to what we could possibly be looking at today in the way

of changing some policy systems environment based upon the data that will tell us what's gonna happen in 10 years. If that makes—

MICHAEL: THAT'S RIGHT. YEAH, AND I REALLY LIKE YOUR FOCUS ON DATA BECAUSE WHAT REALLY MADE THIS WORK POSSIBLE WAS THE AVAILABILITY OF THE DATA THAT ALEXIS WAS ABLE TO ANALYSE USING THESE 14 VARIABLES TO IDENTIFY SOME OF THESE CORRELATIONS. IT'S ONE THING THAT WE, ARE REALLY FOCUSING ON LIFTING UP AS MANY DATA SOURCES AS POSSIBLE TO TRY TO DRAW THESE INFERENCES THAT ARE REALLY TRYING TO BRIDGE THE GAP BETWEEN AN ACADEMIC DISCUSSION WHICH FOCUSES ON KNOWLEDGE CREATION AND, MOVING FORWARD, THE SCIENCE, AND BRIDGING THAT GAP INTO A POLICY DISCUSSION WHERE WE CAN TRY TO SUPPORT AND EDUCATE POLICY MAKERS TO UTILIZE AN EVIDENCE BASE.

ALEXIS: Also, to accentuate and support what David said, academic research takes times to get out and get published if we send it out to an academic journal. I think precisely the fact that the center is accelerating these analyses and are making them available to policy maker on a timely manner, is potentially one of the greatest assets that we have here. If we leverage collaborations with David's office—the Office of Health Equity—with other offices across the state, they'll find that if we were to submit this to a peer review journal, they'll be getting an article in a year and a half.

Nowadays, academics are starting to look at more creative ways to disseminate the results in a timely manner, and creating these policy briefs—or reports that are easy and accessible for people to read—is one way, and I think that the important fact here is that this is a data analysis that is addressing social issues in a timely manner. We're not talking about a problem from seven years ago. We're talking about policy issues that are being addressed as we speak.

DAVID: Yeah, I would agree. We need this information yesterday because there's so much to be done and to have a credible academic institution like a Penn State that basically it's not David Saunders coming up with this information, it's Penn State verifying this data.

ALEXIS: I think one thing that I would say is that one thing I appreciated when the physician from David came, was that already had a road map for us. He said, "Listen, there is this analysis done at the national level. I want to know if this applies to Pennsylvania." He provided us as much of a blueprint from what he wanted and, from there, it was really easy to get the data and perform the analysis and write a report.

MICHAEL: I WANTED TO TALK JUST A LITTLE BIT ABOUT JUST LEVERAGING DATA IN GENERAL IS NOT NECESSARILY A FORGONE CONCLUSION IN MANY CIRCLES. THAT'S ONE THING THAT WE ARE TRYING OUR BEST TO LIFT UP: THAT EVIDENCE-BASED POLICY MAKING IS A ROUTE THAT PROVIDES FOR SEASONED APPROACHES THAT CAN IMPROVE EFFICIENCY BOTH IN GOVERNMENT DOLLARS, BUT ALSO IN AFFECTEDNESS OF PROGRAMS.

I WONDER IF YOU GUYS—IF, DAVID, YOU HAD ANY INSIGHTS ON THE CLIMATE IN GOVERNMENT. YOU'VE BEEN ON THE FRONTLINES OF WHAT THE DATA CULTURE IS AND HOPEFULLY OF SOME PERCEPTIONS OF THE FUTURE.

DAVID: I hear it all the time that we don't have enough data. That the data that we have is not shared. The data that we have as different agencies are not easily accessible and not in one place. It should drive our decisions going forward, but we, over the years—this is historical—we've always kept our data to ourselves. Even internally, sometimes it's not easy to find data, so I believe that data will always be needed. People like myself who don't have a lot of time to go find it. I deal with a couple of different folks within our Epi department here that I count on to not only give me the data, but I need, from time to time, someone to break that data down for me. Someone like Dr. Santos who can say, "Okay, well, here's the data, but this is what the data means," as opposed to me trying to figure that out.

I see a need across the board with various agencies. Even to get that information out from the agencies out to the public and at that local community level, and getting that data from the community level up to even the state agency level.

To answer your question, I really believe that it's a need that will continue to be present. The more coordination that we have around data and the more dissemination, the better.

ALEXIS: I want to echo some of the things that David said, and what I'll say regarding this discussion of using data—using administrative data—I have two points. One is, the plural of anecdotes is not data, so we may hear that one or two or three persons say, "I had this experience," and we need to see whether or not the data support those narratives. Both pieces of data are important, but we need to reconcile what's being told to us with the data that we have available for analysis because if those two don't match, something's happening.

This brings me to another point which is the three fundamental pillars of being able to leverage administrative data to help policy and decision making, and one of them is access to data. The second one is having reliable sources,

and number three is having those results available for people to use. Oftentimes, what we find is a barrier to access to the data, and it may stem from a variety of reasons like a government officer may think that by sharing data, they may be evaluating him. It's happened to me when I ask government officers for some data. They say, "Are you gonna make me look bad?" and that's not the case. The case is we want to evaluate what's happening so we can better inform decision making processes.

I think David and I are on the same page on this. If we have data available, and we can use it to inform decision making and also to inform ourselves of what's happening around us, I think that's, again, right there. If it translates into policy, that's a super gain, but just by starting to do these efforts, we're already doing something different—something meaningful.

MICHAEL: THAT'S RIGHT, AND THAT REALLY SPEAKS TO A CULTURE OF DATA IN A LOT OF GOVERNMENT SPACES, I FEEL, THAT I THINK HAS BEEN A PATCHWORK QUILT OF APPLICATION AND DEVELOPMENT. SOME AREAS AND SOME LEVELS OF GOVERNMENT—SOME AGENCIES—HAVE BEEN VERY FORWARD THINKING IN EMBRACING A DATA CULTURE. ONE WHERE EVALUATION DOES NOT NECESSARILY MEAN SOMEONE'S IN TROUBLE. IT MEANS, MAYBE, IT'S TIGHTENING EFFICIENCY AND IMPROVING METRICS IS A POWERFUL TOOL. I THINK THAT'S A VERY GOOD POINT, ALEXIS. THANK YOU.

MICHAEL: WELL, I JUST WANNA REALLY THANK BOTH OF YOU FOR YOUR TIME TODAY. I THINK THAT THIS IS REALLY AN IMPORTANT INTERSECTION AND A GREAT POTENTIAL FOR FUTURE WORK, AND HOPEFULLY A GREAT MODEL FOR A FUTURE APPLICATION IN A VARIETY OF OTHER AREAS WHERE WE'RE REALLY BRINGING IN THE ACADEMIC PERSPECTIVE AND ALSO THE PRACTITIONER AND GOVERNMENT PERSPECTIVE AND TRYING TO BRIDGE THAT GAP AS MUCH AS WE CAN.

AGAIN, THANK YOU VERY MUCH DR. ALEXIS SANTOS AND ALSO MR. DAVID SAUNDERS FROM OUR PENNSYLVANIA GOVERNMENT. I REALLY APPRECIATE IT.