



# Health Policy Brief

## Closing Ohio's health gaps Moving towards equity

### Ohio has troubling health gaps

There is more than a 29 year gap in life expectancy at birth depending on where a person lives in Ohio. The lowest life expectancy is 60 years in the Franklinton neighborhood of Columbus (Franklin County) compared to 89.2 years in the Stow area (Summit County).<sup>1</sup> This troubling disparity is attributed to the fact that not all Ohioans have the same opportunity to live a healthy life based on geography, race and ethnicity, income, education or other social, economic or demographic factors.

As a result, many groups of Ohioans experience large gaps in health outcomes:

- Black infants are nearly three times as likely to die in the first year of life compared to white infants.<sup>2</sup>
- Ohioans with disabilities are four times as likely to experience depression than Ohioans without disabilities.<sup>3</sup>
- Ohioans with less than a high school education are 2.7 times more likely than Ohioans with some post-high school education to report fair or poor health.<sup>4</sup>

The underlying drivers of these gaps in outcomes are complex and rooted in many factors.

### What is health equity?

Health equity is a term widely used in health policy discussions regarding efforts to eliminate health gaps, but the term has many different definitions. To provide a foundation for advancing health equity in Ohio, HPIO convened an **Equity Advisory Group** to come to consensus on a definition of health equity. The group reviewed existing definitions of health equity<sup>5</sup> and, after a series of discussions, developed the following:

***“Everyone is able to achieve their full health potential. This requires addressing historical and contemporary injustices and removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments and health care.”***

## 3 key findings for policymakers

- **Many groups of Ohioans experience troubling gaps in health outcomes.** Not all Ohioans have the same opportunity to live a healthy life based on geography, race and ethnicity, income, education or other social, economic or demographic factors.
- **The choices we make are often shaped by the environments in which we live.** Because of this, many Ohioans face barriers to being healthy due to, for example, unequal access to high-quality education, a job that pays a self-sufficient income and adequate, stable housing.
- **There are evidence-based approaches to closing Ohio's health gaps.** Closing Ohio's health gaps requires a comprehensive approach that involves multi-sector, public- and private-sector stakeholder collaboration.

The definition highlights the *what* and the *how* of health equity:

- *What does health equity mean?* Everyone is able to achieve their full health potential.
- *How can we achieve health equity?* By addressing historical and contemporary injustices and removing obstacles to health such as poverty, discrimination, and their consequences.

In addition, the Advisory Group identified the following definition for the purposes of measuring Ohio's progress toward health equity:

***“Health equity means reducing and ultimately eliminating disparities in health and its determinants that adversely affect excluded or marginalized groups including but not limited to by demographic, social, economic or geographic factors.”***

## Key terms used in HPIO Equity Advisory Group consensus definitions

**Historical and contemporary injustices:** Examples include slavery, denial of voting and other rights, and discriminatory practices in housing, bank lending and criminal justice.<sup>6</sup>

**Powerlessness:** Feeling unable to change your situation or circumstances because you are not represented, are misrepresented or have no voice at the table.<sup>7</sup>

**Disparities:** Avoidable differences in health outcomes that exist across population groups and which are considered to be unjust or unfair.<sup>8</sup> These include gaps in outcomes across overall health status, the prevalence of chronic conditions and premature death.

**Social determinants of health (referred to in the definition as “determinants”):** These are the conditions and resources that strongly influence health such as access to care, income, wealth, education, housing, transportation, community conditions and social inclusion.<sup>9</sup>

**Excluded or marginalized groups:** Groups that are economically and/or socially disadvantaged as well as those who experience discrimination, such as but not limited to people of color, people living in low-income or under-resourced communities, religious minorities, people with a disability, LGBTQ persons and women.<sup>10</sup>

### Other relevant key terms

**Healthcare disparities:** Differences in the quality of health care provided, that are not due to access-related factors or clinical needs, preferences or the appropriateness of the intervention.<sup>11</sup>

**Inequities:** Differences in outcomes across the social determinants of health that are often a result of systematic, unjust, racist and discriminatory policies and practices.<sup>12</sup> This includes access to healthy foods, a job that pays a self-sufficient income, access to adequate, stable housing and quality education.

The terms health disparities and inequities are often used interchangeably. However, as described above, these are separate and distinct terms. Inequities are viewed as the underlying drivers of health disparities.

## Why does this matter?

Ohio has seen worsening health outcomes and an increase in healthcare spending relative to other states over the past few decades (see figure 1). Ohio ranks 46<sup>th</sup> out of 50 states and D.C. on health value, based on the Health Policy Institute of Ohio's (HPIO) **2017 Health Value Dashboard**. This means that Ohioans live less healthy lives and spend more on health care than people in most other states.

To improve health value in Ohio, we must improve the health of all Ohioans. This means closing Ohio's troubling health gaps and ensuring that every Ohioan has the same opportunity for a healthy life.

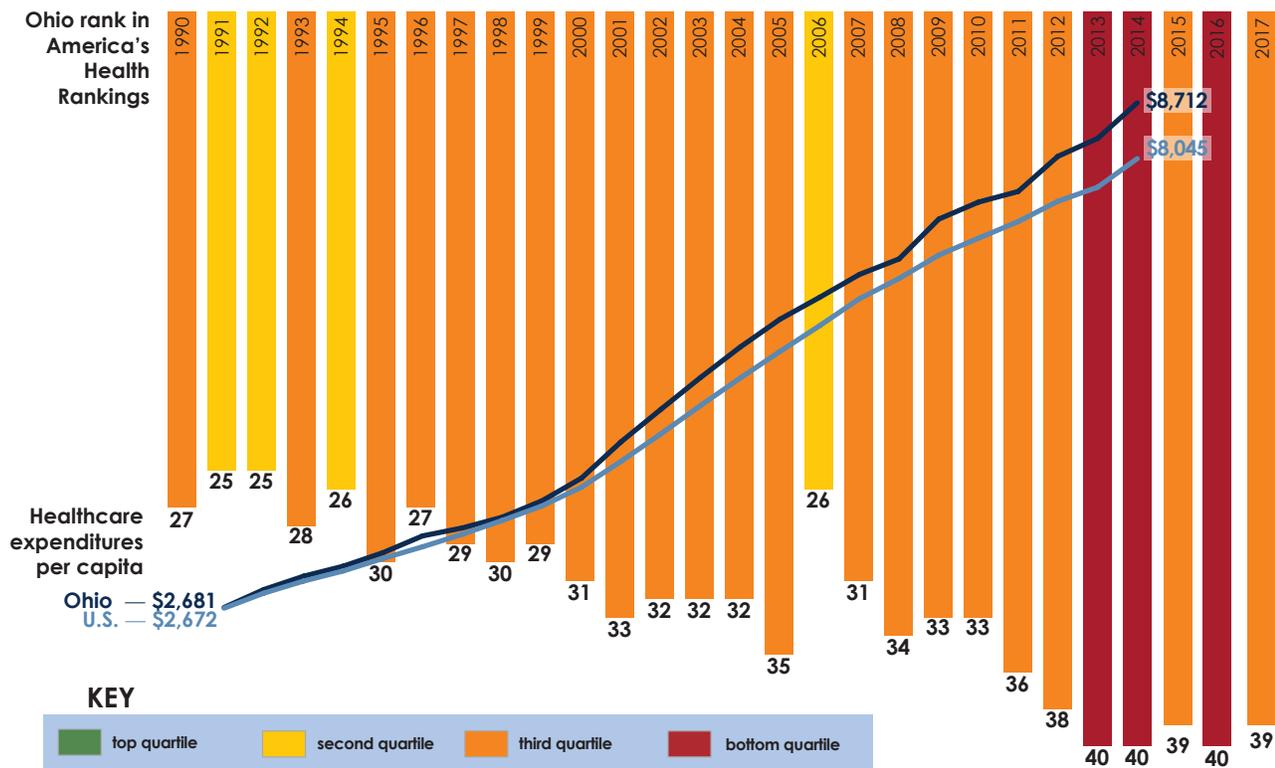
## Why do we have health gaps in Ohio?

It is widely recognized that health equity can only be achieved by addressing the underlying drivers of poor health outcomes. Research estimates that our health is shaped by several modifiable factors (see figure 2). Only 20 percent of a person's health is attributed to clinical care. The rest is attributed to health behaviors (30 percent) and non-clinical factors within our social, economic and physical environment (50 percent). These determinants of health have all been well documented in terms of impact on both health and wellbeing, as well as health disparities and inequities.<sup>13</sup>

Making healthy choices (i.e. health behaviors) is critical for good health (see figure 2). However, these choices are often shaped by the environments in which a person lives. Because of this, many Ohioans face barriers to being healthy. For example:

- **Unequal access to education and employment.** Black children in Ohio are more likely to attend high-poverty, under-resourced schools with lower graduation rates.<sup>14</sup> Lower educational attainment leads to limited job choice and often to lower paying jobs that offer fewer employee benefits, such as health insurance coverage, and greater exposure to stressors that increase health risks.<sup>15</sup>

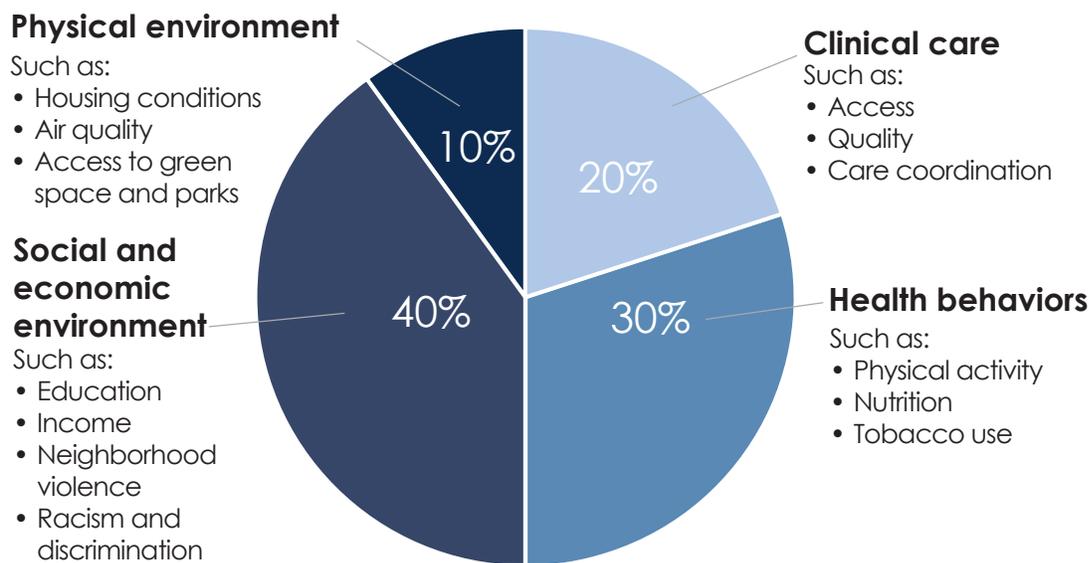
Figure 1. Ohio's overall performance over time on health and healthcare spending (all ages)



Source for health ranking: UnitedHealth Foundation, America's Health Rankings

Source for healthcare spending: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group, compiled by the Kaiser Family Foundation

Figure 2. Modifiable factors that influence health



Source: Booske, Bridget C. et. al. County Health Rankings Working Paper: Different Perspectives for Assigning Weights to Determinants of Health. University of Wisconsin Public Health Institute, 2010.

- **Poor neighborhood safety.** Low-income Ohioans often cannot afford to live in high-income neighborhoods. They are more likely to live in neighborhoods that report high rates of crime and violence<sup>16</sup> and have difficulty finding safe places to exercise and play.
- **Lack of public transportation.** A family without a car, in rural Ohio or in a city without adequate public transportation, may have a difficult time getting to the grocery store to purchase more nutritious foods. Poor nutrition is a risk factor for a number of health conditions including diabetes, heart disease and preterm birth.<sup>17</sup>

Many Ohioans also face the enduring consequences of both historical and contemporary obstacles to health, including:

- **Residential redlining.** Practice developed and implemented by the Federal Housing Administration and banks that limited access to mortgages and other investment in areas with high percentages of non-white households.<sup>18</sup> The effects of redlining include residential segregation and concentrating black families in low-income areas with low-quality housing.<sup>19</sup> Redlining's legacy continues to impact home values, inequitable access to mortgages and other lending services and neighborhood disinvestment in areas targeted by lenders.
- **Predatory lending.** Predatory lenders often disproportionately offer loans with high interest rates and fees in low-income neighborhoods and communities of color.<sup>20</sup> This practice contributes to persistent gaps in wealth accumulation between high- and low-income households and between white households and households of color.<sup>21</sup> Predatory lending also reduces home ownership in these communities – which also contributes to the wealth gap.<sup>22</sup>
- **Funding schools with local property tax revenues.** Public school systems in Ohio are largely funded by property taxes, levies and other locally-assessed taxes and fees.<sup>23</sup> This is one factor that contributes to lower-performing schools in areas with lower incomes and property values.<sup>24</sup> Lower-performing schools contribute to low educational attainment among marginalized groups<sup>25</sup> impacting both life expectancy<sup>26</sup> as well as lifetime earnings.<sup>27</sup>

While some racist policies and practices, such as slavery, Jim Crow and redlining, were eliminated years ago, the long-term impact of these policies persists. Because of the resulting differences in community conditions, as well as the existence of continued discriminatory policies and practices, all

Ohioans do not have the same opportunities for upward social and economic mobility or for making good health choices.

## What are some of Ohio's greatest health gaps?

Data show that many Ohioans experiencing poor health outcomes struggle when it comes to outcomes on the various determinants of health. Figures 3 through 6 illustrate some of Ohio's most notable health disparities and inequities, by geography, race and ethnicity, education level and disability status.

### Gaps in outcomes by geography

There is a gap of more than 29 years in life expectancy at birth in Ohio depending on where a person lives, ranging from a low of 60 years in the Franklinton neighborhood of Columbus (Franklin County) to a high of 89.2 years in the Stow area (Summit County) (see figure 3). The census tracts with the lowest life expectancy in Ohio share similar characteristics:

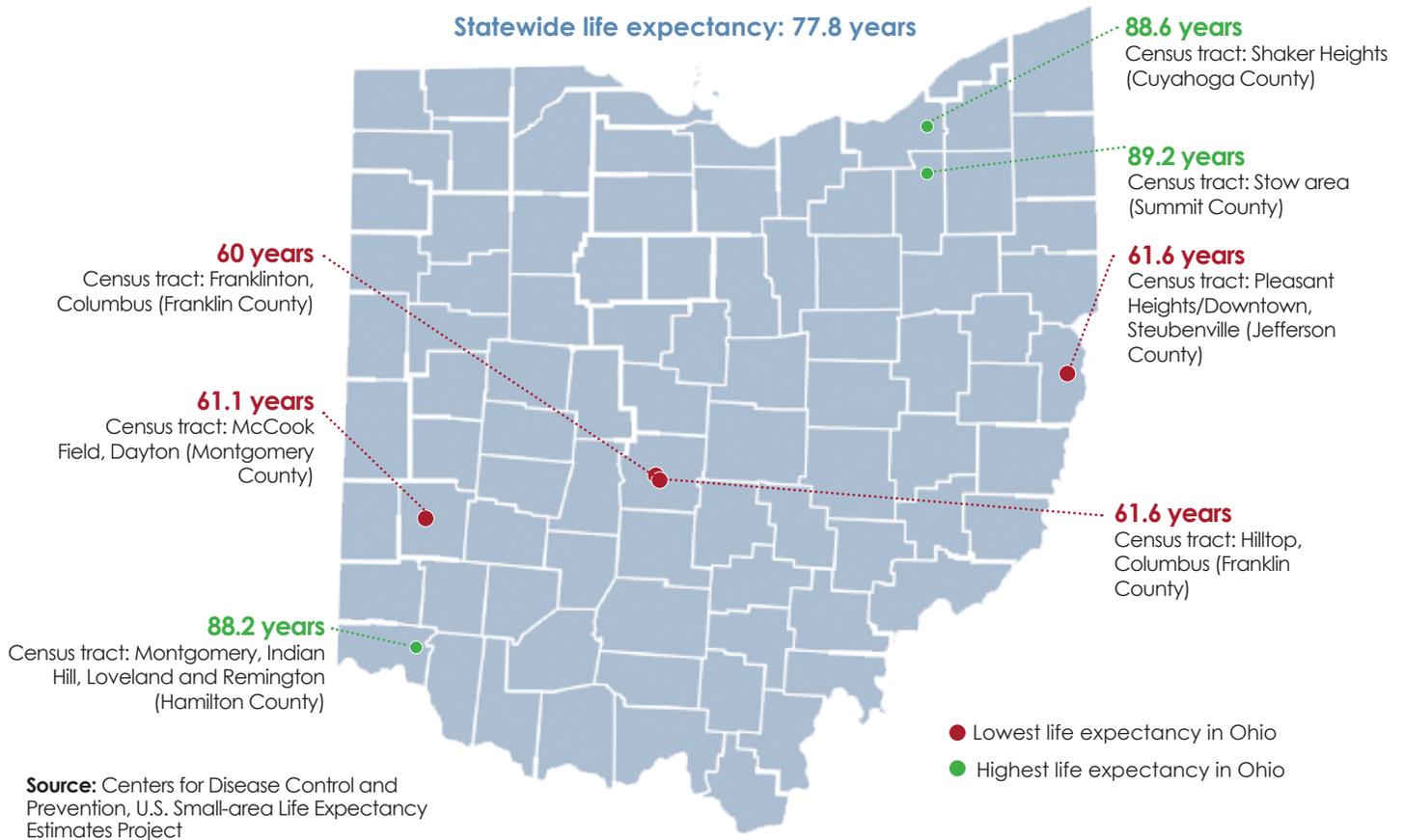
- Household income (\$9,917 – \$24,091) is less than half of the state median household income (\$50,674)
- Percent of people with disabilities (20 percent – 32.1 percent) is more than 1.4 times the state rate (13.8 percent)
- Percent of people who did not graduate from high school (19 percent – 41.9 percent) is between almost two times to nearly four times the state rate (10.5 percent)
- Percent of black Ohioans (15.3 percent – 53.1 percent) is more than the state rate (13.8 percent)<sup>28</sup>

Conversely, the three census tracts with the highest life expectancy rates in Ohio have:

- Higher household income (\$53,333 – \$118,246)
- Lower percent of people with disabilities (6.8 percent – 11.2 percent)
- Lower percent of people who did not graduate from high school (1.5 – 5.6 percent)
- Lower percent of black Ohioans (3.8 percent), with the exception of Shaker Heights (21.4 percent)<sup>29</sup>

The pattern in demographic and socio-economic characteristics described above highlights that black Ohioans, Ohioans with a disability and those with low incomes and low educational attainment are among the most negatively impacted communities in regard to life expectancy.

Figure 3. Top three and bottom three census tracts in Ohio for life expectancy at birth, 2010-2015



**Demographic information for Ohio census tracts with the longest life expectancy at birth, 2010-2015**

Neighborhood (county)	Life expectancy	Percent black	Percent with a disability	Percent with less than high school education (age 25 and over)	Median household income
Stow area (Summit County)	89.2	3.8%	11.2%	5.6%	\$53,333
Shaker Heights (Cuyahoga County)	88.6	21.4%	7%	1.5%	\$106,653
Montgomery, Indian Hill, Loveland and Remington (Hamilton County)	88.2	3.8%	6.8%	1.6%	\$118,246

**Demographic information for Ohio census tracts with the shortest life expectancy at birth, 2010-2015**

Neighborhood (county)	Life expectancy	Percent black	Percent with a disability	Percent with less than high school education (age 25 and over)	Median household income
Franklinton, Columbus (Franklin County)	60	43.9%	24%	41.9%	\$9,917
McCook Field, Dayton (Montgomery County)	61.1	15.3%	22.9%	36.6%	\$24,091
Hilltop, Columbus (Franklin County)	61.6	21.1%	20%	28.5%	\$20,294
Downtown/Pleasant Hill, Steubenville (Jefferson County)	61.6	53.1%	32.1%	19%	\$17,035

**Statewide demographic information, 2010-2015**



Life expectancy	Percent black	Percent with a disability	Percent with less than high school education (age 25 and over)	Median household income
77.8	13.8%	13.8%	10.5%	\$50,674

**Source:** Life expectancy by census tract from Centers for Disease Control and Prevention, U.S. Small-area Life Expectancy Estimates Project. Other information from the U.S. Census Bureau, 2012-2016 American Community Survey 5-year estimates.

## Gaps in outcomes by race and ethnicity

Infant mortality is widely viewed as a “tip of the iceberg” issue because it serves as an indicator of the overall health and wellbeing of a state and reveals the cumulative impact of inequities driven by poverty, discrimination and racism. In Ohio, the gap in outcomes for infant mortality by race and ethnicity is sobering. Black infants are nearly three times as likely to die (15.2 infant deaths per 1,000 live births) before their first birthday compared to white infants in Ohio (5.8 infant deaths per 1,000 live births).<sup>30</sup> Hispanic infants in Ohio are also more likely to die before their first birthday compared to white infants.<sup>31</sup> In addition to this:

- Black children in Ohio are more than 2.8 times as likely and Hispanic children are more than two times as likely to live in poverty than white children.<sup>32</sup>
- More than three-quarters of black children and nearly three-quarters of Hispanic children in Ohio are unable to read proficiently in fourth grade. There is a 29 percentage point difference

in fourth grade reading proficiency between black and white children in Ohio.<sup>33</sup>

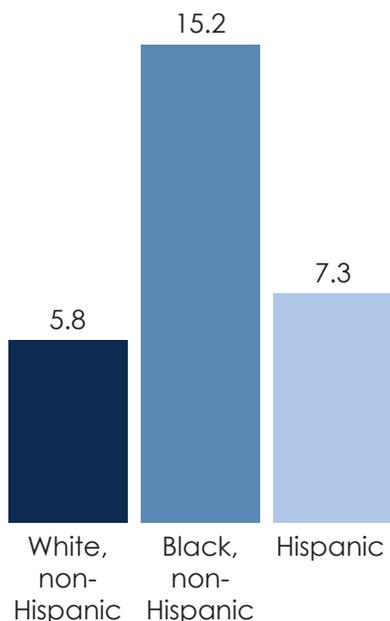
## Gaps in outcomes by educational attainment

Ohioans with less than a high school education are more likely to experience poor outcomes compared to Ohioans with higher educational attainment (see figure 5). For example, Ohioans with less than a high school education are:

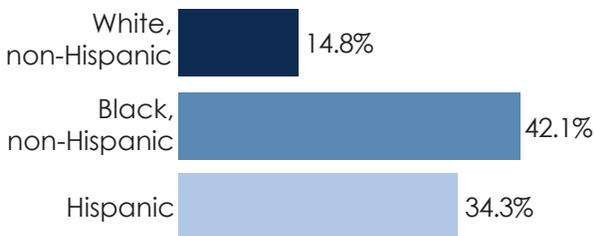
- 1.9 times more likely than Ohioans who graduated high school or earned a G.E.D and 2.7 times more likely than Ohioans with some post-high school education to report fair or poor health status<sup>34</sup>
- 1.7 times more likely to be diagnosed with diabetes as compared to Ohioans with some post-high school education<sup>35</sup>
- 2.1 times more likely than Ohioans who graduated high school or earned a G.E.D and 2.9 times more likely than Ohioans with some post-high school education to be unemployed<sup>36</sup>

Figure 4. Gaps in outcomes by race and ethnicity, Ohio

Infant mortality rate per 1,000 live births in Ohio, 2016<sup>1</sup>



Percent of Ohio children living in poverty (below 100% of FPL), 2017<sup>2</sup>



Percent of Ohio fourth graders who are not proficient in reading by a national assessment, 2017<sup>3</sup>



### Sources

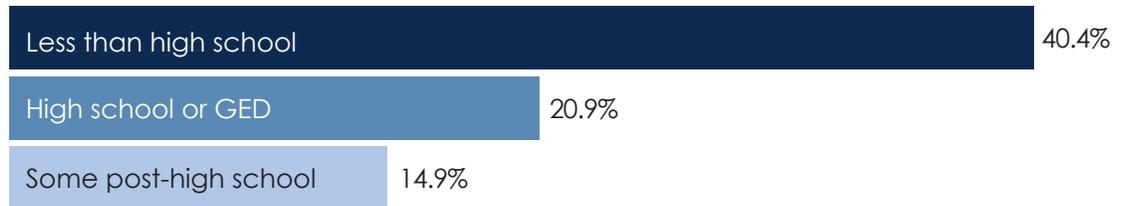
<sup>1</sup> Ohio Department of Health (ODH), Vital Statistics. 2016 Ohio Infant Mortality Data: General Findings

<sup>2</sup> U.S. Census Bureau, 2017 American Community Survey 1-year estimates. Additional analysis by HPIO. Data is for white alone, black alone and Hispanic/Latino.

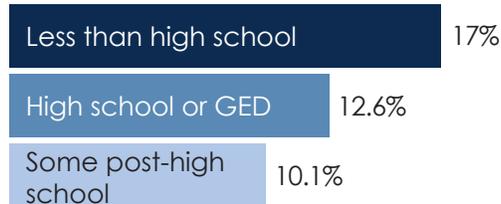
<sup>3</sup> National Center for Education Statistics, National Assessment of Educational Progress.

Figure 5. **Gaps in outcomes by educational attainment, Ohio**

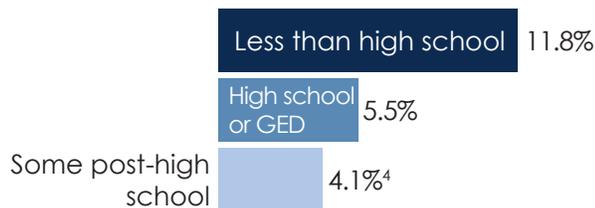
**Percent of adult Ohioans reporting fair or poor health, 2016<sup>1</sup>**



**Percent of adult Ohioans who have been told by a health professional that they have diabetes, 2016<sup>2</sup>**



**Percent of adult Ohioans who were unemployed, 2017<sup>3</sup>**



**Sources**

<sup>1,2</sup> Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System

<sup>3</sup> U.S. Census Bureau, 2017 American Community Survey 1-year estimates

<sup>4</sup> Includes individuals with some college or an associate degree

**Gaps in outcomes by disability status**

There are wide gaps in outcomes between Ohioans with a disability and without a disability (see figure 6). Adult Ohioans with a disability are:

- Almost six times more likely to report fair or poor

health status as compared to adult Ohioans without a disability<sup>37</sup>

- Four times more likely to receive a diagnosis of depression as compared to adult Ohioans without a disability<sup>38</sup>
- 2.5 times less likely to graduate college<sup>39</sup>

Figure 6. **Gaps in outcomes by disability status, Ohio**

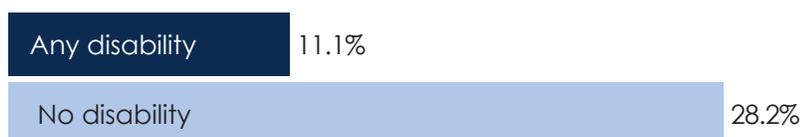
**Percent of adult Ohioans reporting fair or poor health, 2016**



**Percent of adult Ohioans who have ever been told they have depression, 2016**



**Percent of adult Ohioans who are college graduates, 2016**



**Source:** Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System

## Data challenges

It is important to acknowledge that while data paints an important picture of Ohio's greatest health gaps, not all gaps are captured and not all Ohioans impacted by disparities and inequities are reflected in existing, publicly-available data. The magnitude of health disparities and inequities are also often not fully captured in existing data. For example, Ohioans who are members of more than one group facing poor health outcomes, such as Ohioans of color with a disability, often experience more amplified gaps in outcomes.<sup>40</sup>

Acquiring disaggregated data to describe health disparities and inequities is a challenge. Data is not consistently collected or available for all population groups. As a result, there may be more information on certain population groups compared to others. For example, Vital Statistics from the Centers for Disease Control and Prevention provides birth and death certificate data, which collect information on educational attainment but not on income level.

Even when data is collected, sample sizes are often small and estimates are suppressed or unreliable. This is particularly an issue for survey data and disaggregation of data at the local level.

Aggregated data can mask health disparities, particularly for subpopulations. Asian Americans, for example, tend to perform well on many health indicators. However, data on southeast Asians and immigrant or refugee populations from Asia, such as Bhutanese-Nepali refugees, suggest that these subpopulations experience much poorer health outcomes.<sup>41</sup>

HPIO's [equity resource](#) page provides a repository of existing sources of data disaggregated by race and ethnicity, income, education, disability status, geography and other demographic characteristics.

## How can we close Ohio's health gaps?

Closing Ohio's health gaps requires a comprehensive approach that involves multi-sector, public- and private-sector stakeholder collaboration. According to the Prevention Institute, a comprehensive approach to achieve health equity should:

- **Interrupt and reverse the production of health inequities** through policy and practice change
- **Ameliorate the impacts of health inequities** through community-level change, supported by public and private stakeholders, and through regional, state and federal action
- **Accelerate and sustain the closing of health gaps**
- **Establish metrics to track and measure progress** in eliminating health disparities and inequities
- **Change cultural and societal norms and values to produce equitable opportunities** for health and wellbeing<sup>42</sup>

Figure 7 provides a framework for action to achieve health equity at the community level, adapted from the County Health Rankings and Roadmaps Action Cycle. The framework identifies five steps to move a community forward in achieving health equity through a greater emphasis on reducing and eliminating health disparities and inequities.

### Step 1. Assess needs and resources: Collect data to identify health disparities and inequities

- Collect qualitative and quantitative data to assess the health needs of the community, with a focus

on identifying groups experiencing the worst health outcomes (such as by race and ethnicity, age, gender, income level, disability status, sexual orientation, immigration status, zip code, etc.)

- Engage a wide range of community members, with specific outreach to groups experiencing the worst health outcomes
- Identify conditions within the cultural, social, economic and physical environment that are contributing to a group's health outcomes
- Identify gaps in state and local-level data in the reporting of outcomes for groups or subgroups that are not represented and advocate for improved data collection

### Step 2. Focus on what's important: Identify the largest gaps and most negatively impacted communities

- Prioritize health issues where there are large gaps in outcomes across groups within the community
- Prioritize health issues where there is evidence for what works to address the underlying conditions within the cultural, social, economic and physical environment that are contributing to a group's health outcomes
- Prioritize populations or geographic areas that have the worst health outcomes
- Set specific and measurable objectives for priority populations and set targets that are aggressive enough to reduce or eliminate existing disparities and inequities

Figure 7. **Achieving health equity: Framework for action**



Source: HPIO adaptation of County Health Rankings and Roadmaps Action Cycle

**Step 3. Choose effective policies and programs: Focus on policies and programs that reduce and eliminate health disparities and inequities**

- Identify evidence-based strategies that can improve the health outcomes facing priority populations
- Identify evidence-based strategies that can address the conditions within the cultural, social, economic and physical environment that are contributing to a group's poor health outcomes
- Ensure that "homegrown" strategies or strategies for which evidence of effectiveness is not yet established, are designed to address the needs of groups experiencing gaps in health outcomes and the underlying drivers of these outcomes

- Ensure that implementation of selected strategies are designed to reach groups with the highest need and groups experiencing the greatest gaps in outcomes
- Ensure that programs and services are delivered by culturally-competent providers and are culturally-adapted and tailored to reach and meet the needs of priority populations

**Step 5. Evaluate actions: Measure progress toward health equity**

- Evaluate the impact of implemented strategies on health disparities and inequities
- Use evaluation findings to improve reach and effectiveness of strategies
- Publicly report findings to build greater evidence for what works to achieve health equity

**Step 4. Act on what's important: Ensure implemented strategies are effectively reaching priority populations**

## What evidence-based strategies can be implemented to achieve health equity?

The evidence base on what works to achieve health equity is emerging. Two primary resources to find evidence-based strategies are:

- **What Works for Health (WWFH)** Assesses a policy or program's likely effect on various groups (i.e. racial/ethnic, socioeconomic, geographic or another characteristic) in reducing health disparities based on the best available research evidence. Strategies in WWFH are rated as: likely to decrease disparities; no impact on disparities likely; or likely to increase disparities.
- **The Guide to Community Preventive Services (Community Guide or CG)** Assesses a policy or program based on findings from systematic reviews of effectiveness and economic evidence issued by the Community Preventive Services Task Force (CPSTF). The CPSTF identifies a set of equity strategies in the Community Guide as: recommended (evidence is strong and sufficient that intervention is beneficial to reducing disparities); recommended against (evidence is strong or sufficient that intervention is harmful or ineffective in reducing disparities); and insufficient evidence.

It is important to note that these resources highlight strategies as they have been evaluated in the research literature. Other strategies can also be effective at reducing health disparities and inequities if implemented in communities where there are gaps in outcomes and the intervention is culturally adapted, tailored and made accessible to meet the needs of priority populations.

Figure 8 provides examples of evidence-based strategies and partners to achieve health equity in Ohio. HPIO's [equity resource](#) page provides a more comprehensive list of statewide and community-based organizations working in Ohio to eliminate health disparities and achieve equity.

## Conclusion

Many groups of Ohioans experience troubling gaps in health outcomes. These gaps are driven by barriers Ohioans face to being healthy, such as unequal access to high quality education and employment, safe and stable housing, and adequate transportation. However, improvement is possible. There are evidence-based approaches that can be implemented to close these gaps and many Ohio entities are committed to achieving equity. Public and private stakeholders and state policymakers have a critical opportunity to work together on a more comprehensive approach to evaluate, improve and scale up effective strategies across the state.

Figure 8. Examples of evidence-based strategies and partners to achieve health equity in Ohio

Health determinant area	Strategy	Expected beneficial outcomes	Potential state and local level partners	Ohio examples*
Housing	<b>Housing rehabilitation loan and grant programs</b> – Provide funding to repair, improve, modernize, or make accessible homes and remove health or safety hazards such as lead, asbestos or mold. These programs primarily serve families with low to median incomes and households with young children, people with disabilities or aging family members. Programs can be focused at local, state or federal levels.	<b>WWFH</b> • Improved health outcomes • Improved mental health	<ul style="list-style-type: none"> <li>• Ohio Development Services Agency</li> <li>• Community action agencies</li> <li>• Continuums of care</li> <li>• Ohio Housing and Homelessness Collaborative</li> <li>• Community development organizations</li> <li>• Healthcare providers</li> <li>• Local health departments</li> <li>• Employers</li> <li>• Ohio Statewide Independent Living Council</li> </ul>	<p>Nationwide Children's Hospital <i>Healthy Neighborhoods Healthy Families</i> is a multi-sector initiative in Columbus, Ohio focused on improving the health of children and families experiencing high rates of poverty, housing instability and crime in three zip codes.<sup>43</sup> One of the initiative goals is to increase access to affordable housing by eliminating vacant, blighted properties and increasing home ownership.<sup>44</sup></p> <p>In partnership with a nonprofit housing organization and Community Development for All People, the initiative has impacted more than 330 homes since 2008 through complete renovations, new builds with energy efficient and green features and grants to homeowners to make exterior home improvements.<sup>45</sup></p> <p>Southern Orchards, one of the focus neighborhoods, has seen a drastic decrease in vacancy rates, a decline in homicides and an increase in the high school graduation rate from 64 percent in 2013 to 79 percent in 2017.<sup>46</sup></p>

**Note:** Programs listed in this table are identified as equity strategies in Community Guide or are scientifically supported in WWFH and indicated as likely to decrease disparities.

\*This is not an exhaustive list of programs implemented in Ohio.

Figure 8. Examples of evidence-based strategies and partners to achieve health equity in Ohio (cont.)

Health determinant area	Strategy	Expected beneficial outcomes	Potential state and local level partners	Ohio examples*
<b>Built environment</b>	<b>Green spaces and parks</b> – Communities can increase access to green space and parks by creating new parks or open spaces, making parks and green space accessible and inclusive, renovating or enhancing underused recreation areas or rehabilitating vacant lots, abandoned infrastructure or brownfields.	<b>WWFH</b> Increased physical activity	<ul style="list-style-type: none"> <li>Local municipalities (e.g. park and recreation departments, planning commissions)</li> <li>Schools</li> <li>Businesses</li> <li>Metropolitan planning organizations</li> <li>Ohio Developmental Disabilities Council</li> </ul>	<p>The Eastside Greenway project in Cuyahoga County was initiated by the Cuyahoga Planning Commission to connect the east side of Cleveland with 20 Cleveland municipalities through a unified trail network connecting neighborhoods to employment centers, transit and existing green spaces.<sup>47</sup> The project aims to provide safe alternative means of transportation, increase recreation options and improve quality of life for community members.<sup>48</sup> A project focus is to ensure beneficial impact on communities' most vulnerable populations.<sup>49</sup></p> <p>The Great Parks of Hamilton County is leading a Comprehensive Master Plan to preserve and protect natural resources and provide outdoor recreation and education to community members across 17,000 acres of green space. The Plan is divided into seven phases through 2018 and includes a focus on community engagement and diversity to ensure that steps taken meet community needs.<sup>50</sup></p>
<b>Transportation</b>	<b>Public transportation systems</b> – Introduce, expand and make more accessible public transportation systems including buses, trains, trams, trolleybuses, ferries, or rapid transit (e.g., light rail transit, bus rapid transit, or metro services) that are available for use by the general public and run on a scheduled timetable.	<b>WWFH</b> <ul style="list-style-type: none"> <li>Increased access to public transit</li> <li>Increased use of public transit</li> </ul>	<ul style="list-style-type: none"> <li>Fixed route bus systems</li> <li>Transit agencies</li> <li>Ohio Department of Transportation</li> <li>Metropolitan planning organizations</li> <li>Local municipalities</li> <li>Ohio Developmental Disabilities Council</li> </ul>	<p>Smart Columbus is a region-wide Smart City initiative led by the City of Columbus and the Columbus Partnership with funding primarily from the U.S. Department of Transportation.<sup>51</sup> The initiative includes development of a system to provide reliable two-way transportation to expectant mothers using Medicaid-brokered transportation services.<sup>52</sup> A pilot study of the project is planned with targeted enrollment of 500 expectant mothers, including higher enrollment of non-Hispanic black women.<sup>53</sup></p> <p>In addition to standard non-emergency medical transportation trips, participants in the "smart" transportation services group of the study can access freestanding pharmacy and food bank/grocery store trips.<sup>54</sup> The study will evaluate impact on preterm birth and infant mortality rates among participants, which are considerably higher for black infants in Columbus.<sup>55</sup></p>
<b>Nutrition</b>	<b>Fruit and vegetable incentive programs</b> – Provides low-income participants with matching funds to purchase healthy foods, especially fruits and vegetables. Programs often match funds to Supplemental Nutrition Assistance Program (SNAP) benefit spending amounts.	<b>WWFH</b> <ul style="list-style-type: none"> <li>Increased access to healthy food</li> <li>Increased healthy food purchases</li> <li>Increased fruit and vegetable consumption</li> </ul>	<ul style="list-style-type: none"> <li>Foodbanks</li> <li>Local farmers/ farmers markets</li> <li>Employers</li> <li>Convenience stores</li> </ul>	<p>Produce Perks Midwest is a statewide nutrition incentive program that provides 1 to 1 matching dollars for low-income Ohioans using SNAP/Electronic Benefit Transfer to purchase fruits and vegetables. In 2017, the program served 5,000 SNAP households at 83 locations in Ohio. In 2018, the program was awarded a \$2.3 million grant from the federal Food Insecurity Nutrition Incentive program to expand SNAP participant purchase of fruits and vegetables in Ohio.<sup>56</sup></p>

**Note:** Programs listed in this table are identified as equity strategies in Community Guide or are scientifically supported in WWFH and indicated as likely to decrease disparities.

\*This is not an exhaustive list of programs implemented in Ohio.

Figure 8. **Examples of evidence-based strategies and partners to achieve health equity in Ohio** (cont.)

Health determinant area	Strategy	Expected beneficial outcomes	Potential state and local level partners	Ohio examples*
<b>Education</b>	<b>Health career recruitment for minority students</b> – Programs include academic support and professional experiences for high school, college or post-baccalaureate students, and may also offer financial support.	<b>WWFH</b> Increased academic achievement	<ul style="list-style-type: none"> <li>• High schools</li> <li>• Colleges and universities</li> <li>• Healthcare providers</li> <li>• Ohio Department of Education</li> <li>• Ohio Department of Higher Education</li> </ul>	The Northeast Ohio Medical University's <i>Education for Service</i> opportunities provides funding to students who are committed to providing care in underserved communities and contributing to a more diverse workforce in Ohio. <sup>57</sup> The program recruits students from disadvantaged backgrounds. <sup>58</sup>
<b>Employment</b>	<b>Employment programs, such as post-secondary career-technical education (also known as vocational training for adults and transitional jobs)</b> – Vocational training supports the acquisition of job-specific skills through education or on-the-job training. Transitional jobs are time-limited, subsidized, paid jobs intended to provide a bridge to unsubsidized employment.	<b>WWFH</b> <ul style="list-style-type: none"> <li>• Increased earnings</li> <li>• Increased employment</li> </ul>	<ul style="list-style-type: none"> <li>• High schools</li> <li>• Colleges and universities</li> <li>• Employers</li> <li>• Ohio Department of Job and Family Services</li> <li>• County job and family service agencies</li> <li>• Ohio Department of Higher Education</li> <li>• Ohio Department of Developmental Disabilities</li> </ul>	The ApprenticeshipOhio program, administered by the Ohio Department of Job and Family Services, provides career pathway opportunities. Participants receive both training and pay as part of the program, which includes over 900 registered apprenticeships in a variety of fields including construction, energy and health care. <sup>59</sup> Programs include a minimum of 2000 on-the-job training hours as well as 144 classroom instruction hours. <sup>60</sup> On average, apprentices completing their program earn \$60,000 per year upon graduation. <sup>61</sup>
<b>Income</b>	<b>Earned income tax credits (EITC)</b> – An income tax credit that is administered at the federal, state and/or local level to reduce the tax burden for low to moderate income working people.	<b>WWFH</b> <ul style="list-style-type: none"> <li>• Increased employment</li> <li>• Increased income</li> </ul>	<ul style="list-style-type: none"> <li>• Local EITC coalitions</li> <li>• Ohio Benefit Bank</li> <li>• Tax preparers</li> <li>• State and local-level policymakers</li> </ul>	The Cuyahoga EITC Coalition, part of the Internal Revenue Service Income Tax Assistance program, helps low-income families in Cuyahoga County receive all of the EITC due to them free of filing fees. The Coalition has served over 121,000 low to moderate income families since 2005, resulting in refunds totaling more than \$20 million. <sup>62</sup>

**Note:** Programs listed in this table are identified as equity strategies in Community Guide or are scientifically supported in WWFH and indicated as likely to decrease disparities.

\*This is not an exhaustive list of programs implemented in Ohio.

Figure 8. Examples of evidence-based strategies and partners to achieve health equity in Ohio (cont.)

Health determinant area	Strategy	Expected beneficial outcomes	Potential state and local level partners	Ohio examples*
Health care	<p><b>School-based health care (SBHC) including school-based and school-linked health centers</b> – Provide healthcare services either within the school or in an off-site, school-linked arrangement. Primary care, behavioral health, dentistry, vision, social services and health education may also be provided.</p>	<p><b>CG</b></p> <ul style="list-style-type: none"> <li>• Improved school performance</li> <li>• Increased grade promotion</li> <li>• Increased high school completion</li> <li>• Increased delivery of vaccinations and other recommended preventive services</li> <li>• Decreased asthma morbidity</li> <li>• Decreased emergency department and hospital admissions</li> <li>• Increased contraceptive use among sexually active females</li> <li>• Increased prenatal care and birth weight</li> <li>• Decreased health risk behaviors</li> </ul> <p><b>WWFH</b></p> <ul style="list-style-type: none"> <li>• Increased access to care</li> <li>• Improved health outcomes</li> <li>• Increased academic achievement</li> </ul>	<ul style="list-style-type: none"> <li>• Schools, boards of education</li> <li>• Healthcare providers, such as federally qualified health centers, hospitals, primary care, dental care and behavioral health providers</li> <li>• Local health departments</li> <li>• Ohio Department of Medicaid</li> <li>• Ohio Department of Education</li> <li>• State and local social service agencies</li> <li>• Students, families and caregivers</li> </ul>	<p>Cincinnati Children's operates an SBHC at South Avondale Elementary School, one of the poorest neighborhoods in Cincinnati, Hamilton County. Nearly 100 percent of students at the school are economically disadvantaged (99.8 percent) and 95.8 percent identify as black, non-Hispanic.<sup>63</sup> The SBHC provides primary pediatric care for children. Since implementation of the SBHC in 2013, the elementary school has seen a 7.5 percent improvement on overall standardized test scores.<sup>64</sup></p> <p>Alexander Local Schools in rural Athens County provides primary care and mental health services in a clinic adjoining the school to students and community members. This school-based health care model has resulted in:</p> <ul style="list-style-type: none"> <li>• Decreased disciplinary referrals</li> <li>• Reduced student absenteeism</li> <li>• Reduced number of students in a restrictive classroom</li> <li>• Increased graduation rates.<sup>65</sup></li> </ul>

**Note:** Programs listed in this table are identified as equity strategies in Community Guide or are scientifically supported in WWFH and indicated as likely to decrease disparities.

\*This is not an exhaustive list of programs implemented in Ohio.

## Closing gaps in health and health determinants: National examples

The following project profiles highlight communities across the U.S. that have implemented multi-sector initiatives to close gaps in outcomes across health and the social determinants of health.

### ***Boston Children's Hospital Community Asthma Initiative (Boston, Mass.)***

**Objective:** In 2005, Boston Children's Hospital launched the Community Asthma Initiative (CAI) to address racial and ethnic disparities in pediatric asthma outcomes.

**Problem:** Rates of asthma-related hospitalizations among children younger than five were almost five times higher for non-Hispanic black children (14.2 per 1,000 children) and Hispanic children (14.1 per 1,000), compared to non-Hispanic white children (2.9 per 1,000) in 2004. Seventy percent of asthma-related hospitalizations were for children living in five high-poverty neighborhoods with primarily black and Hispanic populations.<sup>66</sup>

**Intervention:** Nurses and Spanish-speaking community health workers provided home visits and community-based case management services to families. Examples of specific services offered included:

- Individualized asthma education
- Home environment assessments and remediation
- Connections to primary care and asthma specialists
- Correspondence with landlords and the public housing authority on housing code violations
- Referrals to legal services, food pantries, smoking cessation resources and benefits assistance

Children enrolled in the CAI were primarily black (45 percent) or Hispanic (47 percent), and 65 percent lived in families with incomes below \$25,000.<sup>67</sup>

**Results:** CAI participants saw a significant decrease (79 percent) in asthma-related hospitalizations and a decrease (56 percent) in emergency department visits. Participants also had fewer missed school days (42 percent) and parent work days (46 percent).<sup>68</sup>

### ***B'more for Healthy Babies (Baltimore, Md.)***

**Objective:** B'more for Healthy Babies (BHB) is a multi-agency citywide initiative that includes services, policies and community outreach programs for Baltimore families to ensure quality access to maternal and infant health services and supports.<sup>69</sup>

**Problem:** In 2011, Baltimore City's infant mortality rate was 1.6 times greater than Maryland's rate. In addition, black infants were about five times more likely to die than white infants.<sup>70</sup>

**Intervention:** The comprehensive, multi-agency approach includes:

- Home visiting for women postpartum
- Safe sleep campaigns
- Prenatal health literacy program
- Teen pregnancy prevention program
- Family planning assistance
- Early Head Start
- Program to prevent substance-exposed pregnancies

**Results:** From 2009-2017, BHB has resulted in a 35 percent decrease in infant mortality, 64 percent decrease in the black-white disparity in infant mortality, 49 percent decrease in teen births, 75 percent decrease in the black-white disparity in teen births and 71 percent decrease in sleep-related infant deaths.<sup>71</sup>

### **Minneapolis Blueprint for Action to Prevent Youth Violence (Minneapolis, Minn.)**

**Objective:** The Minneapolis Blueprint for Action to Prevent Youth Violence is a community-driven, comprehensive response to reduce violence in high-poverty areas in the city.

**Problem:** Homicide was the leading cause of death among young people in Minneapolis ages 15 to 24, accounting for 39 percent of deaths in this age group between 2002 and 2011.<sup>72</sup> Neighborhoods with high rates of poverty in Minneapolis were experiencing disproportionate amounts of youth violence.<sup>73</sup>

**Intervention:** The Blueprint for Action is a comprehensive, multidisciplinary approach to reducing youth violence that involves law enforcement, public health, youth programs, education, social services, city and county government and various other partners. Aspects of the Blueprint include:

- Youth case management program
- Middle school-based gang prevention and healthy youth development curriculum
- Employment programs
- Community college scholarships
- Improved healthcare services for victims of violence
- Efforts to make the physical environment conducive to safe and peaceful activities, such as through the creation of pop-up parks and a neighborhood Clean Sweep program
- Free bus passes for students to alleviate transportation barriers

**Results:** From 2007 to 2015, focus neighborhoods saw the number of youth gunshot victims in Minneapolis decrease by 62 percent, the number of youth victims of crime decrease by 34 percent and the number of youth arrests with a gun decrease by 76 percent.<sup>74</sup>

### **Health Equity Zones (Rhode Island)**

**Objective:** In 2015, the Rhode Island Department of Health (RIDOH) developed its Health Equity Zone (HEZ) initiative to address the root causes of health disparities in economically-disadvantaged, geographically-defined areas with documented health risks.<sup>75</sup>

**Problem:** Residents in lower-income communities were more vulnerable to social and environmental impacts on health. For example, these communities had higher rates of crime, limited access to healthy foods and opportunities for physical activity, fewer employment options and poor housing and education.<sup>76</sup> These circumstances contributed to higher rates of disease and poorer overall health in these communities.

**Intervention:** RIDOH is providing four years of seed funding to 11 HEZs. Each HEZ must conduct a community-led needs assessment and then implement a plan of action to address the unique social, economic and environmental factors that are impacting residents' health.<sup>77</sup> Programs implemented by HEZs included:

- Partnering with the city planning department to develop a Complete and Green Streets ordinance<sup>78</sup>
- Sponsoring an elementary school Walking School Bus program so students can get to school safely
- Hiring a behavioral health clinician within the local police department to divert patients with substance use issues to treatment instead of into the criminal justice system<sup>79</sup>

**Results:** HEZs have resulted in positive outcomes such as increased school attendance rates, successful remediation of blighted properties and improved access to parks and recreational opportunities.<sup>80</sup>

The HEZ initiative has increased community collaboration and elevated the focus on health equity, geographic disparities and the social determinants of health in Rhode Island.<sup>81</sup> Given the short time horizon since implementation of the this initiative, long-term impact on health outcomes has yet to be determined.

# Notes

1. Data from the 2010-2015 National Vital Statistics System. "U.S. Small-area Life Expectancy Estimates Project – USALEEP." Centers for Disease Control and Prevention. Accessed Sept. 21, 2018. <https://www.cdc.gov/nchs/nvss/usaleep.html>
2. 2016 Ohio Infant Mortality Data: General Findings. Columbus, OH: Ohio Department of Health, Vital Statistics, 2016.
3. Data from the 2016 Disability and Health Data System (DHDS). "Disability and Health Data System (DHDS) Mental & Emotional Health." Centers for Disease Control and Prevention. Accessed Sept. 21, 2018. <https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/index.html>
4. Data from the Behavioral Risk Factor Surveillance System. "BRFSS Prevalence & Trends Data." Centers for Disease Control and Prevention. Accessed Sept. 21, 2018. <https://www.cdc.gov/brfss/index.html>
5. See meeting material packet listed under Meeting One and Meeting Two for definitions reviewed on the HPIO Equity Advisory Group page: <https://www.healthpolicyohio.org/hpio-equity-advisory-group/>
6. Braveman, Paula, et al. *What is Health Equity? And What Difference Does a Definition Make?* Princeton, NJ: Robert Wood Johnson Foundation, 2017.
7. Based on HPIO Equity Advisory Group discussions.
8. Whitehead, Margaret. "The Concepts and Principles of Equity and Health." *Health Promotion International* 6, no. 3 (1991): 217–228.
9. Braveman, Paula, et al. *What is Health Equity? And What Difference Does a Definition Make?* Princeton, NJ: Robert Wood Johnson Foundation, 2017.
10. Ibid.
11. Rice, Thomas. "The Impact of Cost Containment Efforts on Racial and Ethnic Disparities in Healthcare: A Conceptualization." In *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. 699–721. Washington, D.C.: The National Academies Press, 2003.
12. Brennan Ramirez, Laura, Elizabeth Baker, and Marilyn Metzler. *Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health*. Atlanta, GA: U.S. Department of Health and Human Services Centers for Disease Control and Prevention, 2008.
13. Davis, Rachel et al. *Countering the Production of Health Inequities: A Framework of Emerging Systems to Achieve an Equitable Culture of Health, Extended Summary*. Oakland, CA: Prevention Institute, 2016.
14. Data from the National Equity Atlas Indicators. "School poverty, Ohio." National Equity Atlas. Accessed Sept. 21, 2018. [http://nationalequityatlas.org/indicators/School\\_poverty/Trend:35536/Ohio/false/School\\_type:All\\_public\\_schools/](http://nationalequityatlas.org/indicators/School_poverty/Trend:35536/Ohio/false/School_type:All_public_schools/) See also data from the National Center for Education Statistics. "Public high school 4-year adjusted graduation rate (ACGR), by selected student characteristics and state: 2010-11 through 2015-16." Accessed Sept. 21, 2018. [https://nces.ed.gov/ipeds/data/ipedsdatatools/datafiles/ipeds/tables/d117\\_219.46.asp](https://nces.ed.gov/ipeds/data/ipedsdatatools/datafiles/ipeds/tables/d117_219.46.asp)
15. Health Policy Institute of Ohio. "What Works to Increase Self-Sufficient Employment." September 2018.
16. Wong Croal, Naima, et al. *Advancing Health Opportunity and Equity Across the United States: A State-By-State Comparison*. Washington, DC: National Collaborative for Health Equity, 2018.
17. Hombeck, Carrie, et al. *The Impact of Chronic Disease in Ohio: 2015*. Columbus, OH: Ohio Department of Health, 2015. See also *The Role of Nutrition in Infant Mortality: A Public Health Perspective*. Johnstown, PA: Association of State Public Health Nutritionists, 2013.
18. Davis, Rachel, et al. *Countering the Production of Health Inequities: A Framework of Emerging Systems to Achieve an Equitable Culture of Health, Extended Summary*. Oakland, CA: Prevention Institute, 2016.
19. Ibid.
20. *What is Predatory Lending?* Columbus, OH: Department of Commerce.
21. Traub, Amy, et al. *The Asset Value of Whiteness: Understanding the Racial Wealth Gap*. Demos and the Institute of Assets and Social Policy, 2017.
22. Davis, Rachel, et al. *Countering the Production of Health Inequities: A Framework of Emerging Systems to Achieve an Equitable Culture of Health, Extended Summary*. Oakland, CA: Prevention Institute, 2016.
23. Ibid.
24. Ibid.
25. Ibid.
26. Health Policy Institute of Ohio. "Connections between Education and Health." January 2017.
27. Health Policy Institute of Ohio. "What Works to Increase Self-Sufficient Employment." September 2018.
28. Data sources listed in figure 3.
29. Ibid.
30. 2016 Ohio Infant Mortality Data: General Findings. Columbus, OH: Ohio Department of Health, 2016.
31. Ibid.
32. Data from the United States Census Bureau, additional analysis by HPIO. "2017 American Community Survey 1-year estimates." Accessed Sept. 21, 2018. <http://www.census.gov/programs-surveys/acs>
33. Data from National Assessment of Educational Progress. "Explore Assessment Data." National Center for Education Statistics. Accessed September 21, 2018. <https://nces.ed.gov/nationsreportcard/data/>
34. Data from the Behavioral Risk Factor Surveillance System. "BRFSS Prevalence and Trends Data." Centers for Disease Control and Prevention. Accessed Sept. 21, 2018. <https://www.cdc.gov/brfss/index.html>
35. Ibid.
36. Data from the American Community Survey. "American Community Survey (ACS)." United States Census Bureau. Accessed Sept. 21, 2018. <https://www.census.gov/programs-surveys/acs/>
37. Data from the Behavioral Risk Factor Surveillance System. "BRFSS Prevalence and Trends Data." Centers for Disease Control and Prevention. Accessed Sept. 21, 2018. <https://www.cdc.gov/brfss/index.html>
38. Ibid.
39. Ibid.
40. Blick, Rachel, et al. *The Double Burden: Health Disparities among People of Color Living with Disabilities*. Columbus, OH: The Ohio State University Nisonger Center, 2015.
41. Health Policy Institute of Ohio on behalf of the Ohio Department of Health. *Ohio 2016 State Health Assessment*, 2016.
42. Davis, Rachel, et al. *Countering the Production of Health Inequities: A Framework of Emerging Systems to Achieve an Equitable Culture of Health, Extended Summary*. Oakland, CA: Prevention Institute, 2016.
43. "Healthy Neighborhoods Healthy Families." Nationwide Children's Hospital. Accessed Sept. 19, 2018. <https://www.nationwidechildrens.org/about-us/population-health-and-wellness/healthy-neighborhoods-healthy-families>
44. "Affordable Housing." Nationwide Children's Hospital. Accessed Oct. 5, 2018. <https://www.nationwidechildrens.org/about-us/population-health-and-wellness/healthy-neighborhoods-healthy-families/affordable-housing>
45. Ibid.
46. Kelleher, Kelly, Jason Reece and Megan Sandel. "The Healthy Neighborhood. Healthy Families Initiative." *Pediatrics* 142, No. 3 (2018). Doi: 10.1542/peds.2018-0261
47. *Eastside Greenway Plan: A Strategic Vision to Connect Eastern Cuyahoga County*. Cleveland: Cuyahoga County Planning Commission, Landscape Art Neighborhoods Development Studio, NOACA, SmithGroupJJR, and Parsons Brinckerhoff, 2015.
48. "Eastside Greenway." Cuyahoga County Planning Commission. Accessed Oct. 5, 2018. <http://www.countyplanning.us/projects/eastside-greenway/>
49. *Eastside Greenway Plan: A Strategic Vision to Connect Eastern Cuyahoga County*. Cleveland: Cuyahoga County Planning Commission, Landscape Art Neighborhoods Development Studio, NOACA, SmithGroupJJR, and Parsons Brinckerhoff, 2015.
50. "Great Parks of Hamilton County Comprehensive Master Plan." Accessed Oct. 5, 2018. <https://mygreatparks.com/>
51. "Smart Columbus: Our Path to the Future." The City of Columbus. Accessed Oct. 5, 2018. <https://smart.columbus.gov/projects/>
52. Ibid.
53. "Admissions." Northeast Ohio Medical University. Accessed Oct. 5, 2018. <http://www.neomed.edu/admissions/scholarships-financial-aid/scholarships-grants/education-for-service/#1492717182470-9a09aed6-f242>
54. Ibid.
55. "ApprenticeOhio." Ohio Department of Jobs and Family Services. Accessed Oct. 5, 2018. <http://apprentice.ohio.gov/index.slm>
56. *School-based health care support toolkit: Case studies on school-based health care efforts in Ohio*. Columbus, OH: Governor's Office of Health Transformation, 2015.
57. Ibid.
58. Ibid.
59. "The Cuyahoga Earned Income Tax Credit." Cuyahoga EITC Coalition. Accessed Oct. 5, 2018. <https://www.refundohio.org/>
60. Sprute, Kelly. "USDA Invests \$21 Million to Encourage Low-Income Families to Buy Healthy Food Options." *United States Department of Agriculture*
61. "Ohio School Report Cards: South Avondale Elementary School." Ohio Department of Education. Accessed Oct. 5, 2018. <https://reportcard.education.ohio.gov/school/detail/033134>
62. "About Cincinnati Children's School-Based Health Center: Where Two Missions Converge." Cincinnati Children's Hospital Medical Center. Accessed Oct. 5, 2018. <https://www.cincinnatichildrens.org/about/community/community-benefit/school-based-health-center>
63. Woods, Elizabeth R., et al. "Community Asthma Initiative to Improve Health Outcomes and Reduce Disparities among Children with Asthma." *Morbidity and Mortality Weekly Report* 65, no. 1 (2016):11-20.
64. Ibid.
65. Ibid.
66. Davis, Rachel, et al. *Countering the Production of Health Inequities: A Framework of Emerging Systems to Achieve an Equitable Culture of Health, Extended Summary*. Oakland, CA: Prevention Institute, 2016.
67. *Profile of Maternal and Infant Characteristics: Baltimore City 2006-2011*. Baltimore, MD: Baltimore City Health Department, 2011.
68. "B'more for Healthy Babies: About BHB." Accessed Oct. 8, 2018. <http://www.healthyybabiesballimore.com/about-bhb>
69. National Academies of Sciences, Engineering, and Medicine. *Communities in Action: Pathways to Health Equity*. Washington, DC: The National Academies Press, 2017: 215-228
70. Ibid.
71. Data from City of Minneapolis in 2016, as reported by National Academies of Sciences, Engineering, and Medicine. *Communities in Action: Pathways to Health Equity*. Washington, DC: The National Academies Press, 2017: 215-228.
72. Patriarca, Mia and Christopher Ausura. "Introducing Rhode Island's Health Equity Zones." *Rhode Island Medical Journal* 99, no. 11 (2016): 47-48.
73. Ibid.
74. *Health Equity Zones: Building healthy and resilient communities across Rhode Island*. Providence, RI: Rhode Island Department of Health, 2018.
75. "Central Falls signs New England's First Green and Complete Streets Ordinance." *LISC Rhode Island*, January 17, 2018. Accessed Sept. 12, 2018. <http://lisc.org/central-falls-signs-new-englands-first-green-and-complete-streets-ordinance/>
76. *Health Equity Zones: Building healthy and resilient communities across Rhode Island*. Providence, RI: Rhode Island Department of Health, 2018.
77. Ibid.
78. "Rhode Island braids funding to create Health Equity Zones." HealthEquityGuide.org. Accessed Sept. 18, 2018. <https://healthequityguide.org/case-studies/rhode-island-braids-funding-to-create-health-equity-zones/>

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