Nirav Shah:

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Announcer:

He was a familiar face in Maine during the COVID-19 pandemic. Now, Dr. Nirav Shah is back in the Pine Tree State and talking with us about sustainable healthcare and public health.

Tim Doak:

Welcome listeners to Sustainable Healthcare. I'm your host, Tim Doak. Anyone who lived in Maine during the COVID-19 pandemic will undoubtedly remember Dr. Nirav Shah. He served as the head of the Maine CDC and then went on to serve as principal deputy director at the US Centers for Disease Control and Prevention. Now we're thrilled to have him back in Maine where he's teaching at Colby College. Nirav, thanks for joining us.

Nirav Shah:

Thanks, Tim. Honored to join you guys.

Tim Doak:

It's great to have you here. And just so we're clear with our listeners as well, you prefer to be called Nirav these days, not Dr. Shah, right?

Nirav Shah:

That is correct. That is absolutely right.

Tim Doak:

Fantastic. So let's jump right in. In your roles at both the Maine CDC and the US CDC, I think you'd have a bigger picture view than most about the effects of climate change on public health. Do you see a clear link between our changing climate and personal and public health?

Nirav Shah:

The answer is yes, and it's not so much just what I happen to see, it's what all of us sees and what scientific data are showing. That is to say the changing climate is affecting public health, not just around the globe, but here in Maine in various and different ways. And I know we'll get into them, but just to set the table, some of them are what we read about and experience every single summer, summers that are hotter than they were before. As they say in The Simpsons, even though it might be the hottest summer of my life, for a lot of younger listeners, it's the coldest summer of their life because it's only going to get warmer and warmer. So that's one category.

Another category that affects the entire globe and may affect Maine as well are increases in infectious disease risks. Some of those, again, are happening in faraway places because of climate change that's forcing people to interact with animals in different ways. But some of it's also happening here closer to home. For example, the increase in tick-borne illnesses like Lyme disease. And then another category that's very much on the minds of everyone in public health, including folks here in Maine, is the intersection of climate change and weather-related events. We've experienced significant flooding in Maine. It's also conceivable that phenomena that haven't occurred in Maine like wildfires may start too. So we've got to cast a broad net, which we are doing in Maine. We've just got to make sure we stay committed to it.

Tim Doak:

Sure. So clearly there is a link. Do you feel that link is widely understood and accepted in the broader public health community?

Nirav Shah:

within the public health community, I think the answer is yes. However, I suspect that even within public health, folks have a sense of the way in which climate change may affect their very narrow area of focus within public health. If you're an infectious disease epidemiologist, you're probably really focused on the ways in which climate change is, again, affecting the boundary between animals and humans and driving more of those interactions leading to more possible spillover events of diseases like Ebola and so on and so forth. If you are someone who focuses on environmental health, you're probably a little bit more attuned to the ways that wildfire smoke affects not only the lungs, but other parts of the body as well.

If your focus is on the psychological aspects of climate change, you're probably aware that a lot of these climate change events are often accompanied by disasters which have a mental health component. And if your focus is on communications, you're trying to figure out how to talk about all of this in a way that will galvanize people to action. The real trick right now is to get those various groups talking with each other so we have a cohesive theory of how climate change and public health interact and what we should all be doing collectively.

Tim Doak:

Sure. So many of our listeners will remember you from your time at the Maine CDC managing the response to the COVID-19 pandemic, and I think in fact, that's where you and I first met as we were preparing to open a mass vaccination site at the Cross Center in Bangor. That seems like just yesterday, and thankfully it isn't. Regarding pandemics, if we step back and think about pandemics holistically, do you think climate change has an effect on their prevalence? And if so, how?

Nirav Shah:

The answer is yes. Or I should say, Tim, climate change increases the possibility that the next pandemic may occur sooner than it might have otherwise. And here are a couple of different ways. One is that some of the forces that govern the emergence of pandemics include forces that are things like the increasing closeness between animals and humans, which again leads to more interactions and thus leads for the higher likelihood of some of these pathogens spilling over. Crowding is another factor. The more crowded our cities get, not really in the US, but more around the globe, the higher likelihood there is that something like a novel influenza could emerge.

Climate too is another one of those factors. Let me give you one or two examples of how climate might interact with pandemic risk. One is by making the environment more hospitable to the animals that harbor a lot of these pandemic-related bugs. So for example, one of the biggest killers on the planet throughout human history has been the mosquito. It's estimated mosquitoes have killed more humans than any other animal out there. As the climate changes, there are more and more habitats that were previously inhospitable to mosquitoes that now become places where they can grow and thrive. We're seeing that even in the United States, diseases that were never really thought to affect the United States are becoming more and more common like dengue fever.

Another way in which climate change can impact the possibility of a pandemic is by causing large shifts in migration. Around the globe, and perhaps even in the not-too-distant future in the US, we may start to see more individuals who are having to move for climate-related reasons, either directly because of the heat or indirectly because of things like drought and instability that renders their farmland unusable. These large migratory shifts can also be accompanied by the introduction of diseases, whether it's cholera, which doesn't necessarily cause a pandemic, or something else which might like a novel influenza. So the

intersection between climate change and pandemic risk is very real, and it's one that has a lot of folks in public health on high alert.

The real trick here is how to talk about climate change and what we've seen throughout the data in our experience at the national level and in Maine, these health-related topics that we're talking about, Tim, are an easy way for people to see themselves as part of the climate change risk calculus, but also an easy way to spur people toward action.

Tim Doak:

Right. So taking all that in, what does the changing climate mean for our healthcare systems in terms of preparedness? What should we be doing to better adjust and adapt and prepare for this?

Nirav Shah:

Great, great. Tim, it's in part a question of what should we be doing here in Maine. It's just as much a question of what are we doing already that we should continue? And I say that because I want folks to appreciate just how much work has been done across the state already to build resilience to climate change and just how much work has been done at your local or neighborhood hospital within your own community already. So in some parts, it's about what we ought to be doing. In other parts, it's what we ought to keep doing.

Here are a couple of ways in which hospitals will have to grapple with climate change. One is one that I've already referenced, but it bears a deeper dive and that's getting ready for the summers. I know it's a bit odd to talk about high heat in a place like Maine, but the truth of the matter is it's a risk. Now, first of all, heat-related injuries are one of the most numerically significant when it comes to climate change. More people are affected by heat-related issues probably than anything else right now, although that might change. So even in a place like Maine where you might think, "Well, gosh, it doesn't get too hot here," true relative to say Houston, but there's a lot less air conditioning in Maine than there is in other parts of the country. And Mainers having been used to colder climates, are a little bit less resilient to high heat swings. And so heat-related injuries, particularly things like heat stroke, overheating, things of that nature, are things that hospitals are going to have to be ready for.

Another are infectious diseases that might have been less common in the past working their way up here. We've already seen a little bit of this with some mosquito diseases like encephalitis. We're starting to see and have been seeing more and more Lyme disease and anaplasma. There may be, maybe not so much in Maine, but in other parts of the country, again, diseases that were long thought to never have affected us, like dengue fever starting to pop up. Again, not so much in Maine, but certainly in other parts of the country.

And then a third area that hospitals have to be ready is in their own physical plant. We've already seen the ways in which floods can affect Maine, not just communities, but the hospitals within those communities. And, Tim, as you very well know from your work, a hospital is not something that can just be put on pause and that can go offline for a while. When the chips are down and disaster strikes, the hospitals have to be ready. They can't be grappling with their own issues like floods. In that moment, they've got to be ready on day one and on minute one. So hospitals will have to steel themselves for these possibilities and start thinking now for what that means for the future.

Tim Doak:

Right. So taking this all in, what do you think are the key takeaways for our listeners? And maybe more to the point, what should we all be doing to make sure that we remain healthy as persons, but also we maintain healthy communities?

Nirav Shah:

I'll start at the personal level. The best things that we can all do to be ready for the possibility that climate change issues may affect the health of Mainers is number one, to go into that conversation, understanding what the parameters are, it's going to affect different people differently. And what's unfortunate about climate change is that it will affect those who are the least able to contend with the ups and downs. So for example, the elderly, the very young, individuals who go into these situations already on their back heels from a health perspective, are going to be the ones who are the most affected.

And so what can you do right now? Well, as we get ready for the summer, have a plan within your community to check in on your neighbors, particularly your elderly neighbors who don't have air conditioning. Do they need a ride to a cooling center? Something of that nature, something that simple can make the difference in such a wide number of people's quality of life. Something as simple as just checking in with your elderly neighbors and offering them a ride when the temperatures soar can be significant at a community level.

The other thing that's really critical of climate change is the R word, resilience. It's not just a matter of planning, it's also a matter of bouncing back as events materialize, and we've already had that experience in Maine after the floods, we're going to need a lot more of that resilience, so building up that cushion now at the community level is critical. And then from a policy matter, preparing for climate change is not a cost-free endeavor. It does and will require funding. And so now is the time to start thinking about the trade-offs that are inherent as we look to secure additional funding so that we can stave off even bigger bills from disasters.

Tim Doak:

All great advice. Nirav, thank you for this discussion. Welcome home and thanks for being our guest today.

Nirav Shah:

Thank you so much, Tim. It is great to be home.

Tim Doak:

I bet it is. Thank you to our podcast listeners as well. Until next time, I'm Tim Doak asking you to think sustainably.

Announcer:

Thank you for listening to this episode of Sustainable Healthcare. Please join us next time for a new episode. There are several ways you can tune in. On our website at northernlighthealth.org/healthyhappywise. We are also on Apple, YouTube, and Spotify, which makes it easy for you to listen on the go on your favorite app.