New Jersey's Interagency Council on Climate Resilience's Asks “What does a Hotter NJ Mean for Our Health?” Webinar Transcript

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SC **Steve Crimando-DHS-DMHAS-DTB.** 24:22

Hello and welcome to New Jersey Climate Week 2024 and good morning. My name is Steve Crimando, director of training for the disaster and Terrorism Branch in the New Jersey Division of Mental Health and Addiction Services in the Department of Human Services.

I'll be your moderator for today's discussion on behalf of the New Jersey Interagency Council on Climate Resilience, or IAC for short, we'd like to thank you for joining us today to learn more about how climate driven temperature increases.

And extreme heat events can impact both our physical and behavioral and behavioral health.

The IAC was established by Governor Murphy through executive Order 89 and consists of 26 state departments and agencies coordinating together at a state level to develop and implement short and long term actions to address and mitigate climate impacts on New Jersey's economy, communities, infrastructure and.

Natural resources.

Part of the IACS mission is to educate New Jersey residents about and prepare them for the impacts of climate change and the actions needed to protect protect new Jer.

In recognition of New Jersey Climate Week 2024, we're fortunate to have an introductory message for you from New Jersey's first Lady Tammy Murphy.

Our first lady is a current board of director and charter member of the Al Gore founded Climate Reality Action Fund and initiated New Jersey's first in the nation K through 12 climate change education curriculum requirement.

This webinar is the second in a series designed to educate the public.

This webinar is the second in a series designed to educate the public on extreme heat.

The first webinar laid the groundwork for understanding warm weather patterns in New Jersey over time and expectations for that trend moving forward. If you missed that session, the webinar recording is posted on the events page of Heat Hub, NJ

today.
We'll dive into way that these warm ways that these warming weather trends can impact our physical.
Mental well-being in this episode, we'll discuss the medical and mental health impacts of extreme heat specific vulnerabilities of individuals and groups, how the medical system and providers are preparing for extreme heat events, and ideas for protecting yourself, family and friends from the heat and the health impact.
Rather of extreme heat. To that end, we're fortunate to have a panel of four health experts with a wealth of knowledge on how and why extreme heat impacts need to be taken seriously.
I'm going to briefly introduce each of our panellists, but please visit the events page on Heat Hub NJ to review their full BIOS.
First up is Doctor Elizabeth, Lisa, CEO, or Lisa.
Lisa is an associate professor of medicine and director of Climate Health at Cooper Medical School of Rouen University, associate program, director of Internal Medicine residency and chair of Physician engagement and Women in Medicine.
She leads several climate, health and public policy committees and consortiums for various associations, including the New Jersey chapter of the American College of Physicians, the Medical Society of New Jersey and the Medical Society Consortium on Climate and Health.
In addition, she's working to integrate climate health throughout medical training at Cooper Medical School of Rowan University and championing healthcare sustainability.
Nationally, next is Doctor Gene Kraft.
Gene practices pediatric critical care medicine at Rwj Barnabas Health and is a clinical.
Associate professor in the Department of Pediatrics at Rutgers New Jersey Medical School.
She also works in the health informatics field, which seeks to leverage information and technology to improve healthcare and advanced biomedical research.
Gene is a past president of the New Jersey chapter of the American Academy of Pediatrics, a founding member of clinicians for Climate Action, New Jersey, and a member of the climate advocates of the American Academy of Pediatrics.
Next, Robert Clyde, the vice president and chief operating officer.
Of the Mental Health Association in New Jersey, an organization that strives to

ensure that the behavioral health or behavioral health is recognized as a key component of our commitment to public health and climate change. Under his leadership, the association has developed a broad array of nationally recognized P/E. Recovery support training programs such as mental health First aid and the New Jersey Statewide Call Center.
Roberts philosophy is the building community partnerships and collaboration creates strong social.
Social justice foundations to address the racial and cultural inequalities and stigma that limit access to behavioral, behavioral, health services and community recovery systems.
And finally, Doctor Soto Sidoguchi is a general internist and epidemiologist and Professor of medicine at Robert Wood Johnson Medical School and Epidemiology at Rutgers School of Public Health.
So Co wears a number of hats at Rutgers University, including being the director of research Education at.
RWJMS and Co director of the Master of Science in Clinical and Translational Science. Rutgers School of Graduate Studies.
She leads multiple climate change, health and health care sustainability initiatives at Rutgers Health and is the Co director of Sustainability committee at Rwj Barnabas Health. So Co pursues her passion for patient care as a hospitalist at Robert Wood Johnson University Hospital and conducts clinical and community relevant rese.
As a clinician scientist, her research expertise is in environmental health services research and.
Pharmacoepidemology studying the health impacts and health services and treatment and patient.
Conditions and their interaction with environmental and climate related factors.
Thank each of you so much for joining us today. Before we get to our questions, I'd like to lay out a few housekeeping sort of items.
First, the webinar is being recorded and the recording will be posted on the events page of Heat Hub and Jay in a few days after this event.
Audience members are in listen only mode to cut down on background noise during the discussion.
Today's format is interview style, with panellists fielding specific questions followed by AQ and a Q&A section from audience members.
If you have questions, please jot those down in the chat feature and we'll do all or do

our best to get to them during the Q&A section.
So let's get started.
First question, Doctor Lisa Chercheo and Dr. Gene Kraft.
Why is it important for everyone to understand the hazards associated with extreme heat and to be able to recognize the signs and symptoms of the different heat related illnesses and how to react to and confront it with those symptoms?

CE **Cerceo, Elizabeth** 34:08
Thank you so much for that. The question I I'm adult health, so I'm not sure if Doctor Kraft, who treats our little people, wants to go first.
I think you're muted.

CJ **Craft, Dr Jeanne** 34:26
If you go first I'm and then I can add the pediatric specific modifications.

CE **Cerceo, Elizabeth** 34:29
Sure. Oh, absolutely, absolutely.
So there are numerous reasons why we're concerned about this right now.
There's a big spectrum of disease. There are certainly mild conditions like heat rash.
You know, sometimes. Well, we'll see it when in babies and young children, but we see it in, in adults as well.
It might be a a bumpy red rash.
That might be itchy.
It could even be secondarily infected.
That's that's pretty minor, but then as people start to get.
More dehydrated, you can see things like cramps happening because as you're sweating, you start to lose salt and so you get electrolyte changes so you can get cramps when we start to get worried though is when we start entering into heat exhaustion and I'm sure many of us.
Have experienced this.
That's when you get some nausea. Maybe some vomiting, headaches, fatigue. You know, many of us have.
Have I'm sure experienced this when you're in heat exhaustion, it's still very reversible.
You know you can get into a cool.

Area you can hydrate. You can get out of it if it's quickly recognized. Where we start to get really worried as clinicians is when you start to to progress.
There's something called heat injury, where your core body temperature has not necessarily crossed a critical threshold yet, but you're starting to see actual and organ damage, so you're seeing things like kidney injury. You might start to see your heart being impacted, but your brain is still OK.
Where we get really, really nervous is when you start to have changes with your central nervous system.
You start to have central nervous system changes like it may just be slurring your speech, or it may be irritability. It may be obtaination.
Sometimes people will have seizures, but once you have those brain impacts then the mortality jumps anywhere from 20 to 80%.
And so it so when you're in in that stage and that can happen very quickly, you can be well hydrated.
You can be totally OK and then go out and you maybe you're running a race or or you're out and it's just a really hot day and and maybe you have some underlying health conditions within 15 to 20 minutes. You can develop heat stroke and and so that.
When we we we really have to get people into into a hospital setting or have EMS start to do rapid cooling on those individuals.
And the rapid cooling can happen in the field.
You know it can be.
Misting people it can be putting ice packs.
Ideally, we we like to do it in the groin.
The axilla.
That's not so comfortable.
Sometimes you even just doing it on the palms and the soles and the cheeks can help, but we want to get that body temperature down as quickly as we can to a safe level, and we want to try to rehydrate people as quickly as we can.
And the type of hydration is also really important too.
So you know you don't want to be repleting with coffee, because that's just going to dehydrate you more.
You don't want to give people alcohol or even energy drinks, things like that.
Really, you want to be rehydrating with water.
Maybe with some electrolytes. You know there are commercial sports drinks out

there in the acute setting.
When if it's more of a people who are chronically exposed to heat, we have to be careful about some of those sugary drinks.
Because the the sugary drinks can actually, it seems like worsen kidney damage.
So so, you know, those are just a few with adult medicine. Some of the things we we really worry about and just you know for scope we know that right now in New Jersey about 445 people are dying of heat related illness every year.
And that's with our current level of warming.
So what?
That's expected to increase in in the future.
O all the more important that that we recognize this now and that we really try to prioritize this as a heat emergency.
But Doctor Kraft, I'd love your perspective on children as well.

CJ **Craft, Dr Jeanne** 38:47
Sure. So.
Everything that doctor Chayo said about adults.
Also applies to children, but there are some developmental and growth differences between adults and children, so.
You know, if we look at infants, they have a relatively large amount of skin for their body size. So they will absorb heat quickly.
So by if you are with an infant and you are starting to feel really hot.
That they got to that point before you did.
And they can't tell you that they're feeling warm.
They may get a little fussy.
They may get a little irritable.
And if you add on to their inability to speak to you, and they're more rapid heating.
The fact that sometimes you overdress them for the temperature because you're worried that is in as much as they get hot faster. They can also get cold faster.
And so sometimes infants are overdressed for the amount of heat.
So now they're heating that much faster.
In addition, we are not all born great at sweating and sweating is a key mechanism for getting rid of excess heat.
So you have small.
Not really good at sweating.

They generate more heat just because they're growing.
They have more skin to absorb external heat and and now maybe they're overdressed. They're going to hit the heat. Illness points faster than a similarly sized adult.
They also can't get themselves to a cooler place.
So if an adult is, is warm and outside, they may look for a tree to shade them.
They may look to see where the water is.
They may look to see seek help and children are not able to do that and one of the most tragic examples of that is that every year children are inadvertently left in cars.
And die as a result of being overheated.
And that is partly because cars heat up much faster than we realize it takes. If it's 72 two degrees outside, and it's partly cloudy.
Show that with in an hour.
You are at a lethal level of heat.
In that car.
And so cars heat up very fast and children they can't get out.
Which is the other problem with that? If you are sitting in a car waiting for somebody and it starts to get hot in the car, you're going to roll down a window, open the door, get out.
Kids can't do that.
So.
As they grow, they approach the adult ability.
Do things like sweat do things like take off extra clothes that that jacket that they don't need, they get better at getting out of a hot environment into a cooler environment. They get better at asking for help.
They get better at telling people they're hot.
Now there are windows in normal development where the desire to not appear weak in front of your peers.
Overcomes.
Your willingness to say I'm hot, I'm tired.
I know that I'm at practice for football, but I really need to take a break and so it's important that the adults who who aren't worried so much about peer pressure who aren't worried about somebody telling them no, you can do it, you can do it, help to.
See, when somebody does need to take a break and step away from the heat, get.
Into the shade so.

That is sort of the pediatric flavor.
Of all of the information that was presented by Doctor Chucheo.

SC **Steve Crimando-DHS-DMHAS-DTB.** 43:12
So helpful, I mean so many aspects.
I don't think we normally think about. I wanna shift directions though.
Doctor Soko Siddh guchi humidity.
New Jersey Summers often combined high heat with high humidity, resulting in higher temperature or higher heat indices, which approximate the temperature field to how it feels where our body, how does humidity factor into how our bodies respond to high temperatures?

SS **Soko Setoguchi** 43:38
Sure. Thank you for the question.
So New Jersey Heat index, which is the incorporation of temperature and then the humidity is relatively high, especially in the southern and then coastal regions in the New Jersey similar to Midwest in in a sense.
So humidity reduces sweat evaporations, making it harder for the body to cool down, which is a compensatory mechanisms when.
A body you know is facing heat stress, so that's why it feels, you know, even with a lower temperature with a high heat.
He feels hotter to the body and then because of that, and then the sort of, you know, difficult to sweat it, to evaporate, I increase the risk of heat related illnesses such as heat exhaustion, heat strokes that it has been mentioned by Doctor Chichio.

SC **Steve Crimando-DHS-DMHAS-DTB.** 44:26
Great. Thank you.
Now just changing direction a little bit about populations, Dr. Kraft and Mr. Clay, who's at the greatest risk for experiencing adverse physical health impacts for high heat.
And then the same question.
What population or at the greater risk for the behavioral health impacts of high heat?

CJ **Craft, Dr Jeanne** 44:47
So I talked about.

Kids as being particularly vulnerable, but some of their vulnerabilities translate to older populations.
You know, there are adults who have the same inability to move to a core place.
There are adults who have the same inability to.
To to express that they are feeling very thirsty and very hot.
Athletes are often feel compelled to compete to the point where they fall down, which is way too long, and I think it's it behooves all of us to.
Help these young athletes and even older athletes speak up when you need a break and also observe and feel free to suggest.
Take a break when it looks like they need them, and then the behavioral health.
Community.
And I'll just say this very briefly and then turn it over.
So there are issues not only with anxiety, agitation, sort of an increased unpleasant response to heat that certainly impacts behaviour health, but a lot of the medications that help you stay safe and safe and well.

BK **Bob Kley** 46:11
Mm hmm.

CJ **Craft, Dr Jeanne** 46:12
Also predispose you to adverse effects.
I'm gonna go ahead and turn it over to my partner now.

BK **Bob Kley** 46:19
No, absolutely, I think it's. You're gonna have a lot of folks who have mental health issues, obviously have are on different kinds of medications to control that aspect of it and heat impacts on that.
Same with substance. Use medications as well too.
It also, you know, exasperates a lot of pre-existing conditions, a lot of folks that have chronic mental health issues also have chronic other health issues as well too.
So you're you're building 1 issue on another.
The other aspect too is that folks that have more chronic mental health issues are also impacted by the social determinants of health, which is, you know, low income.
Poor or poor housing situations? Any elderly that we don't, we don't really deal with very well all these combined to really put a great number of people at risk to.

To heat it heat related issues.
And you know, I think that's something that also with folks with mental illness.
Or those kind of impacting with that they're they're more likely to isolate themselves.
And when you're isolating yourselves and not part of a community, they don't have the aspect opportunity to take out take.
Use of of cooling centers and other opportunities to to deal with do with the heat issues.

SC **Steve Crimando-DHS-DMHAS-DTB.** 47:38
Let's stay with with both of you, Jean and Bob, for a moment and ask you know, what kind of short term physical and behavioral impacts does heat have on the body and the mind?
At what point does the body and the mind start to become incapable of compensating for for increasing temperatures? Is there sort of a tipping point or what do we see physiologically and and psychologically or psychiatrically?

BK **Bob Kley** 48:03
I think at least psychiatrically or you see things like a started kind of a lack of awareness that again as we mentioned before, the lack of awareness of what their body temperatures are much more increased stress and anxiety and confusion.
You know, medications also themselves are whether they're, as they're altered by heat and moisture, so that changes their level of effectiveness and their potency and and side effects can be also amplified.
Tartic dyskinesia is something that can get as example for folks with schizophrenia.
Can get more involved and more intense, so I think the heat just intensifies the the symptoms.

SC **Steve Crimando-DHS-DMHAS-DTB.** 48:47
Bing.

CJ **Craft, Dr Jeanne** 48:48
Yeah. I I I would agree with that 100%.
I do wanna make one comment about pregnancy and heat, just that the heat related illness in pregnancy effects not only mom but the but the fetus.
So that it it really.

Is a a much bigger deal that sometimes we don't necessarily recognize until a baby is born.
And they're born a little too small.
There's some.
Suggestion that there may also be birth defects associated with heat exposure and pregnancy, depending on where you are in pregnancy.
So it's sort of a a, A2, Fer on that. And then the other thing I'd like to say about this is that.
You know, as we go through heat related illness, it is incredibly important to.
Recognize it before your own.
Body.
Is unable to protect you, so as you move, for instance from heat exhaustion to heat stroke, you actually lose the mechanism that makes you sweat.

SC **Steve Crimando-DHS-DMHAS-DTB.** 50:05
Hmm.

CJ **Craft, Dr Jeanne** 50:09
You actually.
Are less able to regionally.
Control temperature and.
Blood flow.
To get help to get rid of the extra heat so your own bodies compensation for you lose thirst.
You you are no longer thirsty, so that everything that your body is doing to try to get you to a safer.
Cooler and often more hydrated space begins to fail you.
And that's when you get the damage to your kidneys. You get damage to your heart, you get damage to muscles, you get other damage in your body. So early recognition, having somebody sit down in the shade with something to drink is a much better solution than.
You know, having to call EMS, they go to the emergency room or admit it to an ICU and you don't know if they're gonna fully recover or not. So early recognition and the very earliest recognition is, you know, if you have a weather app on your phone, che.
With a high temperature is going to be today and you know what?

If you're maybe you're a trainer.
Say you know what we're going to shift our outpatient practice to inpatient.
You know, being aware that there's a possibility that it could be too hot to do whatever you had planned is the first step in preventing.
Heat injury and actually for training training season starts in the summer for a lot of fall sports.
So it's starting when it's super hot.
There are actually demonstrated approaches to gradually allowing people to acclimate to the heat, so if you have small exposures over a long period of time.
In the end, you're going to be able to tolerate the hierarchy a little better than you have if you have.
A long strenuous exposure as your first exposure, you are going to go through the phases of heat injury much quicker than if you allow time to acclimate to the increasing heat.

SC **Steve Crimando-DHS-DMHAS-DTB.** 52:27
Now on that same theme, you know there may be people who are pre-existing conditions who need to be even more aware to your point, gene.
So I want to shift the question to Soko and Bob in the physical and also the mental health domain. Are there pre-existing physical and behavioral health conditions that would make someone more susceptible to experiencing adverse physical behavioral health impacts from high heat?

BK **Bob Kley** 52:53
Well, I think some of that absolutely so Co go.

SS **Soko Setoguchi** 52:53
I go far. Oh, go ahead.
No, no. You can go now.
You start it.

BK **Bob Kley** 53:00
We're we're equally just really quickly. I think we talked a bit about people that are on on different kinds of psychoso, psychotropic medications for mental health and and addiction.

Those are those increases opportunities. You know some of the data shows too how difficult this is.
There's in some of the things that behavioral health emergency rates, for example, are much higher in heat situations.
Some of the data shown were people that are normally just affected by anxiety and stress related issues, mood disorders.
Disillusion of disorders and substance use and self harm. All those issues are amplified during heat.
So I think if you have those situations, you may not think you have. You may be dealing with an issue.
You, the heat situation is going to amplify that out and it also if someone has been had traumatic incidences in their lives associated with some kind of climate issue, been involved with a hurricane or or or some kind of flooding issue, for example, those issues are there and.
A lot of times that's connected to heat and weather related things.
As well too.
You know, it could create and and exasperates people's trauma in their in their lives.

Soko Setoguchi 54:16
So I'm gonna maybe focus on the physical aspect of it and a chronic disease condition. So as you've already heard about the danger of heat on, you know, heat exposure on heat related illnesses such as heat stroke, heat exhaustion, heat syncope.
There are.
It's actually is a tip of the iceberg that heat can also cause exacerbation of underlying conditions such as cardiovascular disease, chronic respiratory disease, diabetes, kidney issues.
So those people with.
Such sort of conditions cardiovascular disease and such as coronary artery disease or heart failure.
Asthma COPD. Diabetes.
We talked about chronic kidney disease.
Those people are at risk of not only to the heat related illnesses that we just heard about, but their exacerbation of their underlying conditions as well.
Other people, I guess conditions that we should probably touch on is the obesity and

the ageing itself, right?
The obesity makes you intolerant to heat in general, and then those people.
Tend to have already cardiometabolic conditions as well, so put them at the risk.
Higher risk.
And then, of course, the aging itself reduces the coping mechanisms that the body has to heat stresses.
So put them at the higher risk, of course.
And there was a dementia could sort of change behavioral sort of patterns and then, you know, made they may not recognize the danger and then put them at the high risk as well.

SC **Steve Crimando-DHS-DMHAS-DTB.** 55:50
So Bob started to mention before some of the psychiatric or psychotropic medications that had risks.
Are there other medications in terms of physical medicine rather than behavioral medicine that that put people at risk or medication to become less effective in high heat conditions? From a medical standpoint?

SS **Soko Setoguchi** 56:11
Yeah. Thank you for the question.
So this is actually one of my research areas that I study the medications and an environmental interactions. I'd like to urge people to actually go to.
There's a very, very nice website that summarizes this sort of issue put by CDC.
They talk about the heat and medications, so in and sort of to summarize how the heat and medication can interact. There are three ways.
One is what Bob is already talking about.
Certain medications you know or the medication side effect could be.
Exacerbated by the heat, there's a medication, what we call medication heat interaction.
Another way is that the medication he can directly affect the how the medication work.
I think Bob already mentioned that as well, but then the famous one is actually instinct 'cause. It has to be kept in a very cool in a fridge fridge and then when it's left outside, when it's hot or you know the when you lose actually.
Electricity from the storm and then the heat happens.

You know, this drug could become.
Ineffective.
And then the other sort of issue with Tina, he not he, but the sunlight and then the medication is that when you have a topical medication put on your skin such as antifungals or antibiotics that could interact with the heat and then increase the skin sensitivity as well.
So in terms of the medication skin, I guess our heat interaction that we were talking about in addition to what Bob mentioned, which is antipsychotic medications.
Other medications that are listed, there's a very nice table in the CDC website.
Include cardiovascular medications, such as diuretics.
Antihypertensives such as angiotensin receptor blockers or beta blockers?
And then there's other psychotropic medications include SSRIs and RIS, like antidepressants, these antidepressants.
And the stimulants for children's is, especially for ADHD in children is something that is we also have to be careful about.

SC **Steve Crimando-DHS-DMHAS-DTB.** 58:14
Great. Thank you so much, Lisa. two-part question for you.
Are there long term chronic conditions that come from repeated exposure to high ambient temperatures and part of that is kind of building on that social determinants of health such as race, ethnicity, income level, employment, etcetera. That again influence how susceptible someone may be to experiencing adverse both Phys.
Or behavioral impacts from high heat.

CE **Cerceo, Elizabeth** 58:42
Such an important question and so Co already touched on that.
The tip of the iceberg.
No, no pun intended here, but, but it really is. When you see that the number of admissions that are coming into the hospital, that the EMTs are getting called out to a lot of of those chronic conditions like particularly respiratory conditions.
And that might be a marker of frailty as well.
But everything from you know, sepsis being worsened or being increased from cardiovascular disease even.
Inflammatory bowel disease and GI conditions.
So there are a lot of chronic conditions that can be worsened, but we're getting more

and more research now that there are conditions that can evolve just on its own, particularly kidney disease and some of this research actually started in Central America because we were seeing that Sug.
Cane workers were out in the field.
There's no worker protections out in the field for 1012 hours a day in blazing heat with with no hydration.
And every day they would come back and they would be talking about.
Urinating sand and they were actually urinating out urate crystals so like stone crystals and they would check their kidney numbers and they would gradually increase and then the next day it would come down and then it would increase again and it would come down until it stops coming.
Down and then it just gradually increases.
And so we, we had called that Mesoamerican nephropathy, but now we know it's not just in Central America, it's been identified all over the world.
And so that heat exposure in and of itself, especially when.
You're not rehydrating in the moment. Is is an enormous risk factor, and we know that kidney stones also go up because as you become dehydrated, you have a higher concentration of calcium and oxalate and urate all the things that are are stone formers. And so it we've seen.
Particularly in the hot climates.
But all the way up here as well that that there's been an increase in in kidney stones.
We've even seen changes in that the gut microbiome and there's some really fascinating research coming out of of Arizona where they're really the epicenter of a lot of the really se.
Heat impacts and the gut microbiome even begins to change, and it begins to resemble gut bacteria.
That's seen in depression and anxiety and and other chronic conditions.
So so I think we're really just starting to understand the depth and the breadth of the heat impacts because the research is evolving.
And then your second question was about the social determinants of health, which really goes into it because, you know, those people who are going to be exposed to heat for long periods of time are probably those that don't have the agency to speak up and and say you.
Know I'm. I'm you know I don't have the right kind of worker conditions.
So the social determinants of health. Really.

I think have come to the fore in medicine because we now recognize that if you're unhoused, you're not going to be able to take care of yourself if you don't have regular transportation, you can't get to your doctor's appointments, and that extends to the environmental determinants of health.

Craft, Dr Jeanne 1:01:38
******.

Cerceo, Elizabeth 1:01:52
So if you think about things like urban heat islands, that's an enormous risk factor for people, because all of that asphalt just holds on and amplifies the heat.
And a big problem is that.
Night time. Those temperatures don't cool down, so your body doesn't have any respite.
It can't deactivate that those stress hormones that are are ramping up and so a lot of times when there's a heat wave, we might not see the admissions coming the first day, but by the second and third day, those effects start to really build up. And so you.
See those?
Those cumulative impacts and we know when heat waves are coming, that there's about an 8% or so increase in in hospitalizations and many.
Coming from our most vulnerable populations that that everyone else on the call had had mentioned, the other thing to consider too is that with the ecological or environmental determinants of health is that people aren't just exposed to one thing, so it's usually not just heat, they may also.
Be exposed to air pollution.
They may also be exposed to other issues, so it's so. It's really important to take those risk factors in their totality when we're assessing patients.

Steve Crimando-DHS-DMHAS-DTB. 1:03:03
No, we have had some great discussions so far, but I also wanna be sensitive to our time 'cause. I wanna get some questions in from our audience.
So what?
I'd like to do is for the next 5 minutes a little bit of a speed round of questions.
So I have some specific questions for our panel gonna ask you to keep the responses

real tight so we can get those important answers from from our audience. The first of these speed round questions for you, Bob, we're gonna talk about.
The role of heat in increasing potential.
Aggression and that sort of behavior, aggression and violence.
What is the relationship? If you could summarize that that we know.

Bob Kley 1:03:44
It it it does.
Yes, I think the best of the answers do it increases things like suicide rates, anxiety stressors, all the things that we have talked about here and create social situations. Again, you talked about being in an urban heat, heat environment, evenings with people out.
It increases people together in in stressful situations who may or may not be able to handle those stressful situations because of mental health issues and social situations. So I think we've seen that.
Pretty obvious in our communities today.

Steve Crimando-DHS-DMHAS-DTB. 1:04:18
So we're seeing this wide range of impacts.
So Co a question for you quickly. The role of ozone as it forms in the presence of heat and sunlight. What's the com comorbidity in in different vulnerable populations when we bring ozone heat, air pollution etcetera into the mix simultaneously?
How does that change the equation?

Soko Setoguchi 1:04:39
Store this is P but also pm 2.5 does too.
These two major air pollutants are associated with a cardiovascular risks and then worsening of the lung event. So two together with the heat and the heat itself, is also associated with those cardiovascular events and lung respiratory events, so.
2.

Steve Crimando-DHS-DMHAS-DTB. 1:05:07
OK, so Co you froze up a little bit.

Soko Setoguchi 1:05:08
Father than one alone.

Steve Crimando-DHS-DMHAS-DTB. 1:05:09
Oh, there you are.
Sorry about that. OK.

Soko Setoguchi 1:05:11
Oh, sorry.

Steve Crimando-DHS-DMHAS-DTB. 1:05:12
Last of our speed round questions for Jean and Lisa.
Your perspective or our healthcare providers adequately trained and equipped in terms of having the knowledge and resources they need to recognize and address the physical and psychological impacts of extreme heat.
How are we tracking the extreme heat effects on human health? To better understand it, where are we in terms of preparedness across our healthcare system?
That's our last.
Question and I wanna hear from the audience.

Craft, Dr Jeanne 1:05:40
Can I just jump in on the information side of this?
There's a lot of being work being done across the country that is using data that hasn't necessarily been incorporated into health records and healthcare system records.
In new in interesting ways. And so, for instance, here in New Jersey, the Rutgers climate science.
Team and and I I say team because it's spreads out over multiple departments.
They are looking to combine heat data with development data with transportation data, with water flooding, etc.
Data with health data to better use all of the information we have.
To predict when there's going to be a problem and one way that this worked very well was in New York City when they had a plan for implementing.
Activating cooling centers, sending out public health notices with heat warnings that

had a threshold that was actually two or three degrees higher than when that when people were actually seeking health.
Related or heat related injury treatment.
So they combined health system data of. So when are people coming in the emergency department with heat and it's actually below where you're telling people that there could be a problem.
So New York actually decreased their threshold for making the announcements, and I think that in New Jersey, I think we're very fortunate to have the Rutgers team really looking at combining this kind of information so that we can better take care of people, turn it back to you.
Elizabeth or Lisa?

CE **Cerceo, Elizabeth** 1:07:37
Thanks. Yeah. Actually just to to dovetail with with that our electronic medical records are another source that are close to home for a lot of us.
Most hospitals will have electronic medical records and a lot of them you can enter in the social determinants of health.
Things like food insecurity and housing insecurity. We need to get into the habit of entering things like the environmental determinants of health as well, so that we can we can preempt some of the vulnerable patients and really do outreach to try to protect them more.
There's a big question to end with.
I do.
I want to address the preparedness of us.
So there are increasingly integration of climate health throughout the medical education continuum from our undergraduate, from our medical students, through our residents and our faculty.
And it's actually ramping up very, very quickly, which is hardening.
There are some wonderful resources out of the global consortium for Climate and health education that's based in Columbia and also the Medical Society Consortium for Climate.
Help and we can get some of those resources later for for medical educators, I and many of my colleagues are are busy trying to integrate this into our medical school training. But of course soon there can always be more resources.
The other thing just to add for for tracking we have the benefit of of having some,

some wonderful state and also federal agencies. And I think just as you all are doing this, this interagency resiliency initiative.
There can be efforts at the national level.
ADC has a National Center for Environmental Health.
There's EPA has been map software.
There, there's a lot of existing programs that can be expanded and made more robust. And right now there there's work with FEMA to potentially name heat waves and there's work with OSHA to to instill more stringent work initiatives for for vulnerable workers.
So we could talk all day about this, but I'll turn it back to you, Steve.

SC **Steve Crimando-DHS-DMHAS-DTB.** 1:09:37
No, I appreciate that everyone of these questions could have been a whole class unto itself.
There's such, you know, so many layers to this discussion, and I want to thank everyone.
That's the last of our formal questions and what I'd like to do is is kind of dip into the audience questions.
Now if I can and ask these actually to to anyone on the panel who'd like to jump in first question from the audience, do you foresee more public facing heat related illness emergency instructions?
Something similar to educating the public.
On information about CPR so you know how does this become accessible to to everybody?
And anybody on the panel, please jump in wherever you feel comfortable.

CE **Cerceo, Elizabeth** 1:10:18
I I can start there.
There are some wonderful infographics that are publicly available that physicians can post in, in their office, from the CDC, from from, Lancet that that are very helpful that begin that conversation. Certainly I think some of the education needs to happen, you know within clinicians offices but but at.
Public health level I I think sessions like these and and getting even more information pushed out to the public will help there.
There's also a lot of discussions about how to integrate heat and health warning

systems, and so I would be excited to see where that goes in New Jersey.
I know other countries and and other states are working on systems like that.

SC **Steve Crimando-DHS-DMHAS-DTB.** 1:11:01
OK.
Well, actually ask another question from the audience.
What special considerations for those 60 and older should people be keeping in mind regarding extreme heat?
So anybody on our panel for for older adults, special considerations.

CJ **Craft, Dr Jeanne** 1:11:21
No, I think it's.
You know, it's funny because I think that older adults often intersect with young children in terms of risk, so inability to physically manage heat is 1 consideration.
Inability. There can be mobility.
Challenges in in being able to get to a cooling centre or you know.
Get out of the hot sun.
And so I think that for for older adults it's it's much more common than for children to be on medications, which may influence their ability to, you know, if you're on a diuretic or some other specific medications that make you more susceptible heat, I think you you have.
To keep it into consideration and and you also have to remember you know if you don't.
If you don't feel good in the heat, get out of the heat and and you should never.
Feel embarrassed to do that.
You should never feel bad about speaking up or asking for somebody to help you get out of the heat.

SC **Steve Crimando-DHS-DMHAS-DTB.** 1:12:30
So here's just like that a question someone's asking for a friend.
I'm sorry, go ahead.

SS **Soko Setoguchi** 1:12:34
If I may add a few things, I'm sorry.

Steve Crimando-DHS-DMHAS-DTB. 1:12:34
Please finish that thought.
Go ahead.
So go.

Soko Setoguchi 1:12:38
Thank you.
Thank you.
The other thing is that the older people tend to not take enough fluid and usually so they tend to get already dehydrated to start with.

Bob Kley 1:12:44
Mm hmm.

Soko Setoguchi 1:12:47
So that's something to keep in mind.
The other thing I wanted to actually emphasize about the medications and then, you know, the heat relationship, it seems to be there's a, you know, emerging sort of data supporting that sort of that that's probably there at the same time, though, I don't want people to say, oh.
I have to stop this medication because they interacted with their feet, so we won't people to be aware of this and then discuss.
Physicians, before you, you know, decide to reduce or stop medications.

Steve Crimando-DHS-DMHAS-DTB. 1:13:14
So there's a few questions from the audience about meds, and I'm actually gonna skip a few of those because you you have talked about that in general task. A few other types of questions. And the next question is what are the steps to consider when opening a cool?
Center and what do organizations, local governments, etcetera, are collaborating to to make cooling centers a reality in New Jersey?
Anybody in our our group, you know?

Craft, Dr Jeanne 1:13:41

You know what? I want to make a comment just in general about different types of cooling centers that you may not think about as a cooling center.

CE **Cerceo, Elizabeth** 1:13:41
Hey, I can. I'll go ahead.

CJ **Craft, Dr Jeanne** 1:13:49
So during the day there are many more options than evenings because.
Your local library, if it's air conditioned, is a cooling center.
It's not an official cooling centre, but it's a cool place to be if you don't have air conditioning. The local mall maybe.
Air conditioning.
So there are lots of.
Public spaces that are available during the day.
The challenge is, is that I don't know about your library, but my library's not open at night and so.

BK **Bob Kley** 1:14:23
Mm hmm.

CJ **Craft, Dr Jeanne** 1:14:25
Some of the more formal cooling centers.
Have if they're not 24 hours a day, extended hours.
So I'm going to end my comments there and pass it on to people with a more specific knowledge.

BK **Bob Kley** 1:14:40
I mean, we do have a network of warming centers when it gets below, you know, in the in the 30s at night that that's in effect, but it's limited and and pretty much an all volunteer network you know across the state.
So I think it's something that agencies and organizations that deal with levels of support for different populations really need to look at because you know it's it's a socio economic issue, it could be home.
Air conditioning and you're stuck and again.
I'll just go back to different populations and then we've talked about today, but

specially the elderly that are normally isolated anyway, they don't even know about these issues and these services that are out there too.
So it's it's a really needs to be part of the framework of our public health system.

Craft, Dr Jeanne 1:15:22
OK.

Steve Crimando-DHS-DMHAS-DTB. 1:15:25
So this is kind of our final question and it's a good wrap up question and maybe a quick answer from from each of you.
The question is, and I know we touched on this to some degree, what actions can individuals take to avoid the negative health effects of extreme heat?
So as a summary statement from each of you, what should people take away in terms of preparing for in terms of, you know, thinking about what what's ahead of us in terms of the climate future?
Any wrap up statements from from each of you.

Craft, Dr Jeanne 1:15:56
I would say the first step is anticipating knowing when it's going to be hot and comparing the activities that you have planned with the heat that's out there and adjusting schedules accordingly.

Steve Crimando-DHS-DMHAS-DTB. 1:16:16
Other docs, other voices.

Cerceo, Elizabeth 1:16:18
I'll I'll second that.
I'll I'll second that there are heat health action plans. We have action plans for asthma.
You can do the same thing with your physician or your provider for heat, and that that involve things like like Soko was talking about, going through your medications.
Also, you know having body systems we we know that, especially for the vulnerable people having a buddy system at at.
A city level has really decreased the health impacts and mortality.

Steve Crimando-DHS-DMHAS-DTB. 1:16:45
Bob Osoko any final statements?

Bob Kley 1:16:47
I I would just say aware awareness, awareness and planning. I mean you really need aware of hate impacts your own body and plan for it and be aware of what the temperatures are and adjust and adjust your schedules and your opportunities to to live.

Soko Setoguchi 1:16:48
Yeah. So.

Steve Crimando-DHS-DMHAS-DTB. 1:17:02
Great. So Co.

Craft, Dr Jeanne 1:17:07
But you're muted.

Steve Crimando-DHS-DMHAS-DTB. 1:17:07
You're on mute for a second.

Bob Kley 1:17:07
Oh, you want me?

Soko Setoguchi 1:17:11
Dissipating the heat is really very important, but also understanding your own risks because you have chronic conditions because you're taking certain medications.
So you know, because of your age, so all those things has to be considered and understanding your own risk is probably another step to take.

Steve Crimando-DHS-DMHAS-DTB. 1:17:26
I wanna thank you all so much for all of that insight today.
A lot of important messages, that's all the time we have though for today, for the discussion. So on behalf of the IAC Member, State agencies and departments, I'd like

to thank all of our panelists for sharing your knowledge and your time with us.
Today, we hope the audience walks away with a better understanding of how climate driven extreme heat effects both our physical and psychological well-being, and why it's important for New Jersey residents to know the signs and the symptoms of heat related illnesses.
What actions they could take to protect themselves?
And their loved ones, as I mentioned before, the recording for this webinar will be posted shortly on the events page of Hithab, NJ, along with the recording of the first webinar in this series, we encourage you to visit Hithab, NJ often as we regularly update and add new.
Materials to the site as it becomes available.
Thank you everyone for being part of our program today.

CE **Cerceo, Elizabeth** 1:18:19
Thank you.

BK **Bob Kley** 1:18:20
Thank you.

CJ **Craft, Dr Jeanne** 1:18:21
Thank you.

SS **Soko Setoguchi** 1:18:23
Thank you.