

# Air Pollution, Environmental Health, and Equity

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**Isabelle Birt (IB):** Welcome to Ideas for Practice, a podcast of the Region V Public Health Training Center. As one of 10 public health training centers across the country, the RVPHTC seeks to strengthen the skills of the current and future public health workforce in order to improve population health outcomes. We hope this podcast will share insights and spark ideas among those working in public health practice. Thank you for tuning into our episode. Today we will be talking all about air pollution, environmental health and equity, I'm your host Isabelle Birt. In this episode on air pollution, environmental health and equity, we will be learning about air pollution, it's effect on health, and gaining insights into the ties with structural racism and health equity. Our guest today is Dr. Kathryn Savoie, Detroit Community Health Director at the Ecology Center. Today, Kathryn is here to talk with us about this complex topic. Welcome to the podcast. I'm excited to speak with you today.

**Kathryn Savoie (KS):** Thank you so much, I'm very happy to be here.

**IB:** So Kathryn, can you start just by telling us a little bit about yourself and about your work?

**KS:** Sure, I'm an ecologist by training. I did my PhD at the University of Michigan and for the past 30 years or so, I've been living and working in Detroit. And really in the area of environmental justice and climate justice, and that's where my work is in Detroit. My focus these days is really around air pollution and climate and energy and environmental justice. So what I do is I work with a whole lot of organizations across the city around air pollution, people who are fighting for Clean Air, supporting neighbors who are organizing against polluting facilities, supporting community struggles with providing low cost community-based air monitors to help them understand what's going on with their air pollution and working for policies that protect public health and improve air quality, so that's what my work is, fighting for environmental justice and side by side with people on the ground in the community but I'm also a Detroiter. I live in Southwest Detroit, which is one of the more polluted and industrialized areas of Detroit, and so this area is really important to me. I'm also the parent of a child, now, an adult who has asthma, and so these things are very personally important to me as well as professionally.

**IB:** Yeah, yeah, and that makes a difference too when it's close to home, I think. It really just brings these topics to life.

**KS:** Right. When you end up with your child in the ER with an asthma attack, you become very aware of these things that contribute to the air pollution and other factors that contribute to harming our health.

***[Air Pollution]***

**IB:** Exactly, exactly. So speaking of that, can you provide us with just a general overview of what air pollution is and what kind of impacts it has on our health?

**KS:** Sure, so air pollution, the most simple definition is just a substance that can be a gas or it can be particles or some combination thereof that's released into the air and is harmful to the health of human beings and other living things, but also it can be harmful to... Certain kinds of pollution can be harmful to the overall health of the planet by causing climate change, so there's a whole bunch of different kinds of pollution out there, and they come from different sources, industrial activities is one large source, transportation and Agriculture are other major sources, so the emissions from cars and trucks, trains and airplanes, boats, everything that's using fossil fuels and burning fossil fuels is contributing to air pollution, almost any kind of combustion or burning of fossil fuels, coal, oil and natural gas is contributing not only to air pollution that we breathe but in many cases, are contributing to climate change as well.

***[Health Inequities]***

**IB:** Yeah, yeah, definitely. So going off of that, are there inequities that exist in this exposure to air pollution? Are there communities or populations that face a greater burden of these health-related effects?

**KS:** Sure, so air pollution can cause a wide range of health effects, and the impacts of that on our health can vary greatly depending on what kind of pollution it is and where people live and what particularly they're exposed to. Worldwide, air pollution kills 9 million people per year so it kills more people that have been killed by the pandemic in the past two years, and it's true that many people are harmed by air pollution, but the impacts of that are not equal across all populations. So Detroiters, for example, suffer from air pollution and asthma as a result at higher rates than the rest of Michiganders, and that is disparity that has only increased in the last few years. The Michigan Department of Health and Human Services did a study in 2016 looking at asthma across the state and found that asthma rates were highest in Detroit and they updated that study recently in 2021 and found the Asthma rates in Detroit residents were 46% higher than those of all Michigan residents.

**KS:** So Detroiters are experiencing this at a much greater rate, and this also has an impact on children. For example, the current data show that a significant difference between asthma prevalence among children in Detroit compared to the rest of the state where Detroit was 14.6% of children and in the state with 8.4%, so there's this huge disparity that we see across populations and everybody is not equally exposed. There's a lot of different health effects, I mentioned asthma, but in Detroit, air pollution has also been linked to not just increased rates of asthma and asthma hospitalization but low birth rate and other poor birth outcomes such as stillbirth are related to air pollution, and cardiovascular disease, which we don't often think of, but we're learning, is a really important impact of air pollution. So air pollution can worsen, or exacerbate many chronic diseases such as respiratory disease but also things like just cardiovascular disease. So increase in hypertension is something that we see with increased exposure to air pollution. And also, there's new research that says diabetes and even dementia and other diseases can be related to air pollution.

**IB:** Yeah, so a lot more than just the respiratory issues we generally think about.

**KS:** There is new research in the last few years showing that there's just many... Especially particulate matter pollution can increase blood pressure, cause heart attacks and irregular heartbeat, cancer, and premature death. In Detroit, there's an estimated 721 premature deaths annually due to exposure to air pollution and most of those are attributable to exposure to particulate matter pollution.

**IB:** It's a pretty big issue.

**KS:** Yeah.

### ***[Historical Context of Inequities]***

**IB:** So you mentioned a little bit about health inequities in relation to air pollution exposure, and particularly in Detroit, so I'm curious, what's the historical context for these health inequities? And how has that translated to present day?

**KS:** So the historical context for these health inequities is really the history of racial discrimination that is manifest across so many aspects of life in the United States whether that's housing, transportation, health care, or other aspects of life, what we see is this historical inequities. And this goes back to... Can be traced to many factors but one of them is the history of redlining. And redlining is the discriminatory mortgage appraisal practices dating from the 1930s where in some neighborhoods, mostly Black and immigrant neighborhoods were deemed undesirable and were rated as risky sites for mortgage loans. So on the mortgage maps, they were displayed as red hence the name redlining. And redlining meant that these neighborhoods were subject to not being approved for mortgage loans. And redlining was not just about race though it very much was, environmental factors were also intertwined with this. So areas that had high levels of industrial facilities, less trees, more pollution, were more likely to be graded as undesirable or dangerous for mortgage investment. And then neighbors that were graded less desirable were then subject to additional polluting facilities being located there. So what you have is this structural racism and segregation that over time was sort of a self-fulfilling prophecy that perpetuated itself keeping Black and Immigrant communities that were considered less desirable neighborhoods becoming this self-fulfilling prophecy of those same neighborhoods being denied additional investment by mortgage lenders. And then becoming even less desirable with low rates of home ownership, lower housing value, and over time, increasing environmental exposures. And so what we see today, almost 80 years after redlining was started, is that redlining continues to shape the environmental reality and exposures in these neighborhoods that were historically redlined. So studies have shown recently that neighborhoods that were historically redlined were more likely to have experienced a range of environmental and health disparities, and that can include less tree cover, hotter temperatures, and these are important as climate change continues so these neighborhoods then are more directly impacted by higher temperatures and they're more exposed to air pollution. So this past historical practice has led to very much shaping the conditions and inequities that exist in cities across the US, like Detroit today. And so it's really important to think about these things as we try to come to solutions to address these inequities.

***[Structural Racism]***

**IB:** Yeah, it's interesting to see how histories as far as 80 years ago have just shaped how everything is today, more than just where people live but also what is developed around where people live, and what those communities look like. It's definitely important to keep that in mind. So considering this long history of structural racism and redlining, do you think it's possible to combat structural racism without addressing these health inequities related to air pollution?

**KS:** No, I don't think it's possible, because this is all part and parcel of the same system. If structural racism is underlying the racial inequities in health, we have to understand that this is all connected, that an 80-year-old practice of redlining and discrimination against certain communities is leading to patterns that we can see today in neighborhoods where those communities are then subject to a whole range of disparate impacts that impact their health and well-being. It's impossible to address the problem of air pollution and other environmental exposures if we don't understand these underlying structures that led to these patterns in the first place. And so yeah, I think it's really important that we address structural racism as a part and parcel of the impacts that people are exposed... Impacts that people are experiencing in communities today.

***[Role of Public Health Professionals]***

**IB:** Yeah, yeah, that makes a lot of sense. So what role do you think public health professionals have in combating air pollution and its associated health effects?

**KS:** Well, I think the public health professionals have a really important role in this, and especially if you work for the government. It's government policies that caused and led to red lining and the historical inequities that we see, and I think that government policies can be and must be an important part of changing so that we don't continue to perpetuate racial inequities in these things. But public health professionals have an important role to play in any case. They are trusted credible experts and their voice really matters, especially in policy issues, so I think it's important for people who care about these things and as public health professionals to first educate yourself about the impacts of air pollution on health in the communities that you serve, how is your community experiencing this issue? And I think it's important to recognize that with the context of the global Covid-19 pandemic, that air pollution is one of the factors that leads to disproportionate impacts of the pandemic. So communities like Detroit that are disproportionately bearing the burden of air pollution are going to be more heavily burdened by Covid-19. And so understanding how these structural issues are experienced by the communities that you're working in is an important task for public health professionals who want to make a difference and to help address these inequities in their community. Since the Black Lives Matter protests in 2020 and the Covid-19 pandemic, there's been raised the national profile of racial inequities in a new way within the health community, and many institutions and municipalities pass declarations of racism as a public health issue, as a public health crisis.

**KS:** The State of Michigan had such a declaration. The City of Detroit City Council passed such a resolution also. And so public health professionals can help with passing these kinds of resolutions to bring awareness in their communities, and that's a great first step but it's also just a step. The next step is what we can do to begin to dismantle the policies and structures that have maintained these racial disparities whether that's exposure to air pollution, Covid-19, or police brutality. Public health professionals can also help in building partnerships with and supporting of under-represented communities, tribal governments, and frontline organizations that are working to protect public health and advance clean air and clean energy in their communities especially in historically marginalized communities because we understand that these are the factors that put communities at risk. And health professionals can also be an advocate for change at the local, state, and federal level for policies and practices that help prevent air pollution. It's really important to remember that the deaths that we talk about, those 9 million deaths worldwide and 721 deaths per year in the City of Detroit, these are preventable deaths. And so health providers, health professionals, public health professionals have a really important role to play in changing the conditions that lead to these preventable deaths. Also, health professionals can work with affected communities. You can provide testimony at public hearings about policies, you can attend permit hearings when new polluting facilities are being permitted in a community, you can lend your voice to these policy changes because almost every major policy change has some kind of a public hearing or public testimony or public input process to accompany it. And even if you are not comfortable or able to do that as a professional representing your agency, you can always do that as a private individual who cares about public health. And the most important thing perhaps is just to remember as important in the public health arena, is health in all policies approach specifically around sources of air pollution, and that can be in energy, it can be in production of manufacturing, of industrial manufacturing, transportation, or buildings. All of these areas or arenas are ways or places in which we can make a difference in terms of policies that protect public health.

**IB:** Yeah, those are some great examples. I'm ready to get out there now. I wanna go represent the field and start showing up.

**KS:** We need everyone's voice in this.

### ***[Air Pollution Work in Public Health]***

**IB:** Yeah, we do. So you did mention examples like the calling out of racism as a public health crisis that states have done, but are there any other examples of work or projects in the public health space that are helping to advocate for healthy air specifically?

**KS:** Sure, I can mention a couple. There are so many but I think there's two that I would like to mention that I'm familiar with that are both here in Michigan, that I've been a part of. One is Community Action to Promote Healthy Environments, which is also known more succinctly as CAPHE, and CAPHE is a partnership that I'm part of that is affiliated with the University of Michigan and brings together University of Michigan School of Public Health researchers along with community residents, community-based organizations, and health service providers as equal partners, working together to improve Detroit's air. So CAPHE has worked for many years to create a public health action plan for improving air quality and health in Detroit. And that outlines what we can do as a community about air pollution in our community including specific steps, strategies and policies. And then we are working together to implement those steps to improve our air. The CAPHE website has a wealth of information for anyone who is interested in air pollution, that can be residents as well as health professionals. There are air pollution factsheets, there are policy briefs, and a public health action plan resource manual. So there's lots of great resources there for anybody who is interested in air pollution, learning more about air pollution and its impacts on health, but also how you can be an advocate and policies that we can promote together. Another organization I would mention is My Air My Health, and that's a coalition here in Michigan that gives health organizations a stronger voice when advocating for policies that improve outdoor air, reduce the harmful effects of climate change and improve the health of children and families across the state. My Air My Health partners with colleges and universities to train future public health professionals about policy and advocacy so that they can be stronger advocates for clean air. They also host monthly health policy calls for health professionals who care about clean air policies so that's a way that almost any health professional can get involved and engaged. Right now, a lot of their work is focusing on fighting for clean energy in Michigan and opportunities to promote cleaner transportation and building energy, so as we mentioned before, transportation and energy production and how we heat our buildings, these are all ways that air pollution is created, and so My Air My Health is really focusing on those arenas to help all of us breathe cleaner air in Michigan.

**IB:** Yeah, that's awesome. I definitely encourage listeners to check out both of those resources, they sound wonderful. So thank you Kathryn so much for speaking with us today. You have a wealth of knowledge in this area and we appreciate the work that you do in Detroit and elsewhere. So something that we've been doing in our podcast just to wrap up, is sharing something that is helping us get through the pandemic, something that provides comfort or inspiration.



**KS:** Well, thank you again for the opportunity to speak today. I really appreciate it. The thing that's really gotten me going through the pandemic is, one, I've just been early on got going for long walks around my neighborhood in Detroit and that has just been for me a real... Just a way to relax and [chuckle] to take a break and get outside the four walls of my work from home space and get to know my neighborhood in a new way, and so that's been a real pleasure and a new experience for me. And then the other things that I just... I really love gardening and I love knitting, and so those are things that help calm me and bring me joy and get me away from Zoom calls and pandemic stress. So those are some of the things that I do.

**IB:** That sounds wonderful. We all need a break from Zoom and being stuck in the house so that's... Yeah, I understand that. But thank you again so much for joining us today and sharing your experiences and providing some insight to our listeners. We hope you've learned some tips for advocating for healthy air and health equity today. We encourage you to check out some of the great resources in the podcast notes as well as an evaluation in the transcript. Funding for this podcast is provided by the Health Resources and Services Administration. With that, we'll end here for today. Stay safe. Stay curious, everyone.