



Preventing and Mitigating the Effects of Adverse Childhood Experiences Health

NATIONAL CONFERENCE *of* STATE LEGISLATURES | AUG 2018



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This publication was made possible by grant number NU50CE002587 from the Centers for Disease Control and Prevention. Its contents and the links to non-CDC websites are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention, the National Center for Injury Prevention and Control, or the U.S. Department of Health and Human Services.

Executive Summary

The term adverse childhood experiences (ACEs) is defined as potentially traumatic events that occur before the age of 18. Such experiences can interfere with a person's health and opportunities throughout his or her lifetime—and can even affect future generations. Researchers have identified connections between ACEs and a greater likelihood of developing risky behaviors, chronic health conditions and poor workforce performance, among other outcomes.¹ Moreover, ACEs can be cyclical.² Research suggests that children who experience physical abuse, for example, may be more likely to commit violence, including abusing or neglecting their own children, as well as to be revictimized in the future.^{3,4}

From 2011 to 2014, over half of all U.S. adults (62 percent) from 23 states reported having at least one adverse childhood experience and 25 percent of adults reported three or more.⁵ As such, some state policymakers are interested in preventing such experiences, mitigating their effects, and reducing the associated costs to state health care, education, child welfare and correctional systems. This brief presents research on adverse childhood experiences and highlights state strategies to prevent and reduce their occurrence and negative effects. Such policies include strategies to build resilience in children and families, help parents reduce stress, and increase screening and treatment for ACEs.

Introduction

Early life experiences, whether beneficial or harmful, have tremendous effects on one’s development, behavior, and long-term health and opportunity. The Adverse Childhood Experience (ACE) Study provided evidence of this connection, noting that ACEs—potentially traumatic events that occur before the age of 18—increase an individual’s risk of disease and behavioral challenges, such as obesity, depression and alcoholism.¹ And, the greater the number of ACEs, the greater the risk for negative outcomes.⁶ Researchers have even identified a link between ACEs and a higher risk of premature death.⁷

Nearly all people experience stress in their life, such as the stress felt before an important test or job interview. However, chronic stress sustained over time can be damaging to the body and the brain. This is particularly true for children because the earliest years are a critical time for development. In our first three years of life, we create 1 million brain connections every second and develop critical abilities, such as language, memory and socialization.⁸ The accumulation of excessive stress in the body (a result of ACEs) interferes with the development of healthy neural, immune and hormonal systems and can alter the expression of our DNA. Furthermore, when a child lacks a supportive adult to turn to in times of adversity, this continuous stress activation becomes particularly toxic.⁹

Toxic stress on our bodies and brains affects behavior in addition to development. The stress of ACEs can inhibit natural, positive methods of coping. In place of healthy behaviors, people with ACEs are more prone to impulsivity and risky behaviors, such as smoking or illicit drug use. These high-risk behaviors account for nearly 50 percent of the increased risk of negative consequences associated with ACEs.¹⁰

Glossary

TRAUMA: A painful or distressing experience often resulting in lasting mental and physical effects.

ADVERSE CHILDHOOD EXPERIENCE: A potentially traumatic experience, which occurs before 18 years of age. Types of ACEs include:

Abuse

- Emotional abuse
- Physical abuse
- Sexual abuse

Neglect

- Emotional neglect
- Physical neglect

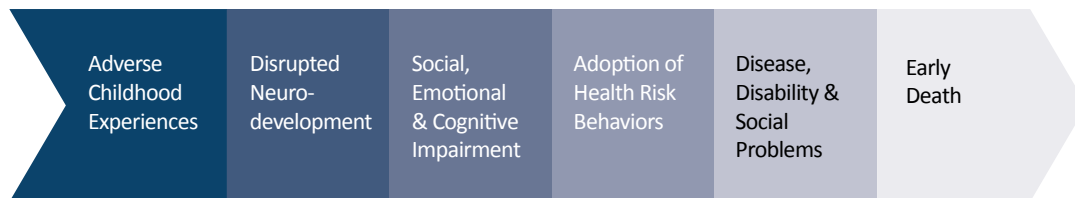
Household Challenges

- Mother treated violently
- Household substance abuse
- Mental illness in household
- Parental separation or divorce
- Incarcerated household member

TOXIC STRESS: Extreme or extended activation of the body’s stress response without the presence of adult support.

Sources: Felitti, 1998; National Institute of Mental Health; Centers for Disease Control and Prevention; Center on the Developing Child at Harvard University

How ACEs Influence Health



Source: Centers for Disease Control and Prevention



The Adverse Childhood Experiences (ACE) Study¹

Beginning in the '90s, an obesity clinic doctor grew curious about why so many of his patients were prematurely ending their treatment. Through surveys and analysis, the doctor identified that these patients, struggling to overcome obesity and often choosing to end treatment entirely, consistently reported a history of childhood sexual abuse. This observed connection between childhood trauma and poorer health later in life ultimately led to the seminal Adverse Childhood Experiences Study.

Between 1995 and 1997, the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente surveyed more than 17,000 male and female adults residing in Southern California. Participants of the study were predominately middle-income, with at least some college experience, white (75 percent) and over the age of 40 (85 percent).

Participants completed a confidential survey about their childhood and current health status and behaviors. Questions about the individual's childhood measured 10 ACEs: emotional, physical and sexual abuse; emotional and physical neglect; parental separation and divorce; parental incarceration; domestic violence; and substance misuse and mental illness in the household. (Since the original study, research on ACEs has expanded to include additional potentially traumatic experiences such as bullying, teen dating violence, community violence, homelessness, economic hardship and the death of a parent.)^{11,12} Participants' ACE scores were derived by summing up each of the 10 ACEs the individual had experienced. ACE scores do not reflect frequency or severity of experiences and do not account for positive experiences early in life that may protect a child from the effects of trauma.

Study findings indicated that adverse childhood experiences were prevalent among participants. Nearly two-thirds reported at least one such experience, and more than 20 percent reported three or more. The most common ACEs reported by study participants were physical and sexual abuse, exposure to substance misuse and mental illness in the household, and parental separation and divorce.

The study also revealed the connection between a high ACE score and an increased risk of disease. Autoimmune disease, chronic lung disease and liver disease were some of the chronic health conditions found to be associated with ACEs. In addition, individuals with multiple ACEs were more likely to perform poorly in school, be unemployed and develop high-risk behaviors, such as smoking and promiscuity.

The Scope of the Challenge

From 2011 to 2014, over half of all U.S. adults (62 percent) from 23 states reported having at least one adverse childhood experience and 25 percent of adults reported three or more.⁵ The prevalence of ACEs and their association with various negative outcomes mean costs to states can be high. For example, the Centers for Disease Control and Prevention (CDC) estimates that child abuse and neglect, which account for half of the 10 original ACEs, cost approximately \$124 billion per year.¹³ These costs affect employers through lost productivity, as well as the health care, education, child welfare and corrections systems. Lost productivity and health care spending contribute the most to overall annual costs.^{14, 15}

Behavioral Risk Factor Surveillance System (BRFSS)¹⁶

The BRFSS, an annual phone survey administered by the Centers for Disease Control and Prevention, collects state data about health-related risk behaviors, chronic health conditions and the use of preventive services. Each year, residents in 50 states, Washington, D.C., and three U.S. territories complete the survey.

Since 2009, 42 states and D.C. have included ACE questions in their BRFSS survey for at least one year, making it a tool for identifying state-specific trends in adverse childhood experiences.

Strategies for Prevention and Mitigation

In the two decades since the original ACE study, an extensive number of publications have added to the body of research on adverse childhood experiences. Many of these publications provide evidence of effective strategies to prevent and manage the consequences of ACEs. For example, many of the recommendations for achieving strong physical health—adequate sleep, good nutrition and regular exercise—are also useful for protecting children from the harms of ACEs. Social support and stress reduction strategies, such as mindfulness and psychotherapy, are also well-supported.¹⁰ Efforts that focus on building healthy families early in the life of a child are cited as among the most influential means of preventing ACEs and reducing their damaging effects.^{17,18}

Resilience

STRATEGY

Build Resilience

STATE OPTIONS

- Increase positive parenting skills and safe, stable and nurturing relationships through home visitation.
- Explore opportunities to expand access to quality early child care and education.

The Center on the Developing Child at Harvard University offers three principles for policymakers to consider in helping families with young children thrive: enhancing responsive relationships, strengthening core life skills and reducing sources of stress.¹⁹ These principles target characteristics of the individual, family and community that are associated with physical health—sometimes referred to as protective factors.^{17,20} Such factors are important because they increase a family’s ability to effectively cope and adapt to hardship and change. This ability to grow and recover from adverse experiences is called resilience.²¹ In other words, protective factors, such as strong family bonds, cultivate greater resilience

that can help protect children from the detrimental effects of adverse experiences.²² When children perceive at least one stable, supportive adult in their life, they are less likely to experience toxic stress and develop unhealthy coping strategies, such as bullying or substance misuse. Safe, stable and nurturing relationships help to build resilience, prevent violence, improve mental health and support health across one's lifespan.^{4,23,24}

Home Visiting

Developing strong family bonds is a teachable skill, and high-quality home visiting programs are one way to do so.²⁵ Home visiting programs employ nurses, social workers, early childhood educators and other trained professionals to visit families in their homes during pregnancy and early childhood. These programs teach positive parenting skills (including best practices for coping with stress), provide health education, and connect families to supportive services such as the Women, Infants and Children (WIC) Food and Nutrition Service program.

Home visiting has been linked to positive results. These include improved school readiness, higher-quality parenting, more positive child-parent interactions and improvements in parents' mental health as they develop more responsive connections to their children. Home visiting has also been found to reduce the likelihood of child abuse and neglect. For families facing added challenges, such as substance dependence, maternal depression, or limited social or financial support, home visiting programs may be especially beneficial.

States that recognize the potential return on investment of home visiting programs may support them through a combination of federal, state, local and private funds. The federal Maternal, Infant and Early Childhood Home Visiting Program, for example, provides funding for all 50 states, the District of Columbia and five territories to operate home visiting programs for at-risk pregnant women and parents with infants or young children.²⁶ For more on home visiting, please visit the NCSL [Home Visiting webpage](#).

State Examples

- In 2015, Oklahoma lawmakers enacted the [Family Support Accountability Act](#), which mandates that home visiting programs work in partnership and sets minimum outcomes programs must achieve.
- In 2016, the Rhode Island General Assembly enacted the [Rhode Island Home Visiting Act](#), which requires the Department of Health to implement a statewide home visiting system using evidence-based models.
- In 2016, New Jersey established a three-year Medicaid [home visitation demonstration project](#) to provide ongoing health and parenting information, parent and family support, and links to essential health and social services during pregnancy, infancy and early childhood.

A more complete list of home visitation legislation passed between 2008 and 2017 can be found [here](#).

Did You Know?

Nurse Family Partnership (NFP) is the most extensively evaluated early home visitation program in the U.S. NFP helps new parents keep themselves and their babies healthy, connect to needed services, and continue their education or find work. NFP has been found to reduce child abuse and neglect by 48 percent and emergency room visits for accidents and poisoning by 56 percent.²⁷

Additionally, there are many evidence-based programs that offer positive parenting education and parenting support services, such as Healthy Families America®, Incredible Years®, Minding the Baby®, SafeCare® and Triple P®.

Quality Early Child Care and Education

In addition to building secure attachments with caring adults, expanding access to early childhood education is a promising pathway to resilience. Early learning opportunities allow children to think, play and explore, which exercise critical executive functions such as “working memory” (storing and accessing information for a limited time) and self-regulation. Children learn to take turns, manage information and avoid distractions, and the more these abilities are practiced the stronger they become. Early childhood education also supports social and emotional development, which includes building self-confidence and positive relationships. These critical abilities emerge through mastering new tasks and learning to interact with others. They also instill in children the motivation, persistence and other life skills necessary to be inventive, flexible and functional adults, and to be resilient in the face of life’s challenges.

Moreover, according to a recent report by Child Trends and the Alliance for Early Success, preschool participation is associated with markedly better academic outcomes, such as improved math, reading and language skills.²⁸ Additionally, high-quality early childhood education may contribute to long-term benefits such as higher earnings, better health and less criminal activity.²⁹ Dr. James Heckman, an economics professor at the University of Chicago, demonstrates a 13 percent return on investment for high-quality, birth-to-5 early childhood education for each year of a child’s life.³⁰ Because high-quality child care and education equip children with opportunities to establish healthy connections with others and skills to be productive adults, broadening access may help prevent the accumulation of toxic stress commonly associated with ACEs.

State Examples

- In 2017, Washington state [established](#) a state-supported early childhood education and assistance program.
- In 2017, state lawmakers in Louisiana [created](#) a special fund to support early childhood education.
- In 2015, New Hampshire lawmakers [tasked](#) the state’s Wellness and Primary Prevention Council to establish a system of family resource centers to provide parental education and support for children from birth to age 5.

Did You Know?

Between January and May of 2018, at least 68 legislative proposals in 25 states incorporated ACEs. These bills addressed appropriations for prevention, task force creation, and training for educators and others on trauma-informed practices.

For more on what states are proposing to address ACEs, please visit the [NCSL Injury Prevention Legislation Database](#). Visitors to the database can search legislation from all 50 states and the District of Columbia on 10 injury prevention topics, including adverse childhood experiences and child abuse and neglect. Searches can be organized by topic, state and year.

Parental Stress

STRATEGY

Support Parental Stress Reduction

STATE OPTIONS

- Consider economic supports, family-friendly workplace policies and affordable housing developments.

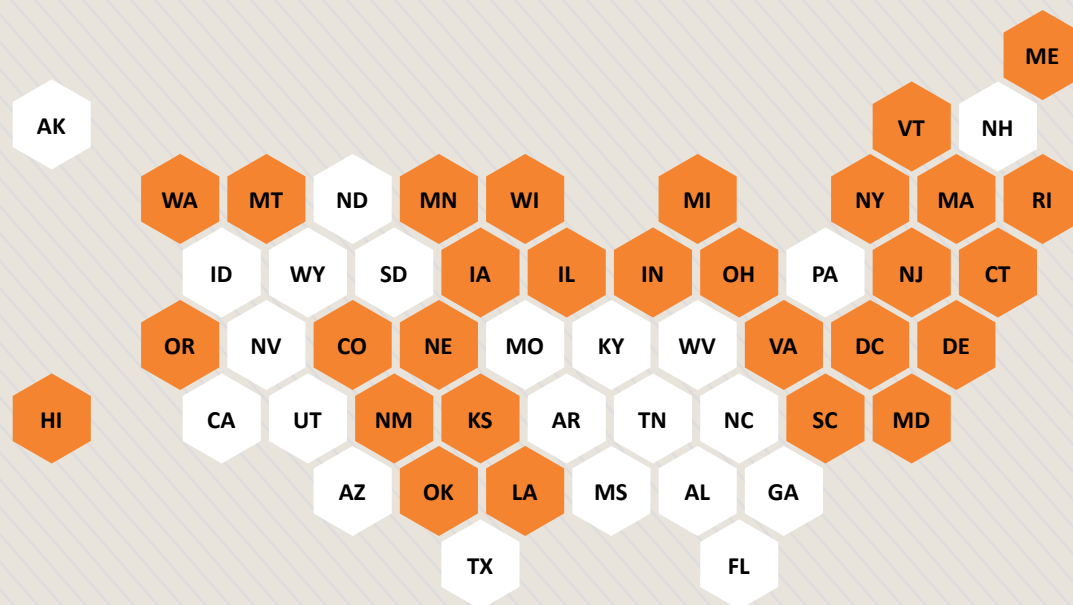
Nearly a quarter of U.S. children live below the federal poverty level, and, in almost every U.S. state, economic hardship is now the most common adverse childhood experience.^{12,31} Economic hardship affects children because it can cause high parental stress and increase their likelihood of experiencing abuse or neglect. Efforts to strengthen families' economic security may help reduce parental stress and establish greater household stability—two factors that can help protect children from abuse and neglect.³² Policies such as minimum wage increases, full pass-through child support payments and earned income tax credits are potential mechanisms for reducing ACEs.^{33,34,35}

For example, the earned income tax credit (EITC) is a policy the federal government, 29 states, the District of Columbia, Guam, Puerto Rico and some municipalities have implemented to build workers' economic security, especially those with children.³⁶ The Center on Budget and Policy Priorities reports that, in 2016, the EITC lifted nearly 6 million people—half of them children—out poverty. Research suggests the policy encourages workforce participation and increased earnings, and people most often use the tax credit refund to pay bills and debts and to build their assets.^{37,38} Furthermore, while government policies that provide economic supports to families are not the only option for addressing ACEs—business leaders also play a role—research does support the effectiveness of such policies in improving parents' ability to provide for the physical and emotional needs of their children.³⁹ The following highlights states that have enacted some of these measures.





States with an Earned Income Tax Credit



■ State EITC

Source: NCSL, *Tax Credits for Working Families*

State Examples

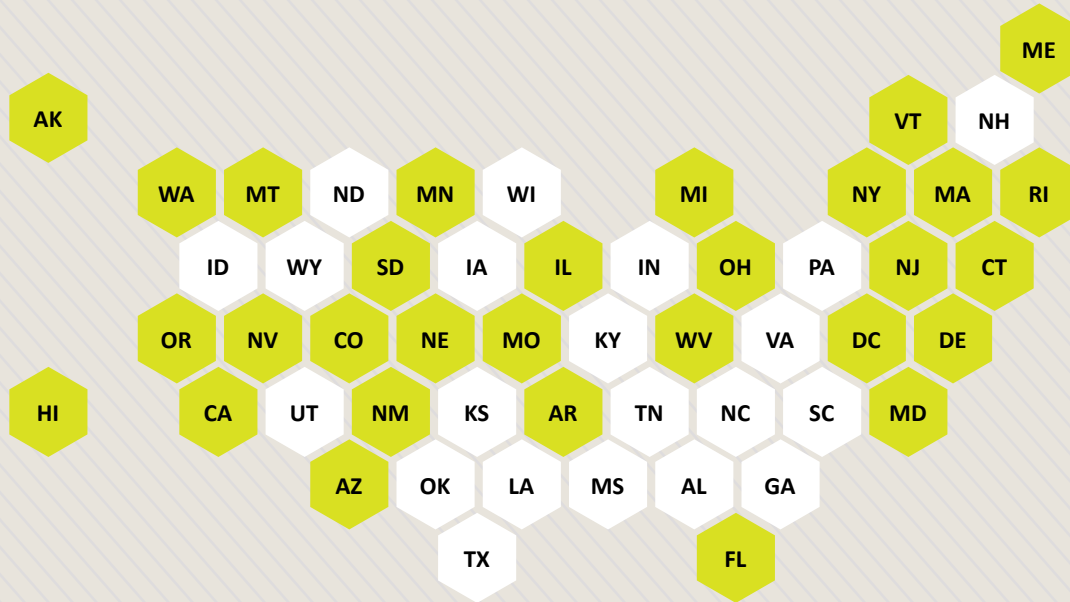
- In 2017, Colorado lawmakers [extended](#) the income tax credit for child care expenses paid by an individual with a federal adjusted gross income of \$25,000 or less.
- In 2016, Virginia lawmakers [increased](#) outreach to potential EITC recipients by providing an annual notice to recipients of various state benefits of the availability of the federal and state EITC.

Did You Know?

Rhode Island enacted the first state earned income tax credit (EITC) in 1986.

[Hawaii](#), [Montana](#) and [South Carolina](#) are the most recent states to create state EITCs.

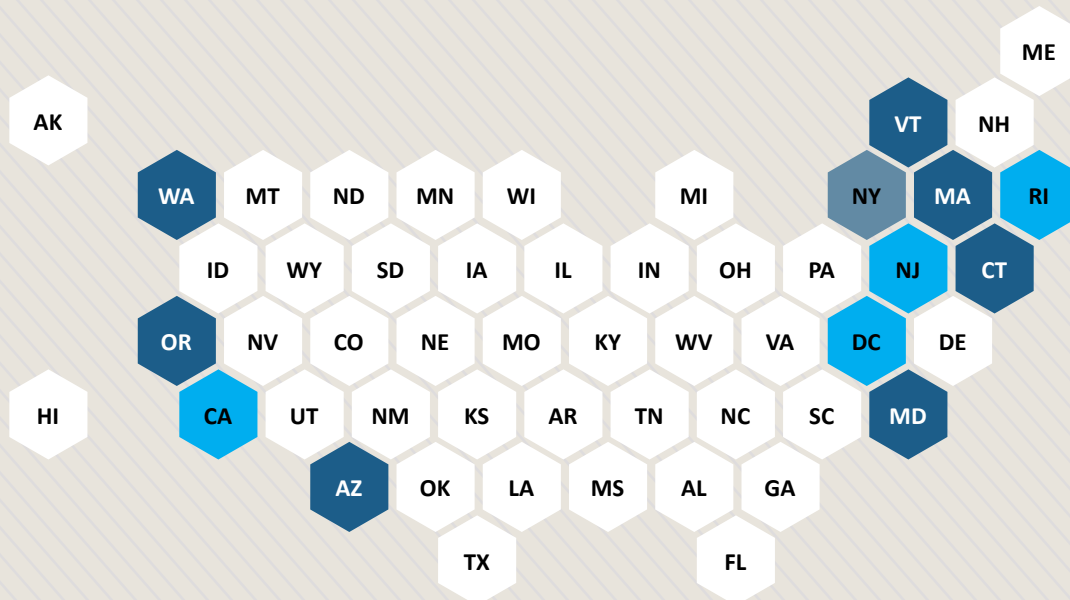
States with a Minimum Wage Greater than \$7.25 Per Hour



State minimum wage greater than federal rate of \$7.25 per hour

Source: NCSL, *State Minimum Wages*

States with Paid Family and/or Sick Leave



■ Paid Sick Leave
■ Paid Family Leave
■ Paid Family and Sick Leave

Source: NCSL, *State Family and Medical Leave Laws*

Housing

Unstable or unaffordable housing, poor neighborhood quality and eviction can also be profound sources of stress for parents and children. Neighborhood quality often informs the quality of available jobs, schools and health care, as well as a families' social mobility.^{40,41,42} And research suggests that the stress associated with housing instability can increase known risk factors for child abuse and neglect, such as harsh parenting practices and maternal depression.^{20,22,43} Nearly 80 percent of mothers experiencing homelessness have significant histories of childhood trauma, and many have experienced intimate partner violence as adults.^{44,45,46,47} Thus, housing instability can be thought of as both a cause and a consequence of ACEs.

Harvard University's Joint Center for Housing Studies reports that in 2016, nearly a third of U.S. households were cost-burdened, meaning they paid more than 30 percent of their income for housing.⁴⁸ In a survey by the University of Southern California and the Los Angeles Business Council, 60 percent of surveyed companies reported that housing costs are a barrier to employee retention.⁴⁹ Thus, housing and zoning policies that increase the number of available, affordable units in a community and support neighborhood investments and diversification are likely to benefit employers as well as families.

Examples of such policies include rent control and inclusionary zoning. Rent control refers to the limits on the rent that landlords may charge. Research on the effectiveness of rent control is mixed. For example, some experts suggest that rent-controlled buildings can suffer from deterioration from lack of investment and rent control laws exacerbate housing shortages. Others assert that rent control helps to maintain neighborhood diversity and stability, often increasing property values.

Inclusionary zoning requires a specified percentage of new housing construction to be affordable to people with low to moderate incomes. Current research about the effects of inclusionary zoning policies is limited. Proponents note the policy's ability to increase the production of affordable homes, while opponents argue such policies increase building costs and place the burden of providing affordable units on developers and market-rate purchasers. At least three states—[Connecticut](#), [Louisiana](#) and [New Hampshire](#)—allow inclusionary zoning where there is rent control pre-emption.

Additional policies communities can consider when seeking to address the issue of housing affordability include reductions in regulatory barriers to development and shared equity homeownership, such as community land trusts.^{50,51} Given the role of counties and municipalities in establishing and altering housing policy, lasting solutions to affordability and availability will likely require a comprehensive strategy from multiple levels of government, as well as support from the private sector.

Screening and Treatment

STRATEGY

Increase Screening and Treatment

STATE OPTIONS

- Broaden access to and coverage of comprehensive health services.

Between 14 percent and 20 percent of U.S. children experience a diagnosable mental, emotional and behavioral disorder, such as depression, anxiety and obsessive-compulsive disorder.⁵² However, for people with adverse childhood experiences, the likelihood of developing one or more of these disorders is significantly greater. Specifically, those with four or more ACEs are about four times more likely to develop depression and 12 times more likely to attempt suicide.⁵³ Children with four or more ACEs are also 32 times more likely to have a learning or behavioral issue when compared to children with no adverse childhood experiences.⁵⁴ Frequent classroom disruptions, aggression, underperformance, truancy, poor attitude, bullying and social withdrawal are symptoms commonly expressed by children struggling to manage a learning or behavioral issue.

Schools and child care centers are uniquely positioned to detect these issues early and link children to supportive services and formal assessments. Early interventions may mitigate the most dire consequences of childhood trauma and frequently demonstrate positive effects on long-term health.^{55,56} Many children report feeling most comfortable receiving health-related services at school and a majority of those accessing mental health services do so through their school.^{57,58} Thus, school-based mental health services may prove to be an effective method for addressing the health care needs of children with ACEs. Specifically, efforts by schools and child care settings to consider a child’s history of trauma and subsequent coping strategies—an approach commonly called trauma-informed care—are likely to be highly valuable in mitigating some of the consequences of ACEs.⁵⁹

Finally, children who grow up in households with family members with an untreated substance use disorder (SUD) or mental illness often witness significant dysfunction. Preventing these types of ACEs may require innovative policies that support comprehensive health care for children and parents. For example, parental opioid dependence is increasingly damaging the health of infants and children. Recent data suggests that, on average, every 15 minutes a baby is born in the U.S. withdrawing from opioids.⁶⁰ In response, states have begun integrating addiction treatment into existing home visiting programs, as well as supporting addiction treatment programs designed specifically for pregnant women and women with young children. Kentucky, Ohio and Vermont are three states with programs designed specifically for mothers combatting an SUD.^{61,62,63} Such efforts to provide comprehensive health services may support better SUD treatment, mental health and child welfare outcomes.⁶⁴

State Examples

In 2015, Iowa enacted a [law](#) allowing for state block grant allocation to develop a range of children, youth and family services through existing community mental health centers. Services include school-based mental health projects, mobile crisis intervention services and mental health assessment capacity development based in public and nonpublic schools.

In 2013, Connecticut enacted a [law](#) allowing school-based health centers to extend their hours and provide services to students who do not reside in the school district where a health center is located. It also allows the centers to provide behavioral health services, expand health care services, conduct community outreach about their services, and receive reimbursement from private insurance.

In 2017, Indiana lawmakers established an [opioid addiction recovery pilot program](#) to assist expectant mothers with an opioid addiction. The program provides treatment in a residential care facility and home visitation services following discharge from the facility.

Moreover, 19 states have either created or funded drug treatment programs specifically for pregnant women, and 17 states and the District of Columbia provide pregnant women with priority access to state-funded drug treatment programs.⁶⁵

Conclusion

Adverse childhood experiences affect development and behavior and, if left unaddressed, threaten long-term health and well-being. To improve the lives of families and reduce the societal costs of ACEs, policymakers are exploring a range of strategies to prevent and mitigate childhood trauma. Effective strategies include building resilience in children and families, supporting parents to develop stress management and positive parenting skills, and increasing access to and use of comprehensive health services.

What Now?

- **Identify existing evidence-based prevention efforts in your state.** Learning about initiatives already underway can help avoid duplication of efforts. For example, does your state or district have an operational home visiting program?
- **Connect with potential partners.** The effects of ACEs are evident in many sectors, so it may be useful to identify and collaborate with businesses, community- and faith-based organizations, and government agencies invested in lessening the occurrence and harms of ACEs.
- **Support evaluation and needs assessment.** Data enables state leaders to recognize policy gaps, target limited resources to populations most in need and understand which strategies are most effective in specific contexts. For example, do public agencies, academic institutions or other entities in your state collect a range of social and economic data?

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