Under the Weather: The Climate Crisis is a Health Crisis

https://www.climateone.org/audio/under-weather-climate-crisis-health-crisis
Recorded on January 30, 2026

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Kousha Navidar: Okay. Ariana. I had to just change insurance and it is the bane of my existence.

Ariana Brocious: Ugh. Health insurance?

Kousha Navidar: Yeah, health insurance, just like the most complicated kind. I dunno if there's anything more complicated than health insurance.

Ariana Brocious: Why do you have to change?

Kousha Navidar: Uh, just like. New job, new year, new me, new ailments. I just turned 38 for some people that's not old. It's like this liminal space between like you, your 10,000 mile body warranty is just about to expire. Bumper to bumper. I gotta get checked out, bro. Anyway. It's a big headache and it made me really thankful this past week simultaneously that I have insurance, but also made me so, uh, aware of the inequity that we face in the healthcare system and surprisingly, especially when it comes to climate change.

Ariana Brocious: Well, you're not alone. There are a lot of people really struggling right now because the premiums for people who get their healthcare through the federal marketplace have just gone up an average of 20%.

Kousha Navidar: That's because Congress stopped funding the tax credits that had made Affordable Care Act insurance affordable.

Ariana Brocious: Last summer, the Congressional Budget Office estimated that letting those subsidies expire would increase the number of uninsured by 4.2 million people over the next decade.

Kousha Navidar: The House recently passed a measure to reinstate the subsidies, helped by a group of breakaway Republicans joined with Democrats. But whether the measure will pass the Senate and President Trump's desk is an open question.

[music cue]

Ariana Brocious: I'm Ariana Brocious.

Kousha Navidar: I'm Kousha Navidar.

Ariana Brocious: And this is Climate One.

Kousha Navidar: As the planet warms, the story of climate change is increasingly becoming a story about human health.

Ariana Brocious: Rising temperatures, wildfire smoke, flooding, and shifting disease patterns are no longer distant threats, they are everyday realities. And that's taking a toll on our bodies.

Kousha Navidar: The climate crisis is reshaping health care systems, exposing inequalities, and forcing doctors and policymakers to rethink some of their practices.

Ariana Brocious: So how do we address this? It begins with awareness – simply knowing that climate impacts like heat or air pollution can exacerbate medical conditions can help us deal with them.

Kousha Navidar: Yeah. And some medical schools are beginning to adopt climate as part of their curriculum, teaching health care providers how these new realities affect their patients.

Ariana Brocious: And this is critical, because as I learned from our first guest, it turns out the US medical education varies school by school – which means doctors in training can get vastly different instruction on how to recognize and address climate impacts they see in their patients.

Cecilia Sorensen is director of the Global Consortium on Climate and Health Education at Columbia University and works as an emergency room doctor. She also spent some time recently consulting with the writers of Grey's Anatomy about an episode featuring a heat wave:

Cecilia Sorensen: I had not watched Grey's Anatomy in about 20 years, so I had to go back and reacquaint myself with what is Grey's Anatomy? So that was, You know, as a practicing ER doctor, you're like, wow, people really think this is what we do. Like that's, that's fascinating. But it was a really cool opportunity to sit down with a room full of, you know, really creative writers in Hollywood and talk to them about heat-related illness, about heat waves, about climate change, and to think about how we can convey this into popular entertainment, right? And how can we put in messages that are actually useful to the public. So It was a really fun experience, you know, they did a research study based on these two episodes which we created of this theoretical heatwave, and found that a lot of people actually had improved their knowledge and awareness of the health harms of heat.

[CLIP "We have an expected high of 108. That means a full ER, lots of heat related illness, especially amongst the most vulnerable populations. We have cool IV fluids, misters and inflatable ice bats. Use them. Cold immersion is the fastest way to lower internal body temperatures."]

So, like, it's fascinating and there was this great article published afterwards. The title was something like, "can fake doctors save real lives?" Right. And I, you know, it's, it's funny 'cause it's

like, yeah, like maybe they can, and isn't that interesting and could we, you know, utilize that more in other public health crises which we're facing.

Ariana Brocious: Yeah. Well I'm delighted to hear that they consulted with you, someone who has real expertise and experience treating people with heat stroke, and other conditions 'cause I think that makes it all the more useful. And the episode, just to clarify, was about some heat wave affecting lots of people, right?

Cecilia Sorensen: Yeah. And you know, it's interesting because the Grey's Anatomy Hospital is in Seattle, like in the TV show, but there was a huge heat wave which impacted the Pacific Northwest, in the past five years, and it was huge and it killed 5,000 people. I mean, this was a real event that had happened in this region. So it wasn't unfathomable that this could happen again. Right. So there was, there was definitely some good, you know, realistic scenario here.

Ariana Brocious: Mm-hmm. When did you first realize climate was an important factor in addressing your patient's needs?

Cecilia Sorensen: Wow. You know, I, I kind of bring this back to when I was a resident, right when I was in training working in a big Denver City hospital, and we would always get inundated by patients in the summer. And we called it trauma season, like as if it were like this season whereby there's just chaos out there in the world, right? It was trauma, it was accidental trauma, people slipped trips, falls, motor vehicle accidents. It was also non-accidental trauma, right? So, so homicides, violence in the streets. We also, in addition to trauma, we saw a lot of mental health crises. We also saw people coming in with heart attacks, with strokes, you know, with dehydration and, and all these other things. And I started noticing, you know, if I was going into a shift and I would see it build day in and day out, because of course, you're there every single day as a resident and you're like, it's getting hotter. It's been really hot. You know, we're on day three of it being really hot and, and you just know that the chaos is building and building and building. So for me that was sort of this early realization of the connection between. Heat and, and health and, and that it wasn't just, you know, we're seeing heat stroke. It's like, no, we're seeing an exacerbation of everything that is out there in the spectrum of mental and physical health and wellbeing.

Ariana Brocious: Yeah, there's well documented evidence that higher temperatures make people more angry, more prone to violence. This can especially affect women disproportionately 'cause there's, you know, more violence against women. We talk about that elsewhere in this episode. You also work now in the emergency department. What climate related health impacts have you seen firsthand there in the last, you know, decade?

Cecilia Sorensen: Right. You know, I was after residency working in Colorado and that's an area that's very prone to wildfires. and we had one of the worst wildfire seasons a few years ago, and, you know, there we were, we're, I'm in the emergency room. The emergency room reeks like wildfire smoke. I mean, it's so thick in the air that people are coughing and have watery eyes, because the hospital doesn't have, you know, proper HVAC systems to filter out wildfire smoke. we, people not showing up to work because they're actively evacuating their homes in the mountains. And then of course we're getting inundated by patients coming in, who are being affected by the wildfire smoke. And this was actually during COVID as well, so, you know. You can imagine that we're already very resource strapped in terms of our ability to take care of very sick respiratory patients.

And, and now it's worse, right? So thinking about climate change as kind of this threat multiplier that impacts populations and impacts health systems who are not necessarily prepared to deal with this inundation suddenly of patients who really need very high levels of, of respiratory care and respiratory support. So we saw a lot of patients coming in with asthma exacerbations, with

exacerbations of their emphysema or any other underlying, you know, airway issues coming into the emergency room. And it was a scary time, right? It was also COVID. So, you know, it was kind of like, you know, is this COVID? Is this wildfire exposure? Is this both, you know, do we treat them differently? And so, you know, that was, that was a very, palpable time in terms of how it's impacting the community and the patients, and also how health systems function.

The heat stuff has been pervasive and persistent and I would say getting worse in most regions over the past 10 years. Seeing it in Colorado, I also work in New York. And there's studies showing in New York that even when the temperatures get above 85 degrees, we start seeing impacts among vulnerable patients in New York and that's, that's not even, you know, I think for a normal, healthy person, like a very hot day, like 85 degrees, that's a warm day. But you look at New York City and we have these incredible islands of vulnerability, urban heat islands where temperatures can be somewhere between 10 and 20 degrees hotter than the ambient temperatures say in Central Park. And we have patients who are highly vulnerable. You know, they're on a lot of medications which make them more vulnerable. They have underlying health conditions and, and they're getting sick at 85 degrees. So this is a pervasive condition that is impacting, I would say, you know, the entire country, whether or not we're, we're diagnosing it accurately as being heat exacerbated conditions coming into the emergency room is a different question.

Ariana Brocious: Yeah. I live in southern Arizona. We have routinely high temperatures many months of the year, but they are getting hotter, they're staying hotter longer, and there are a lot of vulnerable people here as well that live in, perhaps mobile homes or houses that don't have adequate air conditioning. And it's genuinely a life or death situation for some people certain times of the year.

So elsewhere in this episode we talk about how climate is impacting our health and straining the healthcare system, but with you, I wanna ask about healthcare professionals themselves. How is climate related health or environmental exposures covered in medical school or training as someone becomes a health professional?

Cecilia Sorensen: So back when I was in training, there was nothing about this. Like, I don't even think we had a lecture on air pollution. I mean, to be, to be totally clear, the only education I can recall related to environmental exposures was probably related to, you know, lead exposure. So any education that's come into the training of specifically physicians has really been in the past five, maybe 10 years, you know, thinking about this. Nowadays, either the, the way that medical education works in the United States is that there isn't a nationally dictated curriculum. Medical schools have a lot of freedom to really decide, you know, how they're gonna train these, I call 'em baby doctors, um, to understand what, what, you know, what the risks are to human health. And so there's, there's huge variability across the country in terms of what's happening. but over the past five years, you know, the American Association of Medical Colleges, the A A MC has been surveying medical schools every year and, and it's so amazing. They put a question in recently to ask about this very topic of climate change and health. And they're finding that more and more medical schools are incorporating some aspect of this into, um, the education and training of health professionals of physicians. But what that looks like is incredibly variable. So that could be, you know, there's one slide in one optional lecture on climate change compared to, there's a longitudinally integrated curriculum that talks about all the exposures that's seamlessly woven into, you know, their entire medical training. Right. It is completely heterogeneous.

Ariana Brocious: That is not that comforting, I have to say.

Cecilia Sorensen: I mean, not here to scare you, but this is, this is, this is the reality, right. and it's very different across the country. And oftentimes my experience is, you know, I direct the Global

Consortium on Climate Health Education. And what it comes down to in my experience is that, is there a faculty member who feels comfortable teaching it? So again, like going back, you know, when I was training, we didn't get this education, so this is all kind of new, you know, translational science that has to be integrated into clinical practice. And if you don't have an expert or somebody who's just really interested in this at your medical school, there's nobody to do that work to, you know, knit this into a very complicated, very packed curriculum. So we have to kind of be working on both ends of the spectrum, right? Training faculty and also thinking about how we get it into the training of future health professionals.

Ariana Brocious: Yeah, this is so striking to me because it seems like it has so many knock on effects if you're a practicing physician and you're not prepared to evaluate for heat stroke or, respiratory distress caused by elevated temperatures, ground level, ozone, I don't know, things of this nature, like it just, it really is gonna affect somebody's ability to do their job in the right way.

Cecilia Sorensen: Yeah, absolutely. And you know, I think there's, there's so many different ways that we can work on that issue. Right. We have to lean on our medical societies, you know, after you sort of finish your training, where do you get continuing education? Um, you know, well it's from your medical society and it's from the boards. And the boards are this apparatus that make sure clinicians stay current with, you know, science and practice and, you have to re-up your certification as x type of doctor every 10 years and do continuing education. Europe is really far ahead on this, you know, so their societies for cardiology and pulmonology have been recognizing air pollution and heat for a decade, you know, as a risk factor for the onset and progression of disease. So we're, we're quite a bit far behind on that, but we're, we're, I think we're slowly catching up. So for example, the American College of Obstetrics and Gynecologists now have a continuing professional education module on the risks of heat to pregnancy. Right. So that's good. We've also seen the American College of Pediatrics. They've been on the forefront of this, I would say, to give them full credit, like for, for a decade in terms of integrating environmental exposures into sort of the, the ongoing professional training of pediatricians.

Ariana Brocious: So you've said there's been some changes, since you did your training. Does your organization work with those boards to advocate for more of this climate centered education, especially continuing education?

Cecilia Sorensen: Sometimes we do, right? So we, I worked recently with the AMA, they are creating a module that will have continuing education credits associated with it. That is gonna be open to any health professional right in the US. And the AMA is a very generalist type of society. So they're coming out with education and we're able to work with them, as technical consultants to help weave together what really good education is gonna look like in those instances. There's also work we do through the National Academy of Medicine where they've convened many different, private and public stakeholders around how do we more rapidly decarbonize the US health system, which tends to bring in quite a bit of this adaptation and education work, and they're able to bring together the societies because the National Academy of Medicine has so much convening power. So we're looking forward to planning actually a convening this coming year with medical societies to talk about this very question. So it's all like in process right now.

Ariana Brocious: Well good. That's good to hear. You mentioned how different the education can be school to school. Is there resistance to climate education in certain states or certain institutions compared with others?

Cecilia Sorensen: Yes. I mean, I'm sure, yeah, I mean, it's America, right? So, you know, in certain parts of the country, like you're not talking about climate change, you're talking about extreme weather. And, and that's good. I mean, that's good. We're talking about extreme weather, we're

talking about exposures related to that. But I think there are cases where, you know, we do have a lot of climate denial and, and, and we're not necessarily connecting the downstream impacts of climate change on health with its cause, which is, you know, anthropogenic greenhouse gas emissions. So, you know, you're sitting down in a southern state, like you can't deny that we're getting more strong hurricanes and floods, right? Like that is happening. Everybody knows that the new there's, there's not really a lot of denial around that. I think we're just, you know, there's a lot of debate around the cause of this.

Ariana Brocious: Yeah. So, one item in the news lately is the increasing cost of health insurance premiums. This has been kind of a hot button topic. Certain federal subsidies have gone away, so some people are seeing really high increases. How does the climate crisis affect what people pay for health insurance.

Cecilia Sorensen: I mean, it affects the entire insurance market, right? From homeowners insurance, right? We've seen that as also this huge crisis right now where, you know, vast swats of the country are becoming literally uninsurable and states are stepping in as insurers of last resort right in, in places in Florida, places in California, which are incredibly prone to climate related, disasters. When it comes to health insurance, you know, I think where health insurers have a role here is in prevention. So I see us on the same team as health insurers, right? They want to prevent progression of disease, ideally, we, you know, and, and so, you know, what, what can health insurers do really to, to help the most vulnerable, not be exposed to climate related events, right? That could be something like, providing them with air conditioning machines and giving them some type of subsidy. I mean, who knows, right? If you can, you know, pay. $500 for an air conditioning machine and pay a summer bill. Let's say that's, you know, a thousand dollars, that's $1,500 as opposed to an ICU level admission in a hospital, which is gonna be $20,000. You know, I think the math is clear. Whether or not these insurance companies are seeing that and are able to sort of deploy those resources, I think is, is a big question. But, you know, the, the, the biggest thing I think we have going on in our country is, is a lack of real focus on, on prevention, on what does that look like and thinking about, the environmental exposures, which, which really are driving disease in so many places.

And, that's where we need public health and frankly, our public health system has been gutted. And that's a big problem as well in terms of really thinking about prevention. And the problem with public health is that when public health has done well, you don't know because you didn't get sick. When public health has done bad, you're angry because, gosh, where was the public health system? Right? So it's sort of this unsung hero and Health insurance comes in once, once you're already sick. So how can we think about health insurers as being allies to public health in terms of trying to reduce exposures, make environments more healthy, and thus reduce costs of healthcare.

Ariana Brocious: Mm-hmm. I have to share a quick anecdote here because it's such a good example of what you're talking about. I have friends who have kids, and they normally get these text prompts from their pediatrician's office every fall. Hey, come in for a flu shot. We have a flu clinic. Uh, you can drive through, you know, schedule it and kind of get harassed maybe, um, until they, until they make an appointment and go in. This year that didn't happen. They didn't get flu shots, they got the flu and it was horrible. and they said, you know, it was not that we were resistant to getting it, we just were busy people, we kind of forgot.

Cecilia Sorensen: Oh, absolutely.

Ariana Brocious: I wanna sort of conclude with something more positive. 'cause this is real and a serious issue, but also there are good things happening. Are there medical schools or residency programs right now that you see as leaders in preparing their students for the realities of the

climate crisis?

Cecilia Sorensen: Yeah, absolutely. I mean, there's medical schools who are, who are really moving forward on this. I have to say, at Columbia University, we're doing a ton on this. We have a program for residents and fellows where we work with them for a year, building leadership skills, helping them, uh, do research programs, decarbonization programs within their hospitals and health systems. You know, thinking about how do you go from just kind of learning the knowledge and skills to really being able to, to lead initiatives in your communities and in your health system. And this is a really unique program. We had six scholars last year. We're about to open up applications for a new cohort of scholars. So this is really the first program actually in the country, which is bringing residents and fellows into this really structured way to make them leaders in space, which is what we're lacking. Many schools around the country are also having really great curriculum being integrated. I think about Emory University and, and many others who have been really on the forefront of this for quite some time.

Ariana Brocious: Hmm. That's great to hear. Cecilia Sorenson is Director of the Global Consortium on Climate and Health Education at Columbia University. Thank you so much for joining us on Climate One.

Cecilia Sorensen: Thank you so much. Great to be here.

Music: In

Ariana Brocious: Coming up, how policies and system changes can address two major challenges at once:

Jeni Miller: If we take action to prevent climate change, we're also protecting people's health.

Ariana Brocious: That’s ahead, when Climate One continues.

Ariana Brocious: Help others find our show by leaving us a review or rating. Thanks for your support!

Music: Out

Kousha Navidar: This is Climate One. I’m Kousha Navidar.

Our next guest has spent years examining the interconnection between the climate crisis and public health. Jeni Miller is executive director of the Global Climate and Health Alliance, a network of health care workers and organizations that collectively advocate for climate action and healthy communities. She helped me understand the way these seemingly separate worlds—healthcare and climate— influence each other.

Jeni Miller: When I think about how climate change is related to people's health, I really think about it kind of in two big categories. One is the direct impacts of climate change, and how those impacts affect people's health. And that's, those climate impacts are like superstorms, drought warming, some of the consequences of that, like wildfires, flooding and all of those, in diverse ways, can put people's health at risk. But then, the other big way in which climate change is related to health is that the things that cause climate change also can have significant impacts on people's health. The biggest one really is the use of fossil fuels, particularly the burning of fossil fuels. air pollution and toxics in the soil and water. Which then causes impacts on people's health. and then

things like our food system and, and some of the ways that industrialized food production is a driver of climate change, also produces highly processed foods very often, very meat heavy diets, dairy heavy diets that can be problematic causing chronic disease and, and that sort of thing. So if we take action to prevent climate change, we're also protecting people's health

Kousha Navidar: So let's pause there for a second. I'm wondering for this like 10,000 foot view, are there emerging health threats that you feel like the public should be more aware of?

Jeni Miller: Yeah. I mean, first I'll say, I think in general the public is not as aware of the impacts of climate change on health. Just full stop. I can't tell you how many conversations I've had with people where I say, oh yeah, I work on climate change and health, and they're like, climate change and health. How does climate change affect health? To me, especially coming from public health is really obvious. If you have a hurricane that drives people out of their homes, that exposes them to injury, that destroys clinics and so forth that is going to have a huge impact on their health and wellbeing. So to me, the connection even of the well-known effects is very obvious, but to many people, it's not.

But also I think there are some emerging impacts that people who are aware of the connection may not be seeing as much. I think a really big one is the mental health connection. It's bad enough to live through a wildfire that destroys your community, to live through repeated typhoons or hurricanes or flooding, to have drought wipe out your crop. There are after effects of that on people's mental health or, and also precursor effects. You know, I think we're seeing a generation of young people growing up in an era where they know their entire life is gonna be in the climate change era and –

Kousha Navidar: Climate anxiety is so much higher than it ever was, yeah.

Jeni Miller: And it's a very natural reaction. But then, you know, for folks who go through some of these. big dramatic, climatic events. There can be, post-traumatic stress disorder, fear, you know, a sense of uncertainty. For some communities there's a real loss of their history and their culture. Some of the small island countries may not be able to even continue to live in their country, you know, see, looking at the prospect of losing their culture, their home, their way of life.

Kousha Navidar: And there's huge loss there. And the mental health connection is unfortunately abundantly for folks who go through that. I wanna point out something interesting you brought up, because I hadn't thought about it until this moment, but it makes total sense how if like you're at a dinner party and you say, I work in climate and health. Somebody might look at you kind of cockeyed and be like, how are those two things connected? But those things don't live in vacuums, right? people, people might, people might be like, well, when I think of health, I think of like diabetes, I think of asthma. I think of heart disease. I don't necessarily think of global warming, but you're saying those afflictions are connected to climate, right?

Jeni Miller: Yeah, absolutely. So even just starting with heart disease and diabetes, air pollution is a factor in heart disease. The particulate matter gets inside the body and does damage to, you know, heart, veins, the, the flow of blood to all our essential organs, our brain, and air pollution. You know, I mentioned the drivers of climate change, fossil fuel burning, fossil fuel causes, air pollution, climate change itself, the warming can make air pollution worse, so it turns some of the chemicals in the air into ground level ozone, which is another air pollutant. So, the warming can make air pollution worse. The drivers of climate change can make air pollution worse, and then air pollution can make heart disease, cardiovascular disease worse. There are connections with diabetes. There are connections with preterm birth and birth defects and, and, and some of those kinds of problems from air pollution. So that's really just, just one example. There are many, many more. If we have a heat wave, people are vulnerable to heat stroke. If you think about people who work outdoors,

construction workers, agricultural workers exposed to the heat, working in like pretty heavy duty working conditions, their health is gonna be impacted. Their ability to continue to work may be impacted. We need to be able to protect people from those kinds of circumstances. If you have a big, a big storm, a big hurricane, huge flooding, in some places where the sewage treatment systems are not prepared for that type of thing. Flooding can spread disease, Hurricane Harvey that hit Houston spread a tremendous amount of toxic chemicals around an exposed people, both from industrial facilities. So there are just so many interconnections.

Kousha Navidar: Yeah, the theme that I hear in all of those examples is that our bodies, like my body is a system, and in many ways it's a delicate system and it's not a system that lives in a vacuum. And it is a part of a larger ecosystem, and you mess with the ecosystem, you're gonna mess with your, your own system which makes total sense. I'm thinking also about you, yourself for you, which came first, did you come from that health space and then you found a connection to climate, or were you, or was it the opposite?

Jeni Miller: Yeah, definitely the health space. My background is in public health. I started out working in public health in California and working on children's asthma prevention. Also children's obesity prevention and working in communities that were poor communities, more, more exposed and more vulnerable. And the projects that I was working on were looking, actually, from a public health perspective. You look at the environment that somebody is growing up in. The asthma environment that includes like their home. And are there triggers in their home, their school, what's going on at their school, but also do they live next to a road where there are diesel trucks going by all the time? Do they live next to a refinery? So because I came from that public health background, I was already primed to think about the community and the environment that affects people's health. Then I started learning about climate change, in part because some of the things we need to do to prevent climate change are also things that would improve children's asthma, for example. As I started learning about climate change, I realized, wow, this is really the big thing that's gonna determine people's health throughout the next century and beyond. If we don't deal with climate change, doesn't matter what other kind of health work we do, um, people's people will not be healthy.

Kousha Navidar: Can you talk a little bit about how the climate crisis that we face puts pressure on global health systems?

Jeni Miller: Climate change doesn't recognize borders. That's the the first thing. You know, the greenhouse gases we emit in the United States are driving global warming around the world. The greenhouse gases emitted anywhere are contributing to that. But the impacts of climate change are not felt equally around the world. In kind of the climate and health world, we talk about climate change as a threat multiplier. So if you're in a community or a country that is low income, that's already dealing with poverty, that may not have the healthcare that everyone needs just for their basic fundamental healthcare where food systems are more fragile, where, you know, transportation systems and supply chains may not be as robust. Any of those kinds of circumstances mean that then when a heat wave comes, a drought comes, a flood comes, the impacts are gonna be much more severe. And that happens within the United States as well. The wealthier, more well-off communities have more resources to be able to respond to crises,

Kousha Navidar: More resiliency to come back and Yeah. I hear you. Yeah.

Jeni Miller: But then there are also kind of the geographic issues like I, we, I mentioned the small islands that are facing sea level rise. Like that's obviously through no fault of their own and, you know, not because of any particular emissions on their part. But sea level is rising and they're right at sea level. And so they're more impacted. And the same is true with areas of like India and

Pakistan are particularly prone to flooding from like superstorms typhoons and that sort of thing. There are parts of Africa that are particularly prone to drought and the impacts of heat and drought. So, those accidents of geography compound those kind of social and economic circumstances, to mean that there are very different outcomes depending on where you might be.

Kousha Navidar: Do you have some examples of ways that the climate crisis might impact healthcare that folks are surprised to hear about?

Jeni Miller: There are a few stories that have sort of stuck with me. One of them is, I have a colleague who's a physician and she trains residents and was working in a hospital in Boston during a heat wave and was training a group of residents and, you know, residents troop into the room. Patient is presenting with a number of symptoms and she, as an attending physician, does ask the residents, what do you think this is? It turns out that heat wave symptoms can mimic a number of other things. heart disease, kidney failure, stroke, um, et cetera. And none of them came up with heat stroke as a possibility. She's been studying climate change and health. She knew that there was a heat wave going on, and that was one of the elements that she factored in when looking at this patient. The story that just surprised me, something I never would've thought of. An African colleague mentioned to me that in certain communities, the clinics had started seeing snake bites that they were completely unfamiliar with and what was going on is that there are venomous snakes that have a kind of area that they are typically active in, that they typically live in, all of the clinics in the areas with those venomous snakes were aware of those snakes had the antivenom on hand, were ready to go. But because of heat, increased heat, the snakes were moving into higher altitudes. And those clinics that were now seeing these snake bites, they didn't have the ante venom on hand. They weren't recognizing what was going on. It's just something that you don't think of until you hear about it.

Kousha Navidar: That's wild. The snakes moved far enough away because of heat that they went into an area that was not familiar with them. Wow. Yeah. It surpri, you used the word surprising. I think that's an understatement. That's like, you don't, you don't think about all the permutations of the, the impacts of this, of this like, ecosystem. That's wild. At the risk of asking a question that takes a lifetime to answer, and I'm giving you two minutes. How are some of these countries approaching solving this? I mean, the first thing that comes to my mind is improve education, build resiliency. But, but I'm, let me ask you, Jeni, like what are the levers that you can pull that seem to be making the most difference that people are focusing on when we look at these different systems?

Jeni Miller: Yeah. There's a lot of work going on within healthcare and public health systems themselves, which is really important. So, countries are investing in better public health preparation, getting the climate data they need to anticipate what's coming. and then building like heat warning systems, air pollution, warning systems, things like that. The climate modeling tells us this is gonna happen. We need to be prepared in our country, our region –

Kousha Navidar: And we have a plan to be prepared.

Jeni Miller: Developing that plan. Healthcare facilities also, there's work that's happening. Much more needs to happen, much more investment needs to go here to prepare healthcare facilities themselves and to train doctors, nurses, community health workers to be able to recognize these things that they may see.

Kousha Navidar: Which is like your Boston example that you're mentioning? Yeah.

Jeni Miller: Exactly. There needs to be, climate change needs to be in the medical curriculum so that doctors know what they're looking at kind of taking a step back and really looking bigger

picture. First of all, we need to look at all the other things that people depend on to be healthy. You know, maintaining, clean water supply and, and access to water. Protections for workers during heat waves, things like that. Also, one of the most important things that has to go hand in hand with all of these measures to manage what's going on is really the work to stop the problem. So. If we keep going with the fossil fuel use that we are currently dependent on and all these other things that are causing more and more warming, we will not be able to adapt to the levels of warming that will end up in. So there's really a limit to how much we can do about this if we don't tackle that root cause and really, change the course of climate change.

Kousha Navidar: Let's, let's dive into that a little bit because I hear that and my first thought is yes, that makes total sense. And then my second thought is, does it cut both ways? Because the healthcare system is huge, so does the healthcare system actually contribute to climate change?

Jeni Miller: Yeah, it does actually, and I think frankly has a real opportunity to show leadership. And indeed, in some places is showing leadership by focusing not only on being prepared for those impacts, but also reducing its own carbon footprint. There's a lot of work going on around decarbonizing healthcare systems and that can make a difference. The healthcare system globally represents about 5% of greenhouse gas emissions. It's certainly not the largest contributor, but it's a meaningful contributor. And taking those steps to decarbonize send a very powerful signal. It's like the health sector saying. We are so concerned about climate change and its health impacts that we're gonna walk the talk and we're going to, you know, take a lead in decarbonizing even while we're saving people's lives. The other thing is healthcare systems. Influence a lot of supply chain. So there's a lot of transportation that happens to and from hospitals and clinics and moving, medicines around and, and other kinds of supplies that hospitals and, and clinics depend on. Even the production of the supplies that they use.

All of that can be decarbonized and greened. And so healthcare systems can actually have an impact on the, you know, advance of climate change much further than just their own walls. Like they can really influence the communities around them and the supply chains that support them.

Kousha Navidar: Because they're a big buyer. Like they, they control a lot of the terms. Your organization specializes in, in collaborating and, and, and working with different stakeholders for you, are there any success stories that really come to mind based on the challenges we've talked about so far, where like you've seen it done really well or seen it done right?

Jeni Miller: A lot of the work we do is to influence policy decisions and the reason we work at that level is because, I think the, the things that happen at the ground level are super important. Things have to happen globally. For us to solve the problem. So some of the work that we do is at that kind of international multilateral level at the big international meetings. Over the course of about three years, we saw a climate and health declaration adopted at the UN Climate talks, the so-called COPs, conference of parties. The following year there was a climate and health resolution adopted at the World Health Assembly. In the course of those two very successful moments around the intersection of climate and health, we also saw ministers of health and other ministries actually speaking to one another about this intersection of climate and health and beginning to understand that these are really tied together. We're not gonna have healthy populations, productive populations, stable economies if we're not dealing with the ways in which climate change impacts health. And we're not gonna have healthy communities. We're not gonna be protecting people's health unless we're talking to the minister of the environment, the minister of energy, that, you know, all of these other areas. At the kind of ground level, in the UK, the Greener NHS program,so the NHS is the national health system of the UK. It did a complete analysis, not only of its own carbon footprint basically but also its supply chains. And it implemented a whole program of addressing its emissions from its hospitals, thinking about its supply chains. and got that in motion. And really interestingly, a part of it was

making sure the doctors and nurses and staff at all of these hospitals understood the program and they were really on board. Like, they get it, they care about this, they wanna see the places that they work, taking these steps because they know it matters so much.

Kousha Navidar: So I wanna go back to the policy perspective. So for you having the ability to work with leaders isn't necessarily the same thing as being able to, like, hypothetically just have a captive audience of all the world leaders in the room and be able to tell them one thing. But let's imagine for a sec. Let's imagine for a second that that is the position that you're in, what policy change would you tell them is most urgently needed right now?

Jeni Miller: Quite frankly, phase out fossil fuels.

Kousha Navidar: Hmm.

Jeni Miller: It is the root cause of climate change, you know, a huge proportion of greenhouse gases are coming from our use of fossil fuels. A huge proportion of fossil fuel activities have so many other health impacts. And if we don't get a handle on the problem, we're gonna see levels of warming that we really can't manage. If I only get to say one thing to world leaders, it's, we've gotta get off of fossil fuels.

Kousha Navidar: Jeni Miller is Executive Director of the Global Climate and Health Alliance. Thanks so much for hanging out with us and, and, and giving us a lay of the landscape.

Jeni Miller: Thanks. Such a pleasure.

Music: in

Kousha Navidar: We know that climate impacts are felt disproportionately by women and girls. Coming up, we hear from a group that wants to ensure that even as climate changes affect our world, women and girls continue to have access to quality care

Nabeeha Kazi Hutchins: Look at our value system. Time and time again, in states where there were ballot initiatives for reproductive freedoms and reproductive rights in the US, overwhelmingly those voters voted to protect those rights.

Kousha Navidar: That’s up next, when Climate One continues.

Music: out

Ariana Brocious: This is Climate One. I’m Ariana Brocious. As we’ve been talking about on today’s show, there are direct links between planetary health and public health. And while this affects everyone, as a woman, it is no surprise to me that half the population bears a disproportionate burden from some of these risks. I talked about this injustice and what can be done to address it with Nabeeha Kazi Hutchins, president and CEO of PAI, which works to advance the right to sexual and reproductive health care for women and girls around the world.

Nabeeha Kazi Hutchins: We've been around for 60 years fighting for sexual reproductive health and rights and ensuring that those rights are recognized and that communities around the world have access to reproductive healthcare on their terms consistently. And of course this includes ensuring that in times of climate crises and times of conflict and displacement, that communities can access the reproductive healthcare that they need and also access the information that they need. And so, so much of our work is certainly internationally, but it's also the work we do here in the United States to increase awareness and, and increase just a commitment to ensuring that when we

talk about supporting and activating around climate mitigation and climate resilience, that we are recognizing that we have to center our voice and center our response on the health and vitality and protections of women and girls.

Ariana Brocious: For some people, the link between climate change and reproductive health isn't immediately clear. How do you explain that connection?

Nabeeha Kazi Hutchins: Well, the first thing to really recognize is that when climate shocks hit communities, it's not always roads and power lines that break. The things that get most affected and that are not necessarily visible are health systems are supply chains to get care and supplies to communities.and women feel that breakdown immediately. We have to remember that. Climate change is not gender neutral. It has over and over and over again proven that when there is a climate shock, it accelerates violence against women. It accelerates poverty that disproportionately affects women and young people. And we see women and girls face not only reproductive health crises, but a lot of sexual and reproductive health harm and risk, especially in communities where rights and resources are already very fragile.

Ariana Brocious: Hmm. So how is climate change shaping the future of young women from education to autonomy, to their ability to plan families?

Nabeeha Kazi Hutchins: Climate change is affecting their ability to thrive and survive and do this on their own terms. You know, we've got so many examples of when climate crises hit, what that does to communities, what that does to women and girls, and. We're also seeing the protracted effects of these climate events. And so, you know, I'll go to my own home country and the province I was born in, Sindh in Pakistan. In the 2022 floods, there were 650,000 women who were pregnant living in that disaster zone, and a little over 70,000 of them were due to give birth within weeks. That followed, and I imagine, yeah, and it was devastating because of course their livelihoods and their lives were upended, but also there wasn't a single functioning clinic or skilled birth attendant that could focus on them and provide that care. And so it's not only the women who have immediate reproductive health needs that are affected by crises, but we also then saw increases in harmful practices. Child marriage increasing, girls not being able to go to school, which creates a lot of additional vulnerabilities. There's research by the UN that shows when girls are not in school, their chances for unintended pregnancies increases exponentially, child marriage increases exponentially. So this is really about, a, a climate crisis in the moment that has long-term devastating effects on the futures of women and girls.

Ariana Brocious: Yeah, I'm struck thinking about those women in Pakistan and what it must have been like to experience that because giving birth is a natural process, but one that can have complications and to imagine having no support, immediately following tremendous flooding and, and that disaster had to be so hard.

Nabeeha Kazi Hutchins: We also see this here at home. You know, if we, if we look at the hurricane, in Houston, Hurricane Harvey, when those flood waters came, they shut down clinics. They shut down transportation systems across Harris County, and we know that contraceptive access and prenatal care was disrupted overnight. And now there's research that's coming out that shows that there were higher rates of preterm birth. There was low birth weight among women who were exposed to the storm And it was especially devastating for women of color, for black and Latina women. In addition, we saw domestic violence increase. So the patterns that we see in my home country of Pakistan, across countries in Africa, across countries in Latin America that are affected by climate crises are the same dynamics here at home. We just don't talk a lot about it.

Ariana Brocious: And, you know, the impacts from being born preterm, from being low birth

weight, all those things can actually affect people into adulthood. So there are long-term ramifications for everyone, not just women. Another thread in this conversation is this idea of overpopulation that is often tied in with discussions around climate change or, or used to be this idea that, there are too many people on the planet and that's causing increased emissions, and we should limit that. How does that line of thinking influence or affect the work that you do?

Nabeeha Kazi Hutchins: So much of the work that has occurred in the sexual reproductive health and rights was often defined under a population lens. And you could say to your point, well, what are those implications? We can't ignore that. And I think we have to go back and look at the data. And the data shows that it's actually not individuals who are the main drivers of the climate crisis. Cs. and if I were to take that a step further, those who've been the most significant contributors to climate crises are the ones that are least affected. And those who've been the smallest contributors to the climate crises are the most affected. You know, there was an analysis in 2024 and it showed that. 57 companies are responsible for 80% of the global emissions.

So the big polluters who are making the planet uninhabitable for future generations are not individuals.

Ariana Brocious: Right. So just to bring that home, you're saying it's not the individual emissions from having a child or having three children or five children that are driving the climate crisis. It's the actions of these large polluters.

Nabeeha Kazi Hutchins: Absolutely, and I think we also have to account for population dynamics. So, one of the most significant factors that comes into play as it relates to population is about resource demand and resource use. And, and we also know that countries that are high-emitting are also high-consumption countries and those countries stable or declining population. So at the end of the day, for, for us, as we talk about reproductive health and reproductive rights and the intersection with population and climate, it is fundamentally about addressing the emission reality and addressing the consumption patterns and recognizing that this is not something that communities in the global South have contributed to yet they are most affected by it. And we also know that if communities were guaranteed access to sexual reproductive health and rights, had the ability to access contraceptives, had the ability to have a say in their futures and, and, not be affected by teen pregnancies, not be affected by child marriages. Um, we'd be better off.

Ariana Brocious: Often on Climate One we remind listeners and ourselves of the fact that the climate crisis is incredibly unjust, and that those who've contributed least are affected most. How does climate change exacerbate those existing inequities when it comes to reproductive health?

Nabeeha Kazi Hutchins: Let's just look at gender-based violence and look at those vulnerabilities. For every one degree Celsius increase in global temperature, approximately 5% increase is seen in intimate partner violence. We see a 28 percent increase in femicides when there are heat waves. So these are all dynamics about survival. But then you also get into the socioeconomic realities and those vulnerabilities. And you may have heard of this dynamic called, sex for fish. And this has to do with livelihoods of women in particular who are handling fisheries and fishery work in their local communities. When climate related dynamics occur and there's a reduction in that livelihood, you're now creating a situation where women are having to trade sex for food, and they are the primary caregiver. So there's a lot of vulnerabilities here. I'll also bring up data and new research that's coming out that shows that when there are climate events around education disruptions. There's the reality that we see increases in early marriage and also increases in female genital mutilation or female cutting, genital cutting. Why? Because that may be appealing, especially in communities where there's a bride price that is associated with marriage. That again, links back to the socioeconomic resilience of communities. So, the inequities are very clear and the greatest harm is

ultimately to women and girls. There's no doubt about it.

Ariana Brocious: There's also growing evidence that exposure to pollutants like wildfire, smoke, microplastics, and even extreme heat, can influence fertility in pregnancy. What kind of work are you doing in that sphere? Trying to help educate and influence work around that.

Nabeeha Kazi Hutchins: Yeah. There was fascinating research and, one thing I will say about research is research in many ways is a validator. Women and communities have lived these realities for decades and decades and decades. And so we need to be believed when we say, these are dynamics that hurt us. But now we've got more data and more research coming out that perhaps matters to policy makers, matters to those who are funding, work to mitigate harm or work around innovations that can support communities affected by climate change. There was very important research that came out a few years ago, and, and more of that was shared last year and it brought up the extreme heat impact in India. And we see extreme heat impact here in the US as well. And your point is well taken and is correct is that prolonged heat exposure has increased and it's linked to preterm birth, uh, linked to still births to preeclampsia, to miscarriage, and so on and so forth. So the kinds of things that PAI is really pushing for with our partners . We need to make sure our policies are responsive and that there are policies that also address the needs of women laborers. Women in the global south in particular, make up a very large portion of the agricultural workforce. And so what are the policies in place? To protect them and support them so they are not laboring in extreme heat for prolonged periods of time. The last piece around this is the demand generation and the awareness piece, which is so much of the work that we're also doing in East Africa and West Africa is communities just knowing that this is a risk factor, it's a vulnerability and the demand then of their public health system and of their governments. To be able to support them and provide the care and resources they need, but also,for workers and employers to be able to mobilize and, and say, this is a risk factor for my health.

Ariana Brocious: I wanna return to something you said a little while ago, which is we have to believe women and just underscore that because it is so true and there are innumerable stories of women not getting treated, not being listened to not getting the medical care they need because of basically systemic misogyny. We're in an interesting time in this administration. The Trump administration is really pushing American women to have more children. There's a lot of talk about fertility, trying to increase marriage and birth rates in the US simultaneously. The Trump administration is cutting a lot of funding and programs and support systems that exist for all people, but that also influence people's decisions about whether to have children. How are you guys navigating this moment here in the US?

Nabeeha Kazi Hutchins: It is one of the most complicated and complex moments that I think our sector here in the US has experienced. And that is not only the impact on reproductive freedom and reproductive rights, but it's also the broader implications on disengaging from climate discussions, disengaging from the global health community, disengaging from multilateral institutions like UN agencies and so on and so forth. So, how we're navigating is making sure that there is civil society that has a vibrant voice that has the evidence. We're working with members of Congress here in the US but also mobilize community-based organizers, and advocates in the US. So they have the information they need, they have the data that they need, and they also have the strength of community to be able to speak up and push back. and you may ask this or wonder, you know, why should the American public care about this issue and why should we care about the intersection of climate and women's health and women's reproductive freedoms, not only in the US but also abroad. And I would say, look at our value system. Look at what Americans have voted for time and time again, and, and in states where there were ballot initiatives for reproductive freedoms and reproductive rights in the us overwhelmingly the majority of those states, those voters voted to protect those rights, and, If those rights are important to us as Americans living in our communities,

then we also believe that those rights are important for our sisters and our brothers and children abroad. Bottom line is we keep the drumbeat going. We continue to engage with political leaders and policy makers, we continue to mobilize and gather as community and we continue to speak up.

Ariana Brocious: Nabeeha Kazi Hutchins is President and Chief Executive Officer of PAI. Thank you so much for joining us on Climate One.

Nabeeha Kazi Hutchins: Thank you, Ariana, for the opportunity.

Kousha Navidar: Hello, dear listeners. It's the end of our show, and that means it's time for climate one more thing, Ariana, you got something?

Ariana Brocious: I do. I've been telling everyone in my network about this episode of Vaults by David Roberts, another climate nerd that delves into making the electricity grid work like the internet. And it is such an interesting idea. Um, I can't get into the intricacies of it here because I am not that good at explaining it as I've, as I've learned, trying to tell people about it.

Kousha Navidar: Well, okay, so. Electricity, like the internet, what does that mean?

Ariana Brocious: Okay, so today, the way that we get electricity is essentially one directional. You know, it has to come from whoever's generating it. It goes on the, the power lines gets sent to our homes and offices. And even if you're a solar provider and even if you make electricity, you're just kind of tying into that bigger system. This is a different way of sending and receiving information and effectively power so that basically anybody could be, um, on this network and share electricity with each other. So you could like, get electricity from your neighbor, uh, if they had, you know, a, a big enough solar grid or a power wall or something, and it has a lot of really interesting benefits, notably among them, the idea that you are kind of on a microgrid. So if your power goes out, it just affects you or maybe the little grid that you're on instead of, as we often see an entire city or an entire region when we have big power failures. So again, I am not the best person to explain it. Go listen to the episode, you'll get a much better, uh, understanding.

Kousha Navidar: I think I got a lot out of what you said, I think you're selling yourself short. It's kind of like the way on the internet information doesn't just go in one direction, I'm a producer and a consumer. And this, if I'm hearing you right, that I would be a producer and consumer of electricity. Pretty cool. Definitely going to check that out, shout out to Volts.

Music: In

Kousha Navidar: And that's our show. Thanks for listening. Talking about climate can be hard, and exciting and interesting -- AND it's critical to address the transitions we need to make in all parts of society. Please help us get people talking more about climate by giving us a rating or review. You can do it right now on your device. Or consider joining us on Patreon and supporting the show that way.

Ariana Brocious: Climate One is a production of the Commonwealth Club. Our team includes Greg Dalton, Brad Marshland, Jenny Park, Austin Colón, Megan Biscieglia, Kousha Navidar and Rachael Lacey. Our theme music is by George Young. I'm Ariana Brocious.

Music: Out