

# Gina McCarthy Is Fired Up About Climate Change and the Public Health

Eric J. Topol, MD; Gina McCarthy, MS

March 21, 2019

*This transcript has been edited for clarity.*

**Eric J. Topol, MD:** It is a privilege for me to have the chance to speak with Professor Gina McCarthy, who heads up C-CHANGE, the Harvard Center for Climate, Health and the Global Environment at the Harvard T.H. Chan School of Public Health. Prof McCarthy was EPA [Environmental Protection Agency] administrator during the Obama Administration. Welcome, Gina.

**Gina McCarthy, MS:** It's great to be here, Dr Topol. Thank you.

**Topol:** Thanks for all you did during your 4 years at the EPA and now, with your efforts at C-CHANGE, dealing with the climate change crisis we're in. We are so far behind. Here at Medscape, we haven't given adequate priority to this true global crisis. Where do we get started? What can we do?

## A Challenge and an Opportunity for the Healthcare Community

**McCarthy:** We have already started. I very much appreciate the opportunity to talk to you and all the folks you work with. Medscape will certainly provide us an opportunity to advance our efforts in constituencies that can help drive climate action.

Here's the issue, in a nutshell. I've been working on climate change for many years. But I've always felt that it has become a confusing and partisan issue, when really, it is a pretty straightforward, if complicated, science question that's already been answered. We need to broaden the ability for people to take action to address this challenge, which, I agree, is one of the biggest threats of our time.

Until recently, people have seen it as a distant issue, something that's happening to the planet or to faraway places. My job at Harvard C-CHANGE is to use the science to articulate the common threats that climate change poses to public health right now, and to work with you and others to reach the healthcare community. Healthcare providers are trusted advisors to the populace. I want to make sure we're thinking about the public health challenges caused by climate change and also the opportunities we have to drive real prevention of these health problems, and to get the healthcare community more adequately and vitally engaged in this issue as trusted advisors.

I want to connect climate and health directly. I want people to know that climate change is a threat to them today. I also want them to know that we have solutions, so we can turn this challenge into a real opportunity to advance health today while we're protecting the planet. That's the whole ball of wax.

**Topol:** The essential point you make is that climate change and health are connected, which has not been appreciated until relatively recent times. It was almost as if they were in different orbits.

I would like to delve into the specifics about connecting the orbits. One aspect we could talk about is infectious diseases; so many are exacerbated by the change in climate. What are those concerns?

## The Direct Connection Between Climate and Health

**McCarthy:** A variety of communicable diseases are changing their patterns, in terms of the communities that are exposed, the vectors, and the contaminants related to contagious and infectious diseases.

For example, [malaria](#) is a vector-borne disease that is moving into new areas and exposing new communities. We fought

hard to narrow the number of people exposed, but that exposure is now shifting.

Addressing this will involve a whole new education effort and an opportunity to follow where those mosquitoes are going, and to find ways to limit the kind of mosquito populations that will impact health.

Another issue is the contamination of water supplies after a flood. We underestimate just how much that affects, in particular, poor and middle-class communities. During a flood these exposures to contaminated water result in [diarrhea](#) and other potential serious consequences, especially for children and the elderly. But we are also seeing quite a lot of food contamination.

We also have the spread of [Lyme disease](#), another vector-borne disease. In New England, we are seeing the kinds of exposures that we've never seen before. I was just talking to a physician who told me that his wife, a pediatrician, used to see a couple of cases of Lyme disease each month, at the most. Now she sees them every single day.

We need to take this opportunity to educate physicians about diseases they haven't had to be sensitive to before. As with malaria, early detection and treatment of Lyme disease is critical. We usually talk about the floods but not about what floods mean for people long-term.

**Topol:** Just to review, the vectors, as you pointed out, the mosquitoes, transmit Zika, West Nile, malaria, and [dengue fever](#) and encephalitis, and ticks transmit Lyme disease. Then we have the food- and waterborne diseases, [Campylobacter](#), [cholera](#), [leptospirosis](#), and cryptosporidiosis. These are directly linked to climate and climate effects.

Let's move on to the air issue. That causes another type of health adverse effect. Can you comment on that?

#### More Dangerous, More Frequent Challenges

**McCarthy:** These are the issues I'm most familiar with, because when I was at EPA I ran the air and climate programs for a while. The more you learn about air pollution, the more you realize just how much it impacts our lives, and particularly the most vulnerable—our kids and the elderly. We already know that about 1 out of 10 children in the United States today have [asthma](#).

Why is asthma important where climate is concerned? Because climate change exacerbates air pollution, which triggers asthma attacks and makes them more dangerous. You're seeing more frequent and more dangerous challenges for children as well as the elderly because of air pollution.

We already know from looking at the WHO [World Health Organization] studies as well as others<sup>[1,2]</sup> that at least 9 million people every year have premature death and significant additional illness and disease as a result of exposure to pollution. About 7 million of those are from air pollution. If you look at air climate change, it is a significant public health challenge in the areas of air pollution, in particular.

The good news is that the same efforts you take to reduce climate change will get at the very same pollution sources that you would get at if you focused on the public health effects. Climate change is directly linked to carbon pollution. You can start working on these issues, save lives today, and get at the very same long-term sources you need to stabilize the world for the future for our children.

#### **It's time we treated climate change as a real threat to health and started thinking about integrating climate resilience into the medical care curriculum.**

That's really the big message. The more you know about air pollution, the more you hate it. We can see the danger it poses, because it's not just asthma. Air pollution is connected to heart disease; it's connected to more heart attacks; it's connected to cancer; and now it's connected potentially to issues like [autism](#) and dementia.<sup>[3]</sup> There are all kinds of opportunities to keep looking at this, but I would like an opportunity to get rid of it. I don't need any more reason to hate air pollution. I don't need any more reason to hate climate change. I'd just like us to focus our attention and get active.

The medical community needs to be aware of these things because your focus is treating patients. For example, heat stress is a big danger and it is increasing. I think a lot of people in the United States believe that that's a problem in some foreign country, but we have people in the United States today dying as a result of heat stress. We must start thinking about how to prepare for that.

We also need to look at the migration of people that's happening today. After Hurricane Maria hit in Puerto Rico, the Children's Hospital in Boston was jam-packed with kids, because people were leaving Puerto Rico and those kids needed to be cared for. It wasn't just physical problems they were experiencing but the distress and the mental stress of children seeing the destruction happening to their homes. We're just beginning to understand the trauma that these catastrophes are causing children, like when their homes go up in flames in California, or when they have to leave flooded homes or return to them and there's mold and mildew. That will exacerbate the stress and allergies.

All of this tells me that it's time we treated climate change as a real threat to health and started thinking about integrating climate resilience into the medical care curriculum, and educating physicians about how they should treat these patients and what to expect in emergency rooms when these things happen.

### A Global Syndemic

**Topol:** One other thing I wanted to discuss before we get into some of the other health consequences of climate change is what *The Lancet*<sup>[4,5]</sup> calls a global syndemic—the combination of **obesity**, undernutrition, and climate change. Do you see how all of these are linked?

**McCarthy:** One of the challenges we have at the School of Public Health, as with any bureaucracy, is that it is cut up into discrete categories of public health, and the systemic issues tend to get lost. Obesity, undernutrition, climate change—all of those are linked. There is an enormous need to look at what is a healthy diet in the context of a changing environment. Walter Willett is a nutritionist here at the School of Public Health who has been one of the primary investigators looking at a healthy diet and what that means in the context of climate change.<sup>[6]</sup>

What do we do when high CO<sub>2</sub> levels drain significant nutrients out of the grains that the world relies on? How do we produce rice in the quantities we need but in a way that doesn't create so much greenhouse gas emissions that it exacerbates the climate problem? All of these things are absolutely connected. Diabetes is connected to nutrition and to dangers related to climate change from heat and other environmental shifts. The climate is connected to how you design your cities. The good news about this systemic issue is that if you start thinking systemically, you don't have to fix the planet but you build much healthier communities.

**Topol:** Most of us don't think so much about the environmental implications of our food and nutrition. We focus primarily on cars and the transportation side of this. And with that comes the anti-science and resistance. Having been the EPA administrator, how do you feel when you see front-page reports in *The New York Times* and other newspapers that warn of a much greater crisis than we envisioned? Then you have others who say that there's no science to back that up and this isn't true. How do we deal with this?

**McCarthy:** I'm doing an interview tomorrow with Naomi Oreskes. Naomi is at Harvard and she wrote a book called *Merchants of Doubt*.<sup>[7]</sup> It shows that there has been a concerted effort to try to raise doubts about climate science, following the same playbook that was used when the tobacco industry was trying to discredit the science around the dangers of tobacco. For me, it's discouraging; but for all of us, it's dangerous.

We have robust science and we've had robust science for decades. President Reagan asked these questions; he didn't question that climate change was happening. We've learned more recently just how fast the climate is changing and how we need to act more quickly. This urgency is why doubt is the most dangerous thing you can bring into the equation; it has led to so many people not understanding the need to take action now.

**I'm not asking people to sacrifice. I'm asking people to think about what's in their best interest and move forward with solutions that are available today.**

We have to start pushing hard to explain to people in the best terms we can that what we're seeing happening today are the results of climate change. You have to take action unless you want to accelerate the changes that are damaging us today—the floods, the fires, the ocean bleaching, the coral reefs dying off. All of these are public health challenges.

We have to start acting today. We have solutions today. We have clean energy that we've never seen before. If people haven't driven an electric vehicle, go try one.

**Topol:** I can't imagine driving a gas-powered vehicle ever again.

**McCarthy:** I believe we will see that transition happen as more people try these solutions. We're talking about moving

towards a world that's better for everyone. I'm not asking people to sacrifice. I'm asking people to think about what's in their best interest and move forward with solutions that are available today.

Once we start demanding electric vehicles, there's going to be one in every driveway and on every street corner, because they're better. They don't break down. They're quiet. Combine that with autonomous vehicles and I'm putting my feet up and being happy about it. The young people don't like cars anyway. God love them. We'll do bike paths and they can bike everywhere.

We need to see this as an empowering moment, not a frightening moment—one that makes us alert about the world we're living in and what we're doing right now to make that unsustainable, and what we can do to turn it around.

### Every Yin Has a Yang

**Topol:** In the 4 years that you served in President Obama's cabinet, I'm sure this topic was central, and you negotiated the Paris Agreement and many other environmental advances. Now you see all of this being undone and challenged without any basis. How does that affect you?

**McCarthy:** You mean, how do I get up every morning? In all honesty, I can't say that I'm not a little angry that all of that work is at least proposed to be undermined. So far, they haven't actually done too much, other than to stall things at the Federal level. What you are seeing now is that for every yin there's a yang. And we're already seeing it. What's happening is that instead of all the yapping at the Federal level, we're seeing real excitement at lower levels of government. We're seeing grassroots organizations stepping up. We're seeing young people demanding change like we haven't seen before. We're seeing people who ran for public office in 2018 and won because they ran on following the science. Many of them were scientists. Many of them were physicians. They are now in positions of authority. They ran on climate change action.

**Topol:** The Governor of Washington State is running for president on a platform addressing climate change.

**McCarthy:** I love this, because it gives everyone the sense that they have a responsibility to step up when the Federal Government hasn't. We're seeing mayors in hundreds of cities making big commitments. We're working with the Georgetown Climate Center to coordinate on a big new transportation initiative that involves 10 states.

They're going to start moving these issues forward from the grassroots level. The Obama Administration did as much as it could to send all the right signals domestically and internationally. I think it was vital to the Paris Agreement happening because it showed that the big emitters would step up. We're not out of Paris yet. We may not be out of Paris before the next presidential election.

**The idea that you can't have a good, clean environment and healthy people without some kind of damage to the economy is nonsense.**

We still have time. We're still working hard. We have to get up in the morning, not being dejected but recognizing that if we're not individually part of the solution, if we don't start acting in our own communities and our own homes, looking at solutions available to us, then we're part of the problem. We need to start pushing our own communities and professions to recognize and talk about climate change in a normal conversation, not a partisan fight—just a normal conversation about what the science tells us and what we should be doing to keep ourselves healthy. That's what I hope for every day and that's why I get up.

**Topol:** I love your resilience and what you are doing at the C-CHANGE Center at the Harvard School of Public Health. What can you do to help push the cause forward?

**McCarthy:** The full name is the Harvard Center for Climate Health and the Global Environment, and it is all about recognizing that the science at Harvard and elsewhere has taught us about climate-based threats to health. Harvard science has been among the strongest on air pollution, so it underpins all the work that EPA did that resulted in millions of lives saved while tripling the GDP [gross domestic product].

The idea that you can't have a good, clean environment and healthy people without some kind of damage to the economy is nonsense. I am here to go through the School of Public Health department by department, to find out what they are doing. What is the science telling us? What is the latest information? And we're using our communication skills to get that out to the public.

We have the ability to translate science—instead of being science talk—into what it means in terms of its relevance to our lives. What are the challenges related to climate change that relate to health? How can we make the world more equitable? We are investing in solutions that address climate change by looking at it through a public health lens. We're working with cities; we're working with states; we're working with individuals who care about these issues to try to identify and drive solutions.

I'm also working with the international community, because I believe it would be great if everyone thought about how to get moving to protect public health today and gain some momentum. Do that in the most vulnerable communities. Talk about how to do it in India, where you have 200 million people at threat of water insecurity. They don't necessarily know that they're going to have drinking water tomorrow.

Go there. Figure out how to fix these problems. Create the ability to have a broad landscape of solutions and opportunities that will protect us from the scarce resource constraints that climate change is going to impose on us.

It's fun here. It's alive. A lot of young people are here who care about these issues. If there's one way to stay young, it's to hang around in a school like this, where students are demanding change. But they're not just demanding it; they're *designing* it. They are telling us what we ought to do and are pushing it.

I'll use my ability to communicate, to know who the decision-makers are, and to build a constituency for action that will drive those decision-makers crazy if they don't start moving forward. It's not their lives I'm worried about; it's the lives of my kids and my grandchildren. I'm going to do everything I can to make sure they have a decent future.

**Topol:** I share the same concerns about our children and our grandchildren. If we don't get moving on this and take it more seriously, then we're really letting down our own families, our own next generation. Hopefully, with the efforts you've put forth and this great energy you've shown us today, we can continue to build on it.

I love the point you've made about how young people are on this, both working with you and around the world. Many countries are following an exemplary path. My hope is that we will get back on track.

Thank you so much for your efforts. We're closely following the work you're doing at Harvard. I am hoping that this conversation, along with more coverage at Medscape on climate change and its direct effects on all aspects of health, including mental health, will be met with a seriousness and emphasis that can't be mistaken. It has been great to connect with you. We'll certainly look forward to more with you in the future.

**McCarthy:** We will certainly look forward to continued conversations. We are planning to launch a big public campaign on climate and health. Your voice has always been a shining example, and Medscape can be a great opportunity for us to reach the healthcare community. We need everyone to be engaged. Giving me this opportunity has been priceless.

Follow Medscape on [Facebook](#), [Twitter](#), [Instagram](#), and [YouTube](#)

## References

1. World Health Organization. How air pollution is destroying our health. [Source](#)
2. GlobalChange.gov. Climate and health assessment: air quality impacts. [Source](#)
3. Landrigan PJ. Air pollution and health. *Lancet Public Health*. 2017;2:PE4-E5. [Source](#)
4. Swinburn BA, Kraack VI, Allender S, et al. The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission Report. *The Lancet*. January 27, 2019. [Source](#)
5. Mendenhall E, Singer M. The global syndemic of obesity, undernutrition, and climate change. *Lancet*. 2019;393:741. [Source](#)
6. Heller MC, Keoleian GA, Willett WC. Toward a life cycle-based, diet-level framework for food environmental impact and nutritional quality assessment: a critical review. *Environ Sci Technol*. 2013;47:12632-12647. [Source](#)
7. Oreskes N, Conway EM. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York, NY: Bloomsbury Press; 2010.

Medscape © 2019 WebMD, LLC

Any views expressed above are the author's own and do not necessarily reflect the views of WebMD or Medscape.

Cite this: Gina McCarthy Is Fired Up About Climate Change and the Public Health - *Medscape* - Mar 21, 2019.