What the Eyes Don’t See: Water, Crisis, Resistance, Hope

Transcript of the conversation with Dr. Mona Hanna-Attisha

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Orvis Auditorium
UH Mānoa Campus

David Lassner:

Aloha mai kakou, thank you all for joining us here this evening because we're discussing a challenge that is truly of existential importance to all of us, "How to ensure that our freshwater supply remains safe for this and future generations?" Clean water is the basis of life. Ola i ka wai. It is essential to our health, our families, our economy, our communities. And the University of Hawaii has a vital role to play in order to reliably provide clean water to a large population, both rural and urban in our state. We need engineers, chemists, microbiologists, epidemiologists, public health workers and all of this depends on sound public policy.

We need political scientists, communication specialists and policy experts. We, at UH, provide the research, education, training and support to help all of these systems function properly. So our guest this evening is a truly inspiring example of a university faculty member who has gone above and beyond her job as a pediatrician to become a public health researcher, policy analyst, author and an unstoppable force for change, longer intro to come, but I now have the pleasure and honor of introducing our introducer, who of course needs no introduction, but here I am anyway.

Dr. Josh Green has survived and even thrived through his first hundred days, so he is no longer our new governor. He's brought his personal commitment to kindness and caring to his entire administration. For those of us in academia, as my father would say and he was a PhD also, Josh is a real doctor. He's an ER doc who came to Hawaii by way of New York, Pennsylvania and parts beyond, Swarthmore and Penn State, pretty good schools, not as good as UH, but we can forgive him that. He represented Hawaii Island in both the State House and Senate before serving as our lieutenant governor. During COVID, he was, and I have to credit Robert for this one, literally everything, everywhere, all at once, scribbling on his whiteboard, sharing data, answering questions and urging action.

He has been recognized as both Physician of the Year and Legislator of the Year. So please join me in welcoming a good friend, a strong supporter of UH, a champion of great ideas, who has actually been a regular at these events for years, Dr. Josh Green, Governor, MD.

Joshua Green:

Thank you, President. He speaks so eloquently for a gentleman who is constantly tortured at the legislature. We're honored to see so many people tonight. And before I get to introduce a legitimate hero, Dr. Mona, I just wanted to say mahalo to her for bringing so many extraordinary people together. I see community activists that are fighting the right fight to make sure that water is pure. I see directors of health past and present, people from the national space in the EPA to hear her justices, leaders across our

campus children. It takes someone special to bring that kind of group together and it was not Lassner that did that. It was Mona and it certainly was not me.

Now, it is exceptional to see an activist community come together and I'm grateful again to see the opportunity arise because of what Robert does repeatedly here with the total support of the university, so thank you for that, guys. It is special. In Hawaii, we are addressing crises. We have the water crisis without a doubt, as a result of the fuel spill, and the contamination of our aquifer at Red Hill has to be addressed. So having a leader of this nature, someone who has been given accolades, not because she wanted them, but because her actions earned them, is the perfect speaker for us here in 2023. We know that she wants to fight to protect public health because we see it comes right out of her being when you talk to her.

She did something very brave, Dr. Mona did. She spoke up. And I've met a lot of people now over the last few years, exceptional people, who after speaking up, found themselves victimized, found themselves marginalized, found themselves losing their careers, losing their capacity to be educators, to be professionals in their district. So that is extraordinary what she did. Now her work in Flint, Michigan is something that is world-renowned because, not only did she save thousands of lives, but she saved generations of individuals that would have suffered the ill effects of the toxins that came from the water.

Ariston men hydor, water is life in Greek. That is really what she ends up being, because as a pediatrician, and I see my pediatrician and our dearest pediatrician here, she's able to convey that both in her profession and in her work, her policy work. It's special. Now she's doing something much harder than all this. She's raising two teenage daughters, which we know is something to behold having one myself. One will be an activist, one will be a surfer, I'm told, balance in the universe, but that is what it takes. It takes women leaders to create some of what we need in our society. It shouldn't be lost on us. And this is another, if I may, small credit to President Lassner, just across the way with the East West Center, there was another women's leadership summit today happening right now. In this case, East West Japanese leaders and US leaders, again 300 women leaders coming together to grow, to grow their footprint, to help lead us as a global community against some of these great challenges.

So that makes it such an extraordinary thing for me to be able to recognize Dr. Mona, who was recognized first by Time Magazine as of one of the hundred most influential people in the world, one of the women of the century, not bad, but also a woman professional, a pediatrician, author of *What The Eyes Don't See*, something extraordinary, which I feel so, so thankful that you gave me a copy, which I will then give to my teenager. Really someone who fights for truth over lies, science over ideology, which is more important than ever, as we've seen in recent years during the COVID crisis, action over a passive place in society.

It is difficult. It is difficult, but that is what democracy should be, someone who steps up. Seeing a woman leader rise like this is something to behold. So if I may call you up, Dr. Mona, please come. We are so excited to be with you and to get to learn from you. Thank you for sharing.

Robert Perkinson:

Before we branch into the larger issues, let's recap the story for folks. First, as a pediatrician practicing in Flint, how did you first start to worry about the water quality?

Mona Hanna-Attisha:

That's a great question and I'll try to answer this question in maybe just an hour and a half, kinda what happened. So any Michiganders in the audience? Oh my gosh, no way. So hold up your hands and point to ... Okay, everybody, look at them. Point to where you're from, with your hand. Okay. All right. So Michigan is the Mitten State. What are we surrounded by?

Audience:

Water.

Mona Hanna-Attisha:

Water. We're surrounded by the Great Lakes. The Great Lakes are the largest source of freshwater in the world. 21% of the freshwater in the world is around Michigan, and here's Flint. So I saw people pointing to Detroit, maybe like Ann Arbor. Saginaw is a little north of Flint, so not far at all, but this isn't what we do. We point to where we're from. So there's Flint in the middle of the largest source of freshwater in the world and that's where I had been working as a pediatrician. I was a professor, I was a residency director, so I was in charge of training the next generation of doctors. I'd also had my public health degree and I was like, "I'm going to train these doctors to embrace medicine and public health, not just to treat ear infections, but to make sure they're addressing upstream and injustices and inequities that also made people sick."

So working as a pediatrician and families would come in and they would complain about the water like, "I bathe my baby and they get a rash to the waterline," and they're like, "Is this okay?" And I'd be like, "Oh yeah, it's okay. Maybe just dry it or wet it." That's what we would ... Tincture of time, lots of reassurance. Or they'd be like, "Are you sure I should be mixing my baby's formula with this water?" So how do you guys make formula? Powder is mixed with?

Audience:

Water.

Mona Hanna-Attisha:

Water. And they're like, "Are you sure we should be mixing making formulas this way?" And for about a year and a half, I, as a pediatrician with my white coat on, full of doctor confidence, was telling my patients that everything was okay because all the folks in charge were saying everything was okay because how could it not be okay? Because we're surrounded by-

Audience:

Water.

Robert Perkinson:

Fresh water.

Mona Hanna-Attisha:

Water and there's rules and laws and regulations of those people that wake up every day, that we support as taxpayers, that make sure that, when we turn on our water, our water is okay. So for a while, I was

telling my patients everything was okay. And that all changed for me when by pure serendipity, a high school girlfriend came over for dinner and my high school girlfriend of all things was a drinking water expert. Who are you? Make friends with all kinds of people.

Robert Perkinson:

She had been your high school valedictorian.

Mona Hanna-Attisha:

High school valedictorian. She was a high school valedictorian. I was the class president, one of the smartest people I knew. In high school, we did a lot of environmentalism. We shut down a local incinerator in high school. And as high school activists, we elected a state rep who the very first thing he did when he got to our legislature said that, "You couldn't operate an incinerator which burns trash within a certain radius of a school." And it was in the backyard of an elementary school. So at this really early age, I'm like, "Oh my God, policymakers are amazing. They're public servants and they can serve and they can write historic wrongs."

So we were both informed by this environmentalism. I went on to environmental health medicine and she went on to become a drinking water environmental engineer. Went to Carnegie Mellon in Pittsburgh, great school and then ended up at DC and worked for the EPA. And she had just come back home to Michigan and we're hanging out as girlfriends, having a glass of wine. All good stories start with wine. Just kidding. Salad is good. And she's like, "Mona, you're in Flint," and I'm like, "Yeah." And she's like, "Well, the water, there's problems with water." I'm like, "Well, what do you mean?" And she's like, "Well, I saw a memo from a former colleague of mine at the EPA who I know and I trust and he shared that the water is missing corrosion control." And she stares at me like this.

Robert Perkinson:

Like you would know what that meant?

Mona Hanna-Attisha:

Yeah. I'm like, "I have no idea what you're talking about." I didn't learn about corrosion control in medical school that wasn't part of our curriculum. And I'm like, "Well, what does that mean?" And she's like, "Without corrosion control, the water's going to be super corrosive and the lead that's in the plumbing is going to come out of the plumbing and into the drinking water."

Robert Perkinson:

And because it used to be protected by deposits or just the water, the corrosion control water, does it leach the lead?

Mona Hanna-Attisha:

Yeah. I think of it like a medicine corrosion control that you're supposed to put in water treatment and it creates a coating in the pipes so that the metal that's in the pipes won't come out. And there's a lot of lead in plumbing. So do we have any young people who just took high school chemistry or you maybe folks remember? What's the elemental symbol for lead?

Audience:

Pb.

Mona Hanna-Attisha:

Pb. So PB comes from the Latin plumblum, which means plumbing. So the word lead means plumbing. So we've been using lead in plumbing since the Roman times for a long time. So a lot of our drinking water delivery system, our infrastructure is made of lead. And so this important medicine corrosion control, it doesn't eliminate, but it minimizes lead from coming out of pipes. And so Flint's water was missing this ingredient because the water was switched from the Great Lakes.

Robert Perkinson:

But how did that happen?

Mona Hanna-Attisha:

Oh my goodness, yes.

Robert Perkinson:

The water was previously drawn from Lake Huron and they switched it to the Flint River, which is closer?

Mona Hanna-Attisha:

Yes, so that's a great question. So in 2011, Flint lost democracy. You're like, "What? What are you talking about, lost democracy?" So Flint, you guys, Michigan, Saginaw people, what was Flint famous for a long time ago before the water crisis be?

Audience:

Michael Moore.

Mona Hanna-Attisha:

Before Michael Moore.

Robert Perkinson:

Yeah, I knew Flint from skinning rabbits.

Audience:

Cars.

Mona Hanna-Attisha:

Cars. Cars. So cars were born in Flint. General Motors was born in Flint and we were the birthplace of cars. And even more importantly than the birthplace of cars, you guys, does anybody else what Flint is

famous for? It happened shortly after cars were being made. You get extra credit if you know this. Assembly lines, more than that, workers.

Audience:

Unions.

Mona Hanna-Attisha:

Unions, you got it. Good job. Unions. The UAW was born in Flint. Workers sat down in Flint and organized a strike that was heard around the world, demanding things like occupational health and safety and worker protections. Because on the days that they made blue cars, they were coughing up blue, and the days they made red cars, they were coughing up red and they were demanding living wages and all these things that a lot of folks are still fighting for. But anyways, their union was recognized. So more importantly-

Robert Perkinson:

This is like 1930s, new deal?

Mona Hanna-Attisha:

1930s. And the middle class was actually born in America. The middle class was born in America and that deal that was made kind of spread throughout the country. So Flint had this period of prosperity for a long time, highest per capita income in the country, 1980s.

Robert Perkinson:

One income earner could support a family.

Mona Hanna-Attisha:

Absolutely, one job, one union job, one earner could support a middle class family and great education, great infrastructure, everything that you needed for that great American dream, right? But then somebody mentioned Michael Moore, then what happened? Plants closed. Jobs were lost. Globalization. Automation. And-

Robert Perkinson:

Plants closed because they moved them to nonunion, to the south and-

Mona Hanna-Attisha:

They moved them to other countries. Then robots came in. So many reasons. So the population dwindled and jobs were lost. And that brought forth every disparity you can think of, high rates of poverty, unemployment, disparities, and the people who have the power and the privilege to leave our city, left. White flight. Efforts to regionalize failed. So White folks left. They built highways that cut through Black neighborhoods. They came in, they extracted the wealth and they left and they didn't contribute to the city. And that left that tax base that couldn't support this infrastructure.

So Flint was near bankrupt. And in 2011, Flint was so bankrupt that the state took over and we became under emergency management, which is crazy. And this law, emergency management law was put into place by our legislature, which was, at that time, the most gerrymandered legislature in the country. And it was voted down against the will of the people, was a ballot measure that the people of Michigan said, "We don't want emergency managers," but our legislature pushed it through. It was signed by our governor. And at one point in Michigan, half of our African American population was under emergency management, compared to just 2% of our White population. So scratch your head-

Robert Perkinson:

Which means they're managed by the state, not by their local-

Mona Hanna-Attisha:

Yeah, yeah, and American studies professor, "Is that how America is supposed to be run? Is that a democracy?"

Robert Perkinson:

Well, it is often how America is run.

Mona Hanna-Attisha:

That's right. So totally undemocratic, unaccountable, unelected officials running majority-minority committees and they were governing by austerity, by saving money. All they wanted to do was cut costs, cut costs, cut costs. They almost sold off our hospital. Detroit was under emergency management, but they had the A Team of emergency managers and Flint had the B Team. And they're the ones that decided that, "No longer will Flint get their water from high-quality Great Lakes. We're going to save a buck and we're going to change your water to the local Flint River and we're not going to treat it properly." So in 2014 is when our water was switched by unelected, unaccountable emergency managers for this predominantly poor, predominantly minority population.

Robert Perkinson:

So people can understand just how serious lead is, you mentioned that lead has been a metal that's been used since the dawn of civilization. How early did people start to realize that lead could be toxic?

Mona Hanna-Attisha:

Yeah. Centuries ago, we've known that lead was a poison. In the early 1900s, the rest of the world was pretty much stopping the use of lead because it was already known to be a poison. There's theories that hypothesized the demise of the Romans, the Roman civilization, was because of the use of lead, not only in plumbing, but they also put it in food as a salt, not a good idea. Lead is sweet like Van Gogh and other painters used to lick lead paint... Maybe that's why they went a little nuts. So people have known why lead is bad for a long time, but in the turn of the century, in the early 1900s, when the rest of the world was like, "We're not going to use lead anymore," that's when American industries realized, "Hey, we can make a lot of money by putting lead in lots of different things."

Robert Perkinson:

Including?

Mona Hanna-Attisha:

Including-

Robert Perkinson:

Another Flint story or at least a Michigan story, I actually did not realize this until reading your book that I grew up in the age of unleaded gas, but I didn't really realize what a global scourge that we'll be grappling with for who knows how many generations to come, leaded gas was. How did that originate?

Mona Hanna-Attisha:

So in the 1920s, General Motors and Standard Oil decided to put lead in gasoline to fix a problem called engine knocking, which was the loud noise that happened when fuel and air met. And their renowned engineer, Charles Kettering, and their scientist said, "We can't find any alternative besides adding lead to gasoline," tetraethyl lead. And scientists at the time, one of my heroes, Alice Hamilton, a badass woman scientist a century ago, who was a lead expert, said, "You cannot put lead in gasoline. You are going to create a global public health disaster." And they're like, "Oh, it's safe. It's a gift from God," they said, "It is a gift from God."

Robert Perkinson:

Even though the workers in this factory were jumping off balconies and-

Mona Hanna-Attisha:

Workers were jumping off factories, being straightjacketed, people were dying. And at that time, they made a deal with a surgeon general, and they said, General Motor said, "If you can prove lead is bad, we'll stop using it." And that set forth this paradigm in public health called the Kehoe Paradigm named after this GM apologist, scientist, Kehoe, that assumes things are safe until proven dangerous. And that has persisted to this day in public health. We allow industries to spit out chemical after chemical and we assume they're safe. And then amazing academics and scientists and activists say, "Hey, this is not safe." The damage is done and it takes forever to regulate those chemicals. And that started with General Motors and the use of lead in gasoline.

Robert Perkinson:

Just since we're at a university and lots of us are either science nerds or want to be science nerds, how in particular does lead damage? What's the chemistry and the biology of how lead does damage to kids especially?

Mona Hanna-Attisha:

Yeah, so lead was in gas, we put lead in paint, we put lead in plumbing. Lead is still in bullets and fishing, tackle and cosmetics. So lead is still ubiquitous, even though we stopped its use in these lots of big things.

Robert Perkinson:

Right. I was telling her, when I was a kid, we used to melt fishing weights for projects, which I was, "How much smarter would I be?"

Mona Hanna-Attisha:

I know. You turned out okay.

Robert Perkinson:

Yeah.

Mona Hanna-Attisha:

So I'm going to share my one Obama story that I shared. So President Obama came to Flint during the water crisis. This was on his watch and we were talking about lead. And he was joking with a guy next to him and he was like, "Well, we all used to eat paint chips when we were little," and then I turned to him, and I'm like, "But imagine what you could have been."

Robert Perkinson:

With me, it works.

Mona Hanna-Attisha:

That works for everybody, but him. And plus then, I'm like, "Well, if you grew up in Hawaii, you don't have as much lead exposure in Hawaii." Anyways, it's a different story.

Robert Perkinson:

Okay, but in the body, what does it do?

Mona Hanna-Attisha:

So lead is bad, lead is bad. It's in a lot of stuff. We stopped using it as much, but we never removed it from things. So we continue to live with its lingering legacy, especially in old homes and older communities, especially in the Northeast and Midwest. So we used to think lead was a gift from God, right? We used to think it was amazing, but we now know and we increasingly have known for a long time how toxic it is. It is a neurotoxin. It affects the nervous system. It mimics calcium in your body. It ends up getting deposited in your bones. When young children are exposed, it impacts cognition. It erodes your IQ. It impacts behavior. It leads to things like oppositional disorder. It's been linked to criminality. Young kids exposed to lead as adults and seniors can have high blood pressure and cardiovascular disease and gout and early dementia.

So the science, it's crazy. In this amazing book called *Lead Wars*, which is a really good lead history drama, the author calls it a multi-headed Hydra, because whenever you turn, there's another research article or another study that shows how evil lead is. And because of this amazing science, we now know in the public health and the medical community that there's no safe level of lead. None. Even when I was a practicing as a resident, as a young doctor, we used to think that there was a safe level like, "Oh, you

could have this much amount in your body," but now we know that there is none. There is no safe level and that what we're supposed to do is practice primary prevention, which in the world of public health means you're supposed to find it in the environment and make sure people aren't exposed to it, especially young children because it impacts developing the brain. So lead is bad.

Robert Perkinson:

And known as bad for decades-

Mona Hanna-Attisha:

Decades, centuries.

Robert Perkinson:

Much more so than other chemicals, right?

Mona Hanna-Attisha:

Yeah. And still hard to regulate and still people to this day who litigate that it's okay.

Robert Perkinson:

Okay. I realized that when they switched the water to the Flint River, it wasn't like there was lead in the source. They were testing ...

Mona Hanna-Attisha:

Right.

Robert Perkinson:

... presumably for that.

Mona Hanna-Attisha:

Right.

Robert Perkinson:

But because the chemistry of the water changes, there is lead originating at the source that people are consuming. But even before you got involved, there was the EPA memo, there were parents complaining, going to city council meetings with bottles of brown water. How was the corrosion control not realized ... Is that known?

Mona Hanna-Attisha:

Yeah, so I'm sure you-

Robert Perkinson:

Who dropped the ball on such a basic question?

Mona Hanna-Attisha:

Right. And I'm sure there's a lot of parallels in your story, but there were a lot of missed opportunities. There was a lot that was known that was ignored. Within a few months of our water switching, you guys remember General Motors was born in Flint, still has some plants in Flint. The General Motors plants in Flint make engines, car engines. And they were using this water. And they realized that the water that they were using was corroding car engine parts. So General Motors was allowed to go back to Great Lakes water and the people of Flint were literally told to relax, that everything is okay, that everything is testing in compliance, yet it was corroding car engine parts.

So many, many missed opportunities. Amazing citizen science happened where the citizens were testing the water, working with water scientists and were transparently showing lead levels in the water in the hundreds and the thousands of parts per billion and they were being attacked and dismissed. I worked with a group of fourth graders in Flint. They were amazing. They're like, they were scratching their heads like, "I wonder what could be going on with the water." So they had this amazing question. They collected Flint water and Detroit water and they put nails in these test tubes. And these fourth graders noticed that the nails in the Flint water were falling apart and it looked like a snow globe in there. These pieces of the nail were coming apart.

And the fourth graders released their science and the state said, "It was too expensive and too complicated and they could not have done that science." So I share all this to share that what happened in Flint is another example of what happens when we don't listen to science. And it's not the first time we've denied science and scientists and we've all seen it in the pandemic as well and you're seeing it now, but the basic common sense of water treatment of lead was ignored and denied.

Robert Perkinson:

And so you come in from this barbecue with your high school friends-

Mona Hanna-Attisha:

Yes.

Robert Perkinson:

Activists are already complaining about the water, but you were able to bring some data that was more definitive?

Mona Hanna-Attisha:

Yeah.

Robert Perkinson:

How did that happen at the beginning?

Mona Hanna-Attisha:

Right. So yeah, I'm hanging out with my girlfriend. She's like, "There's going to be lead in the water," and that is the date and time and the place where my life changed. From that moment on, I stopped sleeping, I

stopped eating, I lived on coffee. I lost 40 pounds. Not a good way to lose weight. Because we just talked about what lead does, right? We all now know how bad lead is and how especially bad lead is for kids and how especially bad lead is for kids who are already struggling with almost every obstacle in the world. The kids I care for in Flint, we have a 60% child poverty rate, every disparity you can think of. The last thing that my kids needed was lead in their water. This is a population that's already been oppressed for so long.

So when I heard that, I freaked out just like any of you would have freaked out. And by pure serendipity, the next day I had a meeting with the health department and the person in charge of lead for the health department.

Robert Perkinson:

Done.

Mona Hanna-Attisha:

Done.

Robert Perkinson:

It's going to be done.

Mona Hanna-Attisha:

I'm like, "Oh my God, this is awesome. This problem's going to be fixed," because I'm an eternal optimist. And I'm like, "Hey, I'm so glad I'm meeting with you today," and I was prescheduled. And I'm like, "I just heard about the potential of lead being in the water. You're the public health department. What are you going to do about it?" And he is like, "Well, I'm the public health department. We don't handle water. That's not our jurisdiction." So I scratched my head, I'm like, "Wait a minute, this is a public health issue. How can water not be something that you care about?" And he is like, "That's the public works department." I'm like, "What the heck is public works?" They're like, "Well, they handle water."

So I wasn't getting anywhere. It took weeks to get any information, months to find out what was going on. It was blocked, blocked, closed doors everywhere. So just throughout my career as an academic, as a scientist, I knew that if I was going to do something, I would need data and science in my pocket. And I shouldn't have done this. I shouldn't have needed to do this, but I did the research to see if our kids were being exposed. Once again, I didn't need to do this. You don't have to prove-

Robert Perkinson:

Because they should have done it already?

Mona Hanna-Attisha:

No, because we knew lead was in the water. You don't need proof that kids are being poisoned or exposed to do something about it. Hard stop, it's in the water. Car engines are corroding. That's it. The moms, amazing moms and activists and pastors, so many people were saying something was wrong and nobody was listening. And moms were going to townhall meetings with jugs of brown water and being arrested. It should have ended then. But I knew that, if I could do something, I would need that science to speak truth

to power. And quickly did the research to see what was happening in our children's lead levels and then I did something that was really bad. So many of these humbling accolades were mentioned and they're surreal, but I think that my most favorite award I've received was a disobedience award.

Robert Perkinson:

Oh, that is good.

Mona Hanna-Attisha:

From MIT, for being academically disobedient, because when I did the research that showed that there was more lead in the kids' blood. So there's a lot of academics here. What are we supposed to do when we do research? How do we share our research?

Robert Perkinson:

Journals.

Mona Hanna-Attisha:

Yes. And what's that process called?

Robert Perkinson:

Peer review.

Mona Hanna-Attisha:

How long does that take when you publish something in a peer review process?

Robert Perkinson:

I'm embarrassed because I owe two journals' peer review responses.

Mona Hanna-Attisha:

So are there academics out there?

Robert Perkinson:

Slow.

Audience:

Years.

Mona Hanna-Attisha:

Years, months, years. It's a really long time to get your research published or presented at conferences. And so I was academically disobedient and I stood up at a microphone in our hospital at a press conference and I shared the research that our kids were in harm's way because there was no option. Every

day that went by was another day that kids were drinking water that could potentially diminish their potential.

Robert Perkinson:

Because in these preliminary findings, you were able to show that there was some screening beforehand, so you had blood lead levels before and then you were able to show after.

Mona Hanna-Attisha:

Yeah, so blood levels are part of the surveillance system. So this is public health 101. So all blood levels are sent to the county and state health department, so we knew what they were like before and after. We pulled them from our electronic medical record from our health system because we couldn't get them from the health department. And we showed that they increased only in the geography of where the water was. There was no change outside of that. We overlaid it with where the water lead levels were the highest and we showed that the greatest increase in blood lead levels happened where the water blood lead levels were the worst. So share this transparently, publicly at a press conference in my hospital, which is not ...

Robert Perkinson:

And then everything-

Mona Hanna-Attisha:

... what doctors and academics do.

Robert Perkinson:

And then everything got fixed?

Mona Hanna-Attisha:

Yeah. So the press conference, I'm like, "Yeah, this is my job as a pediatrician, as an academic. I'm supposed to protect kids and speak up for kids and plus I'm just sharing science." Can you imagine being in the middle of a public health crisis and not listening to science? So I felt great for half an hour. And then every arm of the state and the federal government went after me and said I was wrong. They called me all kinds of names. My favorite was that I was causing near hysteria, which is sexist and has been thrown against so many women, that I was splicing, dicing numbers. I was an unfortunate researcher and I felt this big. I literally felt tiny. I felt defeated.

I began to second guess myself, "Maybe I was wrong." Imposter syndrome, "Why should I do ... This is not my job. Maybe somebody else should have been doing this," and then like, "Who am I?" I am barely five-foot tall, barely five-foot tall, Brown immigrant, first-generation woman going against some of the most powerful forces in our state. I had just gotten a Fitbit. Obviously, I could tell my heart rate as a doctor, but I could see my heart rate and it was close to 200. My hands are shaking. It was hard to speak truth, the power. And I'm like, "Maybe I should have just kept my eyes closed and gone about my busy business, as a busy mom, wife, professional."

And then fortunately, fairly quickly, I realized that this wasn't about me. This had nothing to do with me, but this had everything to do with my kids. My patients are my children. They are my kids. My research was numbers and science and statistics, but every single number was literally a patient, a kid I'd probably even seen and cared for in the past year or so. And it was almost as if they jumped out of my spreadsheets and lifted me up and gave me the courage to keep going and to fight back and to push back. And we fought back with more science and a growing team of allies were at my side and we didn't give up. We persisted, and eventually, the state conceded, and since then, we have been on this path to recovery.

Robert Perkinson:

And what do you think finally turned it? What finally broke? Was it the organizing? Was it the bigger dataset?

Mona Hanna-Attisha:

The science, right?

Robert Perkinson:

All of the above?

Mona Hanna-Attisha:

The science. So no, it was partly our science, but it was partly the media. After I shared this research very publicly, Flint became this international story. So people often ask me, "What can I do to change the world or what can I do to bring something to light?" And my answer is often, "Support local journalism. Subscribe to your local paper. We need eyes on the ground." So after that press conference, there was days where I did 15 interviews a day to make up for that media inattention, to shine a light on this issue, and ultimately, to shine a light on the fact that this is not an issue just in one place, that this is an issue in so many places that need bright spotlights paid to them.

Robert Perkinson:

Counterfactual, what if this had been happening in a wealthier ... To what extent is it a story of environmental racism? How long were the kids being poisoned before these-

Mona Hanna-Attisha:

Yeah, about a year, over a year and a half.

Robert Perkinson:

The parents with brown water, do you think they would have gained attention sooner?

Mona Hanna-Attisha:

Absolutely. This never would've happened in a richer or Whiter community. I'm going to read you a section about that, "So Flint falls right into the American narrative of cheapening Black life. White America may not have seen the common thread between Flint history and these tragedies, but Black America saw immediately that the blood of African American children was unnecessarily and callously

laced with lead speaks in the same rhythm as Black Lives Matter, a movement also born from the blood of innocent." So there's another quote I include here by one of the fathers of the environmental justice movement, Robert Bullard, who said, "Some communities have the wrong complexion for protection."

So it's been cited in many investigations as an environmental injustice, as a case of environmental racism, and as it has been. And there's a bright light to that. After Flint, the lexicon, the words environmental justice became part of our language and people started to pay attention to it. I know there's folks here that work in environmental justice. The EPA just created an office of environmental justice and civil rights, which is amazing. Presidential candidates talk now about environmental justice, plus people are now aware of it partly because of Flint. Flint was not the first case of environmental injustice. This has been happening for decades. Communities of color, poor communities bear a disproportionate burden of all environmental contamination and Flint is another example.

Robert Perkinson:

Now as you mentioned, Flint is a community that's facing a large set of a large set of challenges. Because I'm a criminal justice historian, I was looking up homicide rates. Flint has a population of about 80,000 now or something, quite reduced from ...

Mona Hanna-Attisha:

300,000.

Robert Perkinson:

... its peak. In 2020, there were almost 70 homicides in Flint. In Honolulu, that has a population 10 times as large, there were about 20.

Mona Hanna-Attisha:

Yeah, I've cared for kids with lead poisoning because of gunshot injuries where the bullets have been retained in their bodies and they continuously excrete lead. So imagine the trauma being shot and then just the lead poisoning from having retained lead bullets. So yeah, we have a lot of violence. We have a lot of poverty, food insecurity, housing insecurity, racism, every kind of systemic inequity you can think of. It's a country that when the water crisis happened and it was exposed, folks on the ground thought it was purposeful, they're like, "Oh, look at the genocide. They want to get rid of us."

Robert Perkinson:

And yet you love working there. So what is it about the community despite its challenges that gives you hope and inspiration?

Mona Hanna-Attisha:

Yeah. I first fell in love with Flint as a medical student. My medical school, Michigan State University is also a land grant university, community-based medical school. I did my clinical training there, fell in love with the city, fell in love with pediatrics, fell in love with the history, the loyalty, the grit, the activism, the camaraderie. I run something called the Flint Registry, which is supported by CDC to follow folks that have been exposed over time and it's all done in humble community partnership. We have community

members that are part of this work. We listen. We have advisories and I have a group of parents that advise us. And we were meeting with the parents and we're like, "Well, what should the logo of this Flint Registry be?"

And one of the parents suggested the Sankofa bird, which is this mythical African bird that's flying forward, so forward thinking and looking back, so never forgetting the history and the injustices of the past. And the bird is holding an egg in its mouth, so eating our young, just kidding. Prioritizing our kids. So I think that's so symbolic.

Robert Perkinson:

Its own egg.

Mona Hanna-Attisha:

It's its own, right? So it's symbolic of the city. The city is all about pushing forward and it's all about ... We do a really good job in this country forgetting history or not learning our history or bearing our history, especially dark history and injustices, but it's about keeping our eyes open to our history. We walk over history every single day and we can't move forward without looking back. And that's part of that looking back. And then once again, as a pediatrician whose work and life is grounded in our kids, it's about prioritizing our young, which we also don't do a great job of in this country. So that's what I love about working with Flint. That's our mission. Despite all the bad things that happened, we've really been leaders. We helped pass the Infrastructure Act, which is the largest federal investment in water infrastructure, replacing lead pipes throughout the country. A lot of what we do, we translate into policy and practices to help other communities.

Robert Perkinson:

Yeah, well, as bleak as the story is and as long-lasting as the damage and irrecoverable as the damage will be for some of those afflicted, it's impressive to me how much you and other activists were able to keep pushing to get the water switched back to Lake Huron, which you were able to do. You were able to get a surprising number of heads to roll, but you got some funding for those broader set of social challenges that kids will be facing too. So what are some of the victories that came out of this despairing moment?

Mona Hanna-Attisha:

Awesome. Thank you. And that's what I want to share, once again, not just the story of this crime that was committed against some of our most vulnerable people in this country, but also this amazing story of resistance and almost of this playbook of resistance and how to build hope in communities. So yes, finally, we got our water switched, but our pipes were corroded. We needed that to be replaced. They're still being replaced to this day. It's almost done. But more than that, it wasn't just about water. It was about kids and community and how to make them whole again. And not just whole, but how to recover and thrive.

So I talk about the Flint Registry that we run that connects people to services. We've made over 30,000 connections for folks into really important public health promoting services from nutrition and we have new early education centers that we were able to build for high quality year round childcare for kids, early literacy programs. We're now an Imagination Library site. Do you guys know what Imagination Library

is? Founded by Dolly Parton, one of my heroes. So we mail books to kids. Every kid from the age of zero to five gets a book delivered. We've mailed 300,000 books to kids as part of that.

We have a Reach Out and Read, which is a clinic-based literacy program. And my clinic, so my pediatric clinic, is located on the second floor of a farmer's market and we moved there on purpose to address nutrition insecurity. It's very hard for kids to get good food. I used to sit with patients and I'd be like, "You need to eat avocados and kale," and they would stare at me like, "Where am I going to get that and how am I going to afford that?" So we, as an institution, moved our practice on the second floor of a farmer's market. And every patient that comes in printed on our electronic medical record, just like amoxicillin, gets a script for fruits and vegetables that has a $15 value.

And as academics, we've assessed it and we've shown how it's improved nutrition intake and behavior and nutrition security. And our US Senator Debbie Stabenow was the co-sponsor of the US Farm Bill. She'd been to my clinic. She knew about the nutrition prescriptions. So she included in the US Farm Bill a national nutrition prescription program inspired by our little program, our little clinic at $25 million a year, and that was a few years ago, and now it's at 40 million a year. So now there's a national nutrition prescription program that anybody can apply to to provide healthy fruits and vegetables for kids. Not enough, but good things. So lots of awesome things that we've been able to put into place.

Robert Perkinson:

And this is a mix of federal funding, philanthropic funding, state funding. MSU, your university also. I'm curious about this initiative that you've set up because your job has shifted from trainer of residents to this pediatric public health initiative.

Mona Hanna-Attisha:

Yeah, so I run this awesome initiative called the Pediatric Public Health Initiative, just to do good for kids and to share our best practices. We've brought in just our little initiative, probably over $60 million, all soft money and federal money to do different programs, to do advocacy work, to share what we've learned. And for me, this is what it means to be part of a university. Once again, we are the pioneer land-grant university in the country. We have had a footprint in Flint for over a century from extension and agriculture and farming and foray, all these different things, just like you do.

The purpose of a university, at least to me, is not to publish papers and write grants. It's to serve, right? It's to work hand in hand with our communities to be that voice of science and facts and expertise to work once again in partnership with a community. And I think that's one of my favorite parts of this story, the role that academia played to be a check and balance to government and to be a partner in recovery and to be also a very trusted voice in the community. So I see that also as happening here and as an increased opportunity for what can be done.

Robert Perkinson:

I was struck too about not just the ways that the university or activists can hold government accountable, but to what extent you maintained a quite hopeful and optimistic view of government, even though there's a way to understand this Flint story as an episode of government neglect, institutionalized racism, indifference, sclerotic bureaucratic resistance and on down the gamut of government failures. But I was struck by how much your views of government in the book come out as optimistic views of civics.

Mona Hanna-Attisha:

Oh, Robert, I love that question, so you're spot on. So I think a lot of people hear Flint, they're like, "Failure of government at every level. Defund every agency. This is another example of how government fails." And I come away with the opposite. So you remember the Flint story was also this democracy story, right? It's also what happens when we don't have representative and whole democracies. So part of the recovery is making sure that we have participatory democracy, that people who are in office look and come from the communities that they serve.

When our elected officials were aware of this crisis, the ones that still had power like our state US senators and our US reps and our state legislators, when they were aware of the crisis, they never stopped fighting for Flint. And for me, that was an affirmation of what government can be and should be, that, once again, government has this ability to historic wrongs, to put public welfare first and foremost, especially children. We know and we've seen it with some of the policies that have happened since. In Michigan, we have a new governor. The very first executive order she did, the very first thing when she got office was a whistleblower protection order. Learning from Flint, encouraging more folks in state agencies to speak up when there's something that might be threatening the health and safety of residents.

We also had a complete restructuring of some of our departments and we have an environmental justice advocate at the state level. We have a clean water advocate. So lots of things have happened that have once again reaffirmed my faith that government can work for us if we can hold them accountable, if they can be representative.

Robert Perkinson:

Are the projects robust enough that you can see the effects in your clinic patients or in your own? I understand you're also piloting this antipoverty program modeled partially on the subsidies for parents-

Mona Hanna-Attisha:

Child tax credit, yeah. I love my work. I'm so excited. So yesterday, I was on the North ... I took my ... We have a daughter, youngest daughter, we went to the car, we drove to the North Shore and we were around some cliff and there's the amazing surf that we're watching. And I got a text that I had to submit a grant. So she opened my laptop, and while we're on this cliff and there was construction, it was like one lane and I logged in while driving, not saying-

Robert Perkinson:

This is good. This is not public health.

Mona Hanna-Attisha:

This is not public health. And I submitted this $15 million grant that we just got to do infant allowances to address child poverty. So inspired. So I never stopped working, but it's so exciting, but inspired by the amazing child tax credit that was expanded during COVID. So during COVID, we actually figured out how to take care of people a little better, right? And I don't want to go back to normal because normal wasn't working for a lot of people. So something that we did do as a nation was we expanded the child tax credit. We lifted 4 million kids out of poverty.

Robert Perkinson:

Yeah, I think a lot of people don't realize quite how big of an impact that, for all the failures of government that we saw in COVID.

Mona Hanna-Attisha:

Yes, yes. So actually people had more food security and parents actually had less stress and they had these monthly payments that they knew that they were getting, so they could-

Robert Perkinson:

Low-income people got a sabbatical for ...

Mona Hanna-Attisha:

It is huge.

Robert Perkinson:

... the only time in human history.

Mona Hanna-Attisha:

It is amazing. Poverty is a policy issue here. We have the worst poverty rate. Anyways, so kind of that, but that wasn't renewed. Congress did not renew it. So we plunged 4 million kids back into poverty and we now increasingly know what poverty does to kids and how it's a toxic stress. Just like lead, it can mess up their brains and really alter their life course. So we're working on this citywide effort to give all pregnant moms and all babies money, unconditional cash. And this is happening all over the country, but nothing at the scale. We're doing it for the whole city and we can do it for the whole city because we're a small city and because everybody's left our city. But maybe people will move back, come to Flint. It's amazing.

Robert Perkinson:

Houses are cheaper than Honolulu. I'm pretty sure.

Mona Hanna-Attisha:

Oh my God, the cost of living is amazing compared to here. No housing issues. So seriously, we're always hiring. So we're working on lots of really great things that we hope will also inspire national policy, so that when there's a window of policymaking, we can put it back into place with the expanded child tax credit and other supports, so that families can raise their kids.

Robert Perkinson:

Yeah, so on the national stage, we've got an acute pollution emergency in East Palestine from the train derailment. There's this horrific slow motion metaphorical train wreck in Jackson, Mississippi of the collapsing municipal water supply. You might have heard we have some issues here. They decided to store 250 million gallons of jet fuel a hundred feet above the water cable. What could go wrong? But what lessons do you think from both the tragedy, the crisis, but also the resistance to it and the recovery do you

think might be applicable to some of these other locations, including ours? And I think we'll talk more about that in a moment.

Mona Hanna-Attisha:

Yeah, there's so many similarities in all of these crises and I've really had the privilege of working with so many other communities. One of the last times I testified before Congress about the need to invest in infrastructure and water delivery specifically, I said Flint's water crisis wasn't the first, it wasn't the worst and it wasn't the last. There continue to be very similar issues that have happened, similar environmental injustices where people are told that everything is okay and it's not okay and they don't even know what they're being exposed to.

So I think there's a lot of lessons that we can share and I think, while being here, I've met with so many amazing people and, you guys, I'm so impressed, especially having been in so many other communities. An incredible activist movement and amazing parents and their voices and the academics are tireless and they're working around the clock to help support the community and the government officials are involved. So-

Robert Perkinson:

We only introduce her to the nice people.

Mona Hanna-Attisha:

Yeah, so I see so many ingredients of success here. And I think what I would offer is maybe two or three tips. One is the need to stay persistent. This is a long game and there's ups and downs in this movement. And you need to stay persistent. And to that end, you need your people. You need a village to do this. Because if you are to stay persistent, it is exhausting and you will burn out and it is hard. You need to take care of yourselves. You need a village to lift you up when you are down and you need to be there to lift them up. This is, once again, a long slog, so you do not do this alone. There's a lot of folks out there that care about the same thing that you care about. Do it together.

I think that the greatest lesson I learned in Flint were the unexpected allies that I made. As a pediatrician, I used to think we have a monopoly on caring for kids. There's nobody that cares about kids more than we care about kids. And I was proven wrong time and time again because so do engineers, who knew? And so do social workers and so do pastors and teachers and so do so many other people. Make friends. Make your team big. Make your tent large. Find all these unexpected allies that care about the same thing that you care about and it will be so much easier. So stay persistent, find your people and then I think that the last bit that I mentioned earlier is make friends with the journalists. Talk to the journalists, share those heartfelt stories.

I think something that I've learned as a communicator, especially after writing a book that anybody could pick up and read, I didn't want to write a science academic book, I wanted a book that anybody could read and I'm going to read you my favorite quote on here. Oprah said, "It had the gripping intrigue of a Grisham thriller." But as I've tried to become a better communicator, I have learned about the power of storytelling. So I used to go and talk to policymakers and I would talk science and facts and the pathophysiology of lead and what needs to happen and they literally would fall asleep as I'm talking to them.

Robert Perkinson:

I love that stuff. That's right.

Mona Hanna-Attisha:

Yeah, yeah. So now every congressional testimony, every conversation I have with anybody who has any purse strings, who has any power, I start with a story. I start with a story. So the last time I testified before Congress, I had my written statement, which was science and facts, it was virtual, which was good and bad, but one good thing about it being virtual, I held up a lead pipe. You can't bring a lead pipe into Congress because it could be a murder weapon. Anyways, so I held up a lead pipe and I held it up to my camera screen and I shared the story of the lead pipe like, "I knew the kid that drank from this lead pipe and I knew his family. His family moved up from Alabama in the 1950s as part of the Great Migration North. They were an auto family. Generations lived in this house that had this lead pipe. Their great-grandson drank water from this pipe, subsequently developed seizures and had a learning disability."

So I held up this pipe and I showed our policymakers in my little tiny virtual camera, I showed them that this pipe was like a straw, right? And that millions of kids throughout this country were drinking through straws that were poison. And then I shared that the pipe was in my hand, like, "OMG, the pipe is in my hand. It's not in the ground anymore. And it's this impossible story that we can do hard things, that we can fix infrastructure, that we can make sure that kids all over, like the kid who drank the pipe, actually do have safe water." So then I went on and talked about science and facts, but I don't care what they heard after that. I hope that all they remembered was that pipe and the story of that kid and how we can do hard impossible things for people.

So storytelling. So be good storytellers. Share your story. I've talked to so many folks already who have these amazing stories about what you've been going through. Lead with those stories. Tug at the heartstrings.

Robert Perkinson:

Thank you.

Mona Hanna-Attisha:

Thank you.