Health Value Dashboard
A closer look at outdoor air pollution and health

February 16, 2023
VISION
Ohio is a model of health, well-being and economic vitality

MISSION
To advance evidence-informed policies that improve health, achieve equity, and lead to sustainable healthcare spending in Ohio.
<table>
<thead>
<tr>
<th>Core funders</th>
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<tbody>
<tr>
<td>hpio</td>
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<tr>
<td>Bethesda Inc.'s grants initiative to transform health</td>
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<td>Bruening</td>
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<td>CareSource</td>
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<td>Cleveland Foundation</td>
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<td>The Columbus Foundation</td>
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<td>George Gund Foundation</td>
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<td>HarmonyProject</td>
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<td>HealthPath</td>
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<td>Interact For Health</td>
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<td>Mercy</td>
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<td>Mt. Sinai Health Foundation</td>
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<td>The NORD Family Foundation</td>
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<td>North Canton Medical Foundation</td>
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<td>Ohio State Bar Foundation</td>
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<td>Sisters of Charity Foundation of Canton</td>
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<td>Sisters of Charity Foundation of Cleveland</td>
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THANK YOU to the organizations that have generously supported HPIO’s 2023 educational event series.
THANK YOU

This program was made possible through the generous support of the SC Ministry Foundation, which promotes the mission and ministry of the Sisters of Charity of Cincinnati.
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HEALTH VALUE DASHBOARD™

A closer look at outdoor air pollution and health

Clean air and water, safe places to walk outside and access to healthy food are examples of physical environment conditions that affect the health and well-being of Ohioans. This policy brief focuses on the importance of clean air and the many effects that air quality has on health throughout a person’s life. State and local leaders in Ohio can do more to improve air quality through policy change.

Outdoor air quality is included in the Health Policy Institute of Ohio’s (HPIO) Health Value Dashboard™. In the Dashboard, Ohio ranked 46th on this metric, meaning that most other states have cleaner outdoor air.

This policy brief provides additional information on the outdoor air quality metric in the Dashboard, including:
- Air pollution affects health outcomes
- Recent policy changes may affect air pollution
- Outdoor air quality can be improved in Ohio

How does outdoor air quality affect health?

Analysis of Dashboard data finds that the physical environment, which includes outdoor air quality, has a much stronger correlation with the overall health of a state than access to care or healthcare system performance. Figure 1 shows the strength of the relationship between domains in the Dashboard and population health, indicating that the physical environment (including outdoor air quality) is strongly connected to a state’s overall health, only surpassed by public health and prevention.

Figure 1. The effect of the physical environment on population health

Strength of relationship between state performance on 2021 Health Value Dashboard domains and population health

Key
- Strong (r > 0.7)
- Moderate (0.5 < r < 0.7)
- Weak (r < 0.5)

Source: HPIO 2021 Health Value Dashboard analysis

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Modifiable factors that impact health

Social, economic and physical environment
(Community conditions, such as economic stability, food insecurity, criminal justice, housing and transportation)

Clinical care
(Such as health care quality and access)

20%

Health behaviors
(Such as physical activity and tobacco use)

30%

50%

All Ohioans should have a fair opportunity to achieve optimal health

The effect of the physical environment on population health

Strength of relationship between state performance on 2021 Health Value Dashboard domains and population health

Key
Size of circle = Strength of correlation (r refers to correlation coefficient)

- **Strong** (r > 0.75)
- **Moderate** (r = 0.5-0.75)
- **Weak** (r < 0.5)

Source: Health Policy Institute of Ohio brief, “A closer look at outdoor air pollution and health.” Data from HPIO 2021 Health Value Dashboard analysis.

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Health value in Ohio

47

43 Population health  37 Healthcare spending
Outdoor air quality

Ohio's outdoor air quality rank
(2021 Health Value Dashboard)
Types of air pollution

→ Nitrous oxides
→ Sulfur dioxide
→ Carbon monoxide
→ Carbon dioxide
→ Ground-level ozone (smog)
→ Lead
→ Particulate matter
<table>
<thead>
<tr>
<th>Sources of air pollution</th>
<th></th>
</tr>
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<tbody>
<tr>
<td><strong>Mobile sources</strong></td>
<td>Cars, buses, planes, trucks</td>
</tr>
<tr>
<td><strong>Stationary source</strong></td>
<td>Power plants, industrial sites</td>
</tr>
<tr>
<td><strong>Area sources</strong></td>
<td>Agriculture, cities</td>
</tr>
<tr>
<td><strong>Natural sources</strong></td>
<td>Wildfires, dust</td>
</tr>
</tbody>
</table>
Improving outdoor air quality will lead to better maternal and infant health, less chronic disease and other improved outcomes from Ohioans.

Ohio has implemented policies that both advance and harm efforts to reduce pollution and improve air quality.

Policymakers have opportunities to improve air quality through policy changes in the transportation, energy and regional planning sectors.
Key finding #1
Improving air quality will lead to improved outcomes
Effects of outdoor air quality on health

- **Maternal and infant health**, such as decreased maternal lung function and inhibited fetal development
- **Lung conditions**, including increased rates of asthma and COPD and increased risk of COVID-19
- **Heart conditions**, such as increased rate of ischemic heart disease
- **Cancers**, including increased risk of lung, bronchial and other cancers
- **Cognitive conditions**, including increased risk of dementia
Outdoor air pollution in Ohio

Average exposure of the general public to PM2.5 pollution, measured in micrograms per cubic meter, 2009 to 2020

Source: Health Policy Institute of Ohio brief, “A closer look at outdoor air pollution and health.” Data from U.S. Environmental Protection Agency, United Health Foundation as compiled by America’s Health Ranking.
# Ohio’s performance on pollution metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Ohio’s rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outdoor air quality.</strong> Average exposure of the general public to particulate matter of 2.5 microns or less in size (PM2.5) (2017-2019)</td>
<td>46</td>
</tr>
<tr>
<td><strong>Toxic pollutants (Risk-Screening Environmental Indicators score).</strong> Composite score that accounts for the size of toxic chemical releases, the fate and transport of chemicals through the environment, the size and location of the exposed population and the chemical’s toxicity that is only meaningful in comparison to other RSEI scores (2018)</td>
<td>48</td>
</tr>
<tr>
<td><strong>Alternative commute modes.</strong> Percent of trips to work via bicycle, walking or mass transit (combined) (2019)</td>
<td>30</td>
</tr>
<tr>
<td><strong>Long commute, driving alone.</strong> Percent of commuters, among those who commute to work by car, truck, or van, alone, who drive longer than 30 minutes to work each day (2019)</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Health Policy Institute of Ohio brief, “A closer look at outdoor air pollution and health.” Data from 2021 Health Value Dashboard
Modifiable factors that impact health

Social, economic and physical environment
(Community conditions, such as economic stability, food insecurity, criminal justice, housing and transportation)

Health behaviors
(Such as physical activity and tobacco use)

Clinical care
(Such as health care quality and access)

Underlying drivers of inequity
Racism and other forms of discrimination (i.e., ableism, ageism, sexism, xenophobia, homophobia, etc.), trauma, exposure to violence, toxic stress, stigma

Air pollution exposure, by race or ethnicity

Index of exposure to air pollutants based on a national scale where 1 is lowest risk and 100 is highest risk compared to census tracts nationwide, in Ohio, 2019

<table>
<thead>
<tr>
<th>Race or Ethnicity</th>
<th>Risk Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>37</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>34</td>
</tr>
<tr>
<td>Latino</td>
<td>30</td>
</tr>
<tr>
<td>Native American</td>
<td>29</td>
</tr>
<tr>
<td>White</td>
<td>26</td>
</tr>
<tr>
<td>Ohio overall</td>
<td>28</td>
</tr>
</tbody>
</table>

Note: Exposure to air pollutants includes pollutants that increase risk of cancer
Source: Health Policy Institute of Ohio brief, “A closer look at outdoor air pollution and health.” Data from National Equity Atlas
Average daily density of PM2.5 by county, Ohio, 2018

Source: Health Policy Institute of Ohio brief, “A closer look at outdoor air pollution and health.” Data from Environmental Public Health Tracking Network, as compiled by County Health Rankings
Other Ohioans affected by air pollution

- Children
- Older Ohioans and Ohioans with pre-existing conditions
- Ohioans with low incomes
Key finding #2
Ohio has implemented policies that both advance and harm efforts to reduce pollution and improve air quality.
Example policy changes:

State government

**House Bill 6 (133rd)**
- Reduced Ohio’s renewable energy benchmark for power plants and electric service companies
- Reduced energy efficiency standards
- Subsidized two coal-fired power plants

**Senate Bill 52 (134th)**
Allows local governments to block the development of renewable energy plants
Example policy changes:

State government

Dept. of Transportation
Received $100M in federal funding to develop electric vehicle charging infrastructure over the next five years

Ohio Environmental Protection Agency
Receiving $75M from the Volkswagen settlement to fund projects that reduce nitrogen oxides emissions from diesel vehicles and equipment
Example policy changes:

**Local governments**

### Public transportation
Stark County Regional Transportation Authority added 10 hydrogen fuel cell-powered buses to its fleet and opened a hydrogen fuel facility in 2018

### Idle-free policies
The Mid-Ohio Regional Planning Commission has helped over 100 local governments, schools and businesses develop an idle-free policy.
Key finding #3
Policymakers have opportunities to improve air quality through policy changes
### Example policy options:

**State government**

<table>
<thead>
<tr>
<th>Policy option</th>
<th>Example</th>
</tr>
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<tbody>
<tr>
<td>Adjust the alternative energy portfolio to its original schedule and set long-term targets for renewable energy</td>
<td>Maine statute requires that 40% of Maine’s energy load be satisfied by renewable energy by 2030</td>
</tr>
</tbody>
</table>
Example policy options:

**Local government**

**Policy option**
Increase presence of and access to green spaces and parks; areas that have historically lacked access should be prioritized

**Example**
- The City of Westerville set a desired outcome in their Community Plan for each resident to be within a half mile of a public park or trail
- By 2018, 89% of households were within a half mile
<table>
<thead>
<tr>
<th>Policy option</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporate the “Complete Streets” concept in roadway and other transportation infrastructure projects at all project phases</td>
<td>Cincinnati passed an ordinance in Nov. 2022 adopting Complete Streets policy for all project phases of new and existing roadways within the city</td>
</tr>
</tbody>
</table>
Ways to influence policy

• Write letters, emails or make phone calls
• Provide district specific data
• Provide analysis of a bill
• Provide testimony at a legislative hearing
• Provide a one-page fact sheet
• Organize community partners to visit key policymakers
• Invite policymakers to visits your organization or speak at a meeting you host
QUESTIONS?
CONTACT INFORMATION

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