hpio health policy institute of ohio™

Health **Policy** Brief

Adverse Childhood Experiences (ACEs)

A strategic approach to prevent ACEs in Ohio

Appendix

This appendix is a supplement to the Health Policy Institute of Ohio (HPIO) policy brief, **Adverse Childhood Experiences: A strategic approach to prevent ACEs in Ohio** and provides information on:

- Methodology used to identify evidence-informed strategies to prevent and mitigate the negative impacts of ACEs
- Process for prioritizing evidence-informed strategies
- Cost-benefit analysis methodology
- Process for identifying key strategies to prevent and mitigate the impact of ACEs that were highlighted in the brief

Identifying evidence-informed strategies

HPIO conducted a review of evidence registries and research literature and gathered additional feedback from HPIO's multi-sector **ACEs Advisory Group** to compile a comprehensive inventory of evidence-informed strategies that prevent and/or mitigate the impact of ACEs.

"Strategy" is a broad term that refers to a policy (e.g., increasing financial support for families), program (e.g., home visiting) or service (e.g., screening, brief intervention and referral to treatment for substance use). The brief identifies 12 key strategies for ACEs prevention and mitigation.

Evidence registry and literature review

From February to March 2021, HPIO conducted a review of the evidence sources listed in figure 1 to identify strategies with evidence of effectiveness for preventing and/or mitigating the impact of ACEs. Only strategies with strong evidence of effectiveness based on these sources were compiled into the strategy inventory. Figure 1 lists the evidence sources (i.e., evidence registries and systematic reviews) and the evidence of effectiveness recommendation level from each source included in the strategy inventory.

Evidence registries and systematic reviews evaluate strategies and policies based on the specific outcomes they produce. To identify strategies and policies that prevent and mitigate ACEs, HPIO developed a list of outcomes from **County Health Rankings and Roadmaps What Works for Health** related to each ACE as defined by **the Centers for Disease Control and Prevention**.

HPIO used the list of outcomes in figure 2 to complete the evidence registry and literature review using the sources listed in figure 1 to identify strategies to include in the inventory.

Stakeholder engagement

To ensure that the inventory of evidence-informed strategies was comprehensive, HPIO solicited feedback from the ACEs Advisory Group. Advisory Group members received a draft copy of the inventory and were asked to respond to the following questions:

1. Are there any additional evidence-informed strategies you would recommend adding? If yes, what is the evidence that this strategy will improve one or more ACEs? (Advisory Group members were asked to send links to evidence supporting strategies.)
2. Are there any strategies you would recommend removing? (Advisory Group members were asked to provide a reason(s) for removing strategies.)

HPIO staff modified the strategy inventory based on feedback from Advisory Group members.

Figure 1. **Evidence sources for the inventory of evidence-informed strategies that prevent and/or mitigate the impact of ACEs**

Systematic review or evidence registry	Recommendation level(s) included in the HPIO inventory
What Works for Health (WWFH): Evidence registry from County Health Rankings and Roadmaps, a project of the University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation	• Scientifically supported • Some evidence
The Guide to Community Preventive Services (Community Guide): Systematic reviews from the U.S. Centers for Disease Control and Prevention (CDC)	Recommended
HI-5 (Health Impact on Five Years): CDC- recommended strategies	Recommended
Social Programs that Work (SPTW): Evidence registry from Arnold Ventures	• Top tier • Near top tier
U.S. Preventive Services Task Force Recommendations (USPSTF): Systematic reviews from the Agency for Healthcare Research and Quality	• Grade A (recommended; high certainty of benefit) • Grade B (recommended; moderate certainty of benefit)
Preventing Adverse Childhood Experiences (ACEs): Leveraging the Best Available Evidence (CDC): Compilation of recommended strategies relevant to ACEs from CDC Technical Packages for Violence Prevention	Included in Technical Package
CDC Technical Packages for Violence Prevention, specifically: • **Intimate partner violence** • **Sexual violence** • **Youth violence** • **Child abuse and neglect** CDC Technical Packages for Violence Prevention compile the best available evidence on strategies and approaches for states and communities to prevent violence	Included in Technical Package
Office of Planning, Research and Evaluation Title IV-E Prevention Services Clearinghouse: Rates the strength of evidence for programs and services intended to provide enhanced support to children and families and prevent foster care placements	• Well-supported • Supported • Promising
Preventing and Mitigating the Effects of Adverse Childhood Experiences: Brief from the National Conference of State Legislatures that presents research on ACEs and highlights state strategies to prevent and reduce their occurrence and negative effects	Included in the brief

Figure 2. **List of outcomes from What Works for Health, categorized by type of ACE use**

ACE	What Work for Health outcomes*
Incarcerated member of the household	• Reduced incarceration • Reduced recidivism • Reduced delinquent behavior • Reduced arrests • Increased satisfaction with justice process • Decreased crime • Reduced exposure to crime
Mental illness in the household	• Improved mental health • Improved parental mental health • Increased access to mental health services • Increased adherence to clinical guidelines • Increased adherence to treatment • Increased knowledge of mental health • Increased medication adherence
Substance use in the household	• Increased access to cessation treatment • Increased adherence to clinical guidelines • Increased adherence to treatment • Increased medication adherence • Increased quit rates • Increased substance use disorder treatment • Increased tobacco cessation • Increased use of cessation treatment • Reduced adverse drug events • Reduced alcohol use • Reduced alcohol-related crashes • Reduced alcohol-related harms • Reduced drug and alcohol use • Reduced excessive drinking • Reduced exposure to secondhand smoke • Reduced exposure to thirdhand smoke • Reduced number of tobacco users • Reduced substance abuse
Emotional abuse	• Increased parent engagement • Reduced child maltreatment • Improved family functioning • Improved parent-child interaction • Improved parenting • Increased family reunification

*Wording of outcomes varies by source. This list provided a guideline for HPIO staff to use to complete the literature review. However, discretion was used to identify related outcomes from registries other than What Works for Health.

Figure 2. **List of outcomes from What Works for Health, categorized by type of ACE** (cont.)

ACE	What Work for Health outcomes*
Sexual abuse	• Decreased violence • Reduced violence • Reduced child injury • Reduced child maltreatment • Reduced injuries • Reduced sexual violence
Physical abuse	• Decreased violence • Reduced violence • Reduced child deaths • Reduced child injury • Reduced child maltreatment • Reduced injuries
Parental separation or divorce	No relevant outcomes or strategies in What Works for Health or other sources
Emotional neglect	• Increased parent engagement • Reduced child maltreatment • Improved family functioning • Improved parent-child interaction • Improved parenting • Increased family reunification
Physical neglect	• Improved access to affordable housing • Improved access to social services • Increased enrollment in social services • Improved economic security • Increased family income • Increased financial stability • Improved housing conditions • Improved housing quality • Improved neighborhood quality • Improved neighborhood safety • Increased neighborhood stability • Improved nutrition • Increased access to care • Increased access to healthy food • Increased food security • Increased access to quality housing • Increased housing stability • Reduced child maltreatment • Reduced lead exposure • Reduced poverty
Intimate partner violence	• Increased awareness of intimate partner violence • Increased knowledge of intimate partner violence • Reduced intimate partner violence • Reduced unhealthy relationships • Reduced aggression • Reduced victimization • Decreased violence

*Wording of outcomes varies by source. This list provided a guideline for HPIO staff to use to complete the literature review. However, discretion was used to identify related outcomes from registries other than What Works for Health.

Figure 2. **List of outcomes from What Works for Health, categorized by type of ACE** (cont.)

ACE	What Work for Health outcomes*
Cross-cutting outcomes across multiple ACES (outcomes are potentially applicable across multiple ACEs)	• Improved child behavior • Improved child development • Improved child well-being • Improved family functioning • Improved parent-child interaction • Improved parenting • Increased family reunification • Increased foster care placement stability • Increased parent engagement • Increased parental self-efficacy • Reduced foster care use • Improved well-being • Increased self-confidence • Increased self-efficacy • Increased self-esteem • Increased understanding of trauma • Increased use of trauma-informed practices • Reduced stress

*Wording of outcomes varies by source. This list provided a guideline for HPIO staff to use to complete the literature review. However, discretion was used to identify related outcomes from registries other than What Works for Health.

Strategy inventory

Using the methodology described above, HPIO identified 186 strategies to include in the strategy inventory. To access the strategy inventory, see **Adverse Childhood Experiences: A Strategic approach to prevent ACEs in Ohio**. See figure 3 for a description of information included in the strategy inventory.

Strategies were grouped by the following six strategy approaches in the Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, **FY2021-FY2024 Adverse Childhood Experiences Prevention Strategy**:

- Ensuring a strong start for children
- Strengthening economic supports for families
- Promoting social norms that protect against violence and adversity
- Enhancing skills to help parents and youth handle stress, manage emotions and tackle everyday challenges
- Connecting youth to caring adults and activities
- Intervening to lessen immediate and long-term harms

In addition, strategies were categorized by:

- Specific ACE or ACEs impacted, or as cross-cutting (meaning outcomes indicate that the strategy could impact multiple ACEs)
- Likelihood to reduce disparities, based on identification as such in **What Works for Health** or **Community Guide**. Information on whether a strategy was likely to reduce disparities was not available for strategies compiled from other evidence registries and systematic reviews.
- Prevention, screening and/or treatment (see **brief** for definition of terms)
- Promoting protective factors and/or reducing risk factors for ACEs (see **brief** for definitions of terms)

Figure 3. **Description of information included in the HPIO ACEs Strategy Inventory**

Column header (Column letter)	Description of information included in the column
Strategy (A)	The name of each strategy and a link to the evidence of effectiveness for each strategy.
CDC category (B)	The CDC **FY2021-FY2024 Adverse Childhood Experiences Prevention Strategy** provides a comprehensive framework of six categories of approaches to prevent ACEs. This column specifies the category that most closely aligns with each strategy in the inventory.
Type of ACE (C-M)	The type of ACE that each strategy is likely to impact. Strategies with an "X" in one or more of these columns were rated as effective for impacting the ACE in the column header (see figure 2 for a list of outcomes, associated with each ACE). The types of ACEs are: • Incarcerated member of the household* • Mental illness in the household* • Substance use in the household* • Emotional abuse* • Sexual abuse* • Physical abuse • Parental separation or divorce • Emotional neglect • Physical neglect • Witnessing domestic violence • Cross-cutting
Prevention strategy (N)	Strategies with an "X" in this column are designed to prevent the occurrence of ACEs.
Screening strategy (O)	Strategies with an "X" in this column are designed to screen for exposure to ACEs.
Treatment strategy (P)	Strategies with an "X" in this column are designed to provide treatment to mitigate the impact of ACEs.
Reduce disparities and inequities (Q)	Strategies in this column were designated by What Works for Health as "likely to reduce disparities" or Community Guide as "equity" strategies.
Promotes protective factors/ resiliency (R)	Strategies with an "X" in this column are designed to promote protective factors, for example, positive friendships and peer networks or healthy social and emotional skills.
Reduces risk factors (S)	Strategies with an "X" in this column are designed to reduce risk factors, for example, communities with high rates of violence and crime or families living in poverty.

*ACE with a significant impact on health. See HPIO brief, **Adverse Childhood Experiences: Health Impact of ACEs in Ohio**, for more information.

Prioritizing evidence-informed strategies

HPIO implemented a prioritization process to identify a key set of strategies with a positive cost-benefit ratio to highlight in the **brief**.

HPIO narrowed the list of 186 strategies to 59 strategies to be included in the cost-benefit analysis using the following prioritization criteria:

1. Impact on ACEs with significant health impacts in Ohio or is cross-cutting (see Brief 1, **Health Impact of ACEs in Ohio**)
2. Prevention strategies, rather than screening or treatment strategies
3. Impact on more than one ACE (i.e., prevents or mitigates the impact of more than one specific ACE)
4. Impact on disparities/inequities

Advisory Group members were asked to provide feedback on prioritization criteria and were also asked to highlight specific strategies that should be selected for additional cost-benefit analysis. HPIO staff considered feedback from Advisory Group members when prioritizing strategies.

Cost-benefit analysis

HPIO contracted with Scioto Analysis to identify cost-benefit estimates for the 59 prioritized strategies. The project team identified a cost-benefit ratio for each strategy using the best data available. The cost-benefit ratios reflect the estimated number of dollars of social value that a strategy generates for every dollar of social cost to implement the strategy. Policy analysts define "social benefit" and "social cost" as the sum of market (e.g., wages, taxes, productivity, healthcare costs) and nonmarket (e.g., quality of life, knowledge, skills, disability- or quality-adjusted life years) costs and benefits brought about by a policy. These benefits and costs comprise the economic, social, and environmental effects of a policy expressed in monetary terms. This approach has been used by the federal government for many years to assess infrastructure projects and has been a regular part of federal regulatory policymaking since the early 1980s.

Strategies with a cost-benefit ratio greater than $1 have an expected positive net benefit and strategies with a cost-benefit ratio of less than $1 have an expected negative net benefit. In other words, a strategy with a cost-benefit ratio of greater than $1 produces positive social outcomes that are worth more than the evaluated social cost.

Identifying cost-benefit ratios

Scioto Analysis completed a review of cost-benefit registries and literature to identify a cost-benefit ratio for each strategy. Sources consulted included the Washington State Institute of Public Policy, federal agencies such as the Substance Abuse and Mental Health Services Administration and research published in peer-reviewed journals, such as the *Journal of Benefit-Cost Analysis*. When a cost-benefit ratio was not available in the literature, Scioto Analysis used data in the literature to estimate a cost-benefit ratio for the strategy.

Limitations of cost-benefit analysis

One limitation of this analysis is that the quality of cost-benefit research is not consistent across the 59 strategies. For example, in some cases the research methods used to estimate a cost-benefit ratio were not as rigorous or the evidence was outdated. To ensure that the limitations of the research were clear, Scioto Analysis assessed the strength of research for each strategy on a scale of one (lowest in strength) to three (highest in strength) across the following factors:

- Methodological **rigor**:
  1. Cost-benefit ratio derived from a single study without a cost-benefit ratio (i.e., cost-benefit ratio estimated by Scioto Analysis)
  2. Cost-benefit ratio derived from a meta-analysis of multiple studies without a cost-benefit ratio (i.e., cost-benefit ratio estimated by Scioto Analysis)
  3. Cost-benefit ratio derived from a meta-analysis that calculates a cost-benefit ratio
- **Completeness** of cost-benefit analysis:
  1. Cost-benefit ratio from a rigorous study with effect sizes estimated only
  2. Cost-benefit ratio from a cost-effectiveness analysis that only monetizes costs
  3. Cost-benefit ratio from a cost-benefit analysis that monetizes costs and benefits
- External **validity** to the setting of policy in the state of Ohio:
  1. Study was conducted outside of the U.S.
  2. Study was conducted in the U.S., but outside of the Midwest
  3. Study was conducted in the Midwest

- How recent evidence was gathered and study released **(recency)**:
  1. Study was released more than ten years ago
  2. Study was released in the last ten years
  3. Study was released in the last five years

HPIO summed these numbers and used the total when determining which strategies to highlight in the brief.

For some of the strategies that HPIO identified, there was no cost-benefit research in the literature for the exact strategy. In these cases, Scioto Analysis identified a cost-benefit ratio based on research for a similar strategy. This limitation reflects a need for additional cost-benefit research strategies to prevent and mitigate the impact of ACEs.

Additionally, the comprehensiveness of cost-benefit analyses varied among strategies. Cost-benefit analyses for some strategies included many beneficial outcomes and others were more limited in scope, which may result in lower cost-benefit ratios. For example, the cost-benefit analysis for Child Parent Centers evaluated 8 outcomes, including short and long-term outcomes and reported a cost-benefit ratio of $10.83. In contrast, the cost-benefit analysis for childcare subsidies evaluated just one outcome, increased tax revenue, and reported a cost-benefit ratio of $1.15. What Works for Health indicates that child care subsidies are also an effective strategy for increasing employment and earnings. If those outcomes had been evaluated in the cost-benefit analysis, the ratio may have been higher.

Identifying key strategies to prevent and mitigate the impact of ACEs

Using the information compiled in the inventory of evidence-informed strategies, the cost-benefit ratio analysis and stakeholder feedback, HPIO staff identified 12 key strategies to prevent and mitigate the impact of ACEs in Ohio. Among the 59 strategies included in the cost-benefit analysis, the 12 strategies with the strongest research and a cost-benefit analysis of greater than $1 were highlighted in the brief. HPIO highlighted strategies with strong alignment between the strategy as described in the research inventory and the policy or program evaluated in the cost-benefit analysis.

Ohio ACEs Impact project

Led by the Health Policy Institute of Ohio (HPIO) and informed by a multi-sector advisory group, the **Ohio ACEs Impact project** includes a series of three policy briefs and an **online resource page** to build on and amplify current efforts to address ACEs in Ohio.

Since August 2020, HPIO has published two policy briefs as part of this project, **Adverse Childhood Experiences: Health Impact of ACEs in Ohio** and **Adverse Childhood Experiences: Economic Impact of ACEs in Ohio.** This brief, the third in the series, builds on the previous two briefs by identifying evidence-informed and cost-effective strategies to mitigate the impacts of ACEs.

This project is funded by the Harmony Project, the Ohio Children's Hospital Association and HPIO's **core funders**.