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Health Policy, Equity, and the Lead Poisoning Crisis: A Conversation with Dr. Mona Hanna-Attisha

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Recommended Citation

Hanna-Attisha, Mona, "Health Policy, Equity, and the Lead Poisoning Crisis: A Conversation with Dr. Mona Hanna-Attisha" (2022). *Center for Policy Research*. 379.
<https://surface.syr.edu/cpr/379>

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Policy Brief

Health Policy, Equity, and the Lead
Poisoning Crisis: A Conversation
with Dr. Mona Hanna-Attisha

Mona Hanna-Attisha

No. 57/2021

Mona Hanna-Attisha, MD, MPH, FAAP, is founder and director of the Michigan State University and Hurley Children's Hospital Pediatric Public Health Initiative, an innovative and model public health program in Flint, Michigan. A pediatrician, scientist, activist, and author, Dr. Hanna-Attisha has testified three times before the United States Congress and was awarded the Freedom of Expression Courage Award by PEN America. She was named one of *Time* magazine's 100 Most Influential People in the World and recognized as one of *USA Today's* Women of the Century for her role in uncovering the Flint water crisis and leading recovery efforts, and most recently, received the 2020 Fries Prize for Improving Health.

A frequent contributor to national media outlets, including the *New York Times* and *Washington Post*, Dr. Hanna-Attisha has appeared on CNN, MSNBC, BBC and countless other outlets championing the cause of children in Flint and beyond. She is the founding donor of the Flint Child Health and Development Fund (flintkids.org). A Covid-19 survivor, Dr. Hanna-Attisha has donated her convalescent plasma several times while continuing to advocate for health and racial equity.

With concentrations in environmental health and health policy, Dr. Hanna-Attisha received her bachelor's degree and Master of Public Health degree from the University of Michigan. She completed her medical degree from Michigan State University College of Human Medicine and her residency at Children's Hospital of Michigan in Detroit, where she was chief resident. She is currently a Charles Stewart Mott Endowed Professor of Public Health and an associate professor of pediatrics and human development at Michigan State University College of Human Medicine.

Dr. Hanna-Attisha is the author of the widely acclaimed and bestselling book [*What the Eyes Don't See: A Story of Crisis, Resistance, and Hope in an American City.*](#)

The Herbert Lourie Memorial Lecture on Health Policy honors the memory of Herbert Lourie, MD, a distinguished Syracuse neurosurgeon, professor, and community leader for nearly 30 years. Generous contributions from his family, friends and colleagues, and former patients have endowed this series. The Lecture and Policy Brief are jointly sponsored by the Maxwell School of Citizenship and Public Affairs of Syracuse University and the Central New York Community Foundation, Inc., and is administered by the Center for Policy Research and The Lerner Center for Public Health Promotion.

The Policy Brief series is a collection of essays on current public policy issues in aging; urban and regional studies; education finance and accountability; public finance; social welfare, poverty, and income security; and related research done by or on behalf of the Center for Policy Research (CPR) at the Maxwell School of Syracuse University.

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Dr. Shannon Monnat- Welcome, Dr. Mona Hanna-Attisha and thank you so much for joining us here at Syracuse University.

Dr. Mona Hanna-Attisha- Thank you.

Dr. Shannon Monnat- We're going to chat about your book, and then we'll open it up to the audience for discussion and questions. I'd like to start with your background if you don't mind, because it plays such an important role in your book, "What the Eyes Don't See: A Story of Crisis, Resistance, and Hope in an American City." We have read about your background as an environmental activist. Activism and resistance seem to be part of your family history, and your childhood seems to have formed your orientation to fighting for social justice issues. Can you tell us a little bit about your background and how it formed your approach to investigating and uncovering the crisis in Flint?

Dr. Mona Hanna-Attisha- Thank you, Shannon, that's a great question. When I set out to write a book, which I never thought I would do as a pediatrician, it was originally going to be a firsthand account of being in the middle of this emblematic environmental and public health crisis. And that was the book I was going to write. And then as I started to write that book, I thought, "Wait a minute, I can't really tell you what I did, without tell you who I am and where I came from." So, my background is very much in this book to give you the perspective of my roots in social justice and advocacy. And embedded in this book are all these little vignettes, and a lot of

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it is my family history and oral history that was passed down for generations.

I'd like to share two quick stories. One is about my great uncle, Nuri. As a kid, I always heard about my great uncle, Nuri, and how he was always on the run from officials, and he had a list of fake names because he was always fleeing the cops. He was always fighting for one cause or the other. And he had gone to school here in the United States. Nuri went to MIT in the 1930s, and he was so excited by the activism that was happening during that time, that he got kicked out of school and was sent back to Iraq, where we're from. And while he was there, he started a group called the Association Against Imperialism and Fascism. He went on to one freedom fighting cause after another. He went to Palestine to fight for Palestine's independence from British rule. And then he found his way as one of two Iraqis that went to Baghdad and Spain to fight in the Spanish Civil War against Franco and Nazis in the beginning of World War II. Because he had spent a little bit of time in America, for some reason they included him in the Abraham Lincoln brigade with all these other Americans that had gone over to Spain to fight as part of the international brigade. It was a quintessential fight for freedom. These were the stories of my childhood. And he also had a tattoo which I thought was amazing, where my parents would tell me stories about my great uncle. I was raised in this milieu of storytelling and family history, where it wasn't about race or religion or country, but it was about doing the right thing, no matter how hard that was.

We are immigrants. I wasn't even supposed to be in this country. I came here when I was 4 years old. And that immigrant perspective very much shaped who I am and the field I went into. I grew up every day grateful to be in this country, yet I had first cousins back home in Iraq, undergoing sanctions and war after war, and air raids and food shortages. I knew how lucky my family and I were. We were absolute recipients of the American dream, but we were

also acutely aware of what bad people could do to vulnerable populations. Another quick story that I share in the book is about a photo that my father shared with me when I was 10 or 11 years old. There was a massacre in Halabja. It was a chemical weapons attack, when Saddam Hussein woke up one day and decided to poison an entire city. 5,000 people died that day. I don't think my dad should have showed me that picture- I was very young- but he never shielded us from what people in power could do to vulnerable populations. Those are the things that shaped me and almost gave me this heightened antenna for injustice. It pushed me to service, pushed me to medicine, pushed me to policy, and pushed me to working in places like Flint, where this happened.

Dr. Shannon Monnat-Thank you, that's very powerful, and it weaves throughout your book in a super interesting way that I think really adds flavor to the story. I think most people in the audience probably know that lead is bad for us and that we shouldn't be consuming it, but can you give us some specifics? What are some of the risks that are involved in lead consumption, especially for children?

Dr. Mona Hanna-Attisha- Yes, that's a great question. So, lead is bad, right? Let's try to make this interactive. What did we put lead in?

Audience Member- Paint.

Dr. Mona Hanna-Attisha- Paint. good, what else?

Audience Member- Gas.

Dr. Mona Hanna-Attisha- Gasoline, what else?

Audience Member- Pesticides.

Dr. Mona Hanna-Attisha- Pesticides, what else?

Audience Member- Pipes.

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Dr. Mona Hanna-Attisha- Pipes, plumbing. I don't know if there are any science majors out there, but what's the elemental symbol for lead?

Audience Member- Pb.

Dr. Mona Hanna-Attisha- Pb, comes from the Latin, plumbum. Lead actually means plumbing, which I didn't know until going through the story. What did we still put lead in? It's still in make-up, fishing rods, and bullets. I've taken care of patients with lead poisoning because they've been shot, and the retained bullets continued to leach lead. Lead is also still in aviation gas. The plane I took this morning probably had leaded gasoline. So even though we know that lead is bad, it's still in a lot of things. Is it still in paint and gasoline? No, we passed really amazing laws that restricted the use of lead in things like paint and gasoline, and finally, in plumbing. But it's not like when we passed those laws we immediately got rid of that lead. Underneath layers of paint, there's layers with lead in them. And underneath soil, especially along roads and highways, there are lead deposits. And in our drinking water infrastructure, there's lead throughout. Lead wasn't banned in our service lines, which are the pipes that go from water mains to the front of your house, until 1986. And lead wasn't restricted in things like brass fixtures and faucets until 2014. I could spend hours talking about the lead industry and the power that they had, and how we were stubbornly slow as a nation to listen to science when we implemented these policies. We don't use lead as much; it's still out there, but we live with this lingering legacy. And over the last few decades we have increasingly come to understand why lead is so bad and why the CDC, the American Academy of Pediatrics, and the World Health Organization, have come to understand that there's no safe level of lead. Levels we thought were okay, even when I was a training doctor 20 years ago, we now know are no longer okay. No lead level has been shown to be safe for children because of what it does. It impacts cognition, so it lowers IQ levels.

It impacts behavior, leads to things like attention disorders and focusing problems. It's been linked to criminality and oppositional defined disorders, growth problems, as well as hearing problems. Kids exposed to lead as adults and seniors can manifest with things like high blood pressure, kidney disease, gout, and even things like early dementia. So, it has a life-course altering impact. And what we're supposed to do in public health for lead is this concept of primary prevention, which means we're never supposed to expose children or a population to lead because it is potent, it's irreversible, and once again, it has no safe level.

The other kind of damning thing with lead is that even though the burden of lead exposure has decreased significantly because of these amazing policies- that we were too late to pass, but still passed- the burden of exposure does not fall equally on our nation's children. And I'm sure we'll talk more about environmental justice and environmental racism, but lead is a classic form of environmental racism. Kids in places like Flint, Detroit, Chicago, Philadelphia, and Baltimore have much higher levels of lead exposure than other children.

Dr. Shannon Monnat- I'm glad you brought that up because it transitions nicely into the next topic that I wanted you to talk about, which is the history of Flint and the role that it played in the poisoning crisis there. I'm sure many people in the audience know a lot about the background of racial-residential segregation, such as the auto plant closures and austerity budgets. Those things came up in your book. Can you talk about the role that that history played in developing this crisis?

Dr. Mona Hanna-Attisha- Absolutely, and I think you guys will appreciate this more than other audiences. History is so important. I think if we understood Flint history, you could have predicted the crisis. We step over history every single day, but it informs where we are and where we need to go. And too often, I think we close our eyes to history, especially anything dark and complicated. But it is

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especially important in this story. So, we'll shoot it back out to you guys. So, you guys tell me, what was Flint famous for, a long time ago, decades ago? Auto industry. Flint was the birthplace of cars. General Motors was born in Flint. And the next question is a little harder. What happened shortly after cars were being made in Flint? That really is something that Flint is more famous for. So, anybody know this? So shortly after cars were being made, autoworkers said, "Hey, this industry is making a lot of money, but we're working really hard. On the days that we make blue cars, we're coughing up blue. On the days that we make red cars, we're coughing up red and we're losing digits." All these bad things are happening, but this company, General Motors, was making a lot of money. So, what did the workers do? They went on strike, and it was called the "strike heard around the world. " It was a sit-down strike. Autoworkers in Michigan sat down and occupied the car plants for 44 days in the cold Michigan winter. Maybe as cold as your winter here in Syracuse. So, the workers sat down, stopped car production, and they demanded things like living wages, occupational health and safety, benefits, housing, healthcare, infrastructure, and all these things that many folks are still fighting for now. The governor of Michigan intervened, and he called in the National Guard. It was the last time the National Guard was called in before the water crisis. Surprisingly, he called the National Guard to protect the workers and he recognized their union. From there, UAW (United Auto Workers) was born. And what set forth after that was something called the grand bargain, where they did get those living wages and benefits. That deal literally spread throughout the US and informed wages across the nation. Flint became this almost promised land where African Americans and the great migration north came up to Flint for great living wage jobs. Immigrants all over the world came to Flint for those, once again, great living wage jobs, a great education system, great healthcare, great infrastructure. This is a crazy statistic, and I still am in awe when I say it, but not that long ago in the 1980s Flint had the highest per capita income in the

country. Isn't that crazy? We are the poorest city of our size right now.

So that history is important because the history that followed is a history that is similar to many post-industrial Rust Belt communities. Also around here is a history of greed, extreme capitalism, racism, and neglect. It's a story where people who had the power and the privilege to leave the city, left the city and plants closed, jobs were lost due to automation and outsourcing, and the list goes on of the badness that happened. That put Flint in crisis for decades. Every disparity you can think of Flint had. From infant mortality to asthma rates to life expectancy. Flint lost more than half its population and continues to lose a significant amount of its population. Flint became a place like so many in our city that you guys know so well, that where you grow up predicts how you end up. Flint kids have a 20-year different life expectancy than kids in another part of our county. It's the same county, but just another part, and there's a 20-year difference. And that is not unique to Flint, you guys know this, that that is throughout our nation where the environment or the situation of where you grow up makes such a huge impact. So, Flint was in this terrible state of crisis, and you're driven by policies, driven by kind of racist real estate practices, all these different issues that made Flint near bankrupt. This is the most crazy part of the story. Do you know what happened to Flint in 2011? We were almost bankrupt as a city. Anybody know what happened in 2011? The city was put under financial emergency management. The state of Michigan took over the city. So as much as we're going to talk about water, lead, and public health, Flint's story is also very much a democracy story because it is a story of what happens when you usurp democracy from a predominant majority-minority city. And this emergency management law was actually voted down by the people of Michigan. There was a statewide ballot and the people of Michigan said, "We don't want an emergency management law." And it was tweaked in our legislature, which happens to be one

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of the most gerrymandered legislatures in the country, and it was signed by the governor. So, against the will of the people, we had this emergency management law. And at one point in Michigan, half of our African American population was under emergency management, compared to just 2% of our white population. It was grossly undemocratic and unjust. And it was the emergency managers that were driven by austerity. All they cared about was saving money, saving money, saving money. That ultimately led to our water switch. This is why history is important. If you understand that history, that it was policies and practices driven by these offered ideologies, it put us to where we are today.

Dr. Shannon Monnat- Can you expand on the water switch for people who aren't familiar with exactly what happened to the water? And why lead started leaching into their drinking water? Can you describe what happened there?

Dr. Mona Hanna-Attisha- The emergency managers decided that the water was too expensive. So, anybody from Michigan? Okay, so what do we do when we say where we're from? So, show me where you are from. Where are you from?

Audience Member- Northville.

Dr. Mona Hanna-Attisha- Northville. Okay, so we hold up our hand because we are the mitten state and we point to different cities: Detroit, Ann Arbor, Flint, Grand Rapids. We also have an upper peninsula that we forget about. So, this is the mitten state. They're important, guys. I grew up there anyways. What is Michigan surrounded by? The Great Lakes; the largest source of fresh water in the world. 21% of the fresh water in the world is around Michigan. For half a century, Flint was getting its water from Lake Huron. We would buy it from Detroit. It was high quality, pretreated water. Detroit sent it up to Flint and we would add a little more chlorine and it was good to go. That was our water for half a century. But under emergency management, this usurped democracy, this

austerity driven state, the emergency managers said, “Hey, that’s too expensive for this poor, predominantly minority community. We’re going to stop getting water from the Great Lakes and we’re going to start getting water from the local Flint River until we build a new pipeline to the Great Lakes.” And when the folks in Flint heard that, they’re like, “What? The Flint River? It used to catch on fire.” It wasn’t just the Cuyahoga River that caught on fire. Other rivers were industrial dumps. It’s a lot cleaner now, thank you to the Clean Water Act, but historically, it’s a toxic dump. Nothing is as high quality as the Great Lakes. So, they decided that they’re going to change the water source. And in April of 2014 a bunch of men in suits got together and they held up a glass of Flint water, they pressed the button, and our water source was change. Right away there were problems, like color, odor, taste, and lots of other issues; skin rashes and people’s hair falling out. We had bacteria in the water and boil advisories. So, red flag after red flag. And it turned out that our water was missing a real important ingredient called corrosion control, which made it about 20 times more corrosive than the water that we had been getting from the Great Lakes. The water was so corrosive that it ate up our pipes which have a lot of lead in them. And that’s how lead got out of the pipes and got into our drinking water, and ultimately, into the bodies of our children.

Dr. Shannon Monnat- And speaking of getting into the bodies of children, when did you first realize that something was going wrong?

Dr. Mona Hanna-Attisha- I was hearing on the local news of all these concerns the residents were having about the water. They were holding jugs of brown water and going to town hall meetings, and these citizens were getting arrested. They were going to emergency managers who weren’t accountable to the people, they were just accountable to the governor, and weren’t listening to them. The moms, and the pastors, the journalists, and all these people were being dismissed and denied. And I was hearing noise of this, but all

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the people in charge, for example the water experts at the state and the city and the health experts, were saying the water was fine. For a year and a half, everybody was saying the water was fine. In my head, I even pictured them with lab coats and test tubes, checking our water and making sure it was okay because this is Michigan. We are surrounded by the Great Lakes, so we have fresh water. And I thought to myself, "It's the 21st century. We've come a long way in water treatment. Civilizations are pretty much built on our ability to deliver clean and sanitized water." But then I also thought, "There's rules and laws, and there's people who wake up every day to make sure that no matter where you live, when you turn on your tap, your water is safe. Isn't that what government and public health is supposed to be all about?" I was reassured, and in some ways, I was drinking the Kool-Aid and I wish I hadn't. I was telling a lot of my patients that were coming in with concerns, "Of course the water is safe. How could it not be? Hello, we are in America! We're not in a third world country. These are the Great Lakes, of course the water is safe!" And that all changed for me when I heard about the possibility of lead being in the water. Because as we just talked about, we all know what lead does. It's potent and irreversible. Our kids are already burdened with so much; this is the last thing they needed. So, my life changed when I heard about lead. But it wasn't anything I was seeing in my patients because that's the sneaky thing with lead and most environmental health issues- you often don't see acute problems. Kids don't present with headaches and learning problems acutely. There's a time lag between an exposure and the manifestation of symptoms. It was simply the hearing of the word lead that literally changed my life.

Dr. Shannon Monnat- So now that you knew about it, what happened next? How did you get from knowing about it to somebody doing something about it?

Dr. Mona Hanna-Attisha- Well, I freaked out for a little bit. I'm like, "This can't be. How could this be? Our kids already have all

these struggles and so many obstacles to their well-being!” This is one of the reasons I came to Flint to work as a pediatrician. We were already tackling so many overwhelming disparities: safety, childhood obesity, and crumbling education system. The list goes on and on. And I’m like, “How did this happen?” I was despondent, I was really sad, I was angry, and I went through a roller coaster of emotions when I heard about the possibility of lead. Lead is literally the oldest and most well-studied poison known to man, and there’s theories that hypothesize that the demise of the Romans was because they used so much lead in plumbing, but they also put lead in their food, so not a good idea. So, I thought, “How could this be in this day and age, in this city, in the middle of the Great Lakes?” When I calmed myself down, I knew the only path forward was action. I quickly grounded myself with what my purpose was and what my work is all about. For me, it’s kids. Kids are my why. Kids are why I went to school forever, why I wake up in the morning, why I wrote this book, why I am here. It’s kids and it’s the ability to improve their outcomes. And the neat thing with pediatrics is that policy and advocacy are really embedded in what we do. A lot of our work is prevention focused, be it from the immunizations we give or the conversations about eating right or bike helmets or whatever. It’s not so much about the kid in front of us today, with the broken wrist. And my daughter has a broken wrist right now, which is ironic. It’s about the kid in front of us right now, it’s about what they will do, what they will become, and their potential. So, knowing that there was lead in the water, potentially diminishing their potential, was a call to action to see if there was more lead in their blood. I never should have had to do this research. There’s no reason that research was needed to prove that kids were being poisoned. We knew there was lead in the water. There was great science telling us there was lead in the water. That should have been the hard stop, but nobody was listening. The government wasn’t listening and was also dismissing those scientists. I knew if I

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was going to try to make any difference, I needed data and science in my pocket.

Dr. Shannon Monnat- Speaking of data and science, this comes through really clearly in the book, the important role of science and population health, and advocating for improvements to population health. That can be really hard, especially in an anti-science climate, like what we are in now, like what we were in when you were fighting against this. Do you have any advice for researchers who are interested in turning their research into evidence that can be used to advocate for public health policies? Is there anything you would change? Would you have done anything differently? What kind of resistance did you get? How do you balance the role of being a pediatrician, a researcher, and an activist?

Dr. Mona Hanna-Attisha- Those are wonderful questions. One of the reasons I wrote “What the Eyes Don’t See: A Story of Crisis, Resistance, and Hope in an American City” was to share some of the lessons that are resonant to where we are today. Not that I could have predicted a pandemic, but it’s about disinvestment in public health, governance that didn’t value public health, and the disrespect of science and all these different things. One of the reasons I think that we’re in this kind of bizarre state of science denial is because maybe we as scientists and academics haven’t been doing a good job communicating our science and communicating our data. We are really good at publishing in journals that like five people read. No offense, those are important, we have to do that. We have to publish and do research. But how do we translate our findings; the important stuff that we’re doing to the lay public? I think we all need better training, but really science and academia as a whole; and how to be better communicators of our science. So that’s one recommendation I have. And for me, I was blessed throughout my training as an undergrad, in med school, and beyond to have had those kinds of preparations. For example, my first opinion piece was in my college newspaper, The Michigan Daily, about the importance

of service learning. I had just done an alternative spring break trip and I'm like, "This is so cool. The university should fund it." And my last opinion piece was in The New York Times. In my professional training, I met with legislators and policy makers, and did things like role playing on what it is like to talk to a policy maker before you actually go to the state capitol and meet with them about a certain bill. And I had other opportunities in my professional training to interact with media and journalism, but I think that's maybe atypical. I think it's very unique, and I think it's very unique in pediatrics. I also received additional training in policy, but I think we have to make it part of curricula everywhere. We have to be able to communicate our data and science in nontraditional media; be it social media, be it an opinion piece, be it in the halls of capitol, be it on TV. And I don't think that's what we've been trained to do but need to do more of. When I decided to write a book, it could have easily been a science, academic, or medicine book, but I thought, "No, I want the lay public to read this. I want everybody to understand science." I talk about P-values. I'm like, "Oh my gosh! It's so exciting to talk about P-values!" And my favorite blurb on the book is by Oprah, who said I had the gripping intrigue of a Grisham thriller. Who would have thought P-values, statistics, data, research, and science would be a page turner? But I think for all of us, it's a lesson on how we translate the important, amazing work that we are doing in our classrooms, institutions, and labs to the public. And to do it quickly. There's this huge translation gap between when you do science and when it gets implemented in policy. We have to narrow that gap. I will give you one quick example: In Flint, part of our recovery is really committed to healthy nutrition. We are a food swamp, not even a food desert. It's a swamp because there's food, but it's just really bad food out there. Higher rates of childhood obesity and lead also. If you have poor nutrition, you absorb more lead, so a lot of our work is around healthy nutrition. We started a nutrition prescription program in our clinic, where we give all patients a \$15 voucher. It's a prescription printed just

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like amoxicillin, that individuals can fill in the farmer's market. And our pediatric clinic is located on the second floor of the farmer's market to address environmental insecurity, food insecurity. I used to tell my patients, "You need to eat better. Eat kale and avocados," and they would just stare at me, like, "Where am I going to get that?" and "How am I going to afford that?" So, we as an institution made the decision to move our practice to a place that made access easier. And we give out these nutrition prescriptions. One of my team members is a public health nutritionist. She's amazing! She's a PhD, RD, MPH, who has been assessing this program. She is NIH funded to see if the nutrition prescription improves BLI and food securities, behaviors, and all these different things. And findings are promising! So, we invited our U.S. senator, Debbie Stabenow, who's a huge champion to our clinic, to see the program and to see what we're doing. She also happened to be the co-sponsor of the U.S. Farm Bill. She snuck in the U.S. Farm Bill, a national nutrition prescription program, and now it's a \$25 million USDA program. It's not enough, but it is one example of translating a practice into policy to make a bigger impact.

Dr. Shannon Monnat- Two more questions before we open it up to the audience, and one has to do with the role of the government. You wrote in the book, "I was a true believer when it came to government. I had faith in its ability to protect rights, promote equality, and mitigate historical injustice." The government clearly failed Flint. Do you still feel this way, and do you have a sense of the current community opinion of government and trust in government?

Dr. Mona Hanna-Attisha- I think for so many people, when they hear the Flint story, they're like, "Oh my gosh! Failure of government at every level!" I think a lot of people come away with that. But for me, I come away with the opposite. I just shared a story about one public servant who, when she found out about what was happening in Flint, never stopped fighting for Flint. She literally held up the

energy bill at one point to get Flint funding. And there's many, many stories of the other kind of governmental leaders who, when they understood the extent and the scope of the injustice, whether they were from Michigan or not. Some of our greatest allies have been in other states. They recognized the injustice and wanted to do good on our behalf. So, for me it's been an affirmation that government can work for people if it is democratic, if it is whole, and Flint's government wasn't. Remember, we were under this kind of state of usurped democracy. Government needs to be representative; it needs to be whole; it needs to be transparent; and it needs to be able to proactively respond to issues like this. There's been many investigations about what happened in Flint. There was a task force that the former governor appointed, and they said that one of the root causes of this crisis was this decades long austerity-driven attack on bureaucracies and government. It was an attack on big government that left many of our public health agencies - like our health department and our water department - unable to do anything proactive and preventive. We're only able to minimally respond to crises. And you can say the same thing right now about our pandemic response. Our public health infrastructure has been so weakened, purposefully, because of certain interests that don't want strong regulations, that it makes it hard for us to robustly respond to a crisis. But more importantly, it makes it difficult to prevent future crises and to keep people healthy. I am a firm believer that we need strong government, responsive government, transparent government, and most importantly, representative government.

Dr. Shannon Monnat- And the people in Flint, do they trust the government yet?

Dr. Mona Hanna-Attisha- No, but it's understandable. There's a movie that I just watched the screening of about Flint called "Who Do You Trust?" Trust has been absolutely severed in Flint. There are people that no matter what you tell them regarding their drinking

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water quality, will never touch the water again in Flint. They won't trust anybody. And that's not to be kind of minimized or ridiculed or to say it's anti-science. That's to be understood because of the trauma, betrayal, and of the governmental, not only indifference and neglect, but malfeasance that happened upon them. Trust is going to take a long time to come back. It's going to take accountability and justice, long term resources, and representation. But if we also think about the history of Flint, that trust was on shaky ground even before the water crisis because Flint felt neglected for so long by people in power. There are some folks in Flint that felt this was a purposeful genocide. They believe they did this on purpose to get rid of us. It's going to take a very long time for trust to come back in such situations.

Dr. Shannon Monnat- So along those lines, can you give us an update on what's going on since this book came out? What has changed? How are the kids?

Dr. Mona Hanna-Attisha- Yeah, that's a great question. I think the hardest part about writing this book was you have to have an end, but the story wasn't over. So where should I end this story? I could have kept writing for years, but my editor was like, "You need to turn something in." Here's where we are now. Our pipes are almost completely replaced. We had a year delay because of COVID, but they're pretty much all replaced, which is amazing. There's only a couple of other cities in the country that have fully replaced their lead pipes: Lansing, Michigan, Madison, Wisconsin. Other cities are now doing it, and some are even ahead of us; Newark, New Jersey, after their crisis, also has just completed all their pipe replacement. Our water is absolutely better. But because of the pipe replacement, people are still required to use filtered water and bottled water, because whenever you dig into the ground or move the earth, you have the potential to release more lead from the pipes. So those precautions are still in place, but I'm sure they're going to be removed soon.

But in my work, I get to spend my every day literally pinching myself to make sure that the kids of Flint have the brightest future possible. I lead this pediatrics public health initiative, which tries to implement secondary prevention measures, which are interventions once a population has already been exposed to something. We lean on the science of what we can put into place to mitigate the impact. I wish I could prescribe something to take away the crisis, but that doesn't exist. But there's a lot that we can do to help kids and families and support their health development. So, we have things like "bring your child to care centers," and we had talked about some of our nutrition programming, huge literacy efforts, parenting support, mental health care, and Medicaid expansion, which is probably the biggest gift we got from the federal government. And the list goes on of all these other science-based, child health and development promoting interventions. We're also funded by the CDC to implement a Flint registry, which is this massive longitudinal effort to see how folks are doing, but more importantly, to get them connected to services. The CDC just included us in their annual budget, so we anticipate doing this work for years if not decades. And we are starting to get data back from that Flint registry.

I think the most common question I get asked is "How are the kids doing?" I can tell you how some kids are doing in clinic, but that is not what you want to know. You want to know how the population is doing. That's the work of epidemiologists, which we all know about now. The kids are okay. They have challenges with things like cognition and behavior. There's a lot of need for neuro-developmental assessments, and there's been an increase in special education services and a drop in literacy rates. It's difficult in all environmental health things to prove causation, but that's not our job. Our job is to see how folks are doing and to support them as much as we can, so this is long-term working. And a big part of my job is the work in advocacy and policy to make sure that future Flints don't happen. Writing this book and talking to

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you guys, and working with policy makers, Flint never should have happened. But Flint's case wasn't the first, it wasn't the worst, and it wasn't the last. There's a lot we can do from learning the lessons of Flint to make sure that there aren't future Flints. I think the most exciting development is the national infrastructure bill. President Biden's infrastructure bill includes the removal of all of our nation's lead pipes. This is amazing! This is something that folks have been working on for a long time. I had a chance to testify before Congress a few months ago about the importance of removing these lead pipes. There are about 10 to 11 million lead pipes in the country. There's a cost of inaction. We work really closely with healthcare economists and lead economists who even have put a price tag on our inaction when it comes to special education costs, criminal justice costs, and decreased economic productivity. Not only does it make health sense, but it also makes economic sense why this should be happening. We were really excited it was included in the house bill. So, fingers crossed, this will get passed soon.

Dr. Shannon Monnat- That's great. Potentially, very good news. Thank you for the really wonderful overview of the book. I'd like to open it up to the audience now. So, what are you interested to know about?

Audience Member- A lot of emphasis has been placed to ensure researchers and policy makers. I was just curious; how did you navigate the differences between yourself and the people you are trying to help, trying to portray?

Dr. Mona Hanna-Attisha- That's a really great question. It was complicated. I don't live in Flint; I work in Flint. I'm not white. I'm not Black. I'm this weird brown immigrant that's come there as a pediatrician. And I was clear up front that I'm not telling anybody's story, I'm telling my story, and my story is just one of many narratives that need to be shared. So that's how I explained it in the text, but in our work, in my daily work in the community, everything is done hand in hand and in humble partnership with the community.

Michigan State University's public health programming is actually based in Flint, and it was created several years ago. This is one of the reasons I came back to Flint. They asked the community, "If we're going to come and build public health programming here in Flint, what do you want us to work on?" They did thousands and thousands of surveys and held town hall meetings, and the community identified three big areas: healthy behaviors, behavioral health, and chronic diseases. And based on what the community wanted, they hired translation researchers not to study the community, but to implement interventions to reduce disparities. So that's how the university was created in Flint, in terms of public health. But the university as a whole is also a land-grant university that has had a footprint in the community for over a century and is always driven to service and to working with the community. So that's the background of that. And then when we created our initiative, we also knew how important this work was to be done with community. That's important in every impacted community that you're working in. But it's especially important in Flint's story because once again, Flint's story is a story of usurped democracy, where the people of Flint were loud and heroic and organized, saying, "There's something wrong with my water. Why aren't you listening to me?" So, central to our recovery is the inclusion of participatory democracy and self-determination. We've formalized that in several ways. I have a parent partner group, a group of parents that we routinely meet with. They represent every ward of the city, and they're moms and dads, and foster parents, and grandparents that we sit with. And it's really hard because I have to close my mouth and I just listen to what people are concerned about and what they want addressed. And then we've taken it a step further- and this is my favorite thing ever- we have a group of kids that advise us, and they have named themselves the Flint Youth Justice League. They are a bad ass group of kids, ranging from 8 to 18 years old, who tell us, once again, what's important to them. Shortly after Flint's crisis happened, I mentioned there

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was a similar crisis in Newark, New Jersey. Our Flint kids Zoomed with kids in Newark, New Jersey, to tell them what they should be advocating for, what's a safe part per billion level, and different kind of tips. These are very deliberate efforts to elevate voices of others. We also have, for example, a director of community engagement and implementation, who's part of our leadership team. And then our Flint registry is a massive project, it's a \$20 million CDC funded project. And so many other universities or other folks are like, "We'll do this for you, we'll run your registry, this the kind of work we do," and we're like, "No thanks, we can do this." The registry is located in downtown Flint, and we are committed to hiring, training, and building a Flint workforce because we also know that central to health is also economic development. I wish I could prescribe living wage jobs for parents. We have an over 60% top poverty rate in Flint. We're so committed to building and training our workforce. These are just some of the things that we've tried to include to impacted community and do our work in a very community participatory, community driven, community informed way.

Audience Member- Do you worry that what happened in Flint is still happening in underserved communities in the U.S.?

Dr. Mona Hanna-Attisha- Yes, it is happening right now. There's another city, Benton Harbor, Michigan. The NRDC (Natural Resources Defense Council), this amazing group of environmental lawyers has just filed a petition that I signed on to, for the EPA (Environmental Protection Agency) to take emergency action. For three and a half consecutive years, Benton Harbor has had violations of the lead in water action level. It is happening all over. Nothing maybe to the extent that it happened in Flint, but before Flint, there was even worse lead in water crisis in Washington, D.C., in the early 2000s, that lasted longer with even higher levels. So as long as we continue to have lead in our drinking water infrastructure, there's going to be exposures. Somebody from the EPA told me our pipes are like straws and we're literally drinking through these lead straws. If we respect

the science that there's no safe level of lead, we need to get the lead out. And so that's why I am so excited about the infrastructure bill, which will finally remove the lead from our service lines.

Audience Member- Thank you so much for being here. It sounds like the emergency management law was a huge part of the structural enablers. Is it still in place and does it exist in other states, and has that been part of the advocacy push to change the policy environment to keep it from happening again?

Dr. Mona Hanna-Attisha- That's a really great question. Yes, the emergency management law was a determinant of this crisis. It was a causative factor. It is still on the books, so it is still a law in Michigan, but there's no other city anymore that's under emergency management. But the law needs to be removed. There are similar receivership laws in other states, but nothing to my understanding that is really as egregious as the one that was in Michigan. After the water crisis became a national story, there were congressional hearings, and the emergency manager was subpoenaed to testify before Congress. He testified before Elijah Cummings, who has since passed away, but was the chair of the oversight committee. And representative Cummings asked something to the emergency manager: "Why didn't you listen to the people? They were coming to you, literally with jugs of brown water and all these concerns. And they had done all the citizen science. Why didn't you listen?" And his response was something like, "I didn't have to. I wasn't accountable for them." So let this serve as an example of the consequences of eroded democracy or corroded democracy. It's not an isolated thing. Turn on the news, these are the things that are happening right now, be it voter ID laws or voter suppression laws. These are all the same kind of efforts that are taking away people's voices from the table.

Audience Member- I was very excited to see that you were coming to campus. My question is, especially just in light of what we're going through right now with COVID-19, what advice do you have

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for people early in their careers, in public leadership, especially those of us that do not have expertise in public health?

Dr. Mona Hanna-Attisha- Awesome, that is a great, great question. And I have four bits of advice, especially for the young folks. You guys inspire me, and you care so much. You have been on the front lines fighting for democracy and equality, and are sick of the status quo. I am always so excited when I interact with you because you give me energy. The first bit of advice is to find your passion, to find your purpose, and to find what grounds you. For me, I told you my why is kids. That's literally why I wake up. Find your thing. What is it that you really care about? There's a long list of things you can care about, like immigration, or women's reproductive rights, or climate crisis, or democracy. What is your why? So, first find your passion and then find your peeps; find your people. This story is not about one person, it is about a team. And it is about an unexpected team that came together, that helped not only expose this crisis, but work together in recovery. For so long, before this crisis, I was an academic pediatrician and a medical educator. I hung out with lots of other pediatricians, and we had a monopoly on caring for kids. We thought, "Who else cares for kids more than we do?" And what I loved learning throughout this crisis is how wrong I was, because, oh my gosh! So do geographers, and so do sociologists, and so do economist, and so do teachers, and so do social workers, and so do all these other folks. So, you are at a place where I know you have incredible interdisciplinary experience. Take all that in because you need all these different lenses to ask different questions and to come up with different solutions. And they're going to be in unexpected places. I never thought my best friend would be a water engineer. Who knew? We couldn't have been more different people, but we both care about the same thing. You need those peeps. You need people because it's exhausting work, it is hard, there's ups and downs, and you need people who have your back when you are low, and when they're down, you need to be there to lift them up.

Find your peeps, don't reinvent the wheel, they're there. So often, I think we feel like we are shouldering all the world's problems on our own, but there's other folks out there that care about the same things that you do. So, find your passion, your purpose, find your peeps, and lastly, be persistent. You guys know this: policy making, especially, happens in windows, and you never know when the windows are going to be. You've got to be persistent, and you'll play the long game. Keep at it, be persistent, and be pleasantly persistent. And maybe annoyingly persistent. I was really good at that. So just be persistent, keep at it, don't give up. And then my last bit of advice is be prepared. I mentioned a little bit about my preparation. And I think there's a line in my book, that says "I was the right person at the right place with the right team, but also the right training." And you guys are, once again, in this amazing place to get a lot of these different skills, and you never know when these skills will come in handy. You know, I did drama in high school and people were like, "Why do you enjoy public speaking" or "How do you know how to project?" I say, "I think it's because I did drama in high school." Take advantage of these amazing opportunities that you have in a very safe space to learn different skills and to get as much of a well-rounded experience as possible. Passion, purpose, people- your peeps, persistence, and be prepared. My advice is, try to hold on to those things.

Dr. Shannon Monnat- That's great advice.

Audience Member- Thanks very much for coming and thank you even more for the work that you're doing. It's just really inspirational to hear about what you've done in your experience. I'm curious about lessons that we can learn from your experience in another context. I'm from South Louisiana, not far from a place that we call "cancer alley," which has some of the highest cancer rates, certainly in the country. You've mentioned a bunch of things; clearly, you and your team had a lot of the advice that you just gave. You had a university in your backyard, you have a community very

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influential and important. I'm wondering what the key ingredients are because it did seem to take off there. You had a lot of media attention, maybe it was partly against some of the skills of the people there. But there are lots of environmental crises. What can we learn from what you did that made for the success you've had, that we can take into other areas?

Dr. Mona Hanna-Attisha-That's a really great question. I have spoken with so many other people, and they are like, "We've been battling this environmental justice for over a decade. Why did yours get fixed or is in the process of getting fixed so quickly?" And I think it was a perfect storm of a lot of things that definitely highlighted Flint and made it an international story. And speaking to that is the role of journalism and media. If there's one thing you can do to increase recognition of this kind of issue, it's subscribe to your local paper. We need more investigative journalists. Investigative journalists are the unsung heroes of the story. They were digging and digging, and digging, and asking questions, and digging, and digging. And I would have been nowhere without their previous articles that were telling what was going on. Unfortunately, we live in a time where we don't have as many print journalists; there aren't as many investigative reporters, but one thing you can do is partner with media, with journalists. Recently, Flint hosted the Society of Environmental Journalists national conference. Journalists are eager to make connections in academia and in the community. So that's one recommendation that we haven't talked about: definitely make partnerships with the people that can really highlight and bring these issues to light.

And all of us as academics are affiliated with universities and institutions. And we may not think it, but we have a lot of credibility. We carry a lot of weight. We have a lot of power in our voice, in our background, in our skill sets, and our communities are yearning to work with us. They want to be able to have that connection with academia. I don't know how you can advertise it but try to

be available to the community when an issue comes up. In the beginning of the Flint water crisis, a year and a half before I got involved, community members went to different universities in our state, and they said help us. They're like, "Oh, we're not funded for this. We have no time. We have no effort to do this." That's not what science is about. Science also has to create the incentives for flexibility and academic freedom to be able to do things that may not be part of your effort allocation, but that's still really important for your community.

The last is the power of storytelling. And I shared in this book, but it's something that I do every day. I have sat in many offices of folks in D.C. and our state capitol and talked science. I'm really good at talking science. I can talk a lot about lead and the statistics, and what needs to be done, and you can literally see eyes glaze over when you talk science. But when I start talking about people and children and their stories, I get a different response. When I testified before Congress a few months ago, I started with a story. I held up a pipe belonging to a family. It was the Brown family. Oscar and Elizabeth Brown moved to Flint in the 1950s from Alabama. They were part of that great migration north. They came to Flint and could only live in a Black-only neighborhood. Oscar worked at Buick, and he got a pension, and he raised generations of his family in this home. Finally, the Browns moved to another part of Flint. And their great grandchild lived with them and drank water from this pipe, and subsequently suffered from seizures and other health problems. I talked about that American promise. How here was that promise of folks trying to flee somewhere with so much oppression and racism to go somewhere better for not just themselves, but for future generations. And yet we had failed them again by this injustice. So, when I told that story, people paid attention to me more than when I told them about the path of physiology of lead. Partner with your communication department or go to different workshops, but there's definitely a power to storytelling.

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Audience Member- Hi, thank you so much for your time today. My question is regarding the possibility of resurgent lead exposure from legacy pollutants in the city of Flint, Michigan. In a city like Syracuse, some of the most persistent sources of lead poisoning come from lead paint dust in substandard housing, as well as soil which has been contaminated from decades of leaded gasoline. I'm curious what the city of Flint has done to address some of these other sources of lead exposure, and if those policies can serve as a model for other cities like Syracuse.

Dr. Mona Hanna-Attisha- It's like you planted that question! I love that question. After Flint happened, the state applied for a waiver from CMS, the Center for Medicare and Medicaid, to do primary prevention, lead inspection, and abatement. It was the first time that healthcare dollars were to be used to fund home inspections holistically, to look for lead paint in dust and soil, and what have you. If they found lead, the healthcare dollars were used to fix it and even put up a family in a hotel until it was fixed. So, Michigan got this waiver. It was done at the state level, not at the city level. And for the first time, it was not dependent on a kid having an elevated lead level, which is usually how it works. As pediatricians, kids come in for their checkups at the ages of one and two. We check their lead level because that's developmentally when kids are walking and crawling, and they explore the world by putting everything in their mouth. That's when they're most at risk for lead paint and dust in soil. And when we find an elevated lead level in that kid, that's what prompts those environmental investigations and abatement. But you know what? That's backwards, that is ridiculous, and it is literally using children as detectors of environmental contamination. But that's how it has been done and how it continues to be done in most places. That's not primary prevention because once you find lead already in a kid, it is too late. So as a nation, we need to do a better job of screening environments before kids are exposed. This is exactly what this waiver did and continues to do. After Michigan

got this waiver, several other states have also gotten it, including Maryland and Illinois. I'm not sure if New York has gotten it, but it's still an option to really focus on primary prevention to once again, find lead in environment before kids are exposed. There are also other best practices in other communities. I think it's Buffalo that just did some really great work with rental inspections, making sure that at point of home transfer, a real lead investigation happens before a child, or a family, moves in. There are things that can be done, and those things have also been shown to be cost effective.

Audience Member- Are there plans in place or in the works to provide support for Flint children affected by lead as they age into adulthood and lose supportive schools or even move out of the area?

Dr. Mona Hanna-Attisha-That is a great question. Yes, there are plans in place, but nothing that's fully resourced to support folks. The Flint registry is one of those longitudinal plans to see how folks are doing and to get them into the services like mental health care or neurodevelopmental assessments. Part of the remediation or long-term support is also being sought out through our justice system. This is something we haven't talked about yet. There were criminal cases as well as civil cases in Flint, and they're all still ongoing. There was a settlement in the civil cases, over \$600 million state settlement; it was the largest settlement that the state has ever had to provide for damages to folks that were injured. It's very complicated and it is once again still in process, but the majority of those dollars do go to children. And there's also part of that fund set aside for future needs. So that's one part of it. And then the other part of justice is the criminal cases, which are in process and there's been charges filed against folks that were involved from the emergency managers to our former governor, to the former head of our health department, and water officials. Included in those charges are also homicide charges because in addition to lead, we also had an outbreak of Legionnaires' Disease

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due the untreated water, and people died from that. But that's also a mess and in process. Lastly, the other effort to support folks' long term is the Flint kids fund which I helped create. This is at our community foundation. It is kind of our 20-year fund to support kids and families. We've been able to raise over \$20 million, which is amazing. We've given out about 11 million to support a lot of the things I talked about, like home visiting programs and breast feeding, and literacy, and all these other support programs. But there's still a need for long term supports. The support that we're talking about, they sound amazing, but they're common sense, right? All children need these things, all kids need healthcare, and food, and education, and early childcare. This is not rocket science, these are things that all kids need.

Audience Member- Could we even pass the federal laws that ended the widespread use of lead today, given what the pandemic has revealed regarding politics, science, and public health? Would what worked before, work now?

Dr. Mona Hanna-Attisha- I am hopeful. I'm also an eternal optimist. Flint's lessons are some of the exact same lessons as the pandemic lessons. It's about, once again, good governance that values public health, about respecting the science, about proactive investment in public health, about equity and disparities, and who's impacted by what crises. For a long time, we've been trying to share these lessons from Flint, but now the whole nation is kind of going through the same experience. I'm hopeful that the whole nation is also learning that we need good leaders that value public health. We need to respect science, and we have to invest in what keeps people healthy, rather than continue to pay so much for treating them after they're sick. We fund a sickness care system; we don't fund a health system. And we have to address things like inequities because, once again, the burden of the things like the pandemic. Things like environmental issues don't fall equally on all populations. All of these lessons that the nation is learning gives me hope, and

I see it already in some policies. But I see it, for example, in the child tax credit. This is the biggest thing that has happened for kids in generations; this effort to lift children out of poverty. It's temporary but it needs to be permanent. I see it in some of the increased funding that's going to public health agencies and things like the CDC. I see it in the infrastructure bill and the plans to support things like family leave and raising the minimum wage and benefits. So, can we sustain some of these things? That's the question. And I think time will tell, but I'm hopeful that we learn some of these lessons.

I had a chance to write an article for The New York Times. It was a year ago, which was premature, but it's like as we envision the post pandemic era, how do we build an America that we need, that's more fair, more resilient, more just? And my whole article was about how do we truly invest in what keeps people healthy, like universal childcare, raised minimum wages, stronger environmental health regulations, family policies; these are the things that truly make people healthy, that so many of our communities, and children especially, don't have. Once again, I'm hopeful, but we have to keep being activists and keep civically engaged, keep voting, keep talking to our policy makers, run for office, do all these different things that can hopefully improve lives, especially of the most vulnerable. This is all about civic engagement.

Audience Member- In your book, you speak about resiliency. How should researchers think about resiliency, and how should we start to build resiliency in our communities in light of COVID-19?

Dr. Mona Hanna-Attisha- I think that is definitely related to the last response. My article in The New York Times, was actually called, "I'm Sick of Asking Children to Be Resilient," because so much of what we do in Flint is on the shoulders of those that are impacted. It's very much a blame the victim situation, like, "Oh, you were exposed to this bad thing, read more to your kid and do this mental health program, and fill this nutrition prescription."

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Building resilience needs to happen at the community policy, country level. We need to put in place the structures that create resilient communities, rather than assuming that children who are burdened with so much can rise up and overcome these insurmountable obstacles.

Audience Member- Thank you for your work and your example. What do you say to the medical community as a physician about your role in activism? I'm sure you hear, "Just stay in your lane, this is not the role of a physician." What do you see are some strategies to bring more people along with you in the medical community?

Dr. Mona Hanna-Attisha- That's a great question. It's a question about doctors being activist, and people are like, "Oh, this is probably not what you expected your career was going to be like." I'm like "No, this is exactly what I expected my career to be like." This is why I went into medicine. My job is: I'm a clinician, I still see patients. I'm a researcher, I'm an academic, and I am an activist. It's literally part of my job description. As much as I understand the biomedical of what makes my patient sick, I also understand that their geography, their histories, and there's hierarchies that also manifest in their bodies as if their lives don't matter, and that also fills our hospitals and our exam rooms. So, this is my lane, and this has been my lane, and I am privileged to continue to teach medical students, and I get to talk to medical students all the time and older docs who are harder to convince. But this is what medicine is all about and one of the lessons of the story is that when the doctor spoke, things happened. Once again, that's not what should've happened. The first mom that said there's something wrong, it should have ended. But when the person with the long white coat and all those degrees after her name said something, it carried weight and credibility. What I try to impart to doctors is that you are so well respected, especially in the era where so many professions are not well respected. Use that power and that voice for good. And I'm so excited by what I have been seeing. Never before I think in

medicine, how we had so much discussion about racism as a public health issue, about the historic practices of medicine; the medical bodies in this country that have not done good things. There's lots of amazing stories: the mortal life of Henrietta Lacks, the Tuskegee experiment. The medical system and medical institutions do need to come to reckoning with their past, and I see that beginning to happen. For example, the American Medical Association (AMA) recently released an apology for bad things that happened decades ago. And the American Academy of Pediatrics said, "We should have given these people a membership to the organization decades ago, but we didn't." There's a reckoning that I think is happening in the medical community. And I think with COVID-19, I hope doctors are beginning to understand that there's only a limit to what we can do. There's not enough ventilators or ICUs that can care for our patients. We need once again, to go upstream and to address the policies and actions that are making our patients sick. And it's been wonderful for me to see doctors that I never thought would speak out, speak out. They are active in their school boards now and they're running for office or they're doing all these wonderfully, civically engaged things with their voice as a physician to hopefully keep more folks healthy. But more needs to be done. There needs to be more curricula on advocacy and media training, and legislative training, and all these different things so that doctors understand this is their lane too.

Dr. Shannon Monnat- Well, just to jump in because you bring up training. I was struck by the way you trained your first-year residents. So maybe you could tell folks who haven't read the book, about what you do with them. Part of it sounded like an ethnography. You send them out into the community to check on people and see what's going on.

Dr. Mona Hanna-Attisha- I run a rotation called community pediatrics, where we do everything we can not to be in the hospital. We take a city tour, we learn about Flint history, we meet with

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policy makers, we go to the court system, we do school visits and home visits, and we map out how much graffiti and blight there is. I try to get my students to understand where our patients are coming from. Not only the challenges, but the strengths, and to try to get them to understand that the illness they present with is a manifestation of so many of these other uncontrollable factors in their lives. I think pediatrics is really good in that respect to try to expose folks to things that are outside of the exam room and the hospital. One of the reasons the book is called “What the Eyes Don’t See” is because doctors can be very myopic. We’re often really good at seeing what’s in front of us. There’s a poem that I included, and I’ll read it. It carries this message better than I ever could. The poem is written in 1937 and is called “A Worker’s Speech to a Doctor.” It’s a poem I give my students and I include in the book. And it says,

*When we are sick
We hear ‘you are the one who will heal us.’
When we come to you
Our rags are torn off
And you tap around our naked bodies
As to the cause of our sickness, a glance at our rags would tell you
more
It is the same cause that wears out
Our bodies and our clothes*

So that was written in 1937. We have obviously come a long way since 1937, but in so many respects this still very much rings true.

Audience Member- Can community members guide or locally co-create large scale infrastructure remediation plans as Biden’s plan might opportune?

Dr. Mona Hanna-Attisha- Absolutely. I hope that the resources come in to do infrastructure improvements, go to local communities,

hire local workforces, and are done in a way that the community wants them to be done. This is once again, about the need to be community informed and driven in participatory. One question I got when I testified before Congress about the pipe replacement was from a representative who said, “How quickly do you think all our nations pipes should be replaced?” I responded, “It took a long time to put them in the ground, it’s going to take a long time to get them out, and a lot of folks are looking at a 10-year window.” And she said, “Do you think that’s going to be enough time to be able to train local workforces to do this? Because we want to make sure that we do this in an equitable way so that we’re also providing these living wage union jobs to some of the most impacted people.” I think that’s possible; I hope that is possible, and I think examples like Flint and Newark where this large-scale infrastructure work has happened in a fairly short period, also speaks to that.

Dr. Shannon Monnat- I think that’s an excellent place to end on hope. And I want to thank you so much for being here. What you’ve done with your work is truly inspirational, and I’m glad that you’ve shared your story with us.

Dr. Mona Hanna-Attisha- Thank you, Shannon. It’s great to be here. Thanks, everyone.