hpio health policy institute of ohio ™

Health **Policy** Brief

Adverse Childhood Experiences (ACEs)

Health impact of ACEs in Ohio

Overview

There are many organizations working to improve child well-being in Ohio at the state and local levels. Across these entities, the impact of adverse childhood experiences (ACEs) has surfaced as a common challenge that must be addressed.

Exposure to ACEs is a pervasive problem affecting many children in Ohio and across the country. National data and analysis provide clear evidence that ACEs exposure is linked to poor health and well-being through adulthood, including disrupted neurodevelopment, social problems, disease, disability and premature death.[1] In addition, ACEs exposure has severe long-term cost implications at the individual and societal levels, including increased medical, child welfare, criminal justice and special education expenditures, as well as productivity losses.[2]

This brief:

- Summarizes current research on how ACEs impact health and well-being
- Provides new data and analysis on the prevalence of ACEs in Ohio and the impact of ACEs on the health of Ohioans

More specifically, this brief expands on what we know from national research by exploring these questions:

- To what extent could Ohio's health outcomes be improved by preventing ACEs?
- Which ACEs have the most significant impact on the health of Ohioans?

3 key findings for policymakers

- **Exposure to ACEs is a pervasive problem.** Nearly two-thirds of Ohioans have been exposed to ACEs. Ohioans of color and Ohioans with low incomes, disabilities and/or who are residents of urban and Appalachian counties are more likely to experience multiple ACEs.
- **Preventing ACEs can improve health.** For example, if exposure to ACEs were eliminated in Ohio, an estimated 36% of depression diagnoses could be prevented.
- **Focusing action on specific ACEs may yield more significant health impacts.** Data analysis suggests that preventing and mitigating the impacts of emotional and sexual abuse and living in a household with someone who has a substance use disorder, mental health problem or who is incarcerated are likely to have the largest effects on the health of Ohioans.

Ohio ACEs Impact project

Led by the Health Policy Institute of Ohio, this project will include a series of three policy briefs and a resource page to build on and amplify current efforts to address ACEs.

This brief focuses on the health impact of ACEs on Ohioans. The remaining two briefs will provide information on:

- The economic impact of ACEs in Ohio
- Evidence-informed and cost-effective strategies to prevent, screen and treat for ACEs exposure

Preventing and mitigating the impact of ACEs are critical components of any plan to advance the health and well-being of Ohioans. Ohio Governor Mike DeWine and other policymakers have already taken significant strides to improve the health and well-being of Ohio's children, including the creation of the Governor's Office of Children's Initiatives and improvements to the state's child welfare and home visiting systems. In addition, the **2020-2022 State Health Improvement Plan** (SHIP) includes reduction of ACEs as a priority.

Policymakers and other stakeholders can use the Ohio-specific data and analyses provided in this brief to inform future approaches to reduce ACEs exposure in Ohio.

What are ACEs?

Adverse Childhood Experiences (ACEs) are "potentially traumatic events" that occur during childhood (ages 0-17).[3] There is variation among researchers in what is considered an ACE. However, ACEs can generally be grouped into three categories: abuse, household challenges and neglect.

Figure 1 lists the various ACEs included in each of these categories as defined by the Behavioral Risk Factor Surveillance System (BRFSS), a tool used to collect state data on health-related measures. BRFSS categories have been modified and adapted from the original ACEs study conducted by the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente in 1995-1997. The study was conducted at Kaiser Permanente and surveyed over 17,000 Health Maintenance Organization members from Southern California. The CDC-Kaiser ACE study serves as a foundation for how ACEs are talked about and understood today.[4]

Racism and other forms of discrimination as an ACE

In recent months, the link between racism and health has come to the forefront of public discussions. The research is clear that racism is a primary driver of the disparities and inequities experienced by communities of color.[5] There is also a growing body of research connecting racism and other forms of discrimination to ACEs, trauma and toxic stress. The impact of trauma and toxic stress on a child's development is discussed in more detail on page 3.

The National Survey of Children's Health (NSCH) includes parent reporting of their child's unfair treatment due to race/ethnicity as an ACE. However, most ACEs surveys do not measure racism. Including racism as an ACE can support efforts to dismantle racism and ensure that all children in Ohio reach their full health potential. Similarly, researchers, state and local policymakers and other partners can take steps to include other "isms" and forms of discrimination (such as ableism, sexism, xenophobia, homophobia, etc.) as ACEs.

Integrating an indicator of exposure to racism or other forms of discrimination into ACEs surveys, such as the Behavioral Risk Factor Surveillance System, American Community Survey and/or Ohio Medicaid Assessment Survey, would provide additional data and tools to advance equity and eliminate health disparities.[6]

For more information on how racism impacts health and action steps to eliminate racism, see HPIO's brief, **Connections between Racism and Health: Taking action to eliminate racism and advance equity**.

Figure 1. **What are included as Adverse Childhood Experiences?**

Abuse	Household challenges	Neglect
• Emotional abuse • Physical abuse • Sexual abuse	• Intimate partner violence • Substance use in the household • Mental illness in the household • Parental separation or divorce • Incarcerated member of the household	• Emotional neglect • Physical neglect

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

There are other forms of childhood trauma that are that are not captured in BRFSS as ACEs. For example, fear of deportation, family separation, racism and discrimination experienced by children of color, immigrants, refugees, migrant workers and native populations. In Ohio, more research is needed to fully understand the prevalence and impact of childhood trauma within these communities.

How do ACEs impact health and well-being?

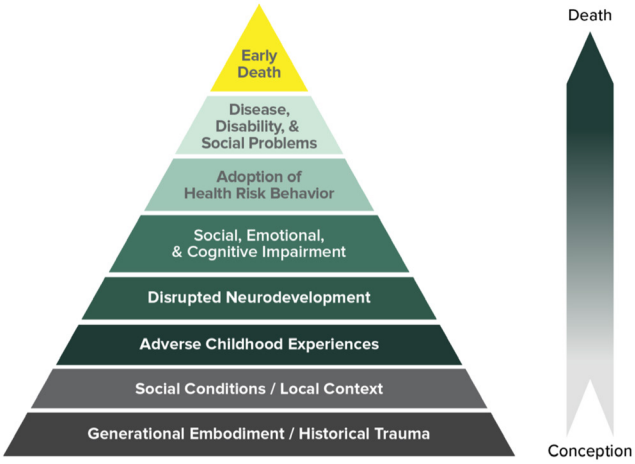
The original CDC-Kaiser ACE study was developed to answer this question: "If risk factors for disease, disability and early mortality are not randomly distributed, what early life influences precede the adoption or development of them?"[7] The ACE Pyramid (figure 2) provides a framework to explain how these risk factors influence poor health and well-being across the life span.

The pyramid acknowledges that children are impacted by the structures and environmental conditions into which they are born. Societal factors, such as the generational impact of historical trauma and exposure to poor social conditions, contribute to ACEs prevalence. For example, racism and multigenerational poverty lead to differences in the allocation of and access to resources among communities. This results in inequities in social conditions at the community level, such as food insecurity, neighborhood segregation and limited access to educational and economic opportunities.[8]

The pyramid also describes how ACEs influence poor health and well-being in direct and indirect ways through:

- Disrupted neurodevelopment and social, emotional and cognitive impairment
- Adoption of behaviors that increase risk of poor health outcomes
- Social problems
- Disease, disability and early death

Figure 2. **The ACE Pyramid: Mechanism by which ACEs influence health and well-being throughout the lifespan**



Source: "About the CDC-Kaiser ACE Study." Centers for Disease Control and Prevention. Accessed July 13, 2020.

The risk for developing poor health outcomes increases in proportion to the number of ACEs to which a person is exposed.[9] This is known as a dose-response relationship — experiencing more ACEs increases the risk for negative outcomes. ACEs also tend to co-occur or cluster, meaning that individuals who are exposed to one ACE are often exposed to multiple ACEs.[10] In fact, researchers found that children exposed to one ACE have an 80% risk of exposure to additional ACEs.[11]

Disrupted neurodevelopment and social, emotional and cognitive impairment

Early exposure to ACEs can impact a child's health through disrupted brain development and physiological changes in the body. Exposure to stress and adversity early in life is particularly harmful, as 90% of a child's brain development occurs in the first five years.[12] Stress disrupts healthy brain development,

ACEs and toxic stress

ACEs impact children's health and development through a physiological reaction to toxic stress. Also referred to as chronic or persistent stress, toxic stress results from prolonged activation of the body's fight-or-flight stress response system. Children experiencing prolonged or severe adversity are more susceptible to experiencing allostatic overload resulting in changes to their nervous, endocrine and immune systems.[13] Over time, this "wear and tear" effect contributes to poor health outcomes, including cardiovascular disease, inflammatory diseases, autoimmune diseases, as well as cognitive, mental and behavioral disorders.[14]

Generational impact of ACEs

ACEs can impact families for generations. Parents' past exposure to ACEs can negatively impact their educational attainment, employment status and income as adults. Consequently, their children are more likely to live in poverty and have poorer educational outcomes, resulting in greater risk of future unemployment, lower incomes and poorer health outcomes.[15]

Further, children of parents who had been exposed to ACEs are at an increased risk of ACEs exposure themselves. For example, ACEs are linked to the adoption of behaviors that increase the risk of poor health outcomes, mental health challenges and having limited economic resources. These and other factors can undermine a parent's ability to provide a secure, healthy and nurturing family environment.[16]

impacting learning, memory, behavior and emotional regulation.[17] Consequently, young children who experience ACEs are more likely to have poor academic and behavioral outcomes, including poor literacy skills, social problems, attention issues and aggression.[18]

Adoption of behaviors that increase risk of poor health outcomes

People who are exposed to chronic and persistent stressors, such as ACEs, may engage in behaviors that increase the risk of poor health outcomes.[19] Research suggests that engaging in these types of behaviors can even have a protective effect on a person's mental health in the short-run. For example, there are strong connections between ACEs exposure, adult obesity and unhealthy eating. Studies have shown that obesity can be emotionally protective, and losing weight can be experienced as threatening for those who experienced childhood trauma.[20] However, obesity and unhealthy eating have long-term health consequences.

Research has also established a strong dose-response relationship between ACEs exposure and behaviors like smoking and substance use. This means that the more ACEs a person experiences, the more likely they are to engage in such behaviors. Specifically, exposure to household substance use as a child is a strong predictor of substance use later in life.[21]

People exposed to ACEs are more likely to adopt the following behaviors that increase risks for and contribute to poor health outcomes:

- Smoking
- Binge drinking
- Other substance use (e.g. marijuana, heroin, cocaine, etc.)
- Physical inactivity
- Unhealthy eating[22]
- High-risk sexual behaviors that may result in teen pregnancy, unplanned pregnancy and/or sexually transmitted diseases (STDs)[23]

Social problems

Health and well-being are indirectly affected by ACEs through lower educational attainment, unemployment and reduced earnings potential.[24] ACEs can hinder a child's ability to succeed in school by impacting learning capacity and contributing to behavioral issues. In fact, exposure to two or more ACEs is associated with nearly 2.7 times greater likelihood of repeating a grade in school compared to no ACEs exposure.[25] Children with two or more ACEs are also significantly more likely to qualify as "children with special healthcare needs" than children who have not been exposed to ACEs.[26]

ACEs are linked to lower levels of educational attainment and income and higher rates of unemployment, Medicaid enrollment and poverty. When compared to those without ACEs exposure, adults with four or more ACEs were found to be:

- 2.3 times more likely to have not completed high school
- 2.3 times more likely to be unemployed
- 1.6 times more likely to live in a household reporting poverty[27]

See HPIO's **Connections between Education and Health policy brief series** and HPIO's **Connections between Income and Health** for more information on the relationship between education, income and health.

Disease, disability and early death

The impact of ACEs exposure compounds over a lifetime, contributing to disease, disability

Protective factors that promote resilience

Not every child exposed to ACEs suffers poor health outcomes as a result. Protective factors can curb the harmful effects of ACEs by diminishing the stress response caused by trauma. Protective factors are assets and resources that promote positive development, including:

- The presence of positive relationships
- Safe environments
- Supports to ensure the healthy development of social and emotional skills[29]

Protective factors can prevent the negative effects of ACEs by promoting resiliency, or the ability to overcome adversity. For example, the presence of an adult who makes a child feel protected or living in a safe neighborhood can mitigate the long-term consequences of ACEs.[30] Research suggests that the presence of protective factors can mitigate the harmful effects of ACEs even for children who have been exposed to four or more ACEs.[31]

Mitigating the impact of ACEs requires a focus on preventing future ACEs, intervening early and providing trauma-informed care when ACEs occur and building protective factors that foster resiliency.

and early death.[28] Over time, the "wear and tear" of ACEs exposure and toxic stress impacts multiple organ systems, including the endocrine and immune systems. This "wear and tear" effect leads to premature aging and increases the risks for heart disease, cancer, chronic obstructive pulmonary disorder (COPD), stroke, diabetes and other conditions.[32]

Further, research has established a relationship between ACEs and long-term mental health consequences such as depression, anxiety, post-traumatic stress disorder, dissociative disorders and dying by suicide.[33]

As a result, people who are exposed to ACEs are more likely to live shorter lives. For example, there is a 9.5-year decrease in life expectancy associated with experiencing three or more ACEs.[34] Individuals with six or more ACEs are estimated to live 20 years less than those who have experienced no ACEs.[35]

What is the impact of ACEs on the health of Ohioans?

Building on national research findings, this analysis of Behavioral Risk Factor Surveillance System (BRFSS) data provides Ohio-specific information to answer the following questions:

- How many people are exposed to ACEs in Ohio?
- To what extent are Ohio's poor health outcomes attributed to ACEs?
- Which ACEs have the greatest impact on health?

This analysis

Data to evaluate the impact of ACEs on the health of Ohioans is limited. Prior to this brief, there was no publicly available analysis of ACEs in Ohio using BRFSS data. HPIO contracted with researchers from the Ohio University Voinovich School for Leadership and Public Affairs to analyze the most-recently available BRFSS ACEs module data for Ohio (from 2015).

The BRFSS ACEs module asks adults to recall experiences from their childhood (ages 0-17). Data from BRFSS is self-reported, which means that a respondent's answers to 11 questions about eight types of ACEs are recorded without being verified against administrative data, such as insurance claims, divorce records or other records maintained by systems. In 2015, the BRFSS ACEs module only included questions about abuse and household problems. Questions about neglect were added in 2019.[36]

For detailed information about the methodology, please see the **Appendix**.

How many people are exposed to ACEs in Ohio?

In 2015, nearly two-thirds of Ohio adults (61%) reported exposure to ACEs, with 25% reporting exposure to one ACE and an additional 36% reporting exposure to two or more ACEs (see figure 3). Thirty-nine percent of Ohioans reported no ACEs exposure. These findings are consistent with the original CDC-Kaiser ACE study, which found that, among more than 17,000 members of the Kaiser Permanente health system in Southern California, 36% of participants reported no ACEs exposure, 26% reported exposure to one ACE, and 38% reported exposure to two or more ACEs.

Prevalence by type of ACE

Among Ohioans who reported exposure to at least one ACE, the most common type of ACE reported was emotional abuse (57%), followed by substance use by a household member (41%) and divorce (36%). Figure 4 displays prevalence estimates for all ACEs among Ohioans with ACEs exposure included in the 2015 BRFSS ACEs module.

Which Ohioans are most at risk for experiencing ACEs?

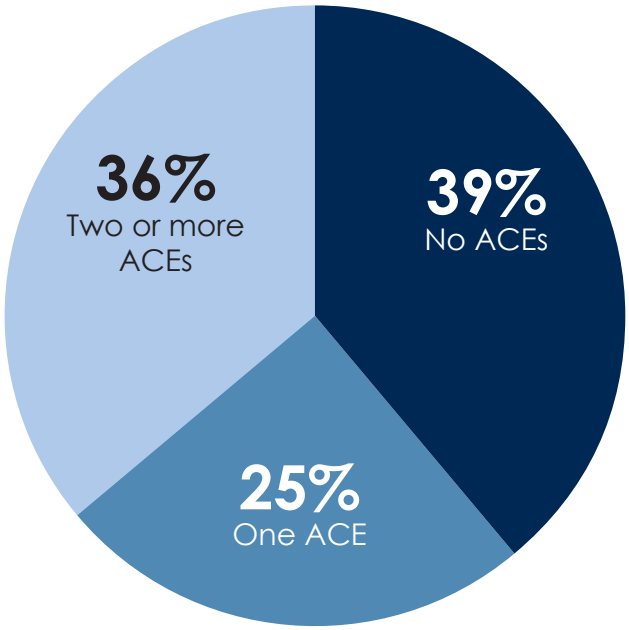
Ohioans of color, with low incomes, with disabilities and who are residents of urban or Appalachian counties were more likely to report exposure to two or more ACEs. HPIO's ***2019 Health Value Dashboard* Equity Profiles** and Ohio's **2020-2022 State Health Improvement Plan** also identify these communities of Ohioans as being most at-risk for experiencing poor health outcomes.

Given the strong connections between ACEs and poor health, it is not surprising that the communities most likely to experience ACEs also experience worse health outcomes. For example, in 2017, the infant mortality rate for Black Ohioans was nearly three times higher than for white Ohioans, and the percent of Ohioans with a disability who reported depression in 2016 was four times higher than Ohioans without a disability.[37]

Ohioans of color

People who reported a race other than white or Black (48%), and people who reported being Black, non-Hispanic (44%),

Figure 3. **Prevalence of ACEs, by number of ACEs, Ohio, 2015**



Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

Figure 4. **Prevalence of specific ACEs among adults who report at least one ACE, by type, Ohio, 2015**

Abuse

Emotional abuse	**57%**
Physical abuse	**26%**
Sexual abuse	**18%**

Household problems

Substance abuse by a household member	**41%**
Divorce/separation of parents	**36%**
Domestic violence	**26%**
Mental illness of a household member	**25%**
Incarcerated household member	**14%**

Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

were more likely to report two or more ACEs than people who reported being white, non-Hispanic (34%)(see figure 5). The rate for the state overall in 2015 was 36%. Hispanic, Asian-American, American Indian/Alaskan Native and other races/ethnicities are combined in the "other" category in figure 5. Estimates are not reported separately for these races/ethnicities since they are statistically unreliable.[38]

If questions about experiencing racism were included in the BRFSS ACEs module, the disparity between white Ohioans and people of color may be even greater. The 2017-2018 National Survey of Children's Health (NSCH) includes parental reporting of a child's experience of racism as an ACE. In NSCH, the percent of Black, non-Hispanic (38%) and Hispanic (35%) children who experience two or more ACEs is about twice as high as the percent of white, non-Hispanic (19%) children who experience multiple ACEs.[39]

Annual household income

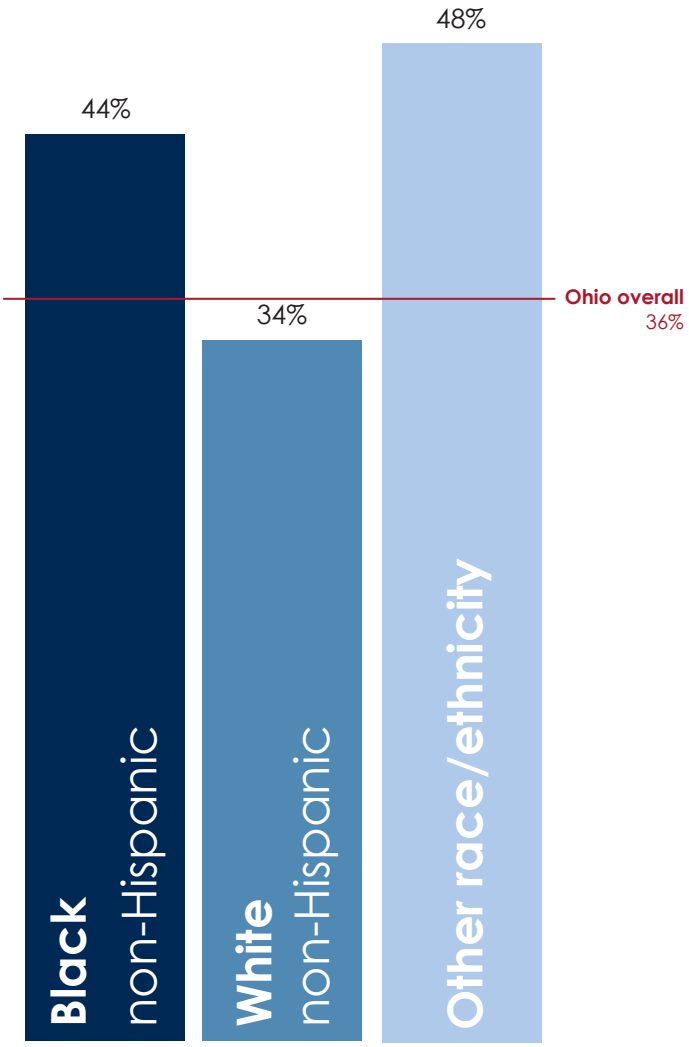
Ohioans with low incomes were more likely to report exposure to two or more ACEs. In 2015, the percent of Ohioans with annual household incomes below $15,000 who reported two or more ACEs (53%) was about 1.7 times higher than Ohioans with annual incomes of $50,000 or more (32%) (see figure 6).

As described on page 4, ACEs impact outcomes across generations. For example, one reason that parents may have lower incomes is exposure to ACEs. In turn, children that grow up in households with lower incomes are more likely to experience ACEs. The resulting generational impacts are not the outcome of moral or ethical failings, but rather a consequence of the physical, social and economic conditions that low-income households are more likely to encounter.

Disability status

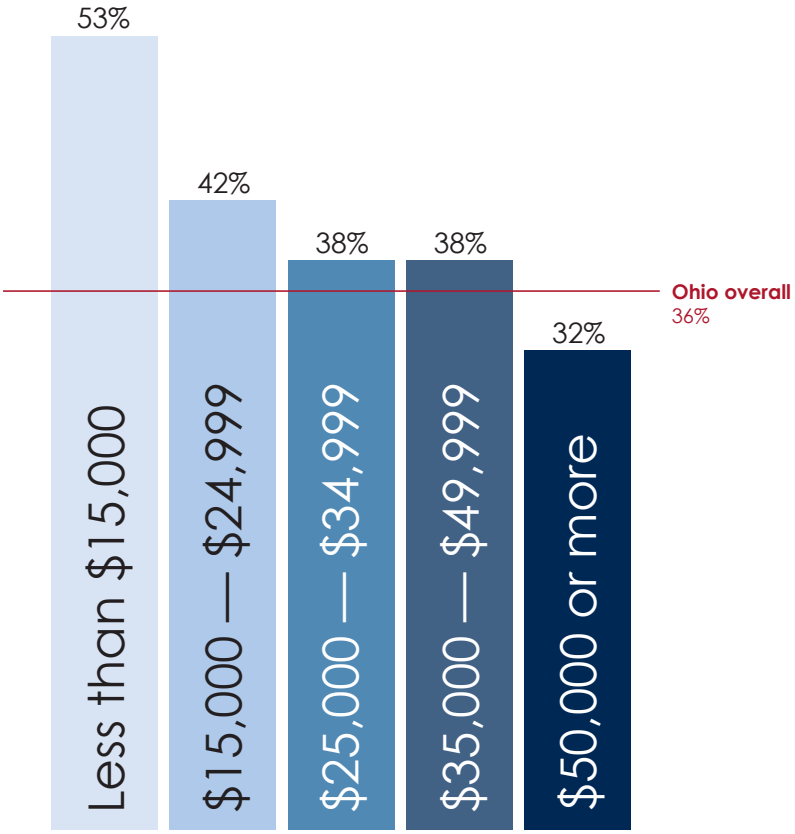
Adult Ohioans with disabilities were more likely to report two or more ACEs than Ohioans without disabilities. The percent of adult Ohioans with disabilities who reported two or more ACEs (49%) was more than 1.5 times higher than Ohioans without disabilities (32%).

Figure 5. **Prevalence of two or more ACES, by race and ethnicity, Ohio, 2015**



Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

Figure 6. **Prevalence of two or more ACES, by income, Ohio, 2015**

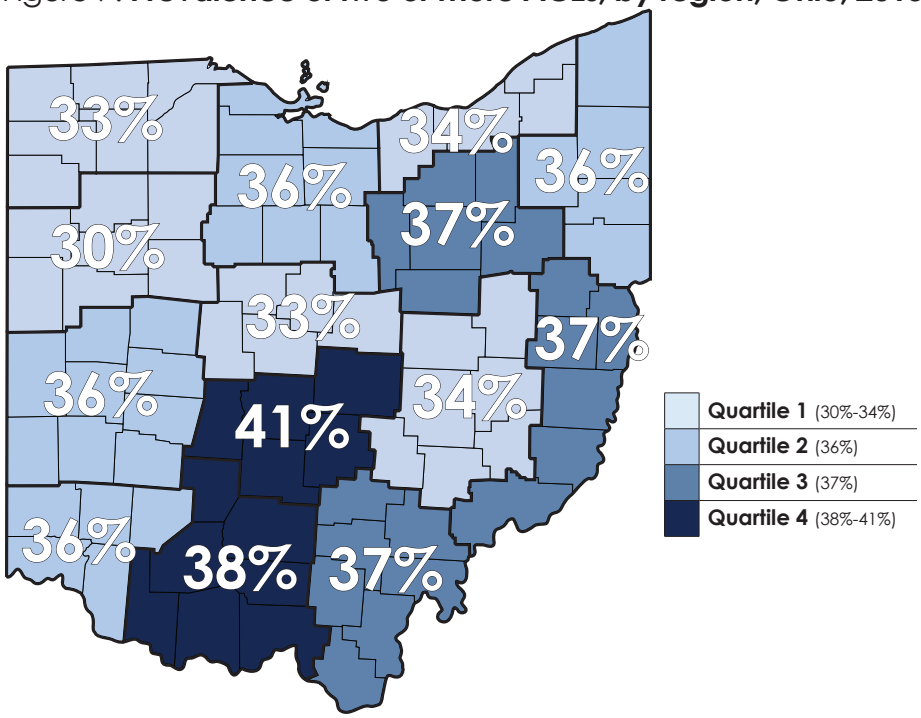


Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

Region and county type

By region, the prevalence of exposure to two or more ACEs ranged from a high of 41% in south-central Ohio to a low of 30% in northwest Ohio (see figure 7).[40] Residents of counties that are designated as urban (39%) and Appalachian (37%) were more likely to report multiple ACEs than residents of suburban (32%) and rural non-Appalachian counties (32%).[41]

Figure 7. **Prevalence of two or more ACEs, by region, Ohio, 2015**



Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs. County designation from the Ohio Medicaid Assessment Survey.

Can poor health in Ohio be attributed to ACEs?

Consistent with national research findings[42], Ohioans who reported experiencing more ACEs were also more likely to report the following negative health outcomes and behaviors:

- Ever being diagnosed with depression (including major depression, dysthymia or minor depression), asthma and/ or poor respiratory health (including COPD, emphysema or chronic bronchitis diagnoses)
- Being a current smoker and/or heavy drinker (defined as 14 or more drinks per week for males and 7 or more drinks per week for females)
- Delaying health care because of cost in the past year

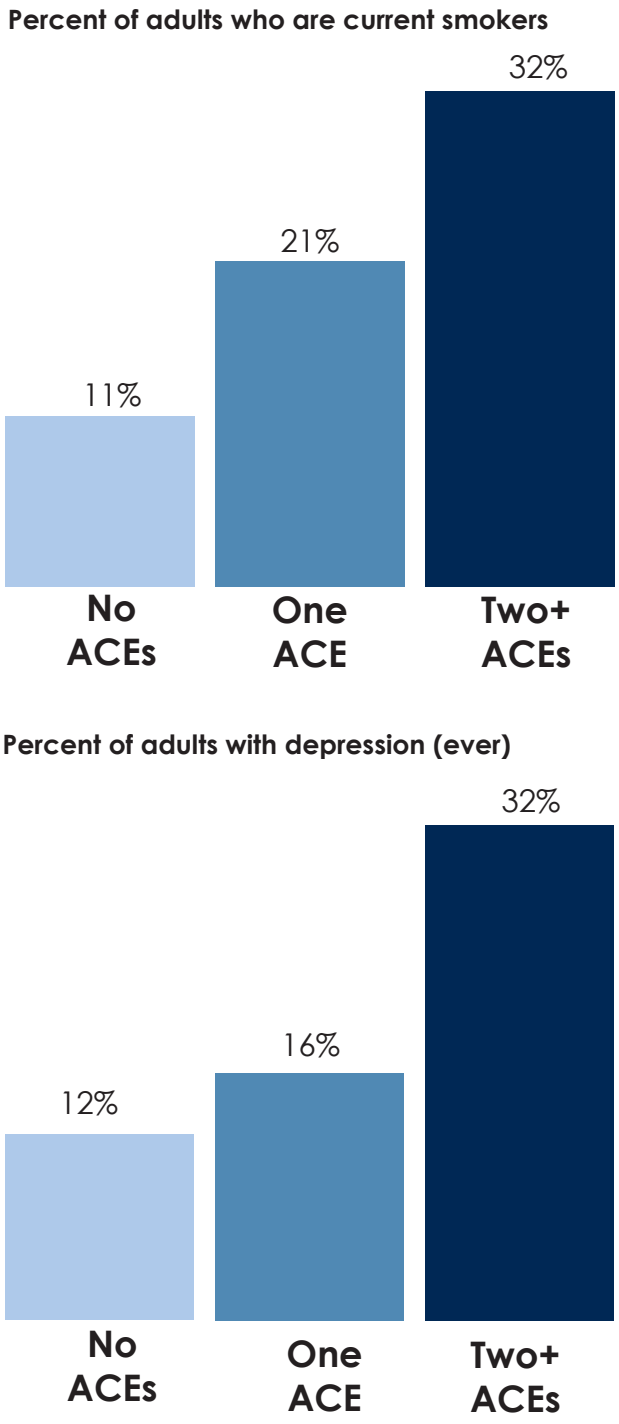
For example, as seen in figure 8, the percent of Ohio adults who are current smokers and experienced two or more ACEs (32%) was almost three times higher than adults who reported no ACEs (11%). Similarly, the percent of Ohio adults with depression who experienced two or more ACEs (32%) was almost three times higher than adults who reported no ACEs (12%).

For prevalence estimates by number of ACEs for each outcome, and for additional information about the analysis, see the **Appendix**.

To what extent are Ohio's poor health outcomes attributed to ACEs?

To understand the extent to which preventing ACEs could improve the health of Ohioans, the estimated percentage of negative health outcomes that could be prevented if exposure to multiple ACEs[43] were eliminated was calculated. This estimate is called population attributable risk (PAR).

Figure 8. **Prevalence of negative health outcomes (age adjusted), by number of ACEs, Ohio, 2015**



Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

Figure 9 illustrates the impact of preventing exposure to ACEs on six health outcomes. For example:

- An estimated 36% of depression diagnoses in Ohio can be attributed to experiencing multiple ACEs. If exposure to ACEs were eliminated among Ohioans, an estimated 36% of depression diagnoses could be prevented.
- An estimated 33% of current smoking in Ohio can be attributed to experiencing multiple ACEs. If exposure to ACEs were eliminated, an estimated 33% of current smoking could be prevented.

Which ACEs have the greatest impact on the health of Ohioans?

To focus attention on ACEs with the greatest impact on health, HPIO's analysis isolated the impact of specific ACEs. The ACEs listed in figure 10 have a significant impact on experiencing at least one negative health outcome.

The following examples are provided to aid with interpretation of the findings in figure 10:

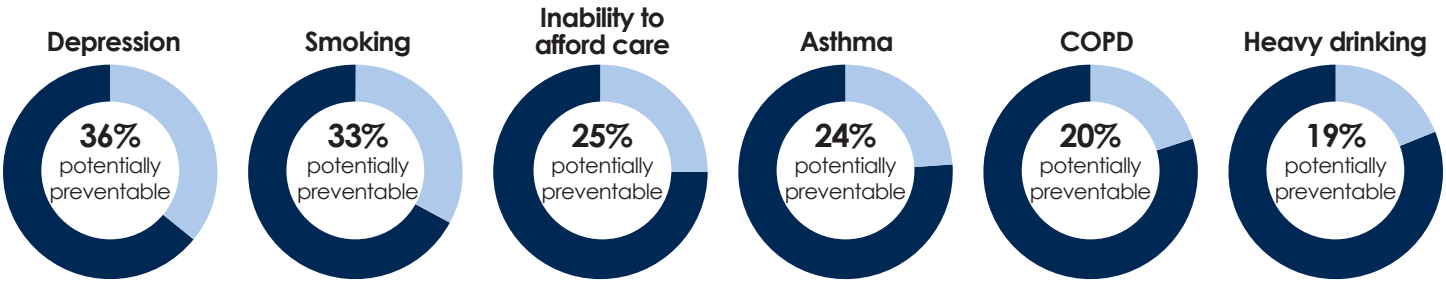
- If exposure to emotional abuse were eliminated, an estimated 16% of depression and 12% of current smoking could also be eliminated.
- If adequate supports and policies were in place to prevent parental or other household member incarceration, an estimated 7% of current smoking and 12% of limited healthcare access due to cost could also be eliminated.

What is a PAR?

Population attributable risk (PAR) is a statistical tool that can be used to envision a future without ACEs and to quantify the return on investment for preventing ACEs. PAR is an estimate of the percentage of an outcome observed in a population that can be attributed to a specific factor. In this analysis, PAR provides an estimate of the percentage of negative health-related outcomes in Ohio's entire adult population that can be attributed to Ohioans who have experienced two or more ACEs.

While PAR is a helpful statistical tool, it does not fully capture the complexity of everyday life, particularly for children and adults who are exposed to trauma and toxic stress. Numerous factors, such as close connections to caring adults and quality education, can protect against the harmful effects of ACEs. Other factors, such as being the victim of a violent crime and experiencing racism, may worsen health outcomes. These important nuances are not captured in BRFSS data, and therefore, were not factored into this analysis. Factors that contribute to negative health outcomes, such as older age, smoking status and having other health problems, are collected in BRFSS, and adjustments were made for these factors in the analysis (see **Appendix**).

Figure 9. **Potential impact of preventing exposure to ACEs on six health outcomes in Ohio**



Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

Figure 10. **PARs for specific ACEs, Ohio, 2015**

Emotional abuse	
Outcome	**PAR**
Depression	16%
Current smoking	12%
Living in a household with a person with substance use problems	
Outcome	**PAR**
Current smoking	14%
Living in a household with a person with a mental illness	
Outcome	**PAR**
Depression	20%
Asthma	13%
Inability to afford health care	14%
Sexual abuse	
Outcome	**PAR**
Depression	15%
Living in household with a person who was incarcerated	
Outcome	**PAR**
Current smoking	7%
Inability to afford care	12%

Source: Data from the 2015 Behavioral Risk Factor Surveillance System was provided by the Ohio Department of Health's Division of Health Improvement and Wellness. Analysis by Ohio University, Voinovich School of Leadership and Public Affairs.

This analysis suggests that preventing exposure to the following ACEs may yield the most significant health impacts: Emotional and sexual abuse and living in a household with someone who has a substance use disorder, mental health problem or who is incarcerated.

Statistically significant PARs were not found for physical abuse, divorce and/or separation of parents or witnessing domestic violence. However, this does not mean that these events are not harmful to health. It means that any difference in outcomes experienced by people who reported these ACEs could be explained by exposure to a different ACE or other factors. For more details about adjustment factors and the methodology for this analysis, see the **Appendix**.

Conclusion

According to HPIO's ***2019 Health Value Dashboard***, Ohio ranks 46th out of 50 states and D.C. on health value. This means that Ohioans live less healthy lives and spend more on health care than people in most other states. With nearly two-thirds of adult Ohioans reporting that they experienced adverse events in childhood, Ohio's poor performance on health and spending is not surprising.

Data highlighted in this brief suggest that the health challenges many Ohioans face today are rooted in experiences and conditions that could have been better managed or prevented during childhood. Efforts to prevent and mitigate the far-reaching impact of ACEs are critical to improving health value in Ohio. Building on national research, this brief's analysis suggests that an effective approach for addressing ACEs in Ohio requires:

- Tailoring strategies and allocating resources to populations most at-risk for experiencing ACEs, such as Ohioans of color and Ohioans with low incomes, disabilities and/or who are residents of urban and Appalachian counties.
- Focusing on strategies to prevent and mitigate the impacts of emotional and sexual abuse and living in a household with someone who has a substance use disorder, mental health problems or who is incarcerated.

Policymakers and other stakeholders can use these findings to develop a comprehensive plan that effectively prevents and mitigates the impact of ACEs and improves the overall health and well-being of Ohioans.

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Notes

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43. For this analysis exposure to ACEs was defined as exposure to 2 or more ACEs. This decision was made based on research findings that exposure to multiple ACEs is associated with worse health outcomes than exposure to a single ACE.

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